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ARTICLE

The 2024 Outline of *Fungi* and fungus-like taxa

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Abstract

With the simultaneous growth in interest from the mycological community to discover fungal species and classify them, there is also an important need to assemble all taxonomic information onto common platforms. Fungal classification is facing a rapidly evolving landscape and organizing genera into an appropriate taxonomic hierarchy is central to better structure a unified classification scheme and avoid incorrect taxonomic inferences. With this in mind, the *Outlines of Fungi and fungus-like taxa* (2020, 2022) were published as an open-source taxonomic scheme to assist mycologists to better understand the taxonomic position of species within the Fungal Kingdom as well as to improve the accuracy and consistency of our taxonomic language. In this paper, the third contribution to the series of *Outline of Fungi and fungus-like taxa* prepared by the *Global Consortium for the Classification of Fungi and fungus-like taxa* is published. The former is updated considering our previous reviews and the taxonomic changes based on recent taxonomic work. In addition, it is more comprehensive and derives more input and consensus from a larger number of mycologists worldwide. Apart from listing the position of a particular genus in a taxonomic level, nearly 1000 notes are provided for newly established genera and higher taxa introduced since 2022. The notes section emphasizes on recent findings with corresponding references, discusses background information to support the current taxonomic status and some controversial taxonomic issues are also highlighted. To elicit maximum taxonomic information, notes/taxa are linked to recognized databases such as Index Fungorum, Faces of Fungi, MycoBank and GenBank, Species Fungorum and others. A new feature includes links to Fungalpedia, offering notes in the *Compendium of Fungi and fungus-like Organisms*. When specific notes are not provided, links are available to webpages and relevant publications for genera or higher taxa to ease data accessibility. Following the recent synonymization of *Caulochytriomycota* under *Chytridiomycota*, with *Caulochytriomycetes* now classified as a class within the latter, based on formally described and currently accepted data, the *Fungi* comprises 19 Phyla, 83 classes, 1,220 families, 10,685 genera and ca 140,000 species. Of the genera, 39.5% are monotypic and this begs the question whether mycologists split genera unnecessarily or are we going to find other species in these genera as more parts of the world are surveyed? They are 433 speciose genera with more than 50 species. The document also highlights discussion of some important topics including number of genera categorized as *incertae sedis* status in higher level fungal classification. The number of species at the higher taxonomic level has always been a contentious issue especially when mycologists consider either a lumping or a splitting approach and herein we provide figures. Herein a summary of updates in the outline of *Basidiomycota* is provided with discussion on whether there are too many genera of *Boletales*, *Ceratobasidiaceae*, and speciose genera such as *Colletotrichum.* Specific case studies deal with *Cortinarius*, early diverging fungi, *Glomeromycota*, a diverse early divergent lineage of symbiotic fungi, *Eurotiomycetes*, marine fungi, *Myxomycetes*, *Phyllosticta*, *Hymenochaetaceae* and *Polyporaceae* and the longstanding practice of misapplying intercontinental conspecificity. The outline will aid to better stabilize fungal taxonomy and serves as a necessary tool for mycologists and other scientists interested in the classification of the *Fungi*.

Keywords – classes – classification – families – genera – orders – phyla

INTRODUCTION

The Outline of *Fungi* and fungus-like taxa is an ongoing project by the Global consortium for the classification of fungi and fungus-like taxa (Hyde et al. 2023a) to develop an internationally accepted structure for the classification of these organisms. The first Outline of *Fungi* and fungus-like taxa was published by Wijayawardene et al. (2020) and updated by Wijayawardene et al. (2022) and follows previous classifications on the fungi (Eriksson 1982, Lumbsch & Huhndorf 2007, 2010, Hyde et al. 2013, 2020, Maharachchikumbura et al. 2015, 2016, Jaklitsch et al. 2016, Wijayawardene et al. 2017a, 2018, 2024, Lücking et al. 2017, He et al. 2019, 2024, Hongsanan et al. 2020a, b). The present outline deals with genera and higher taxa introduced until September 2024.

The new outline includes some additional ongoing facets. We have added the numbers of species in each genus using previous data, expert knowledge, and data from Index Fungorum. In many genera it is impossible to accurately determine the number of species as many taxa were described a long time ago and lack conclusive descriptions, illustrations, and molecular data, and hence we provide estimates. Links are provided to the notes for each recently introduced genus and higher taxon, which are now online as well as included at the end of this paper. Hyde et al. (2023b) have introduced *Fungalpedia* (Fp), which is a compendium of fungi and fungus-like taxa and those that have been completed are linked to the genus or higher taxa in this paper.

In the present *Outline* we have strived to improve the effectiveness and accuracy of the 2022 outline to act as a reference for scientists. The present outline is updated to September 2024 and as new genera and higher taxa become available and will be periodically updated between now and the official 2026 outline and can be downloaded at https://drive.google.com/drive/folders/1ZsQSPrUPYCSCio4r7glBSS_2nl8sOqJ4?usp=sharing. If you would like to be included in future editions of the Outline please contact the senior author.

The role of the *Outline of Fungi*

There have been several attempts to develop standardized classification outlines of the fungi and fungus-like organisms; however, most dealt with groups of the fungi and none covered all fungi and fungus-like taxa. Some web pages also provide information on the classification of *Fungi* and fungus-like organisms (MycoBank, Index Fungorum, Fungal Names, Eumycetozoa, Catalogue of Life and NCBI Taxonomy Database). However, these are not fully synchronized in classification and are mainly the efforts of single or small groups of people and this leads to inconsistencies. For example, in GenBank, *Fusarium* is treated as a genus comprising all fusarium-like taxa, while in MycoBank, *Fusarium* is treated as several distinct, but related genera. Therefore, this outline, which comprises more than 500 curators, is attempting to derive an agreeable classification that can help standardize all other classification schemes.

Number of species and genera

In terms of formally described and currently accepted names, the *Fungi* comprises 19 Phyla, 83 classes, 1,220 families, 10,685 genera and ca 140,000 species. Of the genera, 39.5% are monotypic and this begs the question whether mycologists split genera unnecessarily or are we going to find other species in these genera as more parts of the world are surveyed (Hyde 2024a, b)? Certainly, the latter is happening. For example, Lombard et al. (2016) split *Stachybotryaceae* into 33 genera, many of which were monotypic, and in recent papers further species have been added. The reason that the number of species is approximate is that it is unclear whether speciose genera really contain so many species. Bhunjun et al. (2022) addressed this problem and concluded that it is likely that new species will be described in speciose genera. This is presently evident in genera such as *Alternaria*, *Apiospora*, *Colletotrichum*, and *Fusarium* (Jayawardena et al. 2021a; Liu et al. 2022a). It is, however, difficult to estimate the number of taxa in speciose genera. Many materials for many old names have not been studied recently because of practical difficulties in loaning specimens, inadequate extant descriptions, and the lack of molecular data (Dayarathne et al. 2016). Numbers in Species Fungorum are likely to be incorrect for this reason and this undoubtedly results in an incomplete fungal inventory. In addition, revision of previously speciose genera based on larger sampling of strains and species often result in the reduction of the number of species due to new synonyms because of refined species boundaries, especially with comprehensive DNA sequence analyses (e.g., *Calonectria*; Liu et al. 2020b, *Diaporthe*; Norphanphoun et al. 2022). With respect to species numbers in each genus in this outline, we have therefore adopted a conservative approach, generally rounding species numbers to the nearest five (1-50), the nearest ten (50-100), and thereafter the nearest 100. According to our estimates, there are more than ca 140,000 extant species of *Fungi* and fungus-like organisms.

Hot topics

Bhunjun et al. (2024) published a list of the 100 most cited fungal genera, which comprised several animal and human fungal pathogens, and several plant pathogenic, and symbiotic taxa. Some of these genera are hot topics being constantly researched with an effort to better understand and establish species boundaries (Maharachchikumbura et al. 2021). We provide notes on several of these so-called hot-genera and other hot-topics which have been dealt with in recent papers.

***Incertae sedis* status in higher level fungal classification – an elephant in the room –** written by Kunhiraman C. Rajeshkumar

The classification of fungi has undergone numerous revisions and amendments over time bearing in mind the importance of ranking genera, families and orders. Fungal classification has historically focused on the grouping of critical morphology-based distinguishing traits. Through multiple articles and modifications in the last two editions of the International Code of Nomenclature for algae, fungi, and plants (ICNafp), the rules governing the names of fungi were revisited substantially. The one fungus: one name concept was established for species with more than one morph, and protection under the ICNafp was used to retain the most widely used names from among synonymous asexually- and sexually-typified names. Significant changes have been made in the nomenclature and classification of fungi with the advent of DNA sequencing technology and its application in the taxonomy of fungi (Hongsanan et al. 2018). Our formerly morphology-based fungal classification has been revised and updated due to the multigene sequencing data (primary and secondary DNA barcodes) and phylogeny based on sophisticated statistical algorithms like the coalescence method and divergence time estimations. However, there remains numerous fungi that cannot be accommodated in our current classification scheme referred to by the technical term, *incertae sedis*, even by Species Fungorum or MycoBank.

Incertae sedis taxa are the orphan groups of the classification that need careful treatment. In the modern taxonomic era, addressing the reasons why species are placed in uncertain positions is important. A better approach is inevitable while studying the taxonomy of several important fungi listed in *incertae sedis*. In terms of morphology-based identification, *incertae sedis* taxa are often well-defined with key distinguishing characteristics and illustrations. Although these *incertae sedis* taxa were accurately circumscribed within a genus, authors have not been able to accommodate them in a family and sometimes even at higher taxonomic level. It may be due to the author's lack of expertise in higher classifications or because the fungus differs significantly from other recognized taxa in morphological characteristics. Also, some of these genera tend to have an unstable position in phylogenetic trees, clustering with different taxa depending on the genetic markers analysed or available and the sampling of reference taxa in the analyses (Jeewon & Hyde 2016, Jeewon et al. 2017). Likewise, the lack of asexual-to-sexual linkages in certain fungi and the reliance only on morphology in traditional taxonomic approaches are other reasons for an uncertain phylogenetic position of taxa in the higher-level classification (Shenoy et al. 2007, 2010, Wijayawardene et al. 2017b, 2021a).

In the current era, it is challenging to validate such taxa through additional molecular research, nomenclatural treatments, and revisions due to deteriorated or inadequate type material (holotype, isotype) and the lack of representative axenic ex-types. Traditional taxonomic approaches primarily relied on accessing fungarium specimens loaned through policies and trust to verify authentic types like holotypes and isotypes for taxonomic revisionary studies. The availability of type material from around the world has, of late, been restricted by stringent local biodiversity policies, strict import/export/quarantine laws of various nations, and reduced international cooperation in loaning the type material from recognized fungaria. Unethical practices and breach of integrity or mishandling of important types have also limited the possibility of material exchange for revalidation. The classification of taxa belonging to *incertae sedis* can be effectively resolved by recollecting such fungi from their original collection sites through worldwide collaboration among fungal taxonomists. However, epitypes should only be designated after careful evaluation, as epitypification can only be overruled by formal conservation according to the current ICNafp. In the modern fungal taxonomic era, molecular methods are used to resolve the accurate phylogenetic position of these fungi in the classification. To achieve a far more accurate prediction of the fungal tree of life, correct placement of the *incertae sedis* taxa is essential.

The uncertainty in the classification of fungal species was present at various ranks, including phylum, subphylum, class, subclass, order, and families. An overall assessment of uncertain positions of fungi based on the recent Outline of *Fungi* and fungus-like taxa (Wijayawardene et al. 2022) shows a huge disparity in the phylogenetic placement of well-established legitimate genera. Surprisingly, the kingdom of fungi contains 3,185 genera of fungi that were designated *incertae sedis*. *Ascomycota*, one of the many phyla of fungi, includes the most significant number of *incertae sedis* taxa, about 2,680 genera (Figs 1, 2). Inclusion of these taxa in our current classification scheme will drastically alter our understanding of interspecies relationships and evolutionary patterns within several families and orders.

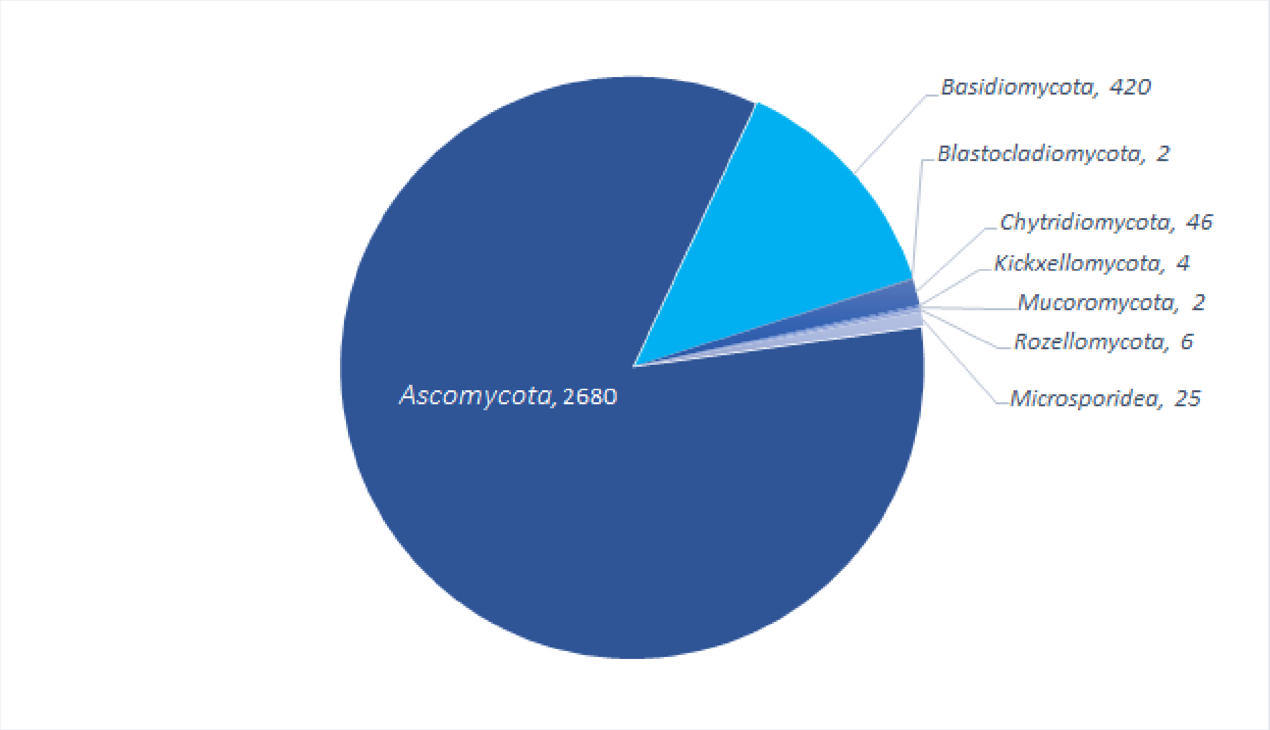

Figure 1 – Number of *incertae sedis* taxa belonging to different phyla.

In comparison, *Basidiomycota* accounts for 420 *incertae sedis* genera followed by *Chytridiomycota* (46 genera), and *Microsporidia* (25 genera). In the *Ascomycota*, approximately 1,477 genera were never placed under any higher classification ranks (families or orders). The *incertae sedis* genera in *Dothideomycetes* account for 482 genera, followed by *Sordariomycetes* with 390 genera. Similarly, *Leotiomycetes* includes 181 genera, *Eurotiomycetes* 27 genera, *Dipodascomycetes* two genera, *Pichiomycetes* one genus, *Saccharomycetes* five genera, and

Pezizomycetes 18 genera. Among the fungal families of *Ascomycota*, a total of 73 families were reported as *incertae sedis,* which included 42 families of *Dothideomycetes* consisting of 98 genera followed by 22 families of *Sordariomycetes* composed of 51 genera (Table 1). Likewise, seven families were not assigned to any order in *Ascomycota*.

Table 1 Number of *incertae sedis* taxa in *Ascomycota* (based on Wijayawardene et al. 2022).

Class	Order	Family	Genus
Arthoniomycetes			23
Dipodascomycetes			2
Dothideomycetes		42	482
Eurotiomycetes		1	27
Geoglossomycetes			2
Laboulbeniomycetes			5
Lecanoromycetes	2	7	66
Leotiomycetes		1	181
Orbiliomycetes			2
Pezizomycetes			18
Pichiomycetes			1
Saccharomycetes			5
Sordariomycetes	7	22	390
Ascomycota incertae sedis			1477

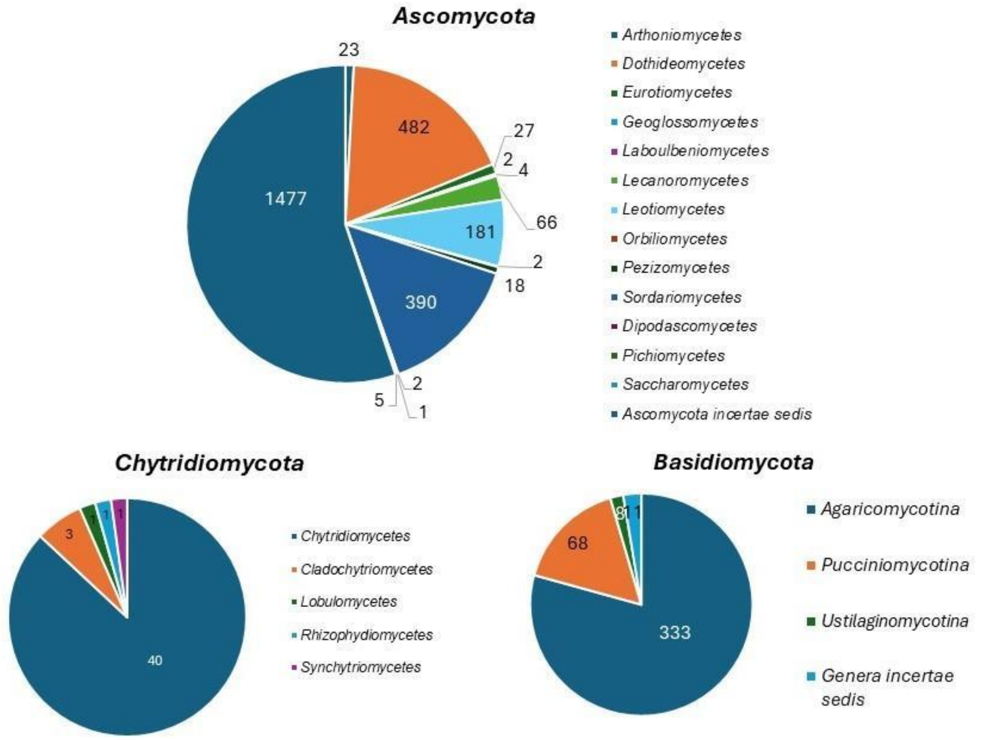

Figure 2 – *Incertae sedis* genera of major fungal phyla.

Within the phylum *Basidiomycota*, 420 *incertae sedis* genera have been reported in Wijayawardene et al. (2022). The *incertae sedis* genera are placed under the three subphyla

Agaricomycotina, *Pucciniomycotina*, and *Ustilaginomycotina*. *Agaricomycotina* encompasses 333 *incertae sedis* genera, followed by *Pucciniomycotina* and *Ustilaginomycotina*, with 68 and eight such genera, respectively. Apart from this, eleven genera *incertae sedis* recorded under the phylum *Basidiomycota* are not placed under any subphylum. The high number of *incertae sedis* genera in *Agaricomycotina* may be because of the substantial floristic studies carried out worldwide before and after the introduction of DNA sequencing tools in taxonomy. In *Chytridiomycota*, 46 genera are of uncertain position. *Chytridiomycetes* accounts for the 40 *incertae sedis* genera, followed by *Cladochytriomycetes* with three genera. The rest of the classes *Lobulomycetes*, *Rhizophydiomycetes*, and *Synchytriomycetes* each contain one *incertae sedis* genus.

Updates in the outline of *Basidiomycota* – written by Mao-Qiang He

In the current outline of *Basidiomycota*, we follow the outline of He et al. (2024) with four subphyla, 20 classes, 77 orders, 297 families, and ca. 2130 genera with slight modifications. Compared to the outline of He et al. (2019), there are two more classes, nine more orders, 56 more families and 206 more genera.

In *Agaricomycotina*, one new class and four orders were proposed. *Bartheletiomycetes*/*Bartheletiales* were proposed based on the phylogenomic relationships of the only species in this class, *Bartheletia paradoxa* (Mishra et al. 2018). *Chionaster*, a monotypic genus described in 1903, had an unclear taxonomic position (Wille 1903). A DNA based study revealed that it is part of *Tremellomycetes* with the orders in *Tremellomycetes* and *Chionasterales* proposed (Irwin et al. 2021). *Sistotremastrales* and *Xenasmatellales* in *Agaricomycetes* were proposed to accommodate corticoid genera (*Sistotremastrum*, *Xenasmatella*) segregated from *Trechisporales* and *Russulales* (Liu et al. 2022e, 2023g). In *Dacrymycetes*, following the taxonomic treatment of Zamora & Ekman (2020), *Unilacrymales* was treated as a synonym of *Dacrymycetales*. Thus, only one order is currently accepted in *Dacrymycetes*. In *Pucciniomycotina*, two new orders were proposed, *Heitmaniales* and *Rosettozymales*. *Heitmania* was originally retained as genus *incertae sedis* in *Microbotryomycetes* (Liu et al. 2017c). Phylogenetic studies supported this lineage as an order (Li et al. 2020a). *Rosettozyma*, *Rosettozymaceae*, and *Rosettozymales* were described in *Microbotryomycetes* to accommodate three new species (Li et al. 2020a). In *Ustilaginomycotina*, one new class and three new orders were proposed. *Peribolosporomycetes*/*Peribolosporales* was classified based on the phylogeny based on 38 protein coding genes, orthology and septal pore type analysis (Witfeld et al. 2023). Phylogenetic analyses of *Cintractiella scirpodendri* demonstrated that *Cintractiella* did not cluster with other orders in *Ustilaginomycetes* and showed affinities to *Malasseziomycetes*, and thus *Cintractiellales* was proposed to accommodate this lineage (McTaggart et al. 2020). *Franziozymales* was proposed to accommodate the single new species *Franziozyma bambusicola* (Li et al. 2022a).

Agaricales, *Hymenochaetales*, *Polyporales*, and *Pucciniales* were the top four orders with new families. There were 20 new families proposed in these four orders. In *Agaricales*, *Phyllotopsis* has long been retained as genus *incertae sedis* (Kirk et al. 2008, He et al. 2019). Based on the six-gene phylogenetic analyses of typhuloid taxa in *Agaricales*, Olariaga et al. (2020) introduced the new family *Phyllotopsidaceae* with the type genus *Phyllotopsis* and other two genera *Macrotyphula* and *Pleurocybella*. A later study proposed *Phyllotopsidaceae* as a new suborder *Phyllotopsidineae* based on phylogenomic analyses of *Agaricales* and found that *Macrotyphula* did not belong in *Phyllotopsidaceae* (Wang et al. 2023a). In the outline, we retained *Macrotyphula* as a genus *incertae sedis* in *Phyllotopsidineae*. Two new families were also included in *Phyllotopsidineae*, viz. *Radulomycetaceae* and *Sarcomyxaceae*. Noteworthily, *Globuliciopsis* of *Polyporales incertae sedis* was accepted in *Radulomycetaceae* based on a phylogenetic study (Perez Gorjón et al. 2024). The new families *Clitocybaceae* and *Omphalinaceae* were established based on molecular analyses (Vizzini et al. 2020a, He et al. 2023b). *Asproinocybaceae* was established by Mou & Bau (2021) to accommodate the genera *Asproinocybe* and *Tricholosporum*, and was accepted in He & Yang (2022) and He et al. (2023). However, a later study considered *Asproinocybaceae* as a synonym of *Lyophyllaceae* in suborder *Tricholomatineae* (Vizzini et al.

2024). We currently accept *Asproinocybaceae* but clarification is needed. In He et al. (2024), 14 families of *Hymenochaetales* were accepted, as compared to six families in the first outline of *Basidiomycota* (He et al. 2019). Many clades of *Hymenochaetaceae* were named and proposed as families. For example, Wang et al. (2023f) proposed six monotypic families, viz. *Peniophorellaceae*, *Resiniciaceae*, *Schizocorticiaceae*, *Sideraceae* and *Skvortzoviaceae*. *Odonticiaceae* was proposed to accommodate *Leifia* and *Odonticium*. In *Polyporales*, six new families were proposed with four in the brown rot group, viz. *Auriporiaceae*, *Piptoporellaceae*, *Postiaceae*, *Taiwanofungaceae*, and two in white rot group, viz. *Climacocystaceae* and *Gloeoporellaceae* (Wang et al. 2023f, Liu et al 2023f).

Pucciniales is the largest order in *Pucciniomycetes*. A major challenge in the molecular systematics and taxonomy of *Pucciniales* has been the limited sampling of taxa, particularly the type species of genera. Recent studies have conducted a broad sampling of rust fungi. Based on the multigene phylogenetic analyses with three genes (small subunit ribosomal DNA (SSU), large subunit ribosomal DNA (LSU), and cytochrome c oxidase subunit III (*cox*3) across 314 species, the taxonomic system of *Pucciniales* is updated with seven new families proposed (Aime & McTaggart 2021). Based on the Asian samples, three new families were proposed from China and one from India (Zhao et al. 2021a, Yadav et al. 2023a). Compared with the first outline of *Basidiomycota*, He et al. (2024) accepted 12 families in *Pucciniales*.

***Boletales*: are there too many genera?** – written by Alona Yu. Biketova & Martin Ryberg, edited by Roy E. Halling, Boris Assyov, Bálint Dima & Michal Mikšík

Boletales E.-J. Gilbert is quite an extensive order of the class *Agaricomycetes*, containing over 2,450 species (Catalog of Life 2024, excluding *Sclerogastraceae*) belonging to 10 suborders, 16 families and ca. 170 genera. The taxonomy of the order has undergone significant changes over time. In only the past few years, numerous novel genera have been described in *Boletales*, begging the question as to whether we need all these new genera. This is of course not a simple question to answer, and it does to some extent boil down to opinions of different approaches on how to define and delimit genera. Here we will give our analysis of why there are so many new genera of *Boletales* and particularly in the family *Boletaceae*. We will show that it is a combination of recent advances in our understanding of the group, but also to some extent our lack of understanding, and classical questions such as what phenetic and genetic variation can be accepted within a genus and if it is better to amend a genus to include more variation or describe a new genus.

The genus *Boletus* was proposed by Linnaeus (1753), but its concept and application has changed many times since then. Linnaeus used it for all poroid fungi, including polypores. Fries used it in a more restricted sense and included taxa with boletoid (pileate-stipitate with poroid hymenophore) basidiomes (Fries 1821). Many boletoid taxa were separated from *Boletus* by some authors early on, such as *Leccinum* and *Suillus* (Gray 1821). However, *Boletales* include many more basidiome morphologies than boletoid, such as sequestrate (gasteroid and secotioid), resupinate, polyporoid, and agaricoid (pileate-stipitate with lamellate hymenophore) types. The molecular phylogenetic and phylogenomic data has shown that the evolution among these different morphotypes is complex and none of the morpho-groups represent monophyletic classes or orders (Binder & Hibbett 2006). The ancestor of the *Boletales* was most likely a resupinate or polyporoid saprotrophic fungus and these basidiome types occur in five families: *Tapinellaceae*, *Serpulaceae*, *Coniophoraceae*, *Hygrophoropsidaceae* (*Leucogyrophana*), *Paxillaceae* (*Hydnomerulius*, *Meiorganum*), and two *incertae sedis* genera (*Corneromyces*, *Phaeoradulum*) (Binder & Hibbett 2006, He et al. 2019). Moreover, it has become clear that lineages with boletoid morphology form a polyphyletic group (Binder & Hibbett 2006). As in many other taxa within *Agaricomycetes* the sequestrate morphology has evolved repeatedly from pileate-stipitate forms in multiple lineages of *Boletales* (in 12 families and two *incertae sedis* genera), which is a great example of convergent evolution (Binder & Hibbett 2006). While it is now widely accepted that sequestrate species may be included in other genera otherwise dominated by pileate-stipitate species (Justo et al. 2010, Elliot & Trappe 2018), this is not very common in *Boletales* with relatively few exceptions (e.g., *Neoboletus* (Wu et al. 2016b), *Xerocomellus*, and *Leccinum* (Kuo & Ortiz-Santana 2020)). Agaricoid forms have also evolved multiple times from resupinate-polyporoid and boletoid forms in *Hygrophoropsis*, *Austropaxillus*, *Paxillus*, the *Gomphidius*-*Chroogomphus* clade, *Phylloboletellus*, *Phylloporus*, *Phylloporopsis*, and *Paxilloboletus* (Binder & Hibbett 2006, Farid et al. 2018, Badou et al. 2022). In addition, many other phenetic characters have been used to segregate boletoid taxa into separate subfamilies and genera, but also many of these characters seem to have a complex evolution (Wu et al. 2014, Tremble et al. 2024). It has therefore turned out that many previously recognized taxa are not monophyletic (Binder & Hibbett 2006, Nuhn et al. 2013), while monophyly is a crucial characteristic of each natural taxon. This has contributed to a situation where many new taxa have been described in recent years.

During the past two decades, a molecular revolution in the systematics of *Boletales* occurred. After detailed phylogenetic studies, it was revealed that two large and iconic genera *Boletus sensu lato* and *Xerocomus sensu lato* are cumbersome and polyphyletic groups, which were divided into at least 26 and 13 genera, respectively (Gelardi et al. 2023, Vadthanarat et al. 2024). Many new genera have therefore been described for newly discovered species that do not form a monophyletic group with other similar species (e.g., Vadthanarat et al. 2019, Sulzbacher et al. 2020, Badou et al. 2022, Wu et al. 2023a). The situation is often complicated by poor resolution in the sense that the optimal trees often show that the new genera are not monophyletic with any existing genera with similar phenetic characteristics, but the branch support values do not confidently show where the clades belong in the phylogeny (Crous et al. 2020a, Hosen & Yang 2021, Magnago et al. 2022, Vadthanarat et al. 2022). Only a few of these studies have followed recommended best practices for describing new genera (Vellinga et al. 2015), namely, failing to establish all genera as monophyletic, insufficient geographic (especially in tropical areas) and taxonomic sampling, missing type species, and inadequate statistical support for branches in the tree (Tremble et al. 2024). Thus, the order will require substantial revision in the future and caution is advised when applying new genus names. In Table 2 we list all new genera described from 2019 to present time.

Another problem is that there is no group-specific standardization for description of new taxa in *Boletales*. Therefore, in some studies phenetic (incl. morphology, ontogenesis, and chemistry) descriptions are too laconic – some important taxon-specific characteristics are missing (e.g. iodine reaction of stipe context in newly described genera by Hosen & Yang 2021 and Mao et al. 2023a; odor and taste of most of newly described taxa, especially not mentioning a peculiar odor in *Lanmaoa*, by Wu et al. 2016b), there is a lack of ecological/habitat data including absence of listed host plants even for type specimens of ectomycorrhizal species (e.g. Farid et al. 2021 – for most of new taxa, Ayala-Vásquez et al. 2023, Das et al. 2023), different sets of genetic markers sequences used for phylogenetic analysis and especially absence of the most common standard markers – internal transcribed spacer (ITS) and large subunit ribosomal DNA (LSU) (e.g. Vadthanarat et al. 2024), as well as unintentional or intentional failure to include good quality sequences from previous studies of the same taxon in a phylogenetic analysis in order for the presented data to better fit an alternative taxonomic hypothesis (e.g. omitting sequences of *Exsudoporus* spp. from Biketova et al. 2022 in the paper Wang et al. 2024f focused on the generic concept of *Butyriboletus* and *Exsudoporus*).

In *Boletaceae*, the largest family of the order *Boletales*, there are many relations that are still not well-resolved (Nuhn et al. 2013, Wu et al. 2014). Even some deepest nodes ("backbones") in *Boletaceae* phylogenies have remained poorly resolved until very recent phylogenomic studies by Tremble et al. (2024). Type studies are also extremely important for understanding the taxonomy of any fungal group. Unfortunately, only a small part of the described *Boletaceae* species (and *Boletales* in general) has ITS and LSU sequences of their type specimens stored in RefSeq (NCBI Reference Sequence Database). A more resolved phylogeny of *Boletaceae* with comprehensive taxonomic and sampling coverage would therefore be a great advancement for developing its more objective taxonomy. So recent advancements in our understanding of the phylogeny of *Boletales*, and the fact that many characters have been used to delineate taxa, that do not delimit monophyletic groups is one major explanation as to why there are many new genera described. Possibly, in addition to that, many new species are being discovered from new areas, and that adds new information about the evolution of traits important to delimit taxa (Alvarado et al. 2021, Badou et al. 2022, Lebel et al. 2022). For example, when it turns out that the characters used to diagnose a genus are plesiomorphic in respect to the characteristics of another genus, rather than apomorphic for the genus in question, then, one of the two genera can be amended to incorporate the species of both previously recognized genera, or new genera can be described to remove the conflict. Even though taxonomically not preferred, the second option seems to be more commonplace, but as descriptions are only needed for the new genus, the old genus is often not amended so that the diagnosis excludes the new genus (Alvarado et al. 2021). As it is also common that the newly described genus has only one or few species, the subsequent discovery of closely related species may lead to amendment of the original description (e.g., Biketova et al. 2022). This has contributed to the fact that 2.8% of the genera in *Boletales* are monotypic and 1.9% only have two species. These numbers are about three times higher than for *Agaricales* (0.9% and 0.6% respectively; Species Fungorum 2024).

Table 2 Genera that have been described in *Boletales* since 2019.

Family	**Genus**	**Author**	**Year**
Boletaceae	*Abtylopilus*	Yan C. Li & Zhu L. Yang	2021
Boletaceae	*Acyanoboletus*	G. Wu & Zhu L. Yang	2023
Boletaceae	*Amoenoboletus*	G. Wu, E. Horak & Zhu L. Yang	2021
Boletaceae	*Amylotrama*	Bloomfield, Davoodian, Trappe & T. Lebel	2022
Boletaceae	*Anthracoporus*	Yan C. Li & Zhu L. Yang	2021
Boletaceae	*Brasilioporus*	A.C. Magnago, Alves-Silva & T.W Henkel	2022
Boletaceae	*Cacaoporus*	Raspé & Vadthanarat	2019
Boletaceae	*Garcileccinum*	Ayala-Vásquez, Pérez-Moreno, nom. inval.	2023
Boletaceae	*Hemiaustroboletus*	Ayala-Vásquez, García-Jiménez & Garibay-Orijel	2022
Boletaceae	*Hemilanmaoa*	Yang Wang, Bo Zhang & Y. Li	2023
Boletaceae	*Hongoboletus*	G. Wu & Zhu L. Yang	2023
Boletaceae	*Ionosporus*	Khmeln.	2019
Boletaceae	*Kaziboletus*	Hosen & Zhu L. Yang	2021
Boletaceae	*Kgaria*	Halling, Fechner, & Davoodian	2023
Boletaceae	*Longistriata*	Sulzbacher, Orihara, Grebenc, M.P. Martín & Baseia	2020
Boletaceae	*Neotropicomus*	A.C. Magnago, Alves-Silva & T.W Henkel	2022
Boletaceae	*Nevesoporus*	A.C. Magnago & T.W. Henkel	2022
Boletaceae	*Niveoboletus*	Yang Wang, G. Wu, B. Zhang & Y. Li	2024
Boletaceae	*Paxilloboletus*	Furneaux, De Kesel & F.K. Khan	2022
Boletaceae	*Rostrupomyces*	Vadthanarat & Raspé, nom. inval.	2024
Boletaceae	*Rubinosporus*	Vadthanarat, Raspé & Lumyong	2022
Boletaceae	*Rufoboletus*	N.K. Zeng & Zhi Q. Liang	2024
Boletaceae	*Tropicoboletus*	Angelini, Gelardi & Vizzini	2023
Boletaceae	*Veloboletus*	Fechner & Halling	2020
Boletaceae	*Villoboletus*	L. Fan & N. Mao	2023
Coniophoraceae	*Penttilamyces*	Zmitr., Kalinovskaya & Myasnikov	2019
Paxillaceae	*Paralpova*	Cabero & P. Alvarado	2021

In many cases, new taxa described in *Boletales* are probably a consequence of discoveries of a lot of new lineages that do not fit well with the genus concept of their sister groups, or for which the sister group represents more than one genus. When dealing with individual taxonomic problems (such as describing one or several species) the easiest solution, and thus requiring the fewest name changes, may often be to describe a new genus. A more integrative view of an entire order/suborder/family/subfamily may highlight other solutions and address issues such as having too many genera or too many monotypic genera (invalidating the idea of binomial nomenclature). There is also a practical aspect to consider about the genus rank – ideally it should be recognizable in the field without requiring knowledge of its species. We, therefore, see the need for monograph style multifaceted studies of higher taxa in *Boletales* to evaluate the delimitations of genera in relation to each other (reciprocal monophyly). Also, global-scale collaboration on the taxonomy of *Boletales* would help to develop universal and group-specific concepts of genera and other taxa, as well as standard requirements for new taxa descriptions.

Ceratobasidiaceae – written by Ryan P. O'Donnell & Tom W. May

Ceratobasidiaceae Martin (1948) was established based on the genus *Ceratobasidium* as typified by the species *C. calosporum* (1935). More than 40 species have been described subsequently in *Ceratobasidium*. The family *Ceratobasidiaceae* was treated by Jülich (1982) as also including *Koleroga*, *Oliveonia*, *Scotomyces*, *Thanatephorus*, *Uthatobasidium* and *Ypsilonidium*. In the 2021 Outline of *Fungi*, Wijayawardene et al. (2022) listed the following genera under *Ceratobasidiaceae*: *Ceratobasidium*, *Ceratoporia*, *Ceratorhiza*, *Rhizoctonia*, *Scotomyces* and *Thanatephorus*.

Oberwinkler et al. (2013) examined the holotype of *Ceratobasidium calosporum* and revealed several discordant ultrastructural and micromorphological characters. *Ceratobasidium calosporum* exhibits partially to completely longitudinally septate basidia, long vermiform basidiospores, and dolipores with continuous parenthesomes. In contrast, all other species described as *Ceratobasidium* have aseptate basidia, globose to ellipsoid basidiospores, and dolipores with discontinuous parenthesomes (Oberwinkler et al. 2013, Roberts 1999). Oberwinkler et al. (2013) concluded that *Ceratobasidium* should only be applied to *C. calosporum*, and the genus was more appropriately placed in the *Sebacinaceae* based on shared characters between *C. calosporum* and *Sebacina calospora*, also known as *Ceratosebacina calospora*. Based on morphological characteristics, including hyphal diameter and branching pattern along with basidial shape, Roberts (1999) recognized both *Ceratobasidium* and *Thanatephorus*, placing a number of genera under *Thanatephorus*, including *Cejpomyces*, *Aquathanatephorus*, *Oncobasidium*, *Tofispora*, *Uthatobasidium* and *Ypsilonidium*; and placing *Koleroga* under *Ceratobasidium*. Roberts (1999) recognized the asexual states of *Ceratobasidium* and *Thanatephorus* as *Ceratorhiza* and *Rhizoctonia* respectively.

In contrast to the morphological distinction between *Ceratobasidium* and *Thanatephorus*, phylogenetic analyses of molecular data have repeatedly demonstrated that there is a single lineage that contains many species described in *Ceratobasidium* (other than the type) along with the type species of *Rhizoctonia* and *Thanatephorus*, and despite their placement within this lineage, they are not monophyletic groups corresponding to the morphologically-defined genera (Gonzalez et al. 2001a, Oberwinkler et al. 2013, Veldre et al. 2013, Diederich et al. 2014, de Melo et al. 2018, Cruz et al. 2022). Thus, it is necessary to recognize a single genus in which *Rhizoctonia* is the earliest name, and *Thanatephorus* a synonym, as accepted by Stalpers et al. (2021). Sequence data confirms the synonymy of the following genera under a broadly circumscribed *Rhizoctonia*: *Aquathanatephorus* (Vu et al. 2019, under *Thanatephorus*), *Ceratorhiza* (as "*Ceratobasidium goodyerae-repentis*", nom. inval.; Xu et al. 2010a), *Koleroga* (Ceresini et al. 2012, under *Ceratobasidum*), *Oncobasidium* (Samuels et al. 2012, under *Ceratobasidium*) and *Uthatobasidium* (Roberts 1999, under *Thanatephorus*; Hibbett & Binder 2002). Morphology remains the rationale for accepting the placement under *Rhizoctonia* of *Cejpomyces*, *Tofispora* and *Ypsilonidium*. We note that, despite the fact that *Ceratobasidium* is not an appropriate genus for members of the *Rhizoctonia* clade, new species continue to be described under this outdated generic name (Cruz et al. 2022, de Melo et al. 2018, Diederich et al. 2014).

Because the type species of the type genus of *Ceratobasidiaceae* does not fall in the *Rhizoctonia* lineage, technically the name *Ceratobasidiaceae* cannot be applied to it and the correct family name is *Cejpomycetaceae* Jülich (1982), which was created to accommodate the genus *Cejpomyces* Svrček & Pouzar (1970), a synonym of *Rhizoctonia* (Langer 1994, Oberwinkler et al. 2013, Roberts 1999). However, *Cejpomycetaceae* has been used very rarely – a Google Scholar search gives only two hits compared to more than 5,000 hits for *Ceratobasidiaceae*. A further consequence of the placement of *Ceratobasidium* (in the sense of the type) in *Sebacinaceae*, is that the name for that family should technically be *Ceratobasidiaceae* as this name was introduced in 1948 while *Sebacinaceae* dates from 1982.

It would be highly confusing to replace the widely used family name *Sebacinaceae* with *Ceratobasidiaceae*, a family name that until recently was used in a quite different sense (i.e. for what is now technically *Cejpomycetaceae*). In order to retain the use of *Ceratobasidiaceae* for most species described within it and to avoid replacement of *Sebacinaceae*, the conservation of *Ceratobasidium* with a conserved type will avoid disadvantageous nomenclatural changes and a proposal to that end will be submitted shortly. *Ceratobasidium sphaerosporum* Warcup & P.H.B. Talbot [now *Rhizoctonia sphaerospora* (Warcup & P.H.B. Talbot) Oberw., R. Bauer, Garnica, R. Kirschner] would be an appropriate type, as there is a sequence available that confirms its position inside the *Rhizoctonia* clade (Gónzalez et al. 2016). Should a proposal to conserve *Ceratobasidium* with *C. sphaerosporum* as a type be successful, *C. calosporum* will need to be placed in another genus. Of the other genera one time included in the *Ceratobasidiaceae*, *Oliveonia* is placed in the *Oliveoniaceae* in molecular phylogeny (Cao et al. 2021), within the *Auriculariales* J. Schröt. (Cao et al. 2021, Olariaga 2021, Roberts 1998). Reliable sequence data is lacking for *Ceratoporia* and *Scotomyces*. Descriptions for these latter two genera state that both genera have clamp connections, while *Ceratobasidiaceae* is circumscribed as not having clamp connections (Jülich 1982; Roberts 1999). On this basis, *Ceratoporia* and *Scotomyces* should be excluded from *Ceratobasidiaceae* but their systematic position within *Cantharellales* is uncertain at this time.

Colletotrichum Corda – written by Herbert Dustin R. Aumentado & Ruvishika S. Jayawardena

Colletotrichum is a well-known pathogenic genus in *Glomerellaceae* (Jayawardena et al. 2021a). Hyde et al. (2023b) provided a note on the illustrated description, habits, lifestyle, and brief history of *Colletotrichum* taxonomy. Numerous new host records and novel *Colletotrichum* species have recently been reported and introduced from various under- and unexplored environments and hosts (de Silva et al. 2021, Jayawardena et al. 2022, Yu et al. 2022b, Armand et al. 2023, Peng et al. 2023b, Zhang et al. 2023a, Aumentado et al. 2024, Najafiniya et al. 2024, Thao et al. 2024, Zapata et al. 2024). These identifications are based on combined morphology and multi-marker phylogenetic analyses using markers such as the ITS, glyceraldehyde-3-phosphate dehydrogenase (*gapdh*), chitin synthase (*chs-1*), Apn2/MAT, actin (*act*), beta tubulin (*tub2*), and histone 3 (*his-3*). Consequently, several *Colletotrichum* species that were previously introduced have been synonymized with closely related species. The incorrect introduction of taxa and the ambiguity of species boundaries are primarily due to limited population genetic data, insufficient taxon sampling and low taxonomic resolution (Xu et al. 2016). The use of multi-marker phylogenies and the adoption of GCPSR as well as the coalescence-based delimitation models GMYC, PTP, and mPTP (Bhunjun et al. 2021a, Chethana et al. 2021, Jayawardena et al. 2021b, Zapata et al. 2024) have facilitated better delineation of species and their boundaries. Among these synonymies are *C. menglaense*, *C. pandanicola*, *C. parvisporum*, *C. rhizophorae*, and *C. thailandica* (Norphanphoun & Hyde 2023) reduced to *C. siamense* (Zhang et al. 2023a, Aumentado et al. 2024), *C. lauri* to *C. godetiae*, *C. australisinense* to *C. wanningense* (Zapata et al. 2024), *C. orientale* and *C. radermacherae* to *C. fioriniae* (Zhang et al. 2023b), *C. wuxuhaiense* to *C. karsti* (Zhang et al. 2023a), *C. citri* and *C. simulanticitri* to *C. nymphaeae* (Damm et al. 2020, Cabral et al. 2024), and *C. dianense* to *C. nigrum* (Chang et al. 2024).

Recent research has also focused on the ecological and host range aspects of *Colletotrichum* species. The host-specificity and pathogenicity profiles of newly and previously described species are being studied to understand their impact on different crops and ecosystems. Some of these are the host range of *Colletotrichum* species from *Litchi chinensis* in Australia (Anderson et al. 2024) and from *Capsicum* in Indonesia (Hodiyah et al. 2024), pathogenicity of *Colletotrichum* on *Cunninghamia lanceolata* (He et al. 2022) and *Osmanthus fragrans* (He et al. 2023a) in China, *Olea europaea* subsp. *europaea* in Uruguay (Moreira et al. 2021), *Capsicum* in Asia (de Silva et al. 2021), and host-specificity of *C. orbiculare* on the cucurbitaceous hosts (Takano et al. 2023). Talhinhas & Baroncelli (2023) compiled and provided a list of *Colletotrichum* species present on each host. The study revealed that although some *Colletotrichum* species are host-specific, i.e., *C. lindemuthianum* on *Phaseolus vulgaris* (Nabi et al. 2022), *C. lupini* on *Lupinus* spp. (Talhinhas et al. 2016) and *C. kahawae* on *Coffea* spp. (Cabral et al. 2020), many *Colletotrichum* species occur on multiple hosts, indicating their polyphagous nature and that many host plant species harbour several *Colletotrichum* species. These studies will help develop targeted strategies for disease management and predict the potential spread of these pathogens in agricultural and natural environments. Moreover, Talhinhas & Baroncelli (2023) accepted 344 species and proposed an additional four species complexes, the citri-medicae, coccodes, tibetense, and trichellum complexes, making 20 species complexes in total.

Comparative genomics has provided significant insights into the evolutionary dynamics of *Colletotrichum* species. By comparing the genomes of different species, we can identify conserved and divergent genetic regions that shed light on the evolutionary processes driving speciation and adaptation (Baroncelli et al. 2021, Chen et al. 2022e, Hsieh et al. 2022). These studies have highlighted the role of horizontal gene transfer, gene duplication, and genome rearrangements in the diversification of *Colletotrichum* species (e.g., Lapalu et al. 2023, Wang et al. 2023b, Su et al. 2024). Baroncelli et al. (2024) presented evidence of independent host jumps from dicotyledons to monocotyledons during the evolution of *Colletotrichum*. These transitions are associated with a gradual reduction in the arsenal for degrading plant cell walls and an expansion in gene families specific to particular lineages. Understanding these evolutionary mechanisms is also crucial for predicting the emergence of new pathogenic strains and developing effective control strategies.

In addition to species identification and evolutionary studies, genomic analyses have also facilitated the assessment of pathogenicity-related genes in *Colletotrichum* species (Guo et al. 2023, Kong et al. 2023, Wang et al. 2023b). It was reported that the *C. gloeosporioides* species complex contains the highest abundance of CAZymes, which may contribute to its widespread distribution, host range and preference, and increased pathogenicity (Chen et al. 2022e, Zhang et al. 2023a). Mapping and characterizing genes involved in host infection, such as those encoding for enzymes, toxins, and effector proteins, provided insights into the molecular basis of pathogenicity and host specificity (e.g., Becerra et al. 2023, Dvorianinova et al. 2023).

How many genera are there in *Cortinarius*? – written by Felipe Wartchow & Ursula Peintner

Cortinarius (Pers.) Gray is a species-rich, hyper-diverse mushroom genus with more than 2,250 known species (He et al. 2019). It is a problematic and morphologically very heterogeneous genus with a complex history: Singer (1986: 618) listed 22 generic names as synonyms. Their macromorphologies range from mycenoid, collybioid, tricholomatoid to nearly pluteoid. The pileus can be glutinous, viscid, hygrophanous, or glabrous, silky, squamulose, or rimose. The lamellae are adnate, with different colors in young specimens, but later they become rich in the color of the usually deep rusty brown spore print. An inner veil in form of a cortina, and an outer fugacious to persistently belt-like veil are usually present.

Moser (1951) summarized the complex taxonomy and stated that, while the genus *Cortinarius* can be adequately characterized as a whole in the sense of Fries, the division into the six subgenera *Myxacium*, *Phlegmacium*, *Inoloma*, *Dermocybe*, *Telamonia* and *Hydrocybe* appears arbitrary. The insufficient evidence in favor of a delimitation of genera, coupled with the multitude of transitional forms, ultimately led him to disavow his earlier classification of the genera *Phlegmacium* (Moser 1960) and *Dermocybe* (Moser 1974). Also, Horak & Wood (1990) and Horak

(1995), have, based on their morphological considerations, asserted that the recognised subgenera are, in fact, somewhat artificial and challenging to interpret.

Following the advent of molecular phylogeny, Peintner et al. (2004) can be regarded as one of the pioneers attempting to resolve the phylogenetic relationships in this group. Based on a then large dataset of 132 rDNA ITS sequences, combined with 54 rDNA ITS and LSU sequences, they detected the major clades /*Myxacium sensu lato*, /subg. *Cortinarius*, /phlegmacioid clade (including the subclades /*Phlegmacium* and /*Delibuti*), /calochroid clade (/*Calochroi*, /*Ochroleuci* and /*Allutus*), /telamonioid clade (/*Telamonia*, /*Orellani*, /*Anomali*), /*Dermocybe sensu lato*, and /*Myxotelamonia*. The authors could not resolve deeper relationships between these clades, and hypothesized that this was a consequence of a low number of representative species (< 5% of the diversity, mostly from northern North Hemisphere). Garnica et al. (2005) proposed a more comprehensive framework for a phylogenetic classification of the genus *Cortinarius* by including more Southern hemisphere taxa. Subsequently, Garnica et al. (2016) corroborated the utility of the ITS region as a marker for species delimitation. Based on this, Soop et al. (2019) further increased the number of included species, and used a multigene phylogeny to test for subgeneric relationships. They demonstrated that a good resolution at the section level could be achieved based on combined rDNA (ITS and LSU) and RNA polymerase II subunit B1 (*rpb1*)/ RNA polymerase II subunit 2 (*rpb2*) datasets, and described 79 clades as sections of *Cortinarius*. But the backbone was still unresolved. Therefore, Liimatainen et al. (2022) attempted to resolve deep relationships of *Cortinarius* based on shallow whole genome sequencing and targeted capture sequencing of 75 single-copy genes from 19 species. This dataset was combined with a 5-locus analysis of 245 species, including the Northern and Southern Hemisphere taxa. As a major result Liimatainen et al. (2022) proposed a re-classification of *Cortinarius* into ten genera, and presented their new concept of *Cortinariaceae* with the genus *Thaxterogaster* as a basal lineage. However, this “taming of the beast” did not go without criticism. Gallone et al. (2024) detected several phylogenetic conflicts when revising the original datasets using concatenation and multispecies coalescent (MSC) approach analyses. They showed that the backbone of the *Cortinarius* tree is unresolved or poorly supported, and that relationships between clades are widely unclear. Different methods of analysis yielded different basal groups. Monophyly of only four out of the ten proposed genera could be unambiguously detected with all analytical methods: *Cortinarius*, *Phlegmacium*, *Aureonarius*, and *Thaxterogaster*. This means that the current phylogenetic trees are inconsistent in resolving the relationships of the old genus *Cortinarius*. The used constrained phylogenies are too arbitrary to split the genus into natural monophyletic groups. If phylogenomics cannot (yet) resolve the *Cortinarius* phylogeny, what comes next, asked Gallone and colleagues? The inability to resolve the *Cortinarius* tree unambiguously may also be inherent in the data, a problem that cannot be solved with more species or more genes. Short branches in the phylogeny can also be interpreted as explosive speciation after the genus evolved. Hybridisation, although rarely reported in *Agaricales*, could be another cause of very short branches.

Under these conditions, it might be wiser to follow Meinhard Moser's example and refrain from defining the few, well-defined *Cortinarius* lineages as separate genera. This conservative approach would delay far-reaching nomenclatural changes to hundreds of species until taxonomic certainty is achieved. Moreover, it also prevents hundreds of species and lineages, especially those from the Southern hemisphere, from floating in a taxonomical void. Well-supported lineages can be considered on the subgenus level until - perhaps - later or sooner, someone really tames the beast and makes it a tame pet for everyone.

Early diverging fungi – written by Nalin Wijayawardene, DongQin Dai & Sergey A. Karpov

‘Early diverging fungi’ is a term used to denote fungi outside *Dikarya* (i.e., *Ascomycota*, *Basidiomycota*, and *Entorrhizomycota*). These fungi play vital roles in various ecosystems. According to Voigt et al. (2021), compared to fungi in *Dikarya*, studies on the taxonomy and evolution of early diverging fungi are scarce. Hence, compared to the fungi in *Dikarya*, fewer species of early diverging fungi have been reported (Wijayawardene et al. 2024). Nevertheless, phylogenetically, and evolutionarily, early diverging fungi are distinct and distributed over 16 currently accepted phyla (Wijayawardene et al. 2024). Below, we briefly discuss three important facts that have been accepted by recent phylogenomic studies.

Chytridiomycota is one of the largest and species-rich phyla among the established early diverging taxa. Currently, over 1,000 species have been accepted in this phylum in Species Fungorum (2024), and these belong to ca. 118 genera. Recent phylogenomic analyses provided a comprehensive background of the phylum (Thomé et al. 2024, Wijayawardene et al. 2024) with ten classes including *Caulochytriomycetes* (Wijayawardene et al. 2024). Doweld (2014) introduced *Caulochytriomycota* to accommodate *Caulochytrium* Voos & L.S. Olive (*Caulochytriaceae*, *Caulochytriales*, *Caulochytriomycetes*), but Ahrendt et al. (2018), Strassert & Monaghan (2022), and Wijayawardene et al. (2024) reported *Caulochytriomycota* to be nested within *Chytridiomycota* and therefore rejected the proposed phylum. Hence, we regard *Caulochytriomycetes* as a distinct class in *Chytridiomycota*.

The placement of *Aphelidiomycota*, *Rozellomycota* (or '*Cryptomycota*'), and *Microsporidia* has been discussed broadly by mycologists and protistologists (e.g., Letcher & Powell 2019, Strassert & Monaghan 2022, Thomé et al. 2023). The first recent study that confirmed the placement of *Rozellomycota* in the kingdom *Fungi* was that of Tedersoo et al. (2018). At the same time, Tedersoo et al. (2018) introduced the sub-kingdom *Rozellomyceta* to accommodate *Rozellomycota*. The subkingdom *Aphelidiomyceta* and the phylum *Aphelidiomycota* were introduced by Tedersoo et al. (2018) to accommodate aphelids. Torruella et al. (2018), Galindo et al. (2021) and Strassert & Monaghan (2022) regarded aphelids (*Aphelidiomycota*) as a sister lineage to *Eumycota* (i.e., true fungi) and revealed the paraphyletic nature of the previously introduced superphylum *Opisthosporidia* (Aphelids + Rozellids + Microsporidia; Karpov et al. (2014)). In their phylogenomic analyses, Wijayawardene et al. (2024) accepted *Aphelidiomycota* as a well-established phylum in the kingdom *Fungi*. Besides, the nomenclature of ranks in *Aphelidiomycota* and *Rozellomycota* is governed by the International Code of Zoological Nomenclature. This is because aphelids and rozellids are phagotrophic, as other related protists within Holomycota, such as nucleariids. Instead, *Fungi* are seen as an exclusively osmotrophic lineage in the protistology field.

Tedersoo et al. (2018) introduced *Sanchytriomycetes* and *Sanchytriales* to accommodate *Sanchytrium* Karpov & Aleoshin and placed them in the phylum *Monoblepharomycota* using SSU rDNA sequences. However, Galindo et al. (2021) introduced *Sanchytriomycota* and accepted it as a distinct phylum of the kingdom *Fungi* based on multigene analysis and their unusual zoospore structure. Nevertheless, Galindo et al. (2021) did not assign a subkingdom to *Sanchytriomycota*. Based on the phylogenomic analyses, Wijayawardene et al. (2024) regarded that *Sanchytriomycota* is accommodated in *Blastocladiomycota*. Furthermore, Wijayawardene et al. (2024) introduced the only subphylum of *Sanchytriomycota*, *Sanchytriomycotina* Karpov.

***Glomeromycota*, a diverse early divergent lineage of symbiotic fungi** – written by Bruno T Goto, Francisco A. de Souza, Franco Magurno, Mariana B. de Queiroz, Naasson V. L. Oliveira, Juliana L. R. de Lima, Elaine C. R. Nascimento & Janusz Błaszkowski

Glomeromycota represent a basal lineage of Kingdom *Fungi* dating back at least to 460 Mya to the Ordovincian (Redecker et al. 2000). The glomeromycotan fungi are pointed as fundamental for the conquest of terrestrial ecosystems by plants (Dotzler et al. 2009) and to improve plant ecosystems diversity and productivity (van der Heijden et al. 1998). They are obligate symbiotic forming associations, commonly known as arbuscular mycorrhiza (AM), with roots of the majority of the extant land plant species and one species is known to associate with cyanobacteria (Malar et al. 2021). They are considered the mother of plant root endosymbioses (Parniske 2008), as their genetic program for AM symbioses is also recruited for other plant root symbioses (Radhakrishnan et al. 2020). Furthermore, AM fungi has also been detected in sediment of aquatic plants and colonizing leaf litter in temperate and tropical ecosystems, both underexplored niches that have potential to contain a hidden diversity (Bunn et al. 2019, Queiroz et al. 2020, 2022, Gomes et al. 2022, Lima et al. 2023, 2024 in press).

The phylogenetic position of *Glomeromycota*, which is still under debate, lies close to *Mucoromycota* or to *Dikarya* (Rosling et al. 2024, Tedersoo et al. 2024, Wijayawardene et al. 2024). However, the phylum status is preserved by several recent phylogenetic and genomic analyses (Rosling et al. 2024, Tedersoo et al. 2024), supporting the classification adopted in Wijayawardene et al. (2020, 2022, 2024).

The presumed absence of sexual reproduction, recently challenged by genomic data, is also a matter of long-lasting debate (Halary et al. 2011, Riley & Corradi 2013, Ropars et al. 2016, Yildirir et al. 2020, Oliveira et al. 2024a). The supposed clonal lifestyle was pointed as a cause of an apparent low species diversification.

Despite the long evolutionary history of the *Glomeromycota* (Redecker et al. 2000, Dotzler et al. 2006, 2009), only ca. 360 species have been described so far, classified within three classes, six orders, 17 families and 49 genera (Goto et al. 2024). However, recent data based on biological dark matter (environmental sequences) supported a huge diversity, with many clades at rank of genus still awaiting description (Tedersoo et al. 2024). Richness estimates for *Glomeromycota* vary between 1,000 to 7,247 species (Mueller & Schmit 2007, Tedersoo et al. 2022). Taking these estimates into account – only a tiny fraction of the glomeromycotan diversity have been described (36–4.9%). However, based on the current species description rate (4.6 species per year), it will take a lot of time to at least significantly reduce the existing gaps (Goto et al. 2024). Furthermore, there are no extinction rate measures for them. Besides, it is known that most of the undescribed species occur in natural environments (Ohsowski et al. 2014) – probably several species are under threat, and we will not notice their extinction as they are still unknown for science.

The majority of the glomeromycotan species kept in living culture collections originated from man-made ecosystems and they are probably ruderal species that show no host specificity (Smith & Read 2008, Ohsowski et al. 2014). Instead, species occurring in natural habitats are difficult to establish in culture – an example are species with glomerocarpic development such as *Redeckera*, *Sclerocarpum* and *Epigeocarpum* (Jobim et al. 2019, Błaszkowski et al. 2021a, Yamato et al. 2024). The problem lies in the lack of knowledge about their basic biology (germination, dormancy, host preferences, among others). Points that need to be addressed to enhance our understanding of this important group of fungi include the collection and maintenance of species from various environments in culture.

Eurotiomycetes – written by Anujani Gunarathne, Dilini Thakshila & Chitrabhanu S. Bhunjun

Eriksson & Winka (1997) introduced the class *Eurotiomycetes* to accommodate the order *Eurotiales* based on the phylogenetic analysis of SSU rDNA sequences. *Eurotiomycetes* is one of the most diverse groups of fungi in terms of morphology and ecology (Geiser et al. 2006). Several ascomata types have been reported, including apothecioid, perithecioid, cleistothecioid, and mazaediate (Jaklitsch et al. 2016). The evolutionary relationships within *Eurotiomycetes* have been the focus of several studies (Wood et al. 2015, Réblová et al. 2017, Houbraken et al. 2020, Visagie et al. 2024b). *Eurotiomycetes* contain six morphologically different subclasses *Eurotiomycetidae*, *Chaetothyriomycetidae*, *Coryneliomycetidae*, *Cryptocaliciomycetidae*, *Mycocaliciomycetida* and *Sclerococcomycetidae* (Geiser et al. 2006, 2015, Spatafora et al. 2006, Hibbett et al. 2007, Réblová et al. 2016, Prieto et al. 2021, Wijayawardene et al. 2022). *Eurotiomycetidae* is characterized by having plectomycetous fungi, which produce cleistothecia or gymnothecia with unitunicate and evanescent asci, while *Chaetothyriomycetidae* produce mostly lichenized ascomata with an opening similar to other *Pezizomycotina* taxa (Geiser et al. 2015). *Mycocaliciomycetidae* species have mazaedial ascomata with stalks. *Coryneliomycetidae* forms pseudothecial mazaedial ascomata, initially with double-walled asci with a deliquescing outer layer. *Sclerococcomycetidae* produce apothecium-like ascomata that are unitunicate and non-amyloid with an external amyloid gelatinous cap (Geiser et al. 2006, 2015, Wood et al. 2015, Réblová et al. 2017). *Cryptocaliciomycetidae* formed a separate clade between *Coryneliomycetidae* and

Eurotiomycetidae, which has bitunicate, evanescent, and clavate asci with a pedicel. The presence of hamathecia and the amyloid reaction of asci distinguish *Cryptocaliciomycetidae* from *Coryneliomycetidae* and *Eurotiomycetidae* (Prieto et al. 2021). *Eurotiomycetes* includes eleven orders, 40 families, 372 genera and 4328 species (Bánki et al. 2024). According to Coleine et al. (2024), the common ancestor of *Eurotiomycetes*, especially *Chaetothyriomycetidae*, was likely rock-inhabiting fungi, with adaptations to harsh conditions such as UV exposure, desiccation, and nutrient deficiencies. The evolution of *Eurotiomycetes* from rock-inhabiting to bryophilous saprotrophs, parasites, extremophiles, and even species that live in human-made environments demonstrates their remarkable evolutionary plasticity and adaptability (Coleine et al. 2024). *Eurotiomycetes* underwent morphological transitions from having fruiting bodies with an opening to being plectomycetous, with intermediate forms seen in *Coryneliales* (Coleine et al. 2024). The evolution of bitunicate to prototunicate asci highlights changes in spore dispersal strategies and environmental adaptations (Spatafora et al. 2006, Coleine et al. 2024).

The saprobic lifestyle is considered to be predominant within *Eurotiomycetes* as they display a remarkable metabolic diversity with the ability to degrade a wide range of complex organic compounds, including pectin, cellulose, and hydrocarbons (Geiser et al. 2006, 2015). This class also contains weak plant pathogens such as *Aspergillus* and *Penicillium* (Geiser et al. 2015). *Aspergillus* and *Penicillium* belong to the ten most cited genera worldwide due to their ability to produce important secondary metabolites including mycotoxins such as aflatoxin and penicillin (Bhunjun et al. 2024). *Eurotiomycetes* consists of numerous animal pathogens as well as keratinophilic fungi such as *Onygenales* species and opportunistic-pathogens like *Exophiala dermatitidis*, a dimorphic black yeast which can cause a wide range of infections (Geiser et al. 2006). The majority of human pathogens classified as *Pezizomycotina* are *Eurotiomycetes* as they can cause slight infection to invasive diseases (Geiser et al. 2006, Chakrabarti & Slavin 2011, Faksri et al. 2014, Ruangritchankul et al. 2015, Chan et al. 2016). They can also form biotrophic, parasitic and endophytic relationships with plants (Geiser et al. 2015). *Eurotiomycetes* have been isolated from soil or plant debris, fresh water, marine water, deep-sea hydrothermal vents as well as hyper-saline waters found in salterns with more than 30% NaCl concentration (Geiser et al. 2015), and in Antarctic endolithic habitats (Coleine et al. 2024). *Eurotiomycetes* such as *Cladophialophora immunda* can break down toluene into CO_2, which demonstrates the potential for bioremediation to clean polluted environments (Coleine et al. 2024). Continued research, particularly in genomics and developmental biology, is crucial for deepening the understanding of the remarkable evolutionary history of this important fungal group.

Marine fungi – written by Gaëtan Burgaud, Gareth Jones, Mark Calabon, Teppo Rämä & Ka-Lai Pang

Marine fungi have been identified in nearly every explored marine habitat, ranging from surface waters to the deepest abysses of the oceans, underscoring their ubiquity and significant contribution to global biogeochemical processes as saprotrophs, parasites, pathogens, commensals, and mutualists (Burgaud et al. 2022, Peng et al. 2024). The definition of marine fungi has evolved over the past century, largely due to taxonomic overlap with terrestrial fungi. Currently, marine fungi are defined as any fungi that are consistently recovered from marine habitats, capable of growth and/or sporulation in marine environments, forming symbiotic relationships with marine organisms, adapting and evolving at the genetic level, or being metabolically active in marine environments (Pang et al. 2016). This definition aligns with the one also proposed by Rédou et al. (2016), which states that marine fungi exhibit long-term presence and metabolic activity in marine habitats, evidenced by their adaptations (morphological features, ecophysiological profiles), active metabolism (rRNA), gene expression (mRNA), catalytic functions (proteome), or specific metabolites (metabolome) resulting from biotic and abiotic interactions.

As of the latest update in July 2024, the total number of marine fungi spans 2,116 species, distributed across 846 genera, 291 families, 110 orders, 34 classes, and ten phyla (www.marinefungi.org). Between 2022 and early 2024, 23 new genera and 61 new species affiliated with the phylum *Ascomycota* (~84%), five new species affiliated with the phylum *Basidiomycota* (7%), one new genus and three new species affiliated with the phylum *Chytridiomycota* (~4%), and three new genera and four new species affiliated with the phylum *Microsporidia* (~5%) were described. Additionally, ten new fungus-like species affiliated with the phylum *Oomycota* were identified. Taxonomic re-assessment/redefinition of taxonomic groups has led to the introduction of eleven genera and 25 species affiliated with the phylum *Ascomycota* and three species affiliated with the phylum *Microsporidia*.

Most new taxa for the period 2022–2024 have emerged from the exploration of new habitats, such as marine sediments (Li et al. 2023a), marine plants (Devadatha & Sarma 2023), seawater (Yang et al. 2023c), as well as new locations such as Saudi Arabia, China, and Qatar (Fotedar et al. 2022). Continued studies of submerged wood (Asghari et al. 2023) and salt marshes (Prematunga et al. 2023) have also contributed to these discoveries.

Sixty-one new species have recently been added to the phylum *Ascomycota* with the following documented for *Sordariomycetes*, with 21 new genera and 42 novel species. Taxa assigned to *Diaporthomycetidae* include: *Cancellidiales* with the new species *Cancellidium* (*Cancellidiaceae*) with *C. estuarinum*, isolated from twigs in estuarine waters (da Silva & Gusmão 2024). Taxa assigned to *Hypocreomycetidae* include those in the orders *Glomerellales* with a new species *Nigrocephalum* (*Plectosphaerellaceae*) with *N. paracollariferum*, from marine sediments (Guerra-Mateo et al. 2024); and *Verticillium bjoernoeyanum* from sand grains attached to driftwood (Crous et al. 2022b). *Myrmecridiales* with *Myrmecridium* (*Myrmecridiaceae*) with *M. hydei*, was isolated from decaying submerged wood (Asghari et al. 2023). *Microascales* with 12 new genera in *Halosphaeriaceae*: *Jinshana* with *J. tangtangiae* from trapped wood on a rocky shore (Manawasinghe et al. 2024); *Ascoglobospora* with *A. marina* isolated from decaying driftwood (Manawasinghe et al. 2024); ten new genera based on p-distance estimations of species previously assigned to the genus *Corollospora*: *Ajigaurospora* (type species *A. pseudopulchella*), *Corollosporella* (type species *Co. anglusa*), *Corollosporopsis* (*Coro. portsaidica*), *Garethelia* (*G. parvula*), *Honshuriella* (*H. fusca*), *Keraliethelia* (*K. pulcehlla*), *Nakagariella* (*N. filiformis*), *Paracorollospora* (*P. angusta*), *Shirahamella* (*S. gracilis*), and *Tokuratelia* (*T. colossa*) (Correia et al. 2023, 2024); in *Microascaceae* one genus *Dactyliodendromyces* with *D. holomorphus* isolated from a hypersaline lagoon in Spain (Barnés-Guirado et al. 2024); and the new species *Microascus algicola* isolated from a marine alga and *M. gennadii* from intertidal sediments (Wang et al. 2024d), along with *M. rothbergiorum* from coral (Crous et al. 2022b); *Scedosporium* includes *S. ellipsosporium*, *S. shenzhenensis*, and *S. sphaerospermum*, all isolated from intertidal sediments (Wang et al. 2024d). *Hypocreales* includes four new genera: *Phaeocollarina* with *P. guttulata*, *Nothoacremoniopsis* (*Acremoniopsidaceae*), with *N. irregularis* and *N. sedimenticola*, and *Pseudosynnemellisia* (*Bionectriaceae*) with *P. favida*, *Heteroacremonium* (*Sedecimiellaceae*) with *H. album* and *H. rugosum*, all isolated from sediments (Li et al. 2023a). New species to *Hypocreales* are: *Acremonium* (*Bionectriaceae*) with *A. ellipsoideum*, *A. multiramosum*, *A. stroudii*, *A. synnematoferum*, *Emericellopsis* (*incertae sedis*) with *E. brunneiguttula* and *E. tubakii*, isolated from algae, driftwood and marine sediments, respectively (Hou et al. 2023); *Fusarium* (*Nectriaceae*) with *F. aseptatum*; *Neoacremonium* (*Neoacremoniaceae*) with *N. taiwanense* (= *Sedecimiella taiwanensis*) described from a twig of *Kandelia obovata* (Hou et al. 2023); *Protocreopsis* (*Bionectriaceae*) with *P. finnmarkica* isolated from wood panel in seawater (Hou et al. 2023), and *Sedecimiella* (*Sedecimiellaceae*) with *S. alba*, *S. funiculosus*, and *S. subulata* isolated from mangrove sediments (Li et al. 2023a). Taxa assigned to *Lulworthiomycetidae* include the new genera: *Paramoleospora* (*Lulworthiaceae*, *Lulworthiales*) with *P. guttulata*, isolated from marine sediment (Li et al. 2023a); *Rambellisea* includes *R. gigliensis* and *R. halocynthiae* isolated from the tunica of the ascidian *Halocynthia papillosa* (Braconcini et al. 2024), and a new species *Lulworthia fundyensis*, isolated from submerged wood (Crous et al. 2022b). The new genus and species *Halophilomyces hongkongensis* isolated from the seagrass *Halophila ovalis* is a nom. inval. (Wang et al. 2024d). Taxa assigned to *Sordariomycetidae* includes two new genera: *Neomorinagamyces* (*Schizotheciaceae*, *Sordariales*) with *N. pyriformis* isolated from marine sediments (Li et al. 2023a) and *Schizochlamydosporiella* with *S. marina*, isolated from marine sediments (Guerra-Mateo et al. 2024), and new species *Chaetomium subaffine* (*Chaetomiaceae*, *Sordariales*) isolated from a marine holothurian (Wang et al. 2022c), *Craspedodidymum brasiliense* (*Chaetosphaeriaceae*, *Chaetosphaeriales*), isolated from twigs in estuarine waters (da Silva & Gusmão 2024) and *Coniochaeta aurantiaca* cultured from sediment samples collected at National Mangrove Nature Reserve of Futian, Shenzhen, China (Li et al. 2023a). Taxa assigned to *Xylariomycetidae* includes the new species *Nemania hydei* (*Xylariaceae*, *Xylariales*), isolated from dead branches on *Avicennia marina* submerged in brackish water (Apurillo et al. 2024). Two new unassigned species are *Lanspora* (*Phomatosporaceae*, *Phomatosporales*, *incertae sedis*) with *L. dorisauae* recovered from trapped wood collected in coastal sites (Pang et al. 2023); and *Gamsia* (family, order and subclass *incertae sedis*) with *G. sedimenticola* isolated from intertidal mud flat sediments (Wang et al. 2024d).

Eurotiomycetes, *Eurotiomycetidae* include 12 new species: *Penicillium* (*Aspergillaceae*, *Eurotiales*), with *P. limoniforme* and *P. sedimenticola* from mangrove sediments (Li et al. 2023a) and *P. pacificagyrus* and *P. pacificasedimenti* isolated from deep-sea marine sediments (Sobol et al. 2023); four *Talaromyces* species, *T. ellipsoideus*, *T. haitouensis*, *T. phialiformis*, *T. zhenhaiensis*, from mud flats and marine sediments (Han et al. 2022, Li et al. 2023a); *Apinisia* (*Apinisiaceae*, *Onygenales*) with *A. pyriformis* and *Arachnotheca pulvereum* and *Auxarthron* (*Onygenaceae*, *Onygenales*) with *A. pyriforme*, all from marine sediments (Li et al. 2023a). *Chaetothyriomycetidae*, represented by one marine species, *Exophiala littoralis* (*Herpotrichiellaceae*, *Chaetothyriales*), was described from marine sediments in the Mediterranean coast of Spain (Guerra-Mateo et al. 2024), the claviform conidia with thick and truncate bases and the absence of budding cells of *E. littoralis* distinguished it from other closely related *Exophiala* species.

New *Dothideomycetes* taxa total 2 genera and 6 species. *Pseudocastanedospora* (*Extremaceae*, *Mycosphaerellales*), is a new genus in *Dothideomycetidae* with *P. guangdongensis* isolated from marine sediments and phylogenetically closely related to *Castanodospora* based on ITS and LSU rDNA sequences. The two genera can be differentiated by the morphology of the conidiophores, conidiogenous cells and conidia (Li et al. 2023a). The new species *Queenslandipenidiella verrucosa* (*Teratosphaeriaceae*, *Mycosphaerellales*) was introduced by Guerra-Mateo et al. (2024) described from marine sediments. *Parahelicomyces dictyosporus* (*Tubeufiaceae*, *Tubeufiales*), grouped in *Pleosporomycetidae*, occurring on culms of *Spartina* sp. in a saltmarsh in Thailand, is unique in the genus in having dictyosporous conidia (Liu et al. 2024c). *Paradictyoarthrinium salsipaludicola* (*Paradictyoarthriniaceae*, *Pleosporales*) is a new species of decaying wood in a mangrove habitat in Prachuap Khiri Khan Province, Thailand (Htet et al. 2023). *Bactrodesmium amazonicum* is an unclassified asexual morph taxon in *Dothideomycetes* and was described from decaying twigs in the intertidal zone of fluvial beaches on Mosqueiro Island, Brazil by da Silva & Gusmão (2024). Wijesinghe et al. (2023a) described *Coniothyrioides thailandica* on decaying wood in a salt marsh in Thailand as a new genus and a new species in *Coniothyriaceae* (*Pleosporales*). An isolate of this new coelomycetous taxon formed a separate branch within *Coniothyriaceae* based on a phylogeny inferred from ITS, LSU and SSU rDNA sequence analyses.

One *Arthoniomycetes*, *Bactrospora mangrovei* (*incertae sedis*, *Arthoniales*), was described on decaying wood of *Rhizophora mucronata* in Muthupet Mangroves of India. it was found to be phylogenetically related to *B. corticola* but the type species, *B. dryina*, was not included in the phylogenetic tree (Devadatha & Sarma 2023).

Five new marine *Basidiomycota* have been introduced since 2022, including *Candolleomyces* (*Psathyrellaceae*, *Agaricales*, *Agaricomycetidae*) with *C. albovagabundus* found on dead wood of *Sonneratia apetala* in a Guangdong mangrove, and *C. brunneovagabundus* on *Sonneratia caseolaris* wood also in Guangdong (Yang et al. 2023c). Three new *Nia* (*Niaceae*, *Agaricales*, *Agaricomycetidae*) species have been introduced: *N. furcatipilosa*, isolated from sea foam in Japan, *N. singaporensis*, on plant debris in maritime sand in Singapore, and *N. sphaerocystis* from sea foam in Japan (Nakagiri et al. 2024).

The phylum *Chytridiomycota* was recently expanded by 1 new genus and 3 new species. *Paradinomyces* was introduced into *Dinomycetaceae* (*Rhizophydiales*, *Chytridiomycotina*, *Chytridiomycota*) with two species: *P. triforaminorum*, a parasitoid isolated from samples obtained in the Baltic Sea during a dinoflagellate bloom (Reñé et al. 2022) and *P. evelyniae* isolated during blooms of the dinoflagellate *Alexandrium minutum* in the coastal Mediterranean Sea (Fernández-Valero et al. 2024). A third species was included in the family *Dinomycetaceae*, *i.e. Dinomyces gilberthii*, isolated during blooms of the dinoflagellate *A. minutum* in the coastal Mediterranean Sea (Fernández-Valero et al. 2024).

The marine Microsporidia was recently expanded by 3 genera and 4 new species. In *Haplophasea*, the new genus *Ecytonucleospora* (*Enterocytozoonidae*, *Chytridiopsida*) was introduced based on a revision of *Enterospora* and the transfer of three species. *Ecytonucleospora hepatopenaei* (= *Enterocytozoon hepatopenaei*), *Ecytonucleospora nucleophila* (= *Enterospora nucleophila*), and *Ecytonucleospora schreckii* (= *Enterocytozoon schreckii*), infecting the shrimp *Penaeus vannamei* (Wang et al. 2023g). The new species *Pseudohepatospora* (*Hepatosporidae*, *Enterocytozoonida*), *incertae sedis*, belongs to a new genus with *P. borealis* as the type species, a parasite infecting Jonah crabs (Bojko et al. 2023). Finally, the new species *Ameson earli* is a parasite of blue crabs in Louisiana (Sokolova et al. 2023). In *Dihaplophasea*, the new genus *Toguebayea* (*Nosematidae*, *Dissociodihaplophasida*) was introduced with *T. baccigeri* as the type species and known as a parasite of marine fish (Miquel et al. 2022). The new species *Jirovecia branchilis* (*Mrazekiidae*, *Dissociodihaplophasida*) from glands of *Branchiura sowerbyi* (*Oligochaeta*: *Tubificidae*) was isolated in China. Two new varieties of *Agmason* (*Thelohaniidae*, *Meiodihaplophasida*) were reported: *Agmasoma carcini* var. *aestuarii* from *Carcinus aestuarii*, and *Agmasoma carcini* var. *maenas* from *Carcinus maenas*, in Argentina (Bojko et al. 2023).

Finally, the fungus-like *Oomycota* group was recently expanded by six distinct species in the genus *Halophytophthora*: *H. brevisporangia*, *H. celeris*, *H. frigida*, *H. lateralis*, *H. lusitanica*, and *H. macrosporangia*, all of which were isolated from various tidal environments in coastal saltmarshes in Portugal (Maia et al. 2022). In addition, four new holocarpic oomycetes parasitic to diatoms and algae were described, namely *Miracula blauvikensis*, *M. polaris*, *Sirolpidium blauvikense*, and *S. litorale* (Buaya & Thines 2022, 2024).

Myxomycetes: the systematics on the verge of a new synthesis – written by Dmytro Leontyev

In recent years, molecular phylogenetic studies on myxomycetes have been rapidly advancing, aimed at matching the progress seen in studies of true fungi. The very first phylogeny of myxomycetes was published two decades ago (Fiore-Donno et al. 2005). Over the next years, the results of further studies (Fiore-Donno et al. 2008, 2012, 2013) allowed to build the backbone for the phylogenetic classification of Myxomycetes, summarized by Leontyev et al. (2019). The latter work outlined the general structure of evolutionary relationships at the level of major clades, but phylogenetic connections at the family and genus level, as well as the positions of many distinctive species, remained unknown.

Several major phylogenetic revisions, based on 3–4 independently inherited genetic markers, were published between 2022 and 2024 to clarify the relationships within key families and genera. The revision of *Didymiaceae* led to the synonymization of the genera *Mucilago* and *Protophysarum* with *Didymium*, the transfer of most of the *Lepidoderma* species to the re-erected genus *Polyschismium*, and the confirmation of the inclusion of *Diachea* in *Didymiaceae* (Ronikier et al. 2022, García-Martín et al. 2023, Prikhodko et al. 2023, Zamora et al. 2023).

Phylogenetic study of the order *Trichiales* led to the resurrection of the family *Dictydiaethaliaceae* and the discovery of the polyphyly of the genus *Dianema* (Ronikier et al. 2020, García-Cunchillos et al. 2022). The traditional genera in the family *Trichiaceae* were discredited: multiple instances of the repeated emergence of characteristics previously used to delimit the genera *Hemitrichia*, *Metatrichia*, *Perichaena*, and *Trichia* were found. García-Cunchillos et al. (2022) proposed a new genus, *Gulielmina* and resurrected of the genus *Ophiotheca*; both taxa were used to accommodate several *Perichaena* species. Authors also expanded the boundaries of the genus *Oligonema* to include several classical *Trichia* species. Taxa related to the type species of *Hemitrichia*, *H. clavata*, were transferred to this genus. The remaining species of *Trichia* and *Hemitrichia* currently retain their traditional names, even though these names do not reflect the true relationships between them (García-Cunchillos et al. 2022).

Further studies continued with a critical revision of the *Arcyriaceae* family, also belonging to *Trichiales* (García-Cunchillos et al. 2022, Yatsiuk et al. 2025). It was confirmed that the genus *Arcyria* splits into two groups: the first includes species with white, gray, and red spores, while the second comprises representatives with yellow and orange spores, as well as several red-spored species. The genus *Heterotrichia* was re-established for the second group. The family *Hemitrichiaceae* was created, uniting *Heterotrichia* and the "true" *Hemitrichia*. The new genus *Spiromyxa*, based on a species discovered in Canada, appears to occupy a basal position in the *Arcyriaceae* clade (Yatsiuk et al. 2025).

A large-scale revision of the important order *Physarales*, which currently includes more than 450 species, has been published by García Martin et al. (2023). This revision confirmed the polyphyly of the genera *Badhamia*, *Fuligo*, and *Physarum*, all from the family *Physaraceae*. The authors proposed a comprehensive revision of the family's systematic structure, which now includes 15 genera. For many of these genera, the revision process has not been completed. An exception is the genus *Nannengaella*, into which ten species were transferred from the genus *Physarum*. A total of 22 new combinations are proposed in different genera, as well as the resurrection of the genera *Lignydium* and *Trichamphora*.

Other discoveries in the last two years include the finding of *Tasmaniomyxa umbilicata* on the shores of the Tasman Sea, for which a new genus was created (Lloyd et al. 2023), and the description of the new genus *Valtocarpus* for two species previously considered within the genera *Amaurochaete* and *Symphytocarpus* (Gmoshinskiy et al. 2023).

A critical analysis of polymorphic species also yielded interesting results. It was found that the classical myxomycete *Lycogala epidendrum* represents a complex of more than 60 biological species (Leontyev et al. 2022, 2023a), of which 15 were described last year (Leontyev et al. 2023b). The *Trichia botrytis* complex, identified as polyphyletic, was expanded by nine species (Bortnikov et al. 2023b). A taxonomic revision of the genus *Licea* subg. *Licea* was done (Wrigley de Basanta et al. 2023). It includes the description of a new species, *Licea ampulliformis*, and the selection of a neotype for *Licea minima* and an epitype and lectotype for *Licea pusilla*, two species published in the 18th century. Also, Leontyev & Ronikier (2024) corrected the usage of the name *Licaethalium* that should be replaced by *Enteridium* due to priority.

All the cited studies are based on several marker genes sequenced using the Sanger method. The multigene approach, based on NGS technologies, is now being developed by at least two teams, one working based on MGI nanoball sequencing technology, and the other on the Oxford nanopore method. Preliminary data of these studies, not yet published, suggests that revolutionary changes are expected in the systematics of myxomycetes in the coming years.

Phyllosticta Pers. – written by Chada Norphanphoun

Phyllosticta species, known for their dual role as endophytes and pathogens causing leaf spots on various plants, exhibit a global distribution (Wulandari et al. 2009, Glienke et al. 2011, Wikee et al. 2011, 2013a, b, Wong et al. 2012, Jayawardena et al. 2019, Anderson et al. 2021, Asiandu et al. 2021). *Phyllosticta*, a significant genus within the family *Phyllostictaceae* of *Botryosphaeriales*, was introduced by Persoon (1818) and represented the earlier-named asexual morph of *Guignardia* (Viala & Ravaz 1892). Current records indicate that *Phyllosticta* is more frequently cited than *Guignardia* across multiple databases, including Google Scholar, Index Fungorum, Species Fungorum, MycoBank, and GenBank. According to the Index Fungorum database, 3,224 epithets are listed (accessed October 4, 2024), while Species Fungorum records approximately 2,099 epithets and 1,560 valid species names (accessed October 4, 2024). The NCBI taxonomy database, which lists taxa for which sequence data is available, features 116 classified species and 147 unclassified *Phyllosticta* species (Schoch et al. 2020). Van der Aa (1973) described

46 *Phyllosticta* species, including both sexual and asexual morphs, and a later revision accepted 190 epithets. Wikee et al. (2013b) identified 170 species names based on multi-marker analysis.

Phyllosticta species have been identified using morphological data and phylogenetic analyses (Guarnaccia et al. 2017). However, the evolutionary relationships within *Phyllosticta* remain unresolved due to a lack of sequence data from type material for many species. This underscores the need for further neo- or epitypification research to clarify their taxonomic placements (Delsuc et al. 2005). Besides, the quite similar morphological features between the species of the genus *Phyllosticta* also pose a challenge for delineation of species boundaries. Therefore, additional analyses using larger and more diverse datasets of *Phyllosticta* taxa and genetic markers are essential for improving phylogenetic resolution, an approach that has been successfully applied to other fungal taxa (Rokas & Carroll, 2005). Norphanphoun et al. (2020) introduced six *Phyllosticta* species complexes based on ITS, LSU, *act*, *gapdh*, and *tef-1α* sequence data to serve as broader delimiters for the genus, highlighting the complexity and ongoing research in this field. The use of whole genome data to study closely related cryptic species has also been recently demonstrated for the EU quarantine fungus *Phyllosticta citricarpa*. More recently, numerous novel *Phyllosticta* species and distributions have been increasingly described based on a combination of morphological features and molecular data (Su & Cai 2012, Wang et al. 2012b, 2013, Wong et al. 2012b, Zhang et al. 2012, 2013, 2022, Wikee et al. 2013b, Zhou et al. 2015, Guarnaccia et al. 2017, Lin et al. 2017, Hattori et al. 2020, Norphanphoun et al. 2020, Sui et al. 2023, Gomdola et al. 2024).

Hymenochaetaceae* and *Polyporaceae - written by Yu-Cheng Dai & Heng Zhao

The family *Hymenochaetaceae* (belonging to *Basidiomycota*, *Agaricomycetes*, and *Hymenochaetales*) was established by Donk in 1948 and typified by the genus *Hymenochaete* Lév. (Donk 1948, Wu et al. 2022b). Members of *Hymenochaetaceae* are characterized by annual to perennial, resupinate, effused-reflexed, pileate to stipitate, brownish basidiomes with a xanthocroic reaction in KOH, poroid, corticioid or hydnoid hymenophore, generative hyphae without clamp connections, setal elements present in most species, and causing white-rot (Wu et al. 2022b). Many species within this family, such as *Fomitiporella* spp., *Pyrrhoderma* spp., *Porodaedalea* spp., and *Sanghuangporus* spp., are economically and ecologically significant (Wu et al. 2019, 2022b, Mokni & Ryvarden 2023, Zhao et al. 2024a).

Over the past few decades, major taxonomic changes have been reported at the genus level of the *Hymenochaetaceae*. Some genera, such as *Fulvoderma*, *Neophellinus*, and *Sanghuangporus*, were added to the family, while some genera, e.g., *Aurificaria*, *Cyclomyces*, *Hydnochaete*, and *Hymenochaetopsis*, were considered as synonyms to other genera (Dai & Li 2010, Rajchenberg et al. 2015, Yang et al. 2016, Zhou et al. 2016, 2018, Wu et al. 2022b). Wu et al. (2022b) recognized 34 genera of *Hymenochaetaceae* with poroid based on molecular analyses. Among these, 25 genera were established before the year 2000 based on morphological evidence. With the advancement of DNA based phylogeny, 19 genera have been described since the year 2000 based on morphological and phylogenetic evidence. Notably, eight genera were described in 2022, viz. *Meganotus*, *Neophellinus*, *Nothonotus*, *Pachynotus*, *Perenninotus*, *Pseudophylloporia*, *Rigidonotus*, and *Sclerotus* (Lima et al. 2022, Wu et al. 2022b). Moreover, the number of species in the family *Hymenochaetaceae* has increased rapidly, from 487 species recorded in the 10th edition of the Dictionary of Fungi (Kirk et al. 2008) to currently over 800 species (https://nmdc.cn/fungalnames/, Wang et al. 2022a, Wu et al. 2022b, He et al. 2024).

The family *Polyporaceae* was proposed by Corda in 1839 based on the Fries' Polyporei, with typified by the genus *Polyporus*, belonging to *Basidiomycota*, *Agaricomycetes*, and *Polyporales* (Corda 1839, Cui et al. 2019, He et al. 2024). Members of *Polyporaceae* are distinguished by mostly poroid or rarely corticioid hymenophore, mostly a dimitic or trimitic, rarely monomitic of hyphal system, hyphae present clamp connection or simple septa, thin- to thick- walled basidiospores, cystidia mostly absent, and causing white rot (Cui et al. 2019). Some species within *Polyporaceae* are economically and ecologically important forest pathogens, medicinal mushrooms, and industrial biotechnology, such as *Lentinus* spp., *Perenniporia* spp., and *Trametes* spp. (Zheng et al. 2017a, Cui et al. 2019, Hapuarachchi et al. 2021, Ji et al. 2022, Wu et al. 2022b, Yuan et al. 2023, Zhao et al. 2024a).

In *Polyporaceae*, 88 genera were recorded in the Outline of *Fungi* and fungus-like taxa – 2021 (Wijayawardene et al. 2022). However, six genera, e.g. *Amauroderma*, *Amaurodermellus*, *Foraminispora*, *Haddowia*, *Humphreya*, and *Tomophagus*, were transferred to the family *Ganodermataceae* (now a synonym of *Polyporaceae*) based on the morphological and phylogenetic evidence (Sun et al. 2022), and five genera, including *Cellulariella*, *Lenzites*, *Loweporus*, *Poronidulus*, and *Royoporus*, were missing in Wijayawardene et al. (2022). Additionally, 20 genera, viz. *Aurantioporia*, *Citrinoporia*, *Cyanoporus*, *Cystidioporia*, *Dendroporia*, *Jorgewrightia*, *Luteoperenniporia*, *Macroporia*, *Macrosporia*, *Mariorajchenbergia*, *Minoporus*, *Neoporia*, *Niveoporia*, *Poriella*, *Pseudogrammothele*, *Rhizoperenniporia*, *Tropicoporia* B, *Truncatoporia*, *Vanderbyliella*, and *Xanthoperenniporia*, were newly described (Chen et al. 2021a, Lira et al. 2021, Ji et al. 2023a, Mao et al. 2023b). Therefore, a total of 107 genera within *Polyporaceae* was recorded. Among these, 55 genera were established before the 2000, accounting for 51.4% and 52 genera have been described since the 2000, accounting for 48.6%.

The longstanding practice of misapplying intercontinental conspecificity is a problem for present day fungal taxonomists – written by Kanad Das & Aniket Ghosh

Understanding the unknown world is the basic instinct of humans. Describing and documenting macrofungi (wild mushrooms) of a designated area (district/state/country/protected area) is an age-old practice by naturalists, biologists, botanists or mycologists, and has been continuing since the 18th century from the time of Carl Linnaeus, the father of modern taxonomy. Initially, the infrageneric classification system developed purely from macromorphological characters. Gradually, with the dedicated involvement of more workers, mainly botanists and mycologists, more and more species were discovered and described. With the passing decades, it was slowly realized that the range of morphological features (for a single species) is wider than expected and many species exhibit overlapping morphological features. Meanwhile, with the advancement of microscopy, workers started considering micromorphological features along with macromorphological characters. The principle was that the more the parameters, the easier the identification. Therefore, with the combination of macro- and micromorphology, description of species became more detailed and identification became more accurate. This practice continued until the beginning of the last decade. Besides Europe and North America, reports also started coming from other continents. By comparing the superficial morphological features with the available literature, similar-looking species were nominated as their European and North American counterparts. In recent years, the concept of species complex / cryptic species has developed. This is where a group of closely related organisms are more or less indistinguishable morphologically but belong to distinct evolutionary lineages. Species delimitation is often unclear therefore, morphologically identical cryptic species have remained undiscovered (Bickford et al. 2007). In recent decades it has become evident that cryptic species, indistinguishable by morphology alone, occur on different continents. Application of molecular phylogeny along with morphology has proven to be the best solution for establishing a taxon. Initially, sequences of the ITS regions of ribosomal RNA gave satisfactory results for many groups of fungi (Kretzer et al. 1996, Das et al. 2011, 2015, 2016a, 2021, Chakraborty et al. 2017, Ghosh et al. 2017, Li et al. 2019) and was considered as the universal barcoding region for Fungi (Schoch et al. 2012). However, ITS alone is insufficient for segregating species in many genera. Other loci such as nuclear ribosomal large subunit (nrLSU) and nuclear ribosomal small subunit (nrSSU) have been explored, but presently, concordance of multigene genealogy coupled with morphology is used to identify unknown taxa, to discover novel taxa, to uncover the cryptic species and to test conspecificity (Das et al. 2023, Ghosh et al. 2023). Significantly, intercontinental conspecificity has rarely been found. Recently, based on several studies, it is evident that Asian members of many fungal genera, e.g., *Amanita*, *Gomphidius*, *Gyroporus*, *Laccaria*, *Russula*, and *Sparassis* as well as *Lactarius*, are divergent from their European and North American counterparts, and many specimens subsequently have been reported as new species (Zhao et al. 2013b, Das et al. 2017, Lee et al. 2017, Vincenot et al. 2017, Cho et al. 2018, Cui et al. 2018, Rossi et al. 2020). Additionally, recent investigations of some Neotropical fungi, mainly Agaricomycetes from Brazil, based on two or multi-gene phylogenies and morphological studies have shown a unique diversity differing from the Northern Hemisphere and other tropical areas (Motato-Vásquez et al. 2020, Palacio et al. 2021, Lima et al. 2022, Schünemann et al. 2023, Oliveira et al. 2024b, Silva-Filho et al. 2023, Sousa-Guimarães et al. 2024, Zabin et al. 2024).

In the last five to six decades, continuous efforts by Asian mycologists to document the fungal taxa in Asia, has been mainly based on morphological parameters. Using available literature, Asian workers initially applied European and North American names to their similar Asian species. It is evident that a combination of multigene genealogy and morphology is the only solution to segregate these cryptic species (Feng et al. 2012, Das et al. 2017, 2020). Unfortunately, in parts of Asia, morphotaxonomy is often still exclusively used to identify and describe species with the erroneous application of European/North American names. Misapplication of intercontinental conspecificity for naming species will therefore increase the number of incorrect names as these Asian taxa are being wrongly identified. The application of multigene phylogeny along with morphological evidence must be followed to avoid misinterpretation of taxa (Das et al. 2016, Hembrom et al. 2016, Kukreti & Bhatt 2016, 2020, Sharma et al. 2016, Kaur & Rather 2016, Kaur et al. 2017, Kumar & Atri 2019, 2020, 2022, Parihar et al. 2019 a, b, Ratheesh et al. 2019, Malik et al. 2020, Wani et al. 2021, 2022). Therefore, we urge fungal taxonomists throughout Asia to embrace the best mycological practice (e.g., Aime et al. 2021, Maharachchikumbura et al. 2021a) and apply a combination of both morphotaxonomy and molecular phylogeny to identify their species correctly and uncover the hidden fungal wealth.

Additional data of this outline and how to use it

This latest Outline is made available in this issue of Mycosphere and besides classification, it also comprises additional information as compared to the previous Outlines. For example, the importance of this Outline, the number of existing species and genera (supported with specific case studies) and the taxonomic problems with genera in *incertae sedis* are discussed. To gain access to extant taxonomic information on fungi, one needs to visit the website: https://www.outlineoffungi.org/outline.php. Once assessed, the website provides users with free access to all data in an easy and friendly way with the main hypertext boxes such as Outline; Notes; Sexual-asexual Links; ecological trait; Consortia; History. One would double click on any of those hypertext boxes to visualize accessible data. The Outline hypertext is the main source of information and provides the most recent taxonomic classification of genera. In addition, a search box is also available in this section to facilitate a search of a specific genus. Typing the genus name in the search box and clicking on search will lead directly to the genus concerned in the Outline and its links to other taxonomic information.

In the new published outline in Mycosphere, we have updated the arrangement of new genera and made other classification changes based on the 2022 literature. Any changes between 2022 to 2023 are provided with notes. Notes from the last Outline (Wijayawardene et al. 2022) and the present outlines are marked after the genus name in superscript with the note number and a direct link to the online version of the note. Double clicking this will take one directly to the note. The numbers in brackets in black refer to the numbers based on Species Fungorum (2023) and expert knowledge. Links to Fungalpedia (Hyde et al. 2023) are provided where entries have been prepared. The taxa, where possible, may also be linked to other webpages, such as Coelomycetes.org (https://www.coelomycetes.org/), Dothideomycetes.org (https://dothideomycetes.org/), facesoffungi.org (https://www.facesoffungi.org/), freshwaterfungi.org (https://freshwaterfungi.org/); MycoBank (https://www.mycobank.org/) or GenBank (https://www.ncbi.nlm.nih.gov/genbank/). Selected synonyms are provided at each rank, especially to dispose of genera that are the basis for family names that are listed as synonyms; and for names that became synonyms on the move towards" "one name : one fungus" nomenclatural system (May 2017, 2024a, b).

Outline of *Fungi*

Kingdom: ***FUNGI*** Bartling
Phylum ***APHELIDIOMYCOTA*** Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Class ***Aphelidiomycetes*** Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Aphelidiales Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov*Fp78
Aphelidiaceae Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Amoeboaphelidium Scherff. (5)
Aphelidium Zopf (10)
Paraphelidium Karpov, Moreira, López-García (2)
Protaphelidium Seliuk & Karpov (1)*Seliuk & Karpov 2024
Pseudaphelidium Schweik. & Schnepf (1)

Phylum ***ASCOMYCOTA*** Caval.-Sm.
Subphylum ***PEZIZOMYCOTINA*** O.E. Erikss. & Winka
Class ***Arthoniomycetes*** O.E. Erikss. & Winka
Arthoniales Henssen ex D. Hawksw. & O.E. Erikss.
Andreiomycetaceae B.P. Hodk. & Lendemer
Andreiomyces B.P. Hodk. & Lendemer (2)

Arthoniaceae Rchb.
Amazonomyces Bat. & Cavalc.(3)
Arthonia Ach. (ca 150)
Arthothelium A. Massal. (ca 30)
Briancoppinsia Diederich, Ertz, Lawrey & van den Boom (1)
Coniarthonia Grube (12)
Coniocarpon DC. (ca 30)
Crypthonia Frisch & G. Thor (16)
Cryptophaea Van den Broeck & Ertz (1)
Cryptothecia Stirt. (ca 65)
Diarthonis Clem. (1)*Note 133
Eremothecella Syd. & P. Syd. (10)
Glomerulophoron Frisch, Ertz & G. Thor (2)
Helicobolomyces Matzer (2)
Herpothallon Tobler (ca 55)
Inoderma (Ach.) Gray (5)
Leprantha Dufour ex Körb. (1)
Myriostigma Kremp. (13)
Naevia Fr. (2)*Note 290, Fp49
Pachnolepia A. Massal. (1)
Reichlingia Diederich & Scheid. (7)
Snippocia Ertz, Kukwa & N. Sand. (1)
Sporodophoron Frisch, Y. Omhura, Ertz & G. Thor (4)
Staurospora Grube (1)*Note 483
Stirtonia A.L. Sm. (ca 25)

Synarthonia Müll. Arg. (25)*Note 499
Tylophoron Nyl. (8)

Chrysotrichaceae Zahlbr.
Chrysothrix Mont. (ca 20)
Galbinothrix Frisch, G. Thor, K. H. Moon & Y. Ohmura (1)
Melarthonis Frisch & G. Thor (1)

Lecanographaceae Ertz, Tehler, G. Thor & Frisch
Alyxoria Ach. ex Gray(19)
Heterocyphelium Vain. (2)
Lecanographa Egea & Torrente (ca 20)
Mixtoconidium Etayo (3)
Phacographa Hafellner (3)
Phoebus R.C. Harris & Ladd (1)*Note 394
Plectocarpon Fée (44)
Zwackhia Körb. (6)

Opegraphaceae Stizenb.
Combea De Not. (2)
Dictyographa Müll. Arg. (7)
Dolichocarpus R. Sant. (2)
Fouragea Trevis. (9)
Ingaderia Darb. (8)
Llimonaea Egea & Torrente (4)
Nyungwea Sérus., Eb. Fisch. & Killmann (4)
Opegrapha Ach. (= *Kalaallia* Alstrup & D. Hawksw.; = *Phacothecium* Trevis.) (ca 100)
Paraingaderia Ertz & Tehler (1)
Paralecanographa Ertz & & Tehler (1)
Paraschismatomma Ertz & Tehler (1)
Pentagenella Darb. (6)
Schizopelte Th. Fr. (2)
Sclerophyton Eschw. (ca 15)
Sparria Ertz & Tehler (3)

Roccellaceae Chevall.
Ancistrosporella G. Thor (6)
Austrographa Sparrius, Elix & A.W. Archer (3)
Austroroccella Tehler & Ertz (1)
Baidera Ertz & Diederich (1)*Note 61
Chiodecton Ach. (ca 20)
Cresponea Egea & Torrente (23)
Crocellina Tehler & Ertz (1)
Dendrographa Darb. (8)
Dichosporidium Pat. (8)
Dirina Fr. (39)
Diromma Ertz & Tehler (1)
Enterodictyon Müll. Arg. (3)
Enterographa Fée (ca 60)
Erythrodecton G. Thor (2)
Follmanniella Peine & Werner (1)
Gorgadesia Tav. (1)

Graphidastra (Redinger) G. Thor (5)
Gyrographa Ertz & Tehler (4)
Gyronactis Ertz & Tehler (2)
Halographis Kohlm. & Volkm.-Kohlm. (1)
Haplodina Zahlbr. (3)
Isalonactis Ertz, Tehler, Eb. Fisch., Killmann, Razafindr. & Sérus. (1)
Lecanactis Körb. (ca 20)
Mazosia A. Massal. (43)
Neosergipea M. Cáceres, Ertz & Aptroot (4)
Ocellomma Ertz & Tehler (2)
Protoroccella Follmann ex Follmann (2)
Pseudolecanactis Zahlbr. (1)
Pseudoschismatomma Ertz & Tehler (1)
Psoronactis Ertz & Tehler (1)
Pulvinodecton Henssen & G. Thor (2)
Roccella DC. (ca 85)
Roccellina Darb. (27)
Sagenidiopsis R.W. Rogers & Hafellner (5)
Schismatomma Flot. & Körb. ex A. Massal. (ca 80)
Sigridea Tehler (5)
Simonyella J. Steiner (1)
Sipmania Egea & Torrente (1)
Streimannia G. Thor (1)
Syncesia Taylor (ca 25)
Tania Egea, Torrente & Sipman (2)
Vigneronia Ertz (5)

Roccellographaceae Ertz & Tehler
Dimidiographa Ertz & Tehler (3)
Fulvophyton Ertz & Tehler (11)
Roccellographa J. Steiner (3)

Arthoniales genera *incertae sedis*
Angiactis Aptroot & Sparrius (4)
Arthophacopsis Hafellner (3)
Bactrospora A. Massal. (44)
Bryostigma Poelt & Döbbeler (17)*Fp101
Catarraphia A. Massal. (1)
Felipes Frisch & G. Thor (1)
Glyphopsis Aptroot (1)
Gossypiothallon Aptroot (1)
Helminthocarpon Fée (14)
Hormosphaeria Lév. (1)
Minksia Müll. Arg. (6)
Nipholepis Syd. (1)
Paradoxomyces Matzer (1)
Perigrapha Hafellner (5)
Phacothecium Trevis. (1)
Sporostigma Grube (1)
Synarthothelium Sparrius (2)
Tarbertia Dennis (1)
Trichophyma Rehm (2)

Tylophorella Vain. (2)
Wegea Aptroot & Tibell (1)

Lichenostigmatales Ertz, Diederich & Lawrey
Phaeococcomycetaceae McGinnis & Schell
Antarctolichenia Selbmann, Muggia & Coleine (1)*Note 702
Etayoa Diederich & Ertz (1)
Lichenostigma Hafellner (= *Phaeosporobolus* D. Hawksw. & Hafellner) (ca 34)
Phaeococcomyces de Hoog (6)

Class *Dothideomycetes* O.E. Erikss & Winka*FoF14145
Subclass *Dothideomycetidae* P.M. Kirk, P.F. Cannon, J.C. David & Stalpers ex C.L. Schoch, Spatafora, Crous & Shoemaker*FoF00025
Arthrocatenales Piątek, Stryjak-Bogacka & Czachura*Piątek et al. 2024
Arthrocatenaceae Piątek, Stryjak-Bogacka & Czachura*Piątek et al. 2024
Arthrocatena Egidi & Selbmann (2)*Doth, FoF11412, Piątek et al. 2024
Hyphoconis Egidi & Quaedvl. (1)*Doth, FoF15875

Aureoconidiellales Hern.-Restr. & Crous*Note 58, FoF07249
Aureoconidiellaceae Hern.-Restr. & Crous*Note 57, FoF15607
Aureoconidiella Hern.-Restr. & Crous (1)*Note 56, FoF10816

Capnodiales Woron.*FoF07632
Antennulariellaceae Woron.*FoF06951
Achaetobotrys Bat. & Cif. (3)*FoF06953
Antennulariella Woron. (5)*FoF06951
Capnofrasera S. Hughes (5)
Capnodendron S. Hughes (1)
Eumela Syd. (4)*Note 160, Doth, FoF09055

Capnodiaceae Höhn. ex Theiss.*FoF06943
Capnodium Mont. (85)*Coel, FoF06944
Chaetocapnodium Hongsanan & K.D. Hyde (10)*FoF00399
Conidiocarpus Woron. (3)*Coel, FoF06946
Heteroconium Petr. (20)
Hyphocapnodia Z.H. Lu & Maharachch. (1)*Note 680, FoF15608
Kosmimatomyces Bianchin., Reinoso-Fuentealba, Rodr.-Andr., Cano & Stchigel (1)*FoF11049
Leptoxyphium Speg. (21)*Coel, FoF06949
Limaciniaseta D.R. Reynolds (1)*FoF06948
Phragmocapnias Theiss. & Syd. (9)
Polychaeton (Pers.) Lév. (31)
Scoriadopsis J.M. Mend. (1)*FoF06950

Euantennariaceae S. Hughes & Corlett ex S. Hughes*FoF06932
Capnokyma S. Hughes (2)*FoF06934
Euantennaria Speg. (21)*FoF06933
Hormisciomyces Bat. & Nascim. (3)*FoF06935
Plokamidomyces Bat., C.A.A. Costa & Cif. (1)*FoF06936
Rasutoria M.E. Barr (2)*FoF06937
Strigopodia Bat. (= *Chaetosaccardinula* Bat.) (4)*FoF06938
Trichothallus F. Stevens (2)*FoF06939

Johansoniaceae Doilom, Phookamsak & K.D. Hyde*FoF04619
Johansonia Sacc. (13)*FoF07635
Orthobellus A.A. Silva & Cavalc. (3)*FoF01955

Neoantennariellaceae Abdollahz. & Crous*Notes 554, 555, FoF12736
Cippumomyces Crous, Overton & Ricci (2)*Note 759, FoF15609
Fumiglobus D.R. Reynolds & G.S. Gilbert (9)*Note 555, FoF06947
Neoantennariella Abdollahz. & Crous (1)*Note 554, FoF11064
Neoasbolisia Abdollahz. & Crous (1)*Note 555, FoF11066

Piedraiaceae Viégas ex Cif., Bat. & S. Camposa*FoF06972
Piedraia Fonseca. & Leãno (3)*FoF06972

Readerielliopsidaceae Abdollahz. & Crous*Note 555, FoF15612
Alloscorias Haituk & Cheew. (1)*Note 633, FoF11068
Fumagospora G. Arnaud (4)*Note 170, FoF11070, GenBank
Phaeoxyphiella Bat. & Cif. (9)*FoF11072
Readerielliopsis Crous & Decock (2)*FoF01736
Scolecoxyphium Cif. & Bat. (8)*FoF12471
Scorias Fr. (13)*Coel, FoF01060
Tryssglobulus B. Sutton & Pascoe (1)*Crous et al. 2021d

Capnodiales genera *incertae sedis**FoF07632
Anariste Syd. (1)*FoF05148
Catenulomyces Egidi & de Hoog (1)*FoF11080
Perusta Egidi & Stielow (1)*FoF15666
Plurispermiopsis Pereira-Carv., Inácio & Dianese (1)*FoF09696
Pseudoepicoccum M.B. Ellis (3)*FoF11084
Racoleus R. Sant. & D. Hawksw. (1)*FoF11086
Ramimonilia Stielow & Quaedvl. (1)*FoF11088
Rosaria N. Carter (1)
Stigmatodothis Syd. & P. Syd. (5)*FoF05149
Stomiopeltis Theiss. (47)*FoF05151

Cladosporiales Abdollahz. & Crous*Note 110, FoF14146
Cladosporiaceae Chalm. & R.G. Archibald*FoF06966
Cladosporium Link (= *Davidiella* Crous & U. Braun) (ca 350)*FoF06968
Cryoendolithus Piątek, Stryjak-Bogacka & Czachura (4)*Note 1567, Piątek et al. 2023
Davidiellomyces Crous (2)*FoF06630
Graphiopsis Trail (4)*FoF06631
Neocladosporium J.D.P. Bezerra, Sand.-Den., Souza-Motta & Crous (4)*FoF06633
Rachicladosporium Crous, U. Braun & C.F. Hill (17)*FoF06634
Toxicocladosporium Crous & U. Braun (21)*FoF06970
Verrucocladosporium K. Schub., Aptroot & Crous (4)*FoF06971

Comminutisporales Abdollahz. & Crous*Note 113, FoF15667
Comminutisporaceae Abdollahz. & Crous*FoF15668
Comminutispora A.W. Ramaley (1)*FoF11099

Dothideales Lindau (= *Neocelosporiales* Crous *fide* Hongsanan et al. 2020)*FoF07659
Dothideaceae Chevall.*FoF00065
Delphinella (Sacc.) Kuntze (6)*FoF00074

Dictyodothis Theiss. & Syd. (8)*FoF00076
Dothidea Fr. (ca 30)*FoF00066
Dothiora Fr. (= *Neocylindroseptoria* Thambug. & K.D. Hyde; = *Neophaeocryptopus* Wanas. et al.) (ca 50)*FoF00078, Note 1504
Endoconidioma Tsuneda, Hambl. & Currah (= *Coniozyma* Crous) (5)*FoF00080, Crous et al. 2020a
Endodothiora Petr. (1)*FoF00082
Kabatina R. Schneid. & Arx (4)*FoF00084
Neodothiora Crous, G.C. Adams & Winton (1)*Note 309, FoF11101
Phaeocryptopus Naumov (6)*FoF00086
Plowrightia Sacc. (24)*FoF00088
Scirrhia Nitschke ex Fuckel (32)
Stylodothis Arx & E. Müll. (3)*FoF00091
Sydowia Bres. (12)*FoF00093
Uleodothis Theiss. & Syd. (8)*FoF04463

Neocelosporiaceae Crous*FoF07662
Celosporium Tsuneda & M.L. Davey (1)*FoF00111
Muellerites L. Holm (1)*FoF07665
Neocelosporium Crous (2)*FoF07663

Saccotheciaceae Bonord.*FoF07666
Aureobasidium Viala & G. Boyer (45)*FoF00098
Banningia Y.P. Tan & G.S. Pegg (1)*Note 1365
Columnosphaeria Munk (4)*FoF00100
Kabatiella Bubák (18)*FoF00103
Moringomyces Crous (1)*Note 286, FoF11104
Pseudoseptoria Speg. (9)*Coel, FoF00134, Fp250
Pseudosydowia Thambug. & K.D. Hyde (7)*FoF00105
Saccothecium Fr. (12)*FoF00107
Selenophoma Maire (ca 75)*FoF00109

Zalariaceae Visagie, Z. Humphries & Seifert*FoF07667
Zalaria Visagie, Z. Humphries & Seifert (2)*FoF07668

Dothideales genera *incertae sedis*
Asteromellopsis H.E. Hess & E. Müll. (1)*FoF11106
Atramixtia Tsuneda, M.L. Davey & Currah (1)
Botryochora Torrend (1)*Note 76, FoF00128
Coccodomyces Sastoque, Cano-Lira & Stchigel (1)*Sastoque et al. 2024
Hormonema Lagerb. & Melin (6)*FoF11108
Pringsheimia Schulzer (14)*FoF00095
Pseudohormonema Crous (1)*Crous et al. 2022b
Rhizosphaera L. Mangin & Har. (12)
Scleroconidioma Tsuneda, Currah & Thormann (1)*Doth

Mycosphaerellales (Nannf.) P.F. Cannon*FoF14162,
Aeminiaceae J. Trovão, I. Tiago & A. Portugal*FoF06985, Paiva et al. 2023
Aeminium J. Trovão, I. Tiago & A. Portugal (1)*Doth, FoF06986
Saxispiralis D.S. Paiva & A. Portugal (1)*Note 1320

Cystocoleaceae Locq. ex Lücking, B.P. Hodk. & S.D. Leav.*FoF06637

Cystocoleus Thwaites (1)*FoF06638

Dissoconiaceae Crous & de Hoog*FoF06640
Dissoconium de Hoog, Oorschot & Hijwegen (5)*FoF06641
Globoramichloridium Y. Marín & Crous (2)*FoF06643
Paradissoconium Crous & Boers (1)*Note 783, FoF15679
Pseudoveronaea Crous & Batzer (2)*FoF06644
Ramichloridium Stahel ex de Hoog (23)*FoF06941
Uwebraunia Crous & M.J. Wingf. (6)*FoF06646

Extremaceae Quaedvl. & Crous*Note 792, FoF06847
Castanedospora G. Delgado & A.N. Mill. (1)*FoF07191
Eriosporella Höhn. (2)*Note 1555, FoF07362
Extremopsis G. Delgado & Maciá-Vicente (1)*Note 779, FoF11116
Extremus Quaedvl. & Crous (3)*FoF06848
Paradevriesia Crous (4)*FoF07634
Petrophila de Hoog & Quaedvl. (1)*FoF06850
Pseudocastanedospora M. Li, Raza & L. Cai (1)*Note 1527
Pseudoramichloridium Cheew. & Crous (3)*FoF06851
Saxophila Selbmann & de Hoog (1)*FoF06852
Vermiconidia Egidi & Onofri (4)*FoF06854

Mycosphaerellaceae Lindau*FoF00119
Acericercospora M. Bakhshi (1)*Note 984
Acervuloseptoria Crous & Jol. Roux (3)*FoF08471
Achorodothis Syd. (2)*Note 10
Amycosphaerella Quaedvl. & Crous (2)*FoF08472
Annellosympodiella Crous & Assefa (1)*FoF08473
Apseudocercosporella Videira & Crous (1)*FoF08474
Asperisporium Maubl. (18)*FoF08475
Australosphaerella Videira & Crous (1)*FoF08476
Brunneosphaerella Crous (4)*FoF08477
Brunswickiella Videira & Crous (1)*FoF08478
Bryopelta Döbbeler & Poelt (1)*Note 84, FoF08585
Camptomeriphila Crous & M.J. Wingf. (1)*FoF08479
Caryophylloseptoria Verkley, Quaedvl. & Crous (4)*FoF08480
Catenulocercospora C. Nakash., Videira & Crous (1)*FoF08481
Cercoramularia Videira, H.D. Shin, C. Nakash. & Crous (1)*FoF08482
Cercospora Fresen. ex Fuckel (ca 700)*FoF08483
Cercosporella Sacc. (ca 7)*FoF08484
Cercosporidium Earle (ca 10)*FoF08485
Chuppomyces Videira & Crous (1)*FoF08486
Cladocillium Chun-Hao Chen & R. Kirschner (1)*Note 109, FoF11138
Clarohilum Videira & Crous (1)*FoF08487
Clypeosphaerella Guatim., R.W. Barreto & Crous (3)*FoF08488
Collapsimycopappus A. Hashim., Y. Harada & Kaz. Tanaka (1)*FoF08489
Collarispora Videira & Crous (1)*FoF08490
Coremiopassalora U. Braun, C. Nakash., Videira & Crous (2)*FoF08491
Cytostagonospora Bubák (4)*Coel, FoF07226
Deightonomyces Videira & Crous (1)*FoF08492
Devonomyces Videira & Crous (1)*FoF08493
Dictyosporina L.M. Abreu, R.F. Castañeda & O.L. Pereira (1)*FoF03438

Distocercospora N. Pons & B. Sutton (3)*FoF08494
Distocercosporaster Videira, H.D. Shin, C. Nakash. & Crous (1)*FoF08495
Distomycovellosiella U. Braun, C. Nakash., Videira & Crous (1)*FoF08496
Dothistroma Hulbary (3)*FoF08497
Epicoleosporium Videira & Crous (1)*FoF08498
Exosporium Link (69)*FoF08499
Exutisphaerella Videira & Crous (1)*FoF08500
Filiella Videira & Crous (1)*FoF08501
Fulvia Cif. (1)*FoF08502
Fusoidiella Videira & Crous (2)*FoF08503
Graminopassalora U. Braun, C. Nakash., Videira & Crous (2)*FoF08504
Hippopotamyces Crous (1)*Note 210, FoF11154
Hirudinaria Ces. (1)*Bakhshi & Crous 2024
Hyalocercosporidium Videira & Crous (1)*FoF08505
Hyalozasmidium U. Braun, C. Nakash., Videira & Crous (2)*FoF08506
Janetia M.B. Ellis (16)*FoF08507
Juncomyces Crous (2)*FoF11159
Lecanosticta Syd. (10)*FoF08508
Madagascaromyces U. Braun, C. Nakash., Videira & Crous (2)*FoF08509
Microcyclosporella J. Frank, Schroers & Crous (1)*FoF08510
Micronematomyces U. Braun, C. Nakash., Videira & Crous (2)*FoF08511
Miuraea Hara (1)*FoF08512
Mycodiella Crous (3)*FoF08513
Mycosphaerelloides Videira & Crous (1)*FoF08514
Mycovellosiella Rangel (39)*FoF08515
Neoacervuloseptoria Raghv. Singh & Sanjay Yadav (1)*Note 887, FoF15858
Neoceratosperma Crous & Cheew. (6)*FoF08516
Neocercospora Bakhshi, Arzanlou, Babai-ahari & Crous (2)*FoF08517
Neocercosporella Sanjay Yadav & Raghv. Singh (1)*Note 888, FoF15860
Neocercosporidium Videira & Crous (1)*FoF08518
Neodeightoniella Crous & W.J. Swart (1)*FoF08519
Neokamalomyces Sanjay & Raghv. Singh (1)*Note 801, FoF15717
Neokirramyces Crous (2)*FoF11172
Neomycosphaerella Crous (2)*FoF08520
Neopenidiella Quaedvl. & Crous (1)*FoF08521
Neophloeospora U. Braun, C. Nakash., Videira & Crous (1)*FoF08522
Neopseudocercospora Crous (2)*FoF08523
Neopseudocercosporella Videira & Crous (2)*FoF08524
Neoramichloridium Phook., Thambug. & K.D. Hyde (1)*FoF08525
Neoseptoria Quaedvl., Verkley & Crous (1)*FoF08526
Neosonderhenia Crous (2)*FoF15356
Nothopassalora U. Braun, C. Nakash., Videira & Crous (1)*FoF08527
Nothopericoniella Videira & Crous (1)*FoF08528
Nothophaeocryptopus Videira, C. Nakash. & Crous (2)*FoF08529
Nothopseudocercospora Crous & U. Braun (1)*Crous et al. 2022
Nothoseptoria Crous & Bulgakov (1)*FoF15719
Nothotrimmatostroma Crous (3)*Doth, FoF08530
Pachyramichloridium Videira & Crous (1)*FoF08531
Pallidocercospora Crous (8)*FoF08532
Pantospora Cif. (2)*FoF08533
Paracercospora Deighton (3)*FoF08534
Paracercosporidium Videira & Crous (2)*FoF08535

Paramycosphaerella Crous & Jol. Roux (13)*FoF08536
Paramycovellosiella Videira, H.D. Shin & Crous (1)*FoF08537
Parapallidocercospora Videira, Crous, U. Braun & C. Nakash. (2)*FoF08538
Passalora Fr. (ca 500)*FoF08539
Pedrocrousiella Rajeshkumar, U. Braun & J.Z. Groenew (1)*FoF11192
Phaeocercospora Crous (2)*FoF08540
Phaeophleospora Rangel (20)*FoF08541
Phaeoramularia Munt.-Cvetk. (ca 25)*FoF08542
Pharcidia Körb. (5)
Phloeospora Wallr. (= *Didymosporina* Höhn.) (ca 100)*FoF08543
Piricauda Bubák (30)*FoF08544
Pleopassalora Videira & Crous (2)*FoF08545
Pleuropassalora U. Braun, C. Nakash., Videira & Crous (1)*FoF08546
Pleurovularia R. Kirschner & U. Braun (1)*Choi et al. 2024
Pluripassalora Videira & Crous (1)*FoF08547
Plurivorosphaerella O. Hassan & T.H. Chang (1)*FoF08548
Polyphialoseptoria Quaedvl., R.W. Barreto, Verkley & Crous (3)*Coel, FoF07511
Polythrincium Kunze (1)*FoF08549
Prathigadoides M. Bakhshi, Zare & U. Braun (1),*Note 577, 1095, FoF15721
Protostegia Cooke (5)*FoF08550
Pruniphilomyces Crous & Bulgakov (1)*FoF11205
Pseudocercospora Speg. (more than 1000)*FoF08551
Pseudocercosporella Deighton (98)*FoF08552
Pseudopericoniella Videira & Crous (1)*FoF08553
Pseudophaeophleospora C. Nakash., Videira & Crous (3)*FoF08554
Pseudozasmidium Videira & Crous (4)*FoF08555
Pteridopassalora C. Nakash. & Crous (2)*Note 794, FoF15735
Quasiphloeospora B. Sutton, Crous & Shamoun (1)*FoF08649
Ragnhildiana Solheim (10)*FoF08556
Ramularia (= *Mycosphaerella*) Unger (ca 400)*FoF09222
Ramulariopsis Speg. (= *Neoramulariopsis* Raghv. Singh & Kushwaha) (6)*Note 889, FoF08557
Ramulispora Miura (11)*FoF08558
Rhabdospora (Durieu & Mont.) Sacc. (58)
Rhachisphaerella U. Braun, C. Nakash., Videira & Crous (1)*FoF08559
Rosisphaerella Videira & Crous (1)*FoF08560
Ruptoseptoria Quaedvl., Verkley & Crous (1)*FoF08561
Scolecostigmina U. Braun (23)*FoF08562
Septoria Sacc. (ca 200)*Coel, FoF07588
Sonderhenia H.J. Swart & J. Walker (4)*FoF01702
Sphaerulina Sacc. (158)*FoF08563
Stigmidium Trevis. (= *Mycophycias* Kohlm. & Volkm.-Kohlm.) (ca 100)*Doth
Stromatoseptoria Quaedvl., Verkley & Crous (1)*FoF08564
Sultanimyces Videira & Crous (1)*FoF08565
Trochophora R.T. Moore (1)*FoF08566
Uwemyces Hern.-Restr., Sarria & Crous (1)*FoF08567
Virosphaerella Videira & Crous (2)*FoF08568
Walkaminomyces Crous & Carnegie (1)*Note 537, FoF11226
Xenomycosphaerella Quaedvl. & Crous (2)*FoF08569
Xenopassalora Crous (1)*FoF08571
Xenoramularia Videira, H.D. Shin & Crous (4)*FoF08570
Xenosonderhenia Crous (3)*FoF08572
Xenosonderhenioides Videira & Crous (1)*FoF08573

Zasmidium Fr. (= *Periconiella* Sacc. *fide* Videira et al. 2017) (ca 150)*FoF08574
Zymoseptoria Quaedvl. & Crous (8)*FoF08575

Neodevriesiaceae Quaedvl. & Crous*FoF07636
Neodevriesia Quaedvl. & Crous (33)*FoF07637
Tripospermum Speg. (34)*FoF08051
Phaeothecoidiellaceae K.D. Hyde & Hongsanan (= *Nowamycetaceae* Crous)*FoF02883
Chaetothyrina Theiss. (18)*FoF06974
Exopassalora Videira & Crous (1)*FoF07641
Houjia G.Y. Sun & Crous (2)*FoF06975
Neochaetothyrina Crous (1)*Note 781, FoF11324
Nowamyces Crous (2)*FoF07642
Phaeothecoidiella Batzer & Crous (2)*FoF06973
Pseudorepetophragma Phookamsak, Bhat & Hongsanan (1)*Note 1197, FoF15862
Pseudostomiopeltis Phookamsak & Hongsanan (2)*Note 1198, FoF15864
Rivilata Kohlm., Volkm.-Kohlm. & O.E. Erikss. (1)*FoF07643
Sporidesmajora Batzer & Crous (1)*FoF07644
Translucidithyrium X.Y. Zeng & K.D. Hyde (2)*FoF04090

Phillipsiellaceae Höhn.
Nothocladosporium Crous (1)*Crous et al. 2022
Phillipsiella Cooke (= *Microphyma* Speg.) (11)*Doth

Schizothyriaceae Höhn. ex Trotter, Sacc., D. Sacc. & Traverso*FoF01932
Amazonotheca Bat. & H. Maia (2)*FoF01943
Hexagonella F. Stevens & Guba ex F. Stevens (1)*FoF01935
Kerniomyces Toro (1)*FoF07046
Lecideopsella Höhn. (8)*FoF01936
Metathyriella Syd. (3)*FoF07047
Myriangiella Zimm. (4)*FoF07048
Plochmopeltis Theiss. (5)*FoF01940
Schizothyrium Desm. (= *Zygophiala* E.W. Mason) (60)*FoF01933
Vonarxella Bat., J.L. Bezerra & Peres (1)*FoF04673

Teratosphaeriaceae Crous & U. Braun*FoF06989
Acidiella Hujslová & M. Kolařík (4)*Doth, FoF06992
Acidomyces B.J. Baker, M.A. Lutz, S.C. Dawson, P.L. Bond & Banfield ex Selbmann, de Hoog & De Leo (3)*FoF06993
Acrodontium de Hoog (18)*Doth, FoF06994
Apenidiella Quaedvl. & Crous (3)*Doth, FoF06995
Araucasphaeria Crous & M.J. Wingf. (1)*Doth, FoF06991
Aulographina Arx & E. Müll. (2)*Doth, FoF07645
Austroafricana Quaedvl. & Crous (3)*FoF06996
Austrostigmidium Pérez-Ort. & Garrido-Ben. (1)*Doth, FoF06997
Batcheloromyces Marasas, P.S. van Wyk & Knox-Dav. (5)*FoF06998
Baudoinia J.A. Scott & Unter. (5)*Doth, FoF06999
Bryochiton Döbbeler & Poelt (5)*Doth, FoF7000
Caatingomyces T.G.L. Oliveira, Souza-Motta, O.M.C. Magalh. & J.D.P. Bezerra (1)*Note 91, Doth, FoF05818
Caeliomyces Crous & Jurjević (1)*Note 683, FoF15742
Camarosporula Petr. (1)*Doth, FoF07001
Capnobotryella Sugiy. (5)*Doth, FoF07002

Catenulostroma Crous & U. Braun (7)*FoF07003
Constantinomyces Egidi & Onofri (6)*Doth, FoF07004
Davisoniella H.J. Swart (1)*Doth, FoF07005
Devriesia Seifert & N.L. Nick. (7)*Doth, FoF07006
Elasticomyces Zucconi & Selbmann (1)*Doth, FoF07007
Eupenidiella Quaedvl. & Crous (1)*Doth, FoF07008
Euteratosphaeria Quaedvl. & Crous (1)*Doth, FoF07009
Friedmanniomyces Onofri (2)*Doth, FoF07010
Haniomyces J.C. Xu (1)*Doth, FoF11378
Hispidoconidioma Tsuneda & M.L. Davey (1)*Doth, FoF07011
Hortaea Nishim. & Miyaji (1)*Doth, FoF07012
Hyweljonesia R.G. Shivas, Y.P. Tan, Marney & Abell (2)*Doth, FoF07013
Incertomyces Egidi & Zucconi (2)*Doth, FoF07014
Intumescentia H.L. Si, R.L. Chang, T. Bose & Y.C. Wang (4)*Note 1200, FoF15839
Lapidomyces de Hoog & Stielow (4)*Doth, FoF07015
Lawreya Ertz, Common, Diederich & U. Braun (1)*Doth, FoF11385
Leptomelanconium Petr. (7)*Note 1139, Doth, FoF07016
Magnuscella Y.S. Anteneh, M.H. Brown & C.M.M. Franco, **nom. inval.** (1)*Note 672
Meristemomyces Isola & Onofri (2)*Doth, FoF07017
Microcyclospora J. Frank, Schroers & Crous (5)*Doth, FoF07018
Monticola Selbmann & Egidi (1)*Doth, FoF07019
Muriphila Jurjević, Čmoková & Hubka (1)*Doth, FoF11389
Myrtapenidiella Quaedvl. & Crous (8)*Doth, FoF07020
Neobryochiton Crous & Boers (1)*Crous et al. 2022
Neocatenulostroma Quaedvl. & Crous (4)*Doth, FoF07021
Neophaeothecoidea Quaedvl. & Crous (1)*Doth, FoF07022
Neotrimmatostroma Quaedvl. & Crous (4)*Doth, FoF04960
Nothodevriesia Crous & Boers (1)*Note 1096, FoF15852
Oleoguttula Selbmann & de Hoog (1)*Doth, FoF07023
Pachysacca Syd. (3)*Doth, FoF00126
Palmeiromyces D.R.S. Pereira & A.J.L. Phillips (1)*Doth, FoF11393
Parapenidiella Crous & Summerell (2)*Doth, FoF07024
Parateratosphaeria Quaedvl. & Crous (6)*Doth, FoF07025
Penidiella Crous & U. Braun (4)*Doth, FoF07026
Penidiellomyces Crous, Attili-Angelis, A.P.M. Duarte, Pagnocca & J.Z. Groenew. (2)*Doth, FoF07027
Penidiellopsis Sand.-Den., Gené, Deanna A. Sutton & Guarro (2)*Doth, FoF07028
Phaeothecoidea Crous (4)*Doth, FoF07029
Placocrea Syd. (1)*Doth, FoF15855
Pseudotaeniolina J.L. Crane & Schokn. (2)*Doth, FoF07030
Pseudoteratosphaeria Quaedvl. & Crous (7)*Doth, FoF07031
Queenslandipenidiella Quaedvl. & Crous (1)*Doth, FoF07032
Rapidomyces Crous & Boers (1)*Crous et al. 2022
Readeriella Syd. & P. Syd. (22)*Doth, FoF07034
Recurvomyces Selbmann & de Hoog (1)*Doth, FoF07035
Salinomyces Czachura & Piątek (2)*Note 771, FoF15856
Simplicidiella Crous, Attili-Angelis, A.P.M. Duarte, Pagnocca & J.Z. Groenew. (1)*FoF07036
Stenella Syd. (44)*Doth, FoF07037
Suberoteratosphaeria Quaedvl. & Crous (3)*Doth, FoF07038
Teratoramularia Videira, H.D. Shin & Crous (5)*Doth, FoF07039
Teratosphaeria Syd. & P. Syd. (ca 30)*Doth, FoF01713
Teratosphaericola Quaedvl. & Crous (3)*Doth, FoF07040

Teratosphaeriopsis Quaedvl. & Crous (1)*Doth, FoF07041
Xanthoriicola D. Hawksw. (1)*Doth, FoF07042
Xenoconiothyrium Crous & Marinc. (1)*Doth, FoF01731
Xenopenidiella Quaedvl. & Crous (7)*Doth, FoF07043
Xenophacidiella Crous (1)*Doth, FoF07044
Xenoteratosphaeria Quaedvl. & Crous (1)*Doth, FoF07045
Xenodevriesiaceae Crous*FoF06987, Paiva et al. 2023
Melanodevriesia H.L. Si, W.Q. Cao & T. Bose (1)*Note 575, FoF11077, Paiva et al. 2023
Xenodevriesia Crous (1)*FoF06988, Paiva et al. 2023

Mycosphaerellales genera *incertae sedis*
Brunneomycosphaerella Dissan., Jian K. Liu & K.D. Hyde (1)*Doth, FoF00565
Mucomycosphaerella Quaedvl. & Crous (1)*Doth, FoF09726
Neohortaea Quaedvl. & Crous (1)*Doth, FoF11417
Ramopenidiella Crous & R.G. Shivas (1)*Doth, FoF07033

Myriangiales Starbäck*FoF08098
Elsinoaceae Höhn. ex Sacc. & Trotter*FoF05764
Elsinoe Racib. (= *Sphaceloma* de Bary) (ca 100)*Doth, FoF05846
Molleriella G. Winter (6)*Doth, FoF07375

Myriangiaceae Nyl.*FoF06552
Anhellia Racib. (9)*Doth, FoF06538
Ascostratum Syd. & P. Syd. (2)*Doth, FoF06539
Butleria Sacc. (1)*Doth, FoF06542
Dictyocyclus Sivan., W.H. Hsieh & Chi Y. Chen (1)*Doth, FoF06544
Eurytheca De Seynes (3)*Doth, FoF06546
Hemimyriangium J. Reid & Piroz (1)*Doth, FoF06548
Mendogia Racib. (7)*Doth, FoF01951
Micularia Boedijn (2)*Doth, FoF06550
Myriangium Mont. & Berk. (ca 30)*Doth, FoF06553
Uleomyces Henn. (12)*Doth, FoF03682
Zukaliopsis Henn. (3)*Doth, FoF06554

Myriangiales genus *incertae sedis*
Dictyonella Höhn. (7)*Doth, FoF12939

Neophaeothecales Abdollahz. & Crous*Note 322, FoF15876
Neophaeothecaceae Abdollahz. & Crous*FoF09780
Neophaeotheca Abdollahz. & Crous (1)*Doth, FoF11420
Nothophaeotheca Crous (1)*Note 782, Doth, FoF09977

Phaeothecales Abdollahz. & Crous*FoF15877
Phaeothecaceae Darveaux*FoF07639
Phaeotheca Sigler, Tsuneda & J.W. Carmich. (3)*Doth, FoF07640

Racodiales Abdollahz. & Crous*Note 442, FoF11516
Racodiaceae Link*FoF06304
Racodium Fr. (11)*Doth, FoF06305

Dothideomycetidae genus *incertae cedis*
Aenigmatomyces R.F. Castañeda & W.B. Kendr. (1)*Note 910, FoF15878

Subclass *Pleosporomycetidae* C.L. Schoch, Spatafora, Crous & Shoemaker*FoF14163
Gloniales Jayasiri & K.D. Hyde*FoF03250
Gloniaceae (Corda) E. Boehm, C.L. Schoch & Spatafora*FoF02166
Cenococcum Moug. & Fr. (2)*Doth, FoF07680
Glonium Mühl. (ca 20)*Doth, FoF02167
Purpurepithecium Jayasiri & K.D. Hyde (2)*Doth, FoF03109

Hysteriales Lindau*FoF07681
Hysteriaceae Chevall.*FoF01838
Actidiographium Lar. N. Vassiljeva (1)*Doth, FoF08053
Gloniella Sacc. (ca 50)*Doth, FoF08054
Gloniopsis De Not. (ca 30)*Doth, FoF08055
Hysterium Pers. (ca 40)*Doth, FoF00004
Hysterobrevium E. Boehm & C.L. Schoch (7)*Doth, FoF08056
Hysterocarina H. Zogg (1)*Doth, FoF08057
Hysterodifractum D.A.C. Almeida, Gusmão & A.N. Mill. (1)*Doth, FoF08058
Hysteroglonium Rehm ex Lindau (3)*Doth, FoF08059
Oedohysterium E. Boehm & C.L. Schoch (3)*Doth, FoF08060
Ostreichnion Duby (3)*Doth, FoF00163
Pseudoscypha J. Reid & Piroz. (1)*Doth, FoF08061
Psiloglonium Höhn. (16)*Doth, FoF08062
Rhytidhysteron Speg. (ca 40)*Doth, FoF08063

Hysteriales genus *incertae sedis*
Graphyllium Clem. (10)*Doth, FoF11445

Mytilinidiales E. Boehm, C.L. Schoch & Spatafora*FoF08100
Mytilinidiaceae Kirschst.*FoF03134
Actidium Fr. (13)*Doth, FoF08102
Bullatosporium Andreasen & Nordén (1)*Andreasen et al. 2024
Camaroglobulus Speer (1)
Halokirschsteiniothelia Boonmee & K.D. Hyde (1)*Doth
Lophium Fr. (6)*Doth, FoF08103
Mytilinidion Duby (31)*FoF08101
Ostreola Darker (8)*FoF08104
Peyronelia Cif. & Gonz. Frag. (4)*FoF08105
Pseudocamaropycnis Crous (1)*FoF08106
Quasiconcha M.E. Barr & M. Blackw. (1)*FoF08107
Zoggium Lar.N. Vassiljeva (1)*FoF08109

Pleosporales Luttr. ex M.E. Barr*FoF08715, FWF
Acrocalymmaceae Crous & Trakun.*FoF08135, FWF
Acrocalymma Alcorn & J.A.G. Irwin (16)*Coel, FoF07097, FWF

Ageratinicolaceae L. Lu, K.D. Hyde & Tibpromma*Note 1530, Senanayake et al. 2023
Ageratinicola L. Lu, K.D. Hyde & Tibpromma (1)*Note1398, Senanayake et al. 2023
Foliophoma Crous (2)*FoF08173, Senanayake et al. 2023

Aigialaceae Suetrong, Sakay., E.B.G. Jones, Kohlm., Volkm.-Kohlm. & C.L. Schoch*FoF08136
Aigialus Kohlm. & S. Schatz (5)*FoF08137
Ascocratera Kohlm. (1)*FoF08138

Fissuroma Jian K. Liu, Phook., E.B.G. Jones & K.D. Hyde (15)*FoF08139
Neoastrosphaeriella Jian K. Liu, E.B.G. Jones & K.D. Hyde (5)*FoF08150
Posidoniomyces Vohník & Réblová (1)*FoF08151
Rimora Kohlm., Volkm.-Kohlm., Suetrong, Sakay. & E.B.G. Jones (1)*FoF08152

Amniculicolaceae Y. Zhang ter, C.L. Schoch, J. Fourn., Crous & K.D. Hyde*FoF08153, FWF
Amniculicola Y. Zhang ter & K.D. Hyde (= *Anguillospora* Ingold) (7)*FoF08154, FWF
Fouskomenomyces Magaña-Dueñas, Cano-Lira & Stchigel (2)
Fusiformispora Phukhams. & K.D. Hyde (1)*FoF07242, Fp148
Murispora Y. Zhang ter, J. Fourn. & K.D. Hyde (14)*FoF08155, FWF
Neomassariosphaeria Y. Zhang ter, J. Fourn. & K.D. Hyde (1)*FoF08156, FWF
Pseudomassariosphaeria Phukhams., Ariyaw., Camporesi & K.D. Hyde (1)*FoF00931
Vargamyces Tóth (1)*FoF08157, FWF

Amorosiaceae Thambug. & K.D. Hyde*FoF01084
Alfoldia D.G. Knapp, Imrefi & Kovács (1)*FoF08159
Amorosia Mantle & D. Hawksw. (1)*FoF08158
Amorocoelophoma Jayasiri, E.B.G. Jones & K.D. Hyde (3)*FoF05230
Angustimassarina Thambug., Kaz. Tanaka & K.D. Hyde (13)*FoF01085
Neoangustimassarina X.D. Yu & Jian K. Liu (1)*Yu et al. 2022a
Neothyrostroma Crous (1)*FoF09981

Anastomitrabeculiaceae Bhunjun, Phukhams. & K.D. Hyde*Notes 27, 778, FoF09521
Anastomitrabeculia Bhunjun, Phukhams. & K.D. Hyde (1)*Notes 26, 778, FoF09522, Fp116

Anteagloniaceae K.D. Hyde, J.K. Liu & A. Mapook*FoF06700, FWF
Anteaglonium Mugambi & Huhndorf (10)*FoF06701
Flammeascoma Phook. & K.D. Hyde (2)*FoF06702, FWF
Neolophiotrema G.C. Ren & K.D. Hyde (1)*FoF04862, Note 1433
Purpureofaciens W. Dong, H. Zhang & K.D. Hyde (1)*FoF08717, FWF

Aquasubmersaceae A. Hashim. & Kaz. Tanaka*FoF08160, FWF
Aquasubmersa K.D. Hyde & Huang Zhang (2)*Coel, FoF07118, Fp65, FWF

Ascocylindricaceae Abdel-Wahab, Bahkali, E.B.G. Jones, Ariyaw. & K.D. Hyde*FoF01041
Ascocylindrica Abdel-Wahab, Bahkali & E.B.G. Jones (1)*FoF00954

Astrosphaeriellaceae Phook. & K.D. Hyde (= *Caryosporaceae* Huang Zhang, K.D. Hyde & Ariyaw.)*FoF01221, FWF
Acuminatispora S.N. Zhang, K.D. Hyde & Jian K. Liu (1)*Doth, Zhang et al. 2024
Aquatospora W. Dong, H. Zhang & K.D. Hyde (1)*Note 36, FoF09245, FWF
Astrosphaeriella Syd. & P. Syd. (52)*FoF01222, FWF
Astrosphaeriellopsis Phook., Jian K. Liu & K.D. Hyde (2)*FoF01240
Caryospora De Not. (144)*FoF08169, FWF
Javaria Boise (2)*FoF08165
Javarisimilis S.N. Zhang, K.D. Hyde & Jian K. Liu (1)*Zhang et al. 2024
Mycopepon Boise (5)*FoF04631
Pithomyces Berk. & Broome (ca 40)*FoF03611, FWF
Pteridiospora Penz. & Sacc. (7)*FoF01231
Quercicola Jayasiri, E.B.G. Jones & K.D. Hyde (2)*FoF05233
Thecatisporium S.N. Zhang, K.D. Hyde & Jian K. Liu (1)*Zhang et al. 2024
Triseptatospora Konta & K.D. Hyde (1)*Note 1428

Xenoastrosphaeriella Jayasiri, E.B.G. Jones & K.D. Hyde (2)*FoF05237, FWF

Bambusicolaceae D.Q. Dai & K.D. Hyde*FoF00586, FWF
Bambusicola D.Q. Dai & K.D. Hyde (18)*FoF01433, FWF
Corylicola Wijesinghe, Camporesi, Yong Wang bis & K.D. Hyde (1)*Note 118, FoF08684
Leucaenicola Jayasiri, E.B.G. Jones & K.D. Hyde (5)*FoF05239
Neopalmiascoma X. Zhang, K.D. Hyde, Tibpromma & Karunarathna (1)*Zhang et al. 2024b
Palmiascoma Phook. & K.D. Hyde (3)*FoF00428, Fp89

Biatriosporaceae K.D. Hyde*FoF08166
Biatriospora K.D. Hyde & Borse (2)*FoF08167

Camarosporiaceae Wanas., Wijayaw., K.D. Hyde & Crous*FoF03527
Camarosporium Schulzer (ca 250)*FoF00405
Camarosporomyces Crous (1)*FoF08168

Camarosporidiellaceae Wanas., Wijayaw., Crous & K.D. Hyde*FoF03528
Camarosporidiella Wanas., Wijayaw., K.D. Hyde (23)*FoF03529

Coniothyriaceae W.B. Cooke*FoF08070
Coniothyrium Corda (ca 400)*FoF08071
Coniothyrioides Wijes., M.S. Calabon, E.B.G. Jones & K.D. Hyde (1)*Note 1214, FoF13901
Neoconiothyrium Crous (4)*FoF08174
Ochrocladosporium Crous & U. Braun (3)*FoF08175
Staurosphaeria Rabenh. (= *Hazslinszkyomyces* Crous & R.K. Schumach.) (9)*FoF08176

Corynesporascaceae Sivan.*****FoF12737, FWF
Corynespora Güssow (ca 150)*FoF06663, FWF
Corynesporasca Sivan. (1)*FoF06662

Cryptocoryneaceae A. Hashim. & Kaz. Tanaka*FoF08177
Cryptocoryneum Fuckel (23)*FoF08178

Cucurbitariaceae G. Winter (= *Fenestellaceae* M.E. Barr)*FoF08179
Allocucurbitaria Valenz.-Lopez, Stchigel, Guarro & Cano (3)*FoF08182
Astragalicola Jaklitsch & Voglmayr (3)*FoF08183
Cucitella Jaklitsch & Voglmayr (1)*FoF08184
Cucurbitaria Gray (= *Gibberidea* (Fr.) Rabenh.) (ca 90)*FoF08180
Fenestella Tul. & C. Tul. (= *Pleurostromella* Petr.) (ca 25)*FoF00576
Gemmamyces Casagr. (2)*Rossman et al. 2015
Neocucurbitaria Wanas., E.B.G. Jones & K.D. Hyde (25)*Coel, FoF02902
Nothocucurbitaria Eisvand & M. Mehrabi-Koushki (2)*Eisvand et al. 2024
Paracucurbitaria Valenz.-Lopez, Stchigel, Guarro & Cano (2)*FoF08185
Parafenestella Jaklitsch & Voglmayr (19)*FoF08186
Protofenestella Jaklitsch & Voglmayr (1)*FoF08187
Rhytidiella Zalasky (4)*FoF08188
Seltsamia Jaklitsch & Voglmayr (2)*FoF08189
Syncarpella Theiss. & Syd. (7)*FoF08190
Synfenestella Jaklitsch & Voglmayr (2)*FoF08191

Cyclothyriellaceae Jaklitsch & Voglmayr*FoF08192
Cyclothyriella Jaklitsch & Voglmayr (1)*FoF08193

Massariosphaeria (E. Müll.) Crivelli (21)*FoF08194

Dacampiaceae Körb.*FoF08195
Aaosphaeria Aptroot (2)*FoF08197
Dacampia A. Massal. (17)*FoF08196
Eopyrenula R.C. Harris (6)*FoF08198
Leptocucurthis Aptroot (1)*FoF08199
Pseudonitschkia Coppins & S.Y. Kondr. (1)*FoF08200
Weddellomyces D. Hawksw. (12)*FoF08201

Delitschiaceae M.E. Barr*FoF08202, FWF
Delitschia Auersw. (ca 50)*FoF08203, FWF
Ohleriella Earle (2)*FoF08205
Semidelitschia Cain & Luck-Allen (3)*FoF08206

Diademaceae Shoemaker & C.E. Babc.*FoF08207
Diadema Shoemaker & C.E. Babc. (8)*FoF08208

Dictyosporiaceae Boonmee & K.D. Hyde*FoF01256
Aquadictyospora Z.L. Luo, K.D. Hyde & H.Y. Su (2)*FoF03767, FWF
Aquaticheirospora Kodsueb & W.H. Ho (1)*FoF08211, FWF
Cheirosporium L. Cai & K.D. Hyde (2)*FoF01257, Fp42, FWF
Dendryphiella Bubák & Ranoj. (17)*FoF08212, FWF
Dictyocheirospora M.J. D'souza, Boonmee & K.D. Hyde (28)*FoF01261, FWF
Dictyopalmispora Pinruan, Boonmee & K.D. Hyde (1)*FoF01258
Dictyosporium Corda (72)*FoF08210
Digitodesmium P.M. Kirk (11)*FoF0126, FWF
Gregarithecium Kaz. Tanaka & K. Hiray. (1)*FoF08213
Jalapriya M.J. D'souza, Hong Y. Su, Z.L. Luo & K.D. Hyde (5)*FoF01269, FWF
Kamatia V.G. Rao & Subhedar (1)
Neodendryphiella Iturrieta-González, Dania García & Gené (3)*FoF08214
Neodigitodesmium W.H. Tian & Maharachch. (1)*Note 766, FoF15894
Neogregarithecium W.H. Tian, K.D. Hyde & Maharachch. (1)*Tian et al. 2024a
Paradictyocheirospora Rajeshkumar, R.K. Verma, Boonmee, K.D. Hyde, Chandrasiri & Wijayaw. (1)*Note 992, FoF09733
Pseudocoleophoma Kaz. Tanaka & K. Hiray. (9)*Coel, FoF07534, FWF
Pseudoconiothyrium Crous & R.K. Schumach. (1)*FoF08215
Pseudodictyosporium Matsush. (4)*FoF01266, FWF
Sajamaea Flakus, Piątek & Rodr. Flakus (1)*FoF11499
Verrucoccum V. Atienza, D. Hawksw. & Pérez-Ort. (3)*Note 565, FoF15896
Vikalpa M.J. D'souza, Boonmee, Bhat & K.D. Hyde (6)*FoF01361, FWF

Didymellaceae Gruyter, Aveskamp & Verkley (= *Microsphaeropsidaceae* Qian Chen et al.)*Coel, FoF08216
Allophoma Q. Chen & L. Cai (15)*FoF08217, Fp126
Anthodidymella Phukhams., Camporesi & K.D. Hyde (1)*FoF07255
Ascochyta Lib. (= *Heracleicola* Tibpromma, Camporesi & K.D. Hyde) (ca 400)*Coel, FoF07121
Austrophoma N.Q. Pham, Marinc. & M.J. Wingf. (1)*Note 1059, FoF15897
Boeremia Aveskamp, Gruyter & Verkley (ca 25)*Coel, FoF07128, Fp130
Briansuttonomyces Crous (1)*FoF08218
Calophoma Qian Chen & L. Cai (14)*FoF08219, Fp127
Chaetasbolisia Speg. (9)*FoF07144

Cumuliphoma Valenz.-Lopez, Stchigel, Crous, Guarro & Cano (4)*FoF08220
Didymella Sacc. (407)*Coel, FoF07278
Didysimulans Tibpromma, Camporesi & K.D. Hyde (2)*FoF2884
Dimorphoma L.W. Hou, L. Cai & Crous (2)*Note 136, FoF11504
Ectodidymella L.W. Hou, L. Cai & Crous (1)*Note 145, FoF11506
Ectophoma Valenz.-Lopez, Cano, Crous, Guarro & Stchigel (6)*FoF08221
Epicoccum Link (ca 100)*FoF08222, Fp128
Heteromicrosphaeropsis M. Mehrabi-Koushki, K.D. Hyde & Jayaward. (1)*Note 1099, FoF15899
Heterophoma Qian Chen & L. Cai (8)*FoF08223
Juxtiphoma Valenzuela-Lopez, Cano, Crous, Guarro & Stchigel (3)*FoF08224, Fp111
Leptosphaerulina McAlpine (62)*FoF08225
Longididymella L.W. Hou, L. Cai & Crous (2)*FoF11512
Macroascochyta L.W. Hou, L. Cai & Crous (1)*FoF11514
Macroventuria Aa (4)*FoF08226
Mesophoma H.B. Zhang, A.L. Yang & L. Chen (2)*Note 1328, FoF15901
Microsphaeropsis Höhn. (55)*FoF08716
Mixtura O.E. Erikss. & J.Z. Yue (1)*FoF00278
Monascostroma Höhn. (6)*FoF00547
Neoascochyta Qian Chen & L. Cai (18)*Coel, FoF07462
Neodidymella Phook., R.H. Perera & K.D. Hyde (1)*FoF00904
Neodidymelliopsis Qian Chen & L. Cai (15)*Coel, FoF07518
Neomicrosphaeropsis Thambug., Camporesi & K.D. Hyde (= *Didymellocamarosporium* Wijayaw., Camporesi, Bhat & K.D. Hyde) (11)*FoF02157
Neoscirrhia Crous & R.K. Schumach. (2)*FoF11517
Nothomicrosphaeropsis Crous (2)*FoF11519
Nothophoma Qian Chen & L. Cai (23)*FoF08227
Paraboeremia Qian Chen & L. Cai (11)*Coel, FoF08228
Paramacroventuria Crous & Bulgakov (1)*Note 621, FoF12733
Paramicrosphaeropsis L.W. Hou, L. Cai & Crous (6)*FoF11523
Phoma Sacc. (= *Atradidymella* M.L. Davey & Currah) (ca 50)*Doth, FoF08229
Phomatodes Qian Chen & L. Cai (3)*FoF08230
Platychora Petr. (1)*FoF08231
Pleurodiscula Höhn. (1)
Pseudoascochyta Valenz.-Lopez, Stchigel, Cano-Canals, Guarro & Cano (2)*FoF08232
Pseudopeyronellaea L.W. Hou, L. Cai & Crous (2)*FoF11528
Remotididymella Valenz.-Lopez, Crous, Cano, Guarro & Stchigel (11)*FoF08233
Rhopographus Nitschke ex Fuckel (ca 20)*Doth, Crous et al. 2022
Sclerotiophoma L.W. Hou, L. Cai & Crous (1)*FoF11531
Similiphoma Valenz.-Lopez, Crous, Cano, Guarro & Stchigel (1)*FoF08234
Stagonosporopsis Died. (ca 40)*Doth, FoF00160
Vacuiphoma Valenz.-Lopez, Cano, Crous, Guarro & Stchigel (4)*Doth, FoF08235
Vandijckomycella Hern.-Restr., L.W. Hou, L. Cai & Crous (2)*Note 530, Doth, FoF08849
Xenodidymella Qian Chen & L. Cai (10)*Doth, FoF08236

Didymosphaeriaceae Munk*FoF00200
Agrorhizomyces Imrefi, D.G. Knapp & Kovács (1)*Imrefi et al. 2024
Alloconiothyrium Verkley, Göker & Stielow (3)*Doth, FoF00028
Austropleospora R.G. Shivas & L. Morin (3)*Doth, FoF00539, Fp117
Barria Z.Q. Yuan (1)*Doth, FoF00030
Bimuria D. Hawksw., Chea & Sheridan (2)*Doth, FoF00032
Camarographium Bubák (8)*Doth, Crous et al. 2022b
Chromolaenicola Mapook & K.D. Hyde (7)*Doth, FoF07783

Curreya Sacc. (9)*FoF08237
Cylindroaseptospora Jayasiri, E.B.G. Jones & K.D. Hyde (2)*Doth, FoF05243
Deniquelata Ariyaw. & K.D. Hyde (6)*Doth, FoF00034
Dictyoarthrinium S. Hughes (ca 10)*Samarakoon et al. 2020a
Didymocrea Kowalski (2)*Doth, FoF08238
Didymosphaeria Fuckel (ca 25)*Doth, FoF00036
Julella Fabre (6)*Doth, FoF00038
Kalmusia Niessl (ca 25)*Doth, FoF00040
Kalmusibambusa Phook., Tennakoon, Thambug. & K.D. Hyde (1)*Doth, FoF03217
Karstenula Speg. (ca 25)*Doth, FoF00042
Laburnicola Wanas., Camporesi, E.B.G. Jones & K.D. Hyde (8)*Doth, FoF01919
Letendraea Sacc. (16)*Doth, FoF00044
Lineostroma H.J. Swart (1)*Doth, FoF01293
Montagnula Berl. (41)*Doth, FoF00048
Neokalmusia Ariyaw. & K.D. Hyde (8)*Doth, FoF00050
Neptunomyces M. Gonçalves, T. Vicente & A. Alves (2)*Doth, FoF08239
Paracamarographium Crous (1)*Crous et al. 2022b
Paracamarosporium Wijayaw. & K.D. Hyde (9)*Doth, FoF08240
Paraconiothyrium Verkley (28)*Doth, FoF00053
Paramassariosphaeria Wanas., E.B.G. Jones & K.D. Hyde (2)*Doth, FoF02293
Paraphaeosphaeria O.E. Erikss. (ca 40*Doth, FoF00057
Phaeodothis Syd. & P. Syd. (ca 20)*Doth, FoF00059
Pleoardoris Pinchi-Davila & Porras-Alfaro (1)*Note 1424
Pseudocamarosporium Wijayaw. & K.D. Hyde (15)*Doth, FoF00007
Pseudodidymocyrtis Flakus, Rodr. Flakus & Etayo (1)*Doth, FoF11542
Pseudopithomyces Ariyaw. & K.D. Hyde (13)*Doth, FoF00937, Fp260
Pseudotrichia Kirschst. (12)*Doth, FoF00784
Spegazzinia Sacc. (ca 25)*Doth, FoF08241
Tremateia Kohlm., Volkm.-Kohlm. & O.E. Erikss. (10)*Doth, FoF00223
Verrucoconiothyrium Crous (3)*Doth, FoF08241
Vicosamyces Firmino, A.R. Machado & O.L. Pereira (1)*Doth, FoF03786
Xenocamarosporium Crous & M.J. Wingf. (1)*Doth, FoF01730

Dothidotthiaceae Crous & A.J.L. Phillips*FoF09123
Belizeana Kohlm. & Volkm.-Kohlm. (1)*Note 65, Doth, FoF09033
Dothidotthia Höhn. (14)*Note 509, Doth, FoF06310
Mycocentrospora Deighton (12)*Doth, FoF07938
Paramycocentrospora Bakhshi & U. Braun (1)*Note 833, FoF15669,
Phaeomycocentrospora Crous, H.D. Shin & U. Braun (1)*Doth, FoF07939
Pleiochaeta (Sacc.) S. Hughes (7)*Doth, FoF07940
Thyrostroma Höhn. (27)*Note 509, Doth, FoF07941, Fp251
Wilsonomyces Adask., J.M. Ogawa & E.E. Butler (1)*Doth, FoF07942

Fuscostagonosporaceae Jayasiri, Camporesi & K.D. Hyde*FoF03780
Fuscostagonospora Kaz. Tanaka & K. Hiray. (5)*Doth*FoF2898

Fusculinaceae Crous*FoF08242
Fusculina Crous & Summerell (3)*Doth, FoF08243
Gordonomyces Crous & Marinc. (1)*Doth, FoF08244

Halojulellaceae Suetrong, K.D. Hyde & E.B.G. Jones*FoF08245
Halojulella Suetrong, K.D. Hyde & E.B.G. Jones (1)*Doth, FoF08246

Omania Maharachch., Wanas. & Al-Sadi (1)*Note 357, Doth, FoF09482

Halotthiaceae Ying Zhang, J. Fourn. & K.D. Hyde*FoF08247
Brunneoclavispora Phook. & K.D. Hyde (2)*Doth, FoF00893
Halotthia Kohlm. (1)*Doth, FoF08248
Mauritiana Poonyth, K.D. Hyde, Aptroot & Peerally (1)*Doth, FoF08249
Neolophiostoma Boonmee & K.D. Hyde (1)*Doth, FoF00961
Pontoporeia Kohlm. (2)*Doth, FoF08250
Sulcosporium Phook. & K.D. Hyde (1)*Doth, FoF00894, Fp129

Hermatomycetaceae Locq.*FoF08251
Hermatomyces Speg. (= *Subicularium* M.L. Farr & Goos) (31)*Doth, FoF08252

Hypsostromataceae Huhndorf*FoF08253
Hypsostroma Huhndorf (3)*Doth, FoF08254

Latoruaceae Crous*FoF07742
Latorua Crous (1)*Doth, FoF07743
Matsushimamyces Rah. Sharma & Roh. Sharma (2)*Doth, FoF07744
Multiverruca H.Y. Wang, Y.F. Han & Z.Q. Liang (1)*Note 1416, FoF16007
Polyschema H.P. Upadhyay (20)*Doth, FoF07745
Pseudoasteromassaria M. Matsum. & Kaz. Tanaka (3)*Doth, FoF00963
Triseptata Boonmee & Phookamsak (1)*Note 519, Doth, FoF07229

Lentimurisporaceae N.G. Liu, J.K Liu & K.D. Hyde*FoF04590
Bahusandhika Subram. (7)*Doth, FoF07231
Lentimurispora N.G. Liu, Bhat & K.D. Hyde (1)*Doth, FoF04591

Lentitheciaceae Y. Zhang ter, C.L. Schoch, J. Fourn., Crous & K.D. Hyde*FoF08256
Crassoascoma Jian K. Liu (1)*Note 576, FoF16008
Darksidea D.G. Knapp, Kovács, J.Z. Groenew. & Crous (7)*Doth, FoF08258
Groenewaldia Rajeshk., R.K. Verma, O.P. Sruthi & Crous (1)*Note 1102, FoF16009
Halobyssothecium Dayar., E.B.G. Jones & K.D. Hyde (13)*Doth, FoF03928
Katumotoa Kaz. Tanaka & Y. Harada (1)*Doth, FoF08259
Keissleriella Höhn. (43)*Coel, Doth, FoF07424
Lentithecium K.D. Hyde, J. Fourn. & Ying Zhang (6)*Doth, FoF08257
Murilentithecium Wanas., Camporesi, E.B.G. Jones & K.D. Hyde (3)*Doth, FoF00293
Neolentithecia C. Phukhams., K.D. Hyde & Y. Li (1)*Note 634, Doth, FoF09841
Neoophiosphaerella Kaz. Tanaka & K. Hiray. (1)*Doth, FoF08260
Paralentithecium H.W. Shen, K.D. Hyde & Z.L. Luo, **nom. inval.** (2)*Note 1051, 1395, FoF16010
Phragmocamarosporium Wijayaw., Yong Wang bis & K.D. Hyde (5)*Doth, FoF08850
Pleurophoma Höhn. (9)*Coel, Doth, FoF07498
Poaceascoma Phook. & K.D. Hyde (6)*Doth, FoF00622
Pseudokeissleriella Jian K. Liu (1) Note 867, FoF12707
Pseudomurilentithecium Mapook & K.D. Hyde (2)*Doth, FoF06791
Pseudosetoseptoria X.G. Tian, K.D. Hyde & Tibpromma (1)*FoF 14287, Tian et al. 2024a
Setoseptoria Quaedvl., Verkley & Crous (9)*Doth, FoF08261
Tingoldiago K. Hiray. & Kaz. Tanaka (3)*Doth, FoF08262
Towyspora Wanas., E.B.G. Jones & K.D. Hyde (1)*Coel, Doth, FoF01671, Fp125

Leptosphaeriaceae M.E. Barr*Coel, FoF01151
Angularia R. Xu, Phukhams. & Y. Li (1)*Note 754, FoF16086

Alloleptosphaeria Ariyaw., Wanas. & K.D. Hyde (4)*Doth, FoF01152
Alternariaster E.G. Simmons (4)*Doth, FoF01154
Chaetoplea (Sacc.) Clem. (23)*Doth, FoF06401
Heterosporicola Crous (3)*Doth, FoF06402
Leptosphaeria Ces. & De Not. (less than 50)*Note 690, Coel, Doth, FoF02297
Longiseptatispora L.W. Hou & Crous (2)*Note 260, Doth, Crous et al. 2020c
Neoleptosphaeria Ariyaw. & K.D. Hyde (2)*Doth, FoF01157
Ochraceocephala Voglmayr & Aiello (1)*Doth, FoF09305
Paraleptosphaeria Gruyter, Aveskamp & Verkley (= *Acicuseptoria* Quaedvl. et al. 2013 *fide* Hongsanan et al. 2020a) (10)*Doth, FoF01159
Plenodomus Preuss (ca 50)*Doth, FoF06403
Praeclarispora Doilom, W. Dong, K. D. Hyde & C. F. Liao (1)*Doth, FoF09225
Pseudoleptosphaeria Ariyaw. & K.D. Hyde (1)*Doth, FoF01162
Quasiphoma Crous (1)*Crous et al. 2022b
Querciphoma Crous (2)*Doth, FoF06404
Sclerenchymomyces Phukhams. & K.D. Hyde (1)*Doth, FoF07287
Sphaerellopsis Cooke (8)*Coel, Doth, FoF06405
Subplenodomus Gruyter, Aveskamp & Verkley (7)*Doth, FoF06406

Leptosphaerioidaceae J.F. Zhang, Jian K. Liu & K.D. Hyde*Zhang et al. 2023
Leptosphaerioides J.F. Zhang, Jian K. Liu & K.D. Hyde (1)*Note 1193, Zhang et al. 2023c

Libertasomycetaceae Crous*FoF08263
Libertasomyces Crous & Roets (4)*Doth, FoF08264
Neoplatysporoides Crous & M.J. Wingf. (2)*Doth, FoF08265

Ligninsphaeriaceae Jin F. Zhang, Jian K. Liu, K.D. Hyde & Zuo Y. Liu*FoF01661
Ligninsphaeria Jin F. Zhang, Jian K. Liu, K.D. Hyde & Zuo Y. Liu (1)*Doth, FoF01662
Ligninsphaeriopsis Phukhams., J.F. Zhang & K.D. Hyde (1)*Doth, FoF07528

Lindgomycetaceae K. Hiray., Kaz. Tanaka & Shearer*FoF08267
Aquimassariosphaeria W. Dong & Doilom (3)*Doth, Note 39, FoF08733
Arundellina Wanas., E.B.G. Jones & K.D. Hyde (1)*Doth, FoF02208
Clohesyomyces K.D. Hyde (2)*Coel, FoF07164
Hongkongmyces C.C.C. Tsang, J.F.W. Chan, Trend.-Sm., A.H.Y. Ngan, I.W.H. Ling, S.K.P. Lau & P.C.Y. Woo (8)*Doth, FoF08269
Lindgomyces K. Hiray., Kaz. Tanaka & Shearer (15)*Doth, FWF, FoF08268
Lolia Abdel-Aziz & Abdel-Wahab (2)*Doth, FoF08270
Muriseptatomyces Crous (1)*Note 1417, FoF16087
Neolindgomyces Jayasiri, E.B.G. Jones & K.D. Hyde (2)*Doth, FWF, FoF05260
Ocellisimilis J. Yang, L.L. Liu & K.D. Hyde (1)*Note 1420, FoF12789
Xenovaginatispora Boonmee, Huanraluek & K.D. Hyde (1)*Note 551, FoF09188

Lizoniaceae Boonmee & K.D. Hyde*FoF03678
Lizonia (Ces. & De Not.) De Not. (17)*Doth, FoF08271

Longiostiolaceae Phukhams., Doilom & K.D. Hyde*FoF07215
Crassiperidium M. Matsum. & Kaz. Tanaka (2)*Doth, Fp15, FoF05595
Longiostiolum Doilom, Ariyaw. & K.D. Hyde (1)*Doth, FoF01881
Shearia Petr. (3)*Doth, FoF01700

Longipedicellataceae Phukhams., Bhat & K.D. Hyde*FoF02665

Longipedicellata H. Zhang, K.D. Hyde & Jian K. Liu (3)*Doth, FoF02665
Pseudoxylomyces Kaz. Tanaka & K. Hiray. (2)*Doth, FoF08272
Submersispora W. Dong, H. Zhang & K.D. Hyde (1)*Doth, Fp175, Note 492, FoF08719

Lophiostomataceae Sacc.*FWF, FoF00796
Alpestrisphaeria Thambug. & K.D. Hyde (1)*Doth, FoF00799
Biappendiculispora Thambug., Kaz. Tanaka & K.D. Hyde (1)*Doth, FWF, FoF01096
Capulatispora Thambug. & K.D. Hyde (1)*Doth, FoF00800
Coelodictyosporium Thambug. & K.D. Hyde (2)*Doth, FoF00802
Crassiclypeus A. Hashim., K. Hiray. & Kaz. Tanaka (1)*Doth, FWF, FoF08273
Desertiserpentica Maharachch., Wanas. & Al-Sadi (1)*Doth, Notes 131, 817, FoF09484
Dimorphiopsis Crous (1)*Doth, FoF01783
Flabellascoma A. Hashim., K. Hiray. & Kaz. Tanaka (6)*Doth, FWF, FoF08275
Guttulispora Thambug., Qing Tian & K.D. Hyde (1)*Doth, FoF00804
Kiskunsagia D.G. Knapp, Imrefi & Kovács (1)*Doth, FoF08276
Lentistoma A. Hashim., K. Hiray. & Kaz. Tanaka (2)*Doth, FWF, FoF08277
Leptoparies A. Hashim., K. Hiray. & Kaz. Tanaka (1)*Doth, Fp19, FoF08278
Lophiohelichrysum Dayar., Camporesi & K.D. Hyde (1)*Doth, FoF00913
Lophiomurispora Wanas. & Mortimer (1)*Doth, Note 263, FoF11581
Lophionema Sacc. (11)*Doth
Lophiopoacea Ariyaw., Thambug. & K.D. Hyde (1)*Doth, FoF00806
Lophiostoma Ces. & De Not. (ca 50)*Doth, FWF, FoF00403
Magnopulchromyces L.B. Conc., Gusmão & R.F. Castañeda (1)*Note 269, Doth, FoF06109
Neopaucispora Wanas., Gafforov & K.D. Hyde (1)*Doth, FoF03986
Neotrematosphaeria Thambug., Kaz. Tanaka & K.D. Hyde (1)*Doth, FWF, FoF00809
Neovaginatispora A. Hashim., K. Hiray. & Kaz. Tanaka (4)*Doth, FWF, FoF08279
Oleaginea W.L. Li & Jian K. Liu (1)*Note 1203
Parapaucispora A. Hashim., K. Hiray. & Kaz. Tanaka (1)*Doth, FoF08280
Paucispora Thambug., Kaz. Tanaka & K.D. Hyde (4)*Doth, FoF00811
Platystomum Trevis. (ca 40)*Doth, FoF00814
Pseudocapulatispora Mapook & K.D. Hyde (2)*Doth, FoF07796
Pseudolophiostoma Thambug., Kaz. Tanaka & K.D. Hyde (3)*Doth, FoF00820
Pseudopaucispora A. Hashim., K. Hiray. & Kaz. Tanaka (2)*Doth, FoF08281
Pseudoplatystomum Thambug. & K.D. Hyde (1)*Doth, FoF00822
Quintaria Kohlm. & Volkm.-Kohlm. (3)*Doth, FWF, FoF08282
Sigarispora Thambug. & K.D. Hyde (18)*Doth, FWF, FoF00823
Vaginatispora K.D. Hyde (10)*Doth, FWF, FoF00828

Lophiotremataceae K. Hiray. & Kaz. Tanaka*FWF, FoF08284
Atrocalyx A. Hashim. & Kaz. Tanaka (9)*Doth, FoF08286
Crassimassarina A. Hashim. & Kaz. Tanaka (1)*Doth, FoF08287
Cryptoclypeus A. Hashim. & Kaz. Tanaka (2)*Doth, FoF08288
Decaisnella Fabre (13)*Doth, FoF08274
Galeaticarpa A. Hashim. & Kaz. Tanaka (1)*Doth, FoF08289
Koordersiella Höhn. (7)*Note 237, Doth, FoF09062
Lophiotrema Sacc. (ca 50)*Doth, FWF, FoF08285
Pseudocryptoclypeus A. Hashim. & Kaz. Tanaka (1)*Doth, FoF08290

Macrodiplodiopsidaceae Voglmayr, Jaklitsch & Crous*FoF08291
Macrodiplodiopsis Petr. (2)*Doth, FoF08292
Pseudochaetosphaeronema Punith. (11)*Doth, FoF08294

Massariaceae Nitschke*FoF06427
Massaria De Not. (ca 50)*Doth
Massarioramusculicola Huanral., Thambug. & K.D. Hyde (1)*Doth, FoF04478
Paramassaria M.C. Samar., & K.D. Hyde (1)*Doth, FoF05213

Massarinaceae Munk*FWF, FoF06497
Byssothecium Fuckel (4)**Doth, FWF, Note 90, FoF06498
Haplohelminthosporium Konta & K.D. Hyde (1)*Doth, Note 199, FoF09169
Helminthosporiella Konta & K.D. Hyde (1)*Doth, Note 205, FoF09171
Helminthosporium Link (= *Helminthosporiella* Hern.-Restr., Sarria & Crous *fide* Hongsanan et al. 2020a) (ca 100)*Doth, FWF, FoF06499
Massarina Sacc. (ca 10)*Doth, FoF06500
Mirohelminthosporium K. Zhang, D.W. Li & R.F. Castañeda (1)*Doth, Note 284, FoF11598
Pseudodidymosphaeria Thambug. & K.D. Hyde (2)*Doth, FoF00465
Pseudosplanchnonema Chethana & K.D. Hyde (1)*Doth, FoF00568
Semifissispora H.J. Swart (5)*Doth, FoF06501
Stagonospora (Sacc.) Sacc. (more than 50)*Coel, Doth, FoF06502
Suttonomyces Wijayaw., Camporesi & K.D. Hyde (3)*Doth, FoF00468
Synhelminthosporium Y.P. Chen & Maharachch. (1)*Chen et al. 2022d

Melanommataceae G. Winter (= *Pseudodidymellaceae* A. Hashim. & Kaz. Tanaka)*FWF, FoF01023
Alpinaria Jaklitsch & Voglmayr (1)*Doth, FoF08295
Aposphaeria Sacc. (ca 50)*Coel,*Doth, FoF00756
Asymmetricospora J. Fröhl. & K.D. Hyde (1)*Doth, FoF00758
Bertiella (Sacc.) Sacc. (6)*Doth, FoF00760
Bicrouania Kohlm. & Volkm.-Kohlm. (1)*Doth, FoF00763
Byssosphaeria Cooke (ca 20)*Doth, FWF, FoF00765
Calyptronectria Speg. (3)*Doth, FoF00767
Camposporium Harkn. (ca 20)*Doth, FWF, FoF08296
Dematiomelanomma Wanas., Y. Gao, H. Gui & K.D. Hyde (1)*Note 1343
Exosporiella P. Karst. (1)*Doth, FoF01024
Fusiconidium Jun F. Li, Phook. & K.D. Hyde (1)*Doth, FoF02516
Herpotrichia Fuckel (ca 50)*Doth, FWF, FoF00770
Mamillisphaeria K.D. Hyde, S.W. Wong & E.B.G. Jones (1)*Doth, FWF, FoF00772
Marjia Wanas., Gafforov & K.D. Hyde (2)*Doth, Fp20, FoF03996
Melanocamarosporioides D. Pem, R. Jeewon, Gafforov & K.D. Hyde (1)*Doth, Note 276, FoF04363
Melanocamarosporium Wijayaw., Camporesi, Bhat & K.D. Hyde (1)*Doth, FoF01522
Melanocucurbitaria Wanas., Gafforov & K.D. Hyde (1)*Doth, Fp22, FoF03999
Melanodiplodia Wanas., Gafforov & K.D. Hyde (1)*Doth, FoF04001
Melanomma Nitschke ex Fuckel (ca 50)*Doth, FWF, FoF00774
Monoseptella Wanas., Gafforov & K.D. Hyde (1)*Doth, Fp23, FoF04003
Muriformistrickeria Q. Tian, Wanas., Camporesi & K.D. Hyde (2)*FoF01035
Navicella Fabre (ca 20)*Doth, FoF00777
Neobyssosphaeria Wanas., E.B.G. Jones & K.D. Hyde (1)*Doth, FoF07281
Petrakia Syd. & P. Syd. (= *Mycodidymella* C.Z. Wei, Y. Harada & Katum.; = *Pseudodidymella* C.Z. Wei, Y. Harada & Katum.*Doth, FoF08301) (11)*Doth, FoF01820
Phragmotrichum Kunze (15)*Doth, FoF08297
Pleotrichocladium Hern.-Restr., R.F. Castañeda & Gené (1)*Doth, FoF08298
Praetumpfia Jaklitsch & Voglmayr (1)*Doth, FoF08299
Pseudobyssosphaeria H.B. Jiang & K.D. Hyde (1)*Doth, FoF08300

Pseudostrickeria Q. Tian, Wanas., Camporesi & K.D. Hyde (3)*Doth, FoF01032
Sarimanas M. Matsum., K. Hiray. & Kaz. Tanaka (2)*Doth, FoF00497
Seifertia Partr. & Morgan-Jones (3)*Doth, FoF08302
Tumularia Descals & Marvanová (2)*Doth, FoF08303
Uzbekistanica Wanas., Gafforov & K.D. Hyde (4)*Doth, Fp29, FoF04008
Vesiculophora J.S. Monteiro & R.F. Castañeda (1)*Note 853
Xenostigmina Crous (1)*Doth, FoF00781

Morosphaeriaceae Suetrong, Sakay., E.B.G. Jones & C.L. Schoch*FWF, FoF08304
Aquihelicascus W. Dong, H. Zhang & Doilom (3)*Doth, Fp141, FWF, Note 38, FoF08721
Aquilomyces D.G. Knapp, Kovács, J.Z. Groenew. & Crous (3)*Doth, FoF08306
Clypeoloculus Kaz. Tanaka & K. Hiray. (4)*Doth, FoF08307
Helicascus Kohlm. (4)*Doth, FoF08308
Minivolcanus Fryar & D.E.A. Catches. (1)*Note 1415
Morosphaeria Suetrong, Sakay., E.B.G. Jones & C.L. Schoch (3)*Doth, FoF06534
Neohelicascus W. Dong, H. Zhang, K.D. Hyde & Doilom (9)*Doth, FWF, Note 312, FoF08722
Neomorosphaeria S.N. Zhang, E.B.G. Jones & K.D. Hyde (1)*Zhang et al. 2024a

Mycoporaceae Zahlbr.*FoF08309
Mycoporum Flot. ex Nyl. (ca 5)*Doth, FoF08310

Neocamarosporiaceae Wanas., Wijayaw., Crous & K.D. Hyde*FoF03556
Dimorphosporicola Crous (1)*Doth, FoF08311
Neocamarosporium Crous & M.J. Wingf. (ca 25)*Doth, FoF00528

Neohendersoniaceae A. Giraldo & Crous*FoF07373
Brevicollum Kaz. Tanaka, A. Hashim. & Toy. Sato (2)*Doth, FoF07374
Crassiparies M. Matsum., K. Hiray. & Kaz. Tanaka (3)*Doth, FoF02024
Medicopsis Gruyter, Verkley & Crous (2)*Doth, FoF08313
Neobrevicollum W.L. Li & Jian K. Liu (2)*Note 1078
Neohendersonia Petr. (4)*Doth, FoF08312
Neomedicopsis Crous & Akulov (1)*Doth, FoF08314

Neomassariaceae H.A. Ariyaw., Jaklitsch & Voglmayr*FoF08315
Neomassaria Mapook, Camporesi & K.D. Hyde (5)*Doth, FoF02437
Pigmentatineomassaria Wijes., Camporesi & K.D. Hyde (1)*Note 1423
Pseudoneohendersonia Y.H. Yang & Manawas. (1)*Yang et al. 2024

Neomassarinaceae Mapook & K.D. Hyde*FoF07798
Neomassarina Phook., Jayasiri & K.D. Hyde (3)*Doth, FoF02259
Pseudohelminthosporium Phukhams. & K.D. Hyde (1)*Doth, FoF07283
Szafranskia Czachura & Piątek (1)*Crous et al. 2024a

Neophaeosphaeriaceae Ariyaw. & K.D. Hyde*FoF01164
Neophaeosphaeria M.P.S. Câmara, M.E. Palm & A.W. Ramaley (6)*Doth, FoF08316

Neopyrenochaetaceae Valenz.-Lopez, Crous, Cano, Guarro & Stchigel*FoF07390
Neopyrenochaeta Valenz.-Lopez, Crous, Stchigel, Guarro & Cano (16)*Coel, Doth, FoF07389

Nigrogranaceae Jaklitsch & Voglmayr*FWF
Nigrograna Gruyter, Verkley & Crous (28)*Doth, FWF, FoF08318

Occultibambusaceae D.Q. Dai & K.D. Hyde*FWF, FoF01973
Brunneofusispora S.K. Huang & K.D. Hyde (6)*Doth, FoF04862
Neooccultibambusa Doilom & K.D. Hyde (6)*Doth, FoF01852
Occultibambusa D.Q. Dai & K.D. Hyde (10)*Doth, FWF, FoF01974
Seriascoma Phook., D.Q. Dai & K.D. Hyde (5)*Doth, FWF, FoF01978
Versicolorisporium Sat. Hatak., Kaz. Tanaka & Y. Harada (1)*Doth, FoF01727
Ohleriaceae Jaklitsch & Voglmayr*FoF08319
Ohleria Fuckel (13)*Doth, FoF00779

Parabambusicolaceae Kaz. Tanaka & K. Hiray.*FWF, FoF06708
Aquastroma Kaz. Tanaka & K. Hiray. (1)*Doth, FWF, FoF08321
Cynodonia Y.P. Tan & P. Wong (1) *Tan & Wong 2024
Kevinia Rajeshk., Verma R., Wijayaw., Karun. & Tibpromma (1)*Note 1054
Lonicericola Phookamsak, Jayasiri & K.D. Hyde (3)*Doth, FoF04962
Multilocularia Phook., Ariyaw. & K.D. Hyde (1)*Doth, FoF01658
Multiseptospora Phook. & K.D. Hyde (1)*Doth, FoF00430
Neoaquastroma Wanas., E.B.G. Jones & K.D. Hyde (4)*Doth, FoF02609
Neomultiseptospora N. Xie, Phookamsak & Hongsanan (1)*Xie et al. 2022b
Parabambusicola Kaz. Tanaka & K. Hiray. (5)*Doth, FWF, FoF08320
Paramonodictys N.G. Liu, K.D. Hyde & J.K. Liu (5)*Doth, FWF, FoF06709
Paramultiseptospora Phookamsak, H.B. Jiang & Chomnunti (1)*Phookamsak et al. 2022
Paratrimmatostroma Jayasiri, Phookamsak, Bhat & K.D. Hyde (1)*Doth, FoF04960
Pseudomonodictys Doilom, Ariyaw., Bhat & K.D. Hyde (3)*Doth, FoF00906
Scolecohyalosporium N. Xie, Phookamsak & Hongsanan (2)*Xie et al. 2022b

Paradictyoarthriniaceae Doilom, Jian K. Liu & K.D. Hyde*FoF00499
Paradictyoarthrinium Matsush. (5)*Doth, FoF00315
Xenomassariosphaeria Jayasiri, Wanas. & K.D. Hyde (2)*Doth, FoF03849

Paralophiostomataceae V.V. Sarma & M. Niranjan*Note 1016, FoF06621
Paralophiostoma V.V. Sarma & M. Niranjan (1)*Doth, FoF06622

Parapyrenochaetaceae Valenz.-Lopez, Crous, Stchigel, Guarro & Cano*FoF08322
Parapyrenochaeta Valenz.-Lopez, Crous, Stchigel, Guarro & Cano (3)*Doth, FoF08323
Quixadomyces Cantillo & Gusmão (3)*Doth, Fp123, FoF08325

Periconiaceae Nann.*FWF, FoF06657
Flavomyces D.G. Knapp, Kovács, J.Z. Groenew. & Crous (1)*Doth, FoF06659
Periconia Tode (= *Bambusistroma* D.Q. Dai & K.D. Hyde; = *Noosia* Crous, R.G. Shivas & McTaggart) (ca 170)*Yang et al. 2022b, Doth, Doth, FoF06660

Phaeoseptaceae S. Boonmee, Thambugala & K.D. Hyde*FWF, FoF04462
Lignosphaeria Boonmee, Thambug. & K.D. Hyde (3)*Doth
Phaeoseptum Ying Zhang, J. Fourn. & K.D. Hyde (7)*Doth, FWF, FoF08326
Pleopunctum N.G. Liu, K.D. Hyde & J.K. Liu (10)*Doth, Fp83, FWF, FoF06113

Phaeosphaeriaceae M.E. Barr*FoF00232
Acericola Wanas., Camporesi, E.B.G. Jones & K.D. Hyde (1)*Doth, FoF03388
Alloneottiosporina Nag Raj (3)*Coel, Doth, Notes 2, 20, FoF07107
Allophaeosphaeria Ariyaw., Camporesi & K.D. Hyde (1)*Doth, FoF00494
Amarenographium O.E. Erikss. (= *Amarenomyces* O.E. Erikss.) (5)*Doth, FoF00237, Rossman et al. 2016

Ampelomyces Ces. ex Schltdl. (16)*FoF00291
Aphanostigme Syd. (21)*Doth, FoF08327
Arezzomyces Y. Marín & Crous (1)*Doth, FoF08328
Banksiophoma Crous (1)*Doth, FoF08329
Bhagirathimyces S.M. Singh & S.K. Singh (1)*Doth, FoF06121
Bhatiellae Wanas., Camporesi & K.D. Hyde (1)*Doth, FoF04013
Bricookea M.E. Barr (1)*Doth, FoF00239
Brunneomurispora Phookamsak, Wanas. & K.D. Hyde (1)*Doth, FoF05699
Camarosporioides W.J. Li & K.D. Hyde (1)*Doth, FoF02350
Chaetosphaeronema Moesz (10)*Coel, Doth, FoF00241
Dactylidina Wanas., Camporesi & K.D. Hyde (1)*Doth, FoF04015
Dematiopleospora Wanas., Camporesi, E.B.G. Jones & K.D. Hyde (6)*Doth, FoF00242
Didymocyrtis Vain. (28)*Doth, FoF08330
Dlhawksworthia Wanas., Camporesi & K.D. Hyde (4)*Doth, FoF04021
Edenia M.C. González, A.L. Anaya, Glenn, Saucedo & Hanlin (2)*Doth, FoF00543
Elongaticollum Tennakoon, C.H. Kuo & K.D. Hyde (1)*Note 148, Doth, FoF07849
Embarria Wanas., Camporesi & K.D. Hyde, (1)*Note 1568, Doth, Fp17, FoF08331
Equiseticola Abdelsalam, Tibpromma, Wanas. & K.D. Hyde (1)*Doth, FoF01242
Eudarluca Speg. (9)*Doth, FoF00245
Galiicola Tibpromma, Camporesi & K.D. Hyde (3)*Doth, FoF00923
Hydeomyces Maharachch., H.A. Ariyaw., Wanas. & Al-Sadi (3)*Doth, FoF05381
Hydeopsis J.F. Zhang, J.K. Liu & Z.Y. Liu (1)*Doth, FoF05837
Italica Wanas., Camporesi & K.D. Hyde (3)*Doth, FoF04024
Jeremyomyces Crous & R.K. Schumach. (1)*Doth, FoF08332
Juncaceicola Tennakoon, Camporesi, Phook. & K.D. Hyde (8)*Doth, FoF02145
Kwanghwana Karun., C.H. Kuo & K.D. Hyde (1)*Doth, FoF08333
Leptospora Rabenh. (ca 25)*Doth, FoF08334
Longispora Phukhams. & K.D. Hyde (1)*Doth, FoF07305
Loratospora Kohlm. & Volkm.-Kohlm. (3)*Doth, FoF00247
Mauginiella Cavara (1)*Doth, FoF08335
Megacoelomyces Dianese, Guterres, M.D.M. Santos & G.F. Sepúlveda (1)*Doth, Fp88, Note 886
Melnikia Wijayaw., Goonas., Bhat & K.D. Hyde (1)*Doth, FoF01528
Murichromolaenicola Mapook & K.D. Hyde (3)*Doth, FoF07805
Muriphaeosphaeria Phukhams., Bulgakov & K.D. Hyde (4)*Doth, FoF00868
Neodacampia Crous & Osieck (1)*Note 1308
Neoophiobolus Mapook & K.D. Hyde (2)*Doth, FoF07808
Neophaeosphaeriopsis H.D. Yang & K.D. Hyde (1)*Note 1068,
Neosetophoma Gruyter, Aveskamp & Verkley (25)*Doth, FoF00249
Neosphaerellopsis Crous & Trakun. (1)*Doth, FoF08336
Neostagonospora Quaedvl., Verkley & Crous (6)*Doth, FoF00250
Neostagonosporella C.L. Yang, X.L. Xu & K.D. Hyde (2)*Doth, FoF05490
Neosulcatispora Crous & M.J. Wingf. (2)*Doth, FoF01686
Nodulosphaeria Rabenh. (47)*Doth, FoF00251
Ophiobolopsis Phook., Wanas. & K.D. Hyde (1)*Doth, FoF03796
Ophiobolus Riess (ca 150)*Doth, FoF00254
Ophiosimulans Tibpromma, Camporesi & K.D. Hyde (2)*Doth, FoF01251
Ophiosphaerella Speg. (13)*Doth, FoF00256
Paraleptospora Mapook & K.D. Hyde (2)*Doth, FoF07810
Paraloratospora Bundhun, Tennakoon, Phookamsak & K.D. Hyde (7)*Doth, FoF07195
Paraophiobolus Phook., Wanas. & K.D. Hyde (3)*Doth, FoF03798
Paraphoma Morgan-Jones & J.F. White (15)*Doth, FoF00259, Fp259
Parastagonospora Quaedvl., Verkley & Crous (27)*Doth, FoF00260

Parastagonosporella M. Bakhshi, Arzanlou & Crous (1)*Doth, FoF08337
Phaeopoacea Thambug., Dissan. & K.D. Hyde (4)*Doth, FoF03200
Phaeoseptoriella Crous (3)*Doth, FoF08338
Phaeosphaeria I. Miyake (= *Phaeoseptoria* Speg. *fide* Hongsanan 2020a) (ca 150)*Doth, FoF00233
Phaeosphaeriopsis M.P.S. Câmara, M.E. Palm & A.W. Ramaley (18)*Doth, FoF00264
Phaeostagonospora A.W. Ramaley (1)*Doth, FoF00267
Piniphoma Crous & R.K. Schumach. (1)*Doth, FoF08339
Polydomus S. Ashrafi & W. Maier (1)*Note 1391
Populocrescentia Wanas., E.B.G. Jones & K.D. Hyde (3)*Doth, FoF00952
Pseudoophiobolus Phook., Wanas. & K.D. Hyde (9)*Doth, FoF03800
Pseudoophiosphaerella J.F. Zhang, J.K. Liu & Z.Y. Liu (1)*Doth, FoF05835
Pseudophaeosphaeria Jayasiri, Camporesi & K.D. Hyde (1)*FoF02345
Pseudostaurosphaeria Mapook & K.D. Hyde (2)*Doth, FoF07813
Sclerostagonospora Höhn. (18)*Doth, FoF01584
Scolicosporium Lib. ex Roum. (10)*Doth, FoF01692
Septoriella Oudem. (= *Poaceicola* W.J. Li, Camporesi, Bhat & K.D. Hyde*Doth; = *Wojnowicia* Sacc.) (ca 50)*Doth, FoF00304
Setomelanomma M. Morelet (1)*Doth, FoF00271
Setophoma Gruyter, Aveskamp & Verkley (15)*Doth, FoF00273
Sulcispora Shoemaker & C.E. Babc. (1)*Doth, FoF00444
Tiarospora Sacc. & Marchal (3)*Doth, FoF00274
Tintelnotia S.A. Ahmed, Hofmüller, M. Seibold & de Hoog (2)*Doth, FoF08339
Tretospeira Piroz. (2)**Note 791
Vagicola Chethana & K.D. Hyde (1)*FoF00908
Vittaliana Devadatha, Nikita, A. Baghela & V.V. Sarma (1)*Doth, FoF04668
Vrystaatia Quaedvl., W.J. Swart, Verkley & Crous (1)*Doth, FoF00275
Wingfieldomyces Y. Marín & Crous (2)*Doth, FoF08341
Wojnowiciella Crous, Hern.-Restr. & M.J. Wingf. (10)*Doth, FoF01729
Xenophaeosphaeria Crous & M.J. Wingf. (1)*Doth, FoF08342
Xenophoma Crous & Trakun. (2)*Doth, FoF08343
Xenoseptoria Quaedvl., H.D. Shin, Verkley & Crous (1)*Doth, FoF00277
Yunnanensis Karun., Phook. & K.D. Hyde (2)*Doth, FoF03725

Pleomassariaceae M.E. Barr*FWF, FoF06430
Beverwykella Tubaki (3)*Doth, FoF00762
Lichenopyrenis Calat., M.J. Sanz & Aptroot (1)*Doth, FoF06433
Peridiothelia D. Hawksw. (3)*Doth, FoF06435
Prosthemium Kunze (13)*Doth, FoF06431
Splanchnonema Corda (= *Myxocyclus* Riess; = *Pleomassaria* Speg.) (ca 40)*FWF, FoF06437

Pleomonodictydaceae Hern.-Restr., J. Mena & Gené*FWF, FoF08344
Pleomonodictys Hern.-Restr., J. Mena & Gené (2)*Doth, FWF, FoF08345
Pleohelicoon Jayasiri, E.B.G. Jones & K.D. Hyde (2)*Doth, FoF05271

Pleosporaceae Nitschke, FoF00500
Allonecte Syd. (3)*Doth, FoF08347
Alternaria Nees (= *Pseudoalternaria* D.P. Lawr., Gannibal, Dugan & B.M. Pryor) (ca 400)*Doth, FoF00501, Fp121
Bipolaris Shoemaker (= *Cochliobolus* Drechsler) (ca 50)*Doth, FoF00503
Clathrospora Rabenh. (24)*Doth, FoF00505
Cnidariophoma Crous & Yarden (1)*Note 1311,

Comoclathris Clem. (44)*Doth, Fp97, FoF00507
Curvularia Boedijn (206)*Doth, FoF00510
Decorospora Inderb., Kohlm. & Volkm.-Kohlm. (1)*Doth, FoF00514
Diademosa Shoemaker & C.E. Babc. (4)*Doth, FoF00516
Dichotomophthora Mehrl. & Fitzp. ex P.N. Rao (6)*Doth, FoF08348
Exserohilum K.J. Leonard & Suggs (ca 35)*Doth, FoF00518
Extrawettsteinina M.E. Barr (2)*Doth, FoF00520
Gibbago E.G. Simmons (1)*Note 182, Doth, FoF00522
Johnalcornia Y.P. Tan & R.G. Shivas (1)*Doth, FoF00524
Neostemphylium Torres-Garcia, Gené & Cano (1)*Note 767
Paradendryphiella Woudenb. & Crous (2)*Doth, FoF00530
Platysporoides (Wehm.) Shoemaker & C.E. Babc. (11)*Doth, FoF00532
Pleocatenata Y.R. Sun, Yong Wang bis & K.D. Hyde (1)*Note 628, FoF10630
Pleoseptum A.W. Ramaley & M.E. Barr (1)*Doth, FoF07387
Porocercospora Amaradasa, Amundsen, Madrid & Crous (1)*Doth, FoF00536
Prathoda Subram. (2)*FoF09131
Pseudoyuconia Lar.N. Vassiljeva (1)*Doth, FoF00537
Pyrenophora Fr. (= *Marielliottia* Shoemaker) (ca 100)*Doth, FoF000009
Scleromyces Torres-Garcia, Dania García & Gené (1)*Note 772
Sinomyces Yong Wang bis & X.G. Zhang (2)
Stemphylium Wallr. (= *Pleospora* Rabenh. ex Ces. & De Not.) (ca 100)*Doth, FoF07388
Tamaricicola Thambug., Camporesi & K.D. Hyde (1)*Doth, FoF02153
Typhicola Crous (1)*Doth, FoF07524

Profundisphaeriaceae J.F. Zhang, Jian K. Liu & K.D. Hyde*Zhang et al. 2023c
Profundisphaeria J.F. Zhang, Jian K. Liu & Z.Y. Liu (1)*Note 1052

Pseudoastrosphaeriellaceae Phook. & K.D. Hyde*FWF, FoF01233
Carinispora K.D. Hyde (2)*Doth, FoF08349
Pseudoastrosphaeriella Phook., Z.L. Luo & K.D. Hyde (7)*Doth, FWF, FoF01234
Pseudoastrosphaeriellopsis Devadatha, Wanas., Jeewon & V.V. Sarma (1)*Doth, FoF05706

Pseudoberkleasmiaceae Phukhams., Akulov & K.D. Hyde*FoF05311
Pseudoberkleasmium Tibpromma & K.D. Hyde (4)*Doth, FoF08350

Pseudocoleodictyosporaceae Doilom & K.D. Hyde*FoF01856
Pseudocoleodictyospora Doilom & K.D. Hyde (3)*Doth, FoF01857
Subglobosporium Doilom & K.D. Hyde (1)*Doth, FoF01861

Pseudolophiotremataceae K.D. Hyde & Hongsanan*FoF05108
Clematidis Tibpromma, Camporesi & K.D. Hyde (1)*Doth, FoF01813
Pseudolophiotrema A. Hashim. & Kaz. Tanaka (1)*Doth, FoF08351

Pseudomassarinaceae Phukhams & K.D. Hyde*FoF07212
Pseudomassarina Phukhams. & K.D. Hyde (1)*Doth, FoF07213

Pseudopyrenochaetaceae Valenz.-López, Crous, Stchigel, Guarro & Cano*FoF08352
Pseudopyrenochaeta Valenzuela-López, Crous, Stchigel, Guarro & Cano (2)*Doth, FoF08353

Pyrenochaetopsidaceae Valenz.-López, Crous, Cano, Guarro & Stchigel*FoF08355
Neopyrenochaetopsis Valenz-López, Cano, Guarro & Stchigel (1)*Doth, FoF08358
Pyrenochaetopsis Gruyter, Aveskamp & Verkley (23)*Doth, FoF08356

Xenopyrenochaetopsis Valenz.-Lopez, Crous, Stchigel, Guarro & Cano (1)*Doth, FoF08359

Roussoellaceae Jian K. Liu, Phook., D.Q. Dai & K.D. Hyde*FWF, FoF08360
Cytoplea Bizz. & Sacc. (19)*Doth, FoF01788
Elongatopedicellata Jin F. Zhang, Jian K. Liu, K.D. Hyde & Zou Y. Liu (2)*Doth, FoF00959
Immotthia M.E. Barr (3)*Doth, FoF08362
Neoroussoella Jian K. Liu, Phook. & K.D. Hyde (14)*Doth, FWF, FoF08363
Nothoroussoella M. Li & L. Cai (1)*Note 1516
Pararoussoella Wanas., E.B.G. Jones & K.D. Hyde (5)*Doth, Fp104, FoF04056
Pseudoneoconiothyrium Wanas., Phukhams., Camporesi & K.D. Hyde (2)*Doth, FoF04054
Pseudoroussoella Mapook & K.D. Hyde (2)*Doth, FoF07818
Roussoella Sacc. (ca 40)*Doth, FWF, FoF01689
Roussoellopsis I. Hino & Katum. (3)*Doth, FoF01778
Setoarthopyrenia Mapook & K.D. Hyde (1)*Doth, FoF07820
Xenoroussoella Mapook & K.D. Hyde (1)*Doth, FoF07822

Salsugineaceae K.D. Hyde & Tibpromma*FoF08364
Acrocordiopsis Borse & K.D. Hyde (2)*Doth, FoF00786
Salsuginea K.D. Hyde (3)*Doth, FoF08365

Shiraiaceae Y.X. Liu, Zou Y. Liu & K.D. Hyde*FoF06202
Grandigallia M.E. Barr, Hanlin, Cedeño, Parra & R. Hern. (1)*Doth FoF06204
Neoshiraia H.A. Ariyaw. (2)*Doth, Note 325
Rubroshiraia D.Q. Dai & K.D. Hyde (1)*Doth, FoF06204
Shiraia Henn. (1)*Doth, FoF06203

Sporormiaceae Munk*FoF06565
Chaetopreussia Locq.-Lin. (1)*FoF06566
Forliomyces Phukhams., Camporesi & K.D. Hyde (1)*Doth, FoF01824
Pleophragmia Fuckel (4)*Doth, FoF06567
Preussia Fuckel (ca 60)*Doth, FoF06568
Sparticola Phukhams., Ariyaw., Camporesi & K.D. Hyde (4)*Doth, FoF01827
Sporormia De Not. (ca 50)*Doth, FoF06569
Sporormiella Ellis & Everh. (ca 60)*Doth, FoF07980
Sporormurispora Wanas., Bulgakov, Gafforov & K.D. Hyde (3)*Doth, FoF04048
Trichophoma Magaña-Dueñas, Cano & Stchigel (1)*Doth, Note 515, FoF11729
Westerdykella Stolk (14)*Doth, FoF06570
Xenomonodictys Hern.-Restr., Karimi, Alizadeh & T. Ghanbary (1)*Doth, Note 539, FoF11732

Striatiguttulaceae S.N. Zhang, K.D. Hyde & J.K. Liu*FoF05032
Longicorpus S.N. Zhang, K.D. Hyde & J.K. Liu (1)*Doth, FoF05036
Striatiguttula S.N. Zhang, K.D. Hyde & J.K. Liu (2)*Doth, FoF05033

Sublophiostomataceae Hongsanan, Phookamsak, K.D. Hyde & Cheewangkoon*Note 1018
Sublophiostoma Phookamsak, Hongsanan & K.D. Hyde (1)*Note 552, FoF09402

Sulcatisporaceae Kaz. Tanaka & K. Hiray.*FoF06031
Anthosulcatispora Phukhams. & K.D. Hyde (1)*Doth, FoF07340
Kazuakitanaka Wanas. (2)*Note 681
Loculosulcatispora G.C. Ren & K.D. Hyde (4)*Doth, FoF07977
Magnicamarosporium Kaz. Tanaka & K. Hiray. (2)*Doth, FoF01684
Neobambusicola Crous & M.J. Wingf. (3)*Doth, FoF06695

Parasulcatispora Phukhams. & K.D. Hyde (1)*Doth, FoF01686
Pseudobambusicola Hern.-Restr. & Crous (1)*Doth, FoF07393
Sulcatispora Kaz. Tanaka & K. Hiray. (3)*Doth, FoF01712
Uniappendiculata Tibpromma (1)*Note 553, FoF10421

Teichosporaceae M.E. Barr*FoF00830
Asymmetrispora Thambug. & K.D. Hyde (1)*Doth, FoF00833
Aurantiascoma Thambug. & K.D. Hyde (3)*Doth, FoF00834
Chaetomastia (Sacc.) Berl. (13)*Doth, FoF08369
Floricola Kohlm. & Volkm.-Kohlm. (6)*Doth, FoF00896
Lendemeriella S.Y. Kondr. (10)*Doth, FoF11742
Loculohypoxylon M.E. Barr (1)*Doth, FoF08370
Magnibotryascoma Thambug. & K.D. Hyde (5)*Doth, FoF00835
Misturatosphaeria Mugambi & Huhndorf (1)*Doth, FoF00831
Parateichospora Crous (1)*Note 678, FoF13360
Paulkirkia Wijayaw., Wanas., Tangthir., Camporesi & K.D. Hyde (1)*Doth, FoF01677
Pseudoaurantiascoma Thambug. & K.D. Hyde (1)*Doth, FoF00837
Pseudocyclothyriella Phukhams. & Phookamsak (1)*Doth, Note 418, FoF09539
Pseudomisturatosphaeria Thambug. & K.D. Hyde (1)*Doth, FoF00838
Pseudoteichospora X.G. Tian, K.D. Hyde & Tibpromma (1)*Tian et al. 2024b
Ramusculicola Thambug. & K.D. Hyde (1)*Doth, FoF00839
Sinodidymella J.Z. Yue & O.E. Erikss. (5)*Doth, FoF08371
Teichospora Fuckel (ca 50)*Doth, FoF08367

Testudinaceae Arx*FWF, FoF08372
Angustospora Abdel-Aziz (1)*Doth, FWF, FoF01632
Halotestudina Dayar. & K.D. Hyde (1)*Doth, Note 193, FoF06170
Lepidosphaeria Parg.-Leduc (2)*Doth, FoF04643
Lojkania Rehm (10)*Doth, FoF00580
Montanitestudina Maharachch., Wanas. & Al-Sadi (1)*Doth, Notes 285, 849, FoF09487
Muritestudina Wanas., E.B.G. Jones & K.D. Hyde (1)*Doth, FoF03866
Neotestudina Segretain & Destombes (2)*Doth, FoF04644
Testudina Bizz. (1)*Doth, FoF08373
Ulospora D. Hawksw., Malloch & Sivan. (1)*Doth, FoF04645
Verruculina Kohlm. & Volkm.-Kohlm. (1)*Doth, FoF06535

Tetraplosphaeriaceae Kaz. Tanaka & K. Hiray*FWF, FoF06665
Aquatisphaeria W.L. Li, N.G. Liu & Jian K. Liu (1)*Doth, Notes 35, 997
Byssolophis Clem. (2)*Doth, Note 89, FoF09039
Ernakulamia Subram. (4)*Doth, FWF, FoF06667
Polyplosphaeria Kaz. Tanaka & K. Hiray. (5)*Doth, FoF06668
Pseudopolyplosphaeria J.F. Zhang, Y.Y. Chen & Jian K. Liu (1)*Note 1191
Pseudotetraploa Kaz. Tanaka & K. Hiray. (5)*Doth, FoF06669
Quadricrura Tanaka, K. Hiray. & Sat. Hatak. (3)*Doth, FoF06670
Shrungabeeja V.G. Rao & K.A. Reddy (7)*Doth, FWF, FoF06671
Tetraploa Berk. & Broome (= *Tetraplosphaeria* Kaz. Tanaka & K. Hiray.) (ca 30)*Doth, FWF, FoF06666
Triplosphaeria Kaz. Tanaka & K. Hiray (5)*Doth, FWF, FoF06672

Thyridariaceae Q. Tian & K.D. Hyde*FoF08374
Chromolaenomyces Mapook & K.D. Hyde (1)*Doth, FoF07824
Cycasicola Wanas., E.B.G. Jones & K.D. Hyde (2)*Doth, FoF04052

Liua Phookamsak & K.D. Hyde (1)*Doth, FoF05709
Parathyridaria Jaklitsch & Voglmayr (12)*Doth, FoF08377
Parathyridariella Prigione, A. Poli, E. Bovio & Varese (1)*Doth, Note 376, FoF11758
Pseudothyridariella Mapook & K.D. Hyde (3)*Doth, FoF07826
Thyridaria Sacc. (ca 40)*Doth, FoF08375
Thyridariella Devadatha, V.V. Sarma, K.D. Hyde, Wanas. & E.B.G Jones (1)*Doth, FoF03860
Vaginospora W.H. Tian, Y. Jin & Maharachch. (1)*Tian et al. 2024c

Torulaceae Corda*****FWF, FoF01740
Cylindrotorula Rajeshkumar, Wijayaw. & Bhat (1)*Doth, Note 761, FoF08026
Dendryphion Wallr. (ca 50)*Doth, FWF, FoF01741
Neotorula Ariyaw., Z.L. Luo & K.D. Hyde (2)*Doth, FWF, FoF01748
Rostriconidium Z.L. Luo, K.D. Hyde & H.Y. Su (3)*Doth, FWF, FoF03764
Rutola J.L. Crane & Schokn. (1)*Doth, FoF06656
Sporidesmioides Jun F. Li, Phook. & K.D. Hyde (1)*Doth, FoF02515
Torula Pers. (ca 50)*Doth, FWF, FoF01740

Trematosphaeriaceae K.D. Hyde, Y. Zhang ter, Suetrong & E.B.G. Jones*FWF, FoF08378
Bryosphaeria Döbbeler (9)*Doth, FoF08381
Falciformispora K.D. Hyde (5)*Doth, FWF, FoF08382
Fuscosphaeria D.G. Knapp & Pintye (1)*Doth, Note 173, 1098, FoF11764
Hadrospora Boise (1)*Doth, FWF, FoF00285
Halomassarina Suetrong, Sakay., E.B.G. Jones, Kohlm., Volkm.-Kohlm. & C.L. Schoch (1)*Doth, FoF08383
Raghukumaria Devadatha, V.V Sarma & E.B.G Jones (1)*Doth, FoF08384
Trematosphaeria Fuckel (ca 50)*Doth, FWF, FoF08379

Tzeananiaceae H.A. Ariyaw., A.J.L. Phillips & W.Y. Chuang*FoF08385
Tzeanania H.A. Ariyaw., A.J.L. Phillips & W.Y. Chuang (1)*Doth, FoF08386

Wicklowiaceae Ariyaw. & K.D. Hyde*FWF, FoF00966
Wicklowia Raja, A. Ferrer & Shearer (4)*Doth, FWF, FoF08388

Zopfiaceae G. Arnaud ex D. Hawksw.*FoF08390
Celtidia J.M. Janse (1)*FoF08393
Coronopapilla Kohlm. & Volkm.-Kohlm. (2)*Doth, FoF08394
Rechingeriella Petr. (3)*Doth, FoF08395
Richonia Boud. (3)*Doth, FoF08396
Zopfia Rabenh. (6)*Doth, FoF08391
Zopfiofoveola D. Hawksw. (1)*FoF08397

Pleosporales genera *incertae sedis**FWF
Aegeanispora E.B.G. Jones & Abdel-Wahab (1)*Doth
Antealophiotrema A. Hashim. & Kaz. Tanaka (2)
Ascorhombispora L. Cai & K.D. Hyde (1)*Doth, FWF
Briansuttonia R.F. Castañeda, Minter & Saikawa (1)*Doth
Chaetodiplodia P. Karst. (19)*Doth
Chaetophoma Cooke (12)*Coel, Doth
Cheiromoniliophora Tzean & J.L. Chen (1)*Doth
Cyclothyrium Petr. (1)*Doth
Dangeardiella Sacc. & P. Syd. (2)*Doth
Daruvedia Dennis (1)*Doth

Dokmaia Promp. (1)*Doth
Farasanispora Abdel-Wahab, Bahkali & E.B.G. Jones (1)*Doth
Fusiformiseptata W. Dong, H. Zhang & K.D. Hyde (1)*Doth, FWF, Note 176, FoF09283
Glaxoa P.F. Cannon (1) Doth
Hobus Jaklitsch & Voglmayr (1)*Doth
Homostegia Fuckel (22)*Doth, FoF09061
Inflatispora Y. Zhang ter, J. Fourn. & K.D. Hyde (2)*Doth
Isthmosporella Shearer & J.L. Crane (1)*Doth, FWF
Lorrainsmithia Y.P. Tan, Minns & E. Lacey*Tan et al. 2024
Mangifericomes E.F. Yang & Tibpromma (1)*Note 544, Doth, FoF10595
Megacapitula J.L. Chen & Tzean (1)*Doth
Megatomentella D.A.C. Almeida, Gusmão & A.N. Mill. (1)*Doth
Neocamarographium Crous (1)*Crous et al. 2022b
Neochrosporium R.P. Liu, Meng Zhang & Y.H. Geng (1)*Note 1195
Neocurreya Thambug. & K.D. Hyde (5)*Doth
Ostropella (Sacc.) Höhn. (9)*Doth
Paraepicoccum Matsush. (1)*Doth, FoF02155
Paraliomyces Kohlm. (1)*Doth
Parameliola Hongsanan, Peršoh & K.D. Hyde (2)*Doth, Fp119
Parastenospora Crous (1)*Note 877
Perthomyces Crous (1)*Doth
Phialophorophoma Linder (1)*Doth, Coel
Pleosphaerellula Naumov & Czerepan. (2)*Doth
Pseudohendersonia Crous & M.E. Palm (2)*Doth
Pseudomultiseptospora Phookamsak, Rajeshk., Karun. & Wijayaw. (1)*Note 1196
Pyrenochaeta De Not. (86)*Doth
Rebentischia P. Karst. (12)*Doth,*FWF
Repetophragma Subram. (34)*Doth
Scleroramularia Batzer & Crous (7)*Doth
Setophaeosphaeria Crous & Y. Zhang ter (6)*Doth
Sirodesmium De Not. (4)*Doth
Spiroplana Voglmayr, M.J. Park & H.D. Shin (1)*Doth
Stuartella Fabre (6)*Doth
Xenolophium Syd. (7)*Doth

Pleosporomycetidae genus *incertae sedis*
Hysterographium Corda (86)*Doth

Dothideomycetes orders *incertae sedis*
Abrothallales Pérez-Ort. & Suija [= *Lichenoconiales* Diederich, Lawrey & K.D. Hyde]*FoF08045
Lichenoconiaceae Diederich & Lawrey*FoF08046 (= *Abrothallaceae* Pérez-Ort. & Suija)
Abrothallus De Not (= *Epinephroma* Zhurb.; = *Vouauxiomyces* Dyko & D. Hawks.) (56)*Doth, FoF08048
Lichenoconium Petr. & Syd. (18)*Doth, FoF08047

Acrospermales Minter, Peredo & A.T. Watson*FoF06407
Acrospermaceae Fuckel*FoF06380
Acrospermum Tode (54)*Doth, FoF06381
Gonatophragmium Deighton (18)*Doth, FoF06486
Oomyces Berk. & Broome (9)*Doth, FoF06488
Pseudoacrospermum Crous (1)*Doth, Note 414, FoF11851
Pseudovirgaria H.D. Shin, U. Braun, Arzanlou & Crous (2)*Doth, FoF06487

Radulidium Arzanlou, W. Gams & Crous (4)*Doth

Asterinales M.E. Barr ex D. Hawksw. & O.E. Erikss. (= *Asterotexales* Firmino, O.L. Pereira & Crous)*FoF07605
Asterinaceae Hansf.*FoF06726
Asterina Lév. (= *Asterolibertia* G. Arnaud; = *Asterostomella* Speg. (87) (ca 700)*Marasinghe et al. 2023, Doth, FoF06727
Asterinella Theiss.(ca 35)*Doth, FoF06729
Batistinula Arx (1)*Doth, FoF06732
Gangamyces Hosag. (2)*Doth
Halbania Racib. (3)*Doth, FoF06735
Meliolaster Höhn. (3)*Doth, FoF06738
Platypeltella Petr. (3)*Doth, FoF06741
Prillieuxina G. Arnaud (65)*Doth, FoF06742
Pycnocarpon Theiss. (4)*Doth, FoF07606
Trichasterina G. Arnaud (11)*Doth, FoF06744
Trichopeltospora Bat. & Cif. (2)*Doth, FoF06745

Asterotexaceae Firmino, O.L. Pereira & Crous*FoF07607
Asterotexis Arx (2)*Doth, FoF06766
Neomackenziella Crous & Osieck (1)*Note 1105

Brunneofissuraceae Marasinghe, Hongsanan & K.D. Hyde*Note 758,
Brunneofissura Marasinghe, Hongsanan & K. D Hyde (1)*Note 757, Doth, Fp90

Cylindrohyalosporaceae Tennakoon, C.H. Kuo, S. Hongsanan & K.D. Hyde*Note 758,
Cylindrohyalospora Tennakoon, C.H. Kuo & K.D. Hyde (1)*Note 991, Doth, FoF09327

Hemigraphaceae D.Q. Dai & K.D. Hyde*FoF03910
Hemigrapha (Müll. Arg.) R. Sant. ex D. Hawksw. (9)*Doth, FoF02311

Lembosiaceae Hosag.*Note 643, FoF07609
Andamanomyces Hosag. (1)*Doth, Note 28
Cirsosia G. Arnaud (16)*Doth, Note 643, FoF06734
Echidnodella Theiss. & Syd. (32)*Doth, Note 643, FoF06761
Echidnodes Theiss. & Syd. (30)*Doth, Note 643, FoF07949
Eupelte Syd. (4)*Doth, Note 643
Lembosia Lév (ca 160)*Doth, Note 643, FoF06736
Maheshwaramyces Hosag. (2)*Doth, Note 643
Marthomamyces L.K. Mathew, Jac. Thomas & N.N. Nair (1)*Doth, Note 643, FoF09833

Melaspileellaceae D.Q. Dai & K.D. Hyde*FoF03911
Melaspileella (P. Karst.) Boud. (4)*Doth, FoF07733

Morenoinaceae Hongsanan & K.D. Hyde*FoF07611
Morenoina Theiss. (27)*Doth, FoF07612

Neobuelliellaceae Hongsanan & K.D. Hyde*FoF07614
Neobuelliella Hongsanan & K.D. Hyde (1)*Doth, FoF07615

Oblongohyalosporaceae Tennakoon, C.H. Kuo, S. Hongsanan & K.D. Hyde*Note 1411
Oblongohyalospora Tennakoon, C.H. Kuo & K.D. Hyde (1)*Doth, FoF09330, Note 1409

Stictographaceae D.Q. Dai & K.D. Hyde*FoF03912
Actinocladium Ehrenb. (9)*Note 763
Buelliella Fink (13)*Doth, FoF03625
Karschia Körb. (51)*Doth, FoF07619
Labrocarpon Etayo & Pérez-Ort. (2)*Doth, FoF07620
Melaspileopsis (Müll. Arg.) Ertz & Diederich (1)*Doth, FoF07621
Neoacrodictys J.W. Xia & X.G. Zhang (1)*Notes 763, 881
Stictographa Mudd (1)*Doth, FoF 07617

Asterinales genera *incertae sedis*
Calothyriopsis Höhn. (4)*Doth, FoF06750
Caribaeomyces Cif. (1)*Doth
Caudella Syd. & P. Syd. (4)*Doth
Discopycnothyrium Hongsanan & K.D. Hyde (1)*Doth
Dothidasteromella Höhn. (11)*Doth, Note 143, FoF06236
Hazslinszkya Körb. (4)*Doth
Inocyclus Theiss. & Syd. (8)*Doth
Melanographa Müll. Arg. (9)*Doth
Parasterinopsis Bat. (3)*Doth, FoF06739
Pirozynskiella S. Hughes (3)*Doth
Schenckiella Henn. (1)*Doth, FoF06743
Spiralomyces Crous & Jurjević. (1)*Note 999
Uleothyrium Petr. (2)*Doth, FoF06762
Vishnumyces Hosag. (1)*Doth
Vizellopsis Bat., J.L. Bezerra & T.T. Barros (1)*Doth, FoF06746

Aulographales Crous, Spatafora, Haridas & I.V. Grig.*Note 54, FoF12966
Aulographaceae Luttr. ex P.M. Kirk, P.F. Cannon & J.C. David*Note 54, FoF06201
Aulographum Lib. (41)*Doth, FoF06202
Lembosiella Sacc. (1)*Doth, FoF07948
Thyriopsis Theiss. & Syd. (2)*Doth, FoF07950

Rhizodiscinaceae Crous, Spatafora, Haridas & I.V. Grig.*Note 54, FoF12985
Rhizodiscina Hafellner (5)*Doth, FoF00361

Botryosphaeriales C.L. Schoch, Crous & Shoemaker, FoF07659
Aplosporellaceae Slippers, Boissin & Crous, FoF00113
Alanomyces Roh. Sharma (1)*Doth, FoF07623
Aplosporella Speg. (= *Bagnisiella* Speg.) (ca 275)*Doth, FoF01427

Botryosphaeriaceae Theiss. & Syd. (= *Endomelanconiopsidaceae* Tao Yang & Crous), FoF00116
Alanphillipsia Crous & M.J. Wingf. (5)*Doth, FoF01417
Barriopsis A.J.L. Phillips, A. Alves & Crous (5)*Doth,*Fp248, FoF01679
Botryobambusa Phook., Jian K. Liu & K.D. Hyde (3)*Doth, FoF02408
Botryosphaeria Ces. & De Not. (= *Fusicoccum* Corda) (ca 150)*Coel, Doth, FoF00141
Cophinforma Doilom, Jian K. Liu & K.D. Hyde (3)*Doth, FoF07624
Diplodia Fr. (ca 400)*Doth, FoF00147
Dothiorella Sacc. (= *Spencermartinsia* A.J.L. Phillips, A. Alves & Crous 2008) (ca 260)*Doth, FoF00148, Fp6
Endomelanconiopsis E.I. Rojas & Samuels (3)*Doth, FoF07625
Eutiarosporella Crous (7)*Coel, Doth, Fp176, FoF07365

Gibberidea Fuckel, **nom. inval.** (ca 100)*Note 183, 1594, FoF09057
Lasiodiplodia Ellis & Everh. (= *Lasiodiplodiella* Zambett.) (85)*Doth, FoF00151
Macrophomina Petr. (5)*Doth, FoF07626
Marasasiomyces Crous (1)*Coel, Doth, FoF07440
Mucoharknessia Crous, R.M. Sánchez & Bianchin (2)*Coel, Doth, FoF01651
Neodeightonia C. Booth (13)*Doth, FoF07627
Neofusicoccum Crous, Slippers & A.J.L. Phillips (ca 60)*Coel, Doth, FoF00153
Neoscytalidium Crous & Slippers (5)*Doth, FoF07628
Oblongocollomyces Tao Yang & Crous (2)*Doth, FoF08049
Phaeobotryon Theiss. & Syd. (11)*Doth, FoF07629
Sakireeta Subram. & K. Ramakr. (1)*Coel, Doth, FoF07583
Sardiniella Linald., A. Alves & A.J.L. Phillips (4)*Doth, FoF02405
Sphaeropsis Sacc. (= *Phaeobotryosphaeria* Speg.) (8)*Doth, FoF01704
Tiarosporella Höhn. (8)*Coel, Doth, FoF00333

Melanopsaceae Phillips A.J.L., Slippers, Boissin & Crous, FoF07630
Melanops Nitschke ex Fuckel (ca 60)*Coel, Doth, FoF07442

Phyllostictaceae Fr. (= *Pseudofusicoccumaceae* Tao Yang & Crous), FoF02296
Phyllosticta Pers. (ca 53)*Coel, Doth, FoF00155
Pseudofusicoccum Mohali, Slippers & M.J. Wingf. (9),*Doth, FoF05299

Planistromellaceae M.E. Barr, FoF06689
Planistroma A.W. Ramaley (5)*Doth, FoF06264
Kellermania Ellis & Everh. (= *Planistromella* A.W. Ramaley) (ca 20)*Coel, Doth, FoF06690
Knudsenia Y. Joshi (1)*Note 1557
Umthunziomyces Crous & M.J. Wingf. (1)*Doth, FoF06718

Saccharataceae Slippers, Boissin & Crous (= *Septorioideaceae* Wyka & Broders), FoF02296
Pileospora Tanney & Seifert (1)*Doth, FoF11899
Saccharata Denman & Crous (= *Neoseptorioides* Crous, Jacq. Edwards & Pascoe *fide* Hongsanan et al. 2020a) (21)*Doth, FoF02297
Septorioides Quaedvl., Verkley & Crous (2)*Doth, FoF06278

Botryosphaeriales genera *incertae sedis*
Auerswaldiella Theiss. & Syd. (9)*Doth
Mycosphaerellopsis Höhn. (1)*Doth, FoF06263
Leptoguignardia E. Müll. (2)*Doth
Metameris Theiss. & Syd. (2)*Doth
Phyllachorella Syd. (3)*Doth
Pilgeriella Henn. (2)*Doth
Sivanesania W.H. Hsieh & Chi Y. Chen (1)*Doth
Vestergrenia Rehm (24)*Doth

Catinellales Ekanayaka, K.D. Hyde & Ariyawansa, FoF07646
Catinellaceae Ekanayaka, K.D. Hyde & Ariyawansa, FoF07647
Catinella Boud. (4)*Doth, FoF07648

Cladoriellales Crous, FoF07649
Cladoriellaceae Crous, FoF07650
Cladoriella Crous (5)*Doth, FoF07651

Collemopsidiales Pérez-Ort., Garrido-Ben. & Grube, FoF07652
Xanthopyreniaceae Zahlbr., FoF07653
Collemopsidium Nyl. (24)*Doth, FoF07655
Didymellopsis (Sacc. & D. Sacc.) Clem. & Shear (8)*Doth, FoF07656
Frigidopyrenia Grube (1)*Doth, FoF07657
Pyrenocollema Reinke (17)
Rhagadodidymellopsis Fern.-Brime, Gaya, Llimona & Nav.-Ros. (1)*Note 448, Doth, FoF09130
Xanthopyrenia Bachm. (4)*Doth, FoF07654
Zwackhiomacromyces Etayo & van den Boom (2)*Doth, FoF08929
Zwackhiomyces Grube & Hafellner (41)*Doth, FoF07658

Coniosporiales Crous, Spatafora, Haridas & I.V. Grig.*Note 116, FoF12983
Coniosporiaceae Crous, Spatafora, Haridas & I.V. Grig.*Note 115, FoF11919
Coniosporium Link (64)*Doth

Dyfrolomycetales K.L. Pang, K.D. Hyde & E.B.G. Jones, FoF07670
Pleurotremataceae Walt. Watson, FoF01911
Dyfrolomyces K.D. Hyde, K.L. Pang, Alias, Suetrong & E.B.G. Jones (12)*Doth, FoF 7672
Melomastia Nitschke ex Sacc. (52)*Doth, FoF07673
Pleurotrema Müll. Arg. (29)*Doth, FoF07671

Endophytiales G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra*Barreto et al. 2024b
Endophytiaceae G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra*Barreto et al. 2024b
Endophytium G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra (2)*Barreto et al. 2024b

Endosporiales G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra*Barreto et al. 2024b
Endosporiaceae D. Pem, Doilom & K.D. Hyde, Doth, FoF06681
Endosporium Tsuneda (2)*Note 152, Doth

Eremithallales Lücking & Lumbsch, FoF07674
Melaspileaceae Walt. Watson (= *Eremithallaceae* Lücking & Lumbsch), FoF07675
Encephalographa A. Massal. (6)*Doth, FoF07678
Melaspilea Nyl. (= *Eremithallus* Lücking, Lumbsch & L. Umaňa) (ca 40)*Doth, FoF07676

Eremomycetales Crous, Spatafora, Haridas & I.V. Grig., FoF07679
Eremomycetaceae Malloch & Cain,*FoF05359, Hernandez-Restrepo et al. 2020
Arthrographis G. Cochet ex Sigler & J.W. Carmich. (10)*Doth, Hernandez-Restrepo et al. 2020
Eremomyces Malloch & Cain (1)*Doth, FoF05360
Rhexothecium Samson & Mouch (1), FoF06699

Holmiellales Maharachch. & Wanas.*Notes 216, 918, FoF09479
Holmiellaceae Maharachch. & Wanas.*Notes 215, 919, FoF09506
Holmiella Petrini, Samuels & E. Müll. (5)*Doth, FoF00349

Homortomycetales Maharachch. & Wanas.*Note 217, FoF09480
Homortomycetaceae Thambug., A.J.L. Phillips & K.D. Hyde, FoF02150
Homortomyces Crous & M.J. Wingf. (2)*Doth, FoF07968

Jahnulales K.L. Pang, Abdel-Wahab, El-Shar., E.B.G. Jones & Sivichai*FWF, FoF07682
Aliquandostipitaceae Inderb.*FWF, FoF07683
Aliquandostipite Inderb. (= *Patescospora* Abdel-Wahab & El-Shar. *fide* Hongsanan et al. 2020a) (5)*Doth, FWF, FoF07684
Ascagilis K.D. Hyde (7)*Note 48, Doth, Fp94, FWF, FoF09187
Brachiosphaera Nawawi (2)*Doth, FWF, FoF07685
Jahnula Kirschst. (14)*Doth, FWF, FoF07686
Megalohypha A. Ferrer & Shearer (1)*Doth, FoF07687
Neojahnula W. Dong, H. Zhang & K.D. Hyde (1)*Doth, FoF07688
Pseudojahnula W. Dong, H. Zhang & K.D. Hyde (1)*Doth, FoF07689
Xylomyces Goos, R.D. Brooks & Lamore (8)*Doth, FWF, FoF07690

Manglicolaceae Suetrong & E.B.G. Jones, FoF07691
Manglicola Kohlm. & E. Kohlm. (2)*Doth, FoF07692

Kirschsteiniotheliales Hern.-Restr., R.F. Castañeda, Gené & Crous*FWF, FoF07693
Kirschsteiniotheliaceae Boonmee & K.D. Hyde*FWF, FoF01737
Kirschsteiniothelia D. Hawksw. (= *Dendryphiopsis* S. Hughes) (55)*Doth, FWF, FoF08040

Kirschsteiniotheliales genera *incertae sedis*
Brachysporiella Bat. (14)*Doth
Taeniolella S. Hughes (ca 60)*Doth

Lembosinales Crous, FoF07694
Lembosinaceae Crous, FoF07695
Lembosina Theiss. (27)*Doth, FoF07696

Lichenotheliales K. Knudsen, Muggia & K.D. Hyde, FoF07698
Lichenotheliaceae Henssen, FoF07699
Endococcus Nyl. (ca 40)*Doth, FoF00560, Diederich et al. 2018, Hafellner 2019, Pem et al. 2024
Lichenothelia D. Hawksw. (ca 30)*Doth, FoF07700

Lineolatales Crous, Spatafora, Haridas & I.V. Grig.*Note 1086, FoF
Lineolataceae Crous, Spatafora, Haridas & I.V. Grig.*FoF
Lineolata Kohlm. & Volkm.-Kohlm. (1)*Doth

Microthyriales G. Arnaud, FoF07701
Microthyriaceae Sacc., FoF06747
Antidactylaria Z.F. Yu, M. Qiao & R.F. Castañeda (3)*Note 598, FoF05734
Arnaudiella Petr. (11)*Doth, FoF06749
Chaetothyriothecium Hongsanan & K.D. Hyde (1)*Doth, FoF06751
Hamatispora L.T.H. Yen, K. Yamag. & K. Ando (1)*Doth, FoF06752
Isthmomyces Z.F. Yu, M. Qiao & R.F. Castañeda (4)*Note 579
Keqinzhangia Z.F. Yu, M. Qiao & R.F. Castañeda (1)*Note 762, FoF05738
Microthyrium Desm. (ca 90)*Doth, FoF06748
Neoanungitea Crous (2)*Doth, FoF07702
Nothoanungitopsis Crous (1)*Note 340, Doth, FoF11942
Nothomicrothyrium Crous (1)*Note 1055
Paramicrothyrium H.X. Wu & K.D. Hyde (1)*Doth, FoF06754
Paramirandina L.L. Liu & Z.Y. Liu (2)*Note 1421
Pseudocorniculariella L.L. Liu & Z.Y. Liu (1)*Note 1338
Pseudocoronospora Z.F. Yu, M. Qiao & R.F. Castañeda (1)*Doth, FoF05736

Pseudomicrothyrium X.Y. Zeng, S. Hongsanan & K.D. Hyde (1)*Doth, FoF06755
Pseudopenidiella Crous & Koukol (4)*Doth, FoF06757
Triscelophorus Ingold (10)
Tumidispora Hongsanan & K.D. Hyde (2)*Doth, FoF00944

Microthyriales genera *incertae sedis*
Heliocephala V. Rao, K.A. Reddy & de Hoog (8)*Doth
Mitopeltis Speg. (1)*Doth
Neocladophialophora Crous & R.K. Schumach. (1)*Crous et al. 2022b, Liu et al. 2023b
Neoscolecobasidium Crous (1)*Doth
Parazalerion Madrid, Gené & Cano (1)*Doth, Qiao et al. 2021b, Liu et al. 2023b, Pem et al. 2024
Pseudosoloacrosporiella Crous (1)*Note 770
Seynesiella G. Arnaud (5)*Doth, FoF06758
Thyriodictyella Cif. (1)*Doth

Minutisphaerales Raja, Oberlies, Shearer & A.N. Mill.*FWF, FoF08064
Acrogenosporaceae Jayasiri & K.D. Hyde*FWF, FoF04575
Acrogenospora M.B. Ellis (= *Farlowiella* Sacc.) (23)*Doth, FWF, FoF08065

Minutisphaeraceae Raja, Oberlies, Shearer & A.N. Mill.*FWF, FoF08066
Minutisphaera Shearer, A.N. Mill. & A. Ferrer (6)*Doth, FWF, FoF08067

Monoblastiales Lücking, M.P. Nelsen & K.D. Hyde*FoF08069
Monoblastiaceae Walt. Watson*FoF08851
Acrocordia A. Massal. (26)*Doth, FoF08071
Anisomeridium (Müll. Arg.) M. Choisy (86)*Doth, FoF08073
Appendispora K.D. Hyde (2)*Doth, FoF08361, Zhang et al. 2024a
Caprettia Bat. & H. Maia (8)*Doth, FoF08074
Megalotremis Aptroot (16)*Doth, FoF08077
Monoblastia Riddle (12)*Doth, FoF08070
Trypetheliopsis Asahina (8)*Doth, FoF08084

Eriomycetaceae Huanraluek & K.D. Hyde*Note 904
Eriomyces Huanraluek, Thambug. & K.D. Hyde (1)*Doth, FoF06151
Funbolia Crous & Seifert (1)*Doth, FoF08075
Haudseptoria Crous & R.K. Schumach. (1)*Note 200, Doth, FoF11953
Heleiosa Kohlm., Volkm.-Kohlm. & O.E. Erikss. (1)*Doth, FoF08076
Italiofungus Crous (1)*Note 225, Doth, FoF11955
Karstiomyces J.F. Zhang & K.D. Hyde (1)*Note 1053
Neoheleiosa Mortimer (2)*Note 311, Doth, FoF11959
Phellinocrescentia Crous & Decock (1)*Doth, FoF08082
Pseudopassalora Crous (1)*Doth, FoF08083

Murramarangomycetales Crous*FoF08087
Murramarangomycetaceae Crous*FoF08088
Phaeothyriolum Syd. (= *Murramarangomyces* Crous) (7)*Doth, FoF08089

Muyocopronales Mapook, Boonmee & K.D. Hyde*FoF01886
Muyocopronaceae K.D. Hyde*FoF08090
Arxiella Papendorf (5)*Doth, FoF08091
Leptodiscella Papendorf (6)*Doth, FoF08092
Muyocopron Speg. (67)*Doth, FoF01887

Mycoleptodiscus Ostaz. (12)*Doth, FoF08094
Neocochlearomyces Pinruan, Sommai, Suetrong, J.Z. Groenew. & Crous (1)*Doth, FoF08095
Neomycoleptodiscus Hern.-Restr., J.D.P. Bezerra & Crous (2)*Doth, FoF08096
Paramycoleptodiscus Crous & M.J. Wingf. (1)*Doth, FoF08093
Pseudopalawania Mapook & K.D. Hyde. (1)*Doth, FoF08097
Quadrisporella Senwanna, Cheewangkoon & K.D. Hyde. (1)*Note 1458
Setoapiospora Mapook & K.D. Hyde (1)*Fp124, Doth, FoF06793

Natipusillales Raja, Shearer, A.N. Mill. & K.D. Hyde*FWF, FoF08110
Natipusillaceae Raja, Shearer & A.N. Mill.*FWF, FoF08111
Ascominuta Ranghoo & K.D. Hyde (2)*Doth, FWF
Natipusilla A. Ferrer, A.N. Mill. & Shearer (4)*Doth, FWF, FoF08112

Neodactylariales H. Zheng & Z.F. Yu*Note 765
Neodactylariaceae H. Zheng & Z.F. Yu*Note 764
Beaucarneamyces Crous (1)*Crous et al. 2024b
Neodactylaria Guevara-Suarez, Deanna A. Sutton, Wiederh. & Gené (2)*Note 670, Doth

Palawaniaceae Mapook & K.D. Hyde*FoF02653
Palawania Syd. & P. Syd. (3)*Doth, FoF06426

Parmulariales D.Q. Dai & K.D. Hyde*FoF03913
Parmulariaceae E. Müll. & Arx ex M.E. Barr*FoF02296
Aldona Racib. (3)*Doth, FoF00309
Aldonata Sivan. & A.R.P. Sinha (1)*Doth, FoF00311
Antoniomyces Inácio (1)*Doth, FoF02299
Apoa Syd. (1)*Note 1569
Aulacostroma Syd. & P. Syd. (4)*Doth, FoF02301
Campoa Speg. (4)*Doth, FoF02303
Cirsosiopsis Butin & Speer (1)*Doth, FoF08113
Coccodothis Theiss. & Syd. (1)*Doth
Cocconia Sacc. (14)*Doth, FoF00558
Cycloschizon Henn. (13)*Doth, FoF02305
Cyclostomella Pat. (3)*Doth, FoF02307
Dothidasteroma Höhn. (4)*Doth, FoF08114
Ferrarisia Sacc. (ca 8)*Doth, FoF02309
Hysterostomella Speg. (25)*Doth, FoF02313
Kiehlia Viégas (2)*Doth, FoF08115
Mintera Inácio & P.F. Cannon (1)*Doth, FoF02317
Pachypatella Theiss. & Syd. (2)*Doth, FoF02319
Palawaniella Doidge (6)*Doth, FoF02321
Parmularia Lév. (12)*Doth, FoF02297
Parmulariopsella Sivan. (1)*Doth, FoF02323
Parmulariopsis Petr. (1)*Doth, FoF02325
Parmulina Theiss. & Syd. (5)*Doth, FoF08116
Perischizon Syd. & P. Syd. (3)*Doth
Placoasterella Sacc. ex Theiss. & Syd. (4)*Doth, FoF08117
Placosoma Syd. (2)*Doth, FoF08118
Placostromella Petr. (3)*Doth, FoF08119
Pleiostomellina Bat., J.L. Bezerra & H. Maia (1)*Doth, FoF08120
Polycyclina Theiss. & Syd. (1)*Doth, FoF02327
Polycyclus Höhn. (2)*Doth, FoF02329

Protothyrium G. Arnaud (4)*Doth, FoF02331
Pseudolembosia Theiss. (4)*Doth, FoF02333
Rhagadolobiopsis Guatim. & R.W. Barreto (1)*Doth, FoF08121
Rhagadolobium P. Henn. & Lindau (11)*FoF02335
Rhipidocarpon (Theiss.) Theiss. & Syd. (1)*Doth, FoF02337
Symphaeophyma Speg. (1)*Doth, FoF02339
Syrropeltis Bat., J.L. Bezerra & Matta (1)*Doth, FoF08122
Thallomyces H.J. Swart (1)*Doth, FoF02341
Viegasella Inácio & P.F. Cannon (1)*Doth, FoF02343

Patellariales D. Hawksw. & O.E. Erikss.*FoF08123
Patellariaceae Corda*FoF00342
Baggea Auersw. (1)*Doth, FoF00345
Banhegyia L. Zeller & Tóth (2)*Doth, FoF00601
Colensoniella Hafellner (1)*Doth, FoF08126
Endotryblidium Petr. (1)*Doth, FoF00347
Glyphium Nitschke ex F. Lehm. (6)*Doth, FoF08127
Haematomyxa Sacc. (4)*Doth, FoF08128
Hysteropatella Rehm (7)*Doth, FoF00351
Hysteropeltella Petr. (1)*Doth, FoF00352
Lahmiomyces Cif. & Tomas. (1)*Doth, FoF08129
Lecanidiella Sherwood (1)*Doth, FoF00353
Lirellodisca Aptroot (1)*Doth, FoF00355
Murangium Seaver (1)*Doth, FoF00357
Patellaria Fr. (ca 50)*Doth, FoF00343
Poetschia Körb. (4)*Doth, FoF00359
Pseudoparodia Theiss. & Syd. (1)*Doth, FoF00377
Rimula Velen. (28)*Doth, FoF08130
Schrakia Hafellner (1)*Doth, FoF00363
Stratisporella Hafellner (1)*Doth, FoF00365
Tryblidaria (Sacc.) Rehm (27)*Doth, FoF00367

Phaeosclerales G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra*Barreto et al. 2024b
Phaeoscleraceae G.G. Barreto, Souza-Motta, G.A. Silva, J.Z. Groenew., Crous & J.D.P. Bezerra*Barreto et al. 2024b
Phaeosclera Sigler, Tsuneda & J.W. Carmich. (1)*Doth

Phaeotrichales Ariyaw., Jian K. Liu & K.D. Hyde*FoF08131
Phaeotrichaceae Cain*FoF08131
Echinoascotheca Matsush. (1)*Doth, FoF08133
Phaeotrichum Cain & M.E. Barr (5)*Doth, FoF08132
Trichodelitschia Munk (5)*Doth, FoF08134

Stigmatodiscales Voglmayr & Jaklitsch*FoF08771
Stigmatodiscaceae Voglmayr & Jaklitsch, FoF08772
Stigmatodiscus Voglmayr & Jaklitsch (= *Asterodiscus* Voglmayr, Gardiennet & Jaklitsch) (6)*Doth, FoF01654

Strigulales Lücking, M.P. Nelsen & K.D. Hyde, FoF08774
Strigulaceae Zahlbr. (= *Phyllobatheliaceae* Bitter & F. Schill. *fide* Hongsanan et al. 2020b)*Note 490, FoF08853

Dichoporis Clem. (20)*Doth, FoF08854
Flagellostrigula Lücking, S.H. Jiang & Sérus. (1)*Note 165, Doth, FoF08874
Flavobathelium Lücking, Aptroot & G. Thor (1)*FoF08876
Oletheriostrigula Huhndorf & R.C. Harris (1)*FoF08925
Phyllobathelium (Müll. Arg.) Müll. Arg. (8)*Doth, FoF08877
Phyllocharis Fée (1)*Doth, FoF08878
Phyllocraterina Sérus. & Aptroot (2)*Note 397, Doth, FoF08880
Phylloporis Clem. (7)*Doth, FoF08882
Puiggariella Speg. (5)*Doth, FoF08885
Raciborskiella Höhn. (1)*Doth, FoF08887
Racoplaca Fée (7)*Doth, FoF08888
Serusiauxiella S.H. Jiang, Lücking & J.C. Wei (3)*Note 472, Fp174, FoF08889
Strigula Fr. (ca 50)*Coel, Doth, FoF07706
Swinscowia S.H. Jiang, Lücking & Sérus. (34)*Note 497, Doth, FoF08890

Tenuitholiascaceae S.H. Jiang, Lücking & J.C. Wei*FoF08775
Tenuitholiascus S.H. Jiang, Lücking & J.C. Wei. (1)*Doth, FoF08776

Superstratomycetales van Nieuwenh., Miądl., Houbraken, Adan, Lutzoni & Samson*Note 788, FoF08926
Superstratomycetaceae van Nieuwenh., Miądl., Houbraken, Adan, Lutzoni & Samson*Note 787, FoF08777
Superstratomyces van Nieuwenh., Miądl. & Samson (4)*Note 786, Doth, FoF08778

Trypetheliales Lücking Aptroot & Sipman*FoF08780
Polycoccaceae Ertz, Hafellner & Diederich*FoF08781
Clypeococcum D. Hawksw. (ca 10)*Doth, FoF08783
Polycoccum Saut. ex Körb. (ca 45)*Doth, FoF08782

Trypetheliaceae Eschw. (= *Arthopyreniaceae* Walt. Watson)*Note 521, FoF08784
Alloarthopyrenia Phukhams Lücking & K.D. Hyde (1)*Doth, FoF02379
Aptrootia Lücking & Sipman (3)*Doth, FoF08786
Architrypethelium Aptroot (11)*Doth, FoF08787
Arthopyrenia A. Massal. (= *Arthopyreniomyces* Cif. & Tomas.; = *Pyrenyllium* Clem.) (ca 50)*FoF08162
Astrothelium Eschw. (= *Campylothelium* Müll. Arg.) (ca 250)*Doth, FoF08788
Bathelium Ach. (ca 25)*Doth, FoF08789
Bogoriella Zahlbr. (= *Distothelia* Aptroot; = *Novomicrothelia* Aptroot, M.P. Nelsen & Lücking) (22)*Note 142, Doth, FoF08790
Constrictolumina Lücking, M.P. Nelsen & Aptroot (6)*Doth, FoF08795
Dictyomeridium Aptroot, M.P. Nelsen & Lücking (8)*Doth, FoF08796
Macroconstrictolumina Lücking, R. Miranda & Aptroot (4)*Note 267, Doth, FoF08798
Marcelaria Aptroot, M.P. Nelsen & Parnmen (= *Buscalionia* Sambo) (3)*Doth, FoF08803
Mycomicrothelia Keissl. (8)*FoF08163
Nigrovothelium Lücking, M.P. Nelsen & Aptroot (3)*Doth, FoF08804
Polymeridium (Müll. Arg.) R.C. Harris (= *Exiliseptum* R.C. Harris) (ca 50)*Doth, FoF08805
Polypyrenula D. Hawksw. (1)*Doth, FoF08805
Pseudobogoriella Lücking, R. Miranda & Aptroot (16)*Note 416, Doth, FoF08807
Pseudopyrenula Müll. Arg. (20)*Doth, FoF08823
Schummia Lücking, R. Miranda & Aptroot (1)*Doth, FoF08824
Trypethelium Spreng. (16)*Doth, FoF08785
Viridothelium Lücking, M.P. Nelsen & Aptroot (11)*Doth, FoF08826

Tubeufiales Boonmee & K.D. Hyde (= *Bezerromycetales* J.D.P. Bezerra, Souza-Motta & Crous; = *Wiesneriomycetales* J.D.P. Bezerra, R.J.V. Oliveira, Souza-Motta, J.Z. Groenev. & Crous)*FWF, FoF00203
Bezerromycetaceae J.D.P. Bezerra, Souza-Motta & Crous*FoF06809
Bezerromyces J.D.P. Bezerra, Souza-Motta & Crous (= *Xiliomyces* J.D.P. Bezerra, Souza-Motta & Crous) (4)*Doth, Doth, FoF06810
Honghemyces Wanas., J.D.P. Bezerra & P.E. Mortimer (1)*Note 789
Neorhamphoria Boonmee, Hüseyın & Selçuk (1)*Doth, FoF02823

Tubeufiaceae M.E. Barr*FWF, FoF00204
Acanthohelicospora Boonmee & K.D. Hyde (4)*Doth, FoF00206
Acanthophiobolus Berl. (3)*Doth, FoF06812
Acanthostigma De Not. (40)*Doth, FoF06813
Acanthostigmina Höhn. (3)*Doth, FoF06814
Acanthotubeufia Y.Z. Lu & K.D. Hyde (1)*Doth, FoF04696
Aquaphila Goh, K.D. Hyde & W.H. Ho (2)*Doth, FWF, FoF02356
Berkleasmium Zobel (ca 45)*Doth, FWF, FoF01879
Bifrontia Norman (2)*Doth, FoF00175
Boerlagiomyces Butzin (8)*Doth, FWF, FoF00176
Camporesiomyces D.P. Wei, Wanas. & K.D. Hyde (3)*Doth, FoF07074
Chaetosphaerulina I. Hino (6)*Doth, FoF06816
Chlamydotubeufia Boonmee & K.D. Hyde (5)*Doth, FWF, FoF02357
Dematiohelicoma Y.Z. Lu, J.C. Kang & K.D. Hyde (2)*Doth, FoF04700
Dematiohelicomyces Y.Z. Lu, Boonmee & K.D. Hyde (1)*Doth, FWF, FoF04701
Dematiohelicosporum Y.Z. Lu, J.K. Liu & K.D. Hyde (1)*Doth, FoF04703
Dematiotubeufia Y.Z. Lu, Boonmee & K.D. Hyde (1)*Doth, FoF04705
Dictyospora Brahaman., Y.Z. Lu, Boonmee & K.D. Hyde (1)*Doth, FWF, FoF03262
Discotubeufia Jayasiri, E.B.G. Jones & K.D. Hyde (1)*Doth, FoF05300
Helicangiospora Boonmee, Bhat & K.D. Hyde (1)*Doth, FoF00210
Helicoarctatus Y.Z. Lu, J.C. Kang & K.D. Hyde (2)*Doth, FWF, FoF04707
Helicodochium J.S. Monteiro, R.F. Castañeda, A.C. Cruz & Gusmão (2)*Doth, FWF, FoF04709
Helicohyalinum Y.Z. Lu, J.K. Liu & K.D. Hyde (2)*Doth, FoF04710
Helicoma Corda (ca 65)*Doth, FoF00211
Helicomyces Link (17)*Doth, FoF00212
Helicosporium Nees (ca 20)*Doth, FoF00213
Helicotruncatum Y.Z. Lu, J.C. Kang & K.D. Hyde (1)*Doth, FoF04730
Helicotubeufia Y.Z. Lu & J.K. Liu (3)*Doth, FoF04385
Kamalomyces R.K. Verma, N. Sharma & Soni (6)*FoF06817
Kevinhydea N.G. Liu, Y.Z. Lu & J.K. Liu (1)*Doth, FoF04875
Lichenotubeufia Etayo (9)*Doth
Manoharachariella Bagyan., N.K. Rao & Kunwar (4)*Doth, FoF07530
Moorella P. Rag. Rao & D. Rao (3)
Muripulchra Z.L. Luo, Hong Y. Su & K.D. Hyde (1)*Doth, FoF02647
Neoacanthostigma Boonmee, Bhat & K.D. Hyde (3)*Doth, FoF00214
Neochlamydotubeufia Y.Z. Lu, Boonmee & K.D. Hyde (2)*Doth, FWF, FoF04731
Neodictyospora J.F. Zhang, Jian K. Liu & K.D. Hyde (1)*Note 1192
Neohelicoma Y.Z. Lu, Boonmee & K.D. Hyde (1)*Doth, FoF04734
Neohelicomyces Z.L. Luo, Bhat & K.D. Hyde (11)*Doth, FWF, FoF02643
Neohelicosporium Y.Z. Lu, J.C. Kang & K.D. Hyde (23)*Doth, FWF, FoF03570
Neomanoharachariella L.L. Li, H.W. Shen & Z.L. Luo (2)*Li et al. 2022a
Neotubeufia Chaiwan, Boonmee, Y.Z. Lu & K.D. Hyde (1)*Doth, FWF, FoF03777

Parahelicomyces Goh (11)*Note 862, Doth, FoF12026
Pleurohelicosporium Y.Z. Lu, J.C. Kang & K.D. Hyde (1)*Doth, FoF04743
Podonectria Petch (= *Tetracrium* Henn.) (11)*Doth, FoF06818
Pseudohelicomyces Y.Z. Lu, J.K. Liu & K.D. Hyde (8)*Doth, FWF, FoF04745
Pseudohelicoon Y.Z. Lu & K.D. Hyde (2)*Doth, FWF, FoF04748
Pseudotubeufia J. Ma & Y.Z. Lu (2)*Note 1367
Slimacomyces Minter (2)
Tamhinispora Rajeshk. & Rah. Sharma (3)*Doth, FoF00215
Thaxteriella Petr. (10)*Doth, FoF00216
Thaxteriellopsis Sivan., Panwar & S.J. Kaur (1)*Doth, FWF, FoF01866
Tubeufia Penz. & Sacc. (ca 60)*Doth, FWF, FoF00063
Xenosporium Penz. & Sacc. (10)*Doth
Zaanenomyces Crous & Osieck (3), Note 574, FoF

Wiesneriomycetaceae Suetrong, Rungjind., Somrith. & E.B.G. Jones*FWF, FoF06311
Excipulariopsis P.M. Kirk & Spooner (1) Doth
Heveicola R.F. Xu, K.D. Hyde & Tibpromma (1)*FoF10490, Xu et al. 2022a
Parawiesneriomyces Crous & M.J. Wingf. (2)*Doth, FoF06556
Phalangispora Nawawi & J. Webster (4)*Doth, FoF07568
Pseudogliophragma Phadke & V.G. Rao (1)*Doth, FoF06557
Setosynnema D.E. Shaw & B. Sutton (3)*Doth, FoF07569
Speiropsis Tubaki (8)*Doth, FoF06558
Wiesneriomyces Koord. (3)*Doth, FWF, FoF06312

Valsariales Jaklitsch, K.D. Hyde & Voglmayr*FoF08827
Valsariaceae Jaklitsch, K.D. Hyde & Voglmayr*FoF06561
Bambusaria Jaklitsch, D.Q. Dai, K.D. Hyde & Voglmayr (1)*Doth, FoF06559
Myrmaecium Nitschke ex Fuckel (ca 7)*Doth, FoF06560
Valsaria Ces. & De Not. (33)*Note 527, Doth, FoF06562

Venturiales Y. Zhang ter, C.L. Schoch & K.D. Hyde*FoF06345
Cylindrosympodiaceae Crous, M. Shen & Y. Zhang ter*Note 129, FoF12984
Cylindrosympodium W.B. Kendr. & R.F. Castañeda (10)*Note 129, Doth, FoF09215
Pseudoanungitea Crous (3)*Doth, FoF08833
Septonema Corda (ca 40)*FoF08108
Sympodiella W.B. Kendr. (7)*FoF09216
Tothia Bat. (2)*Doth, FoF00401

Sympoventuriaceae Y. Zhang ter, C.L. Schoch & K.D. Hyde*FoF06346
Acroconidiellina M.B. Ellis (4)*Doth, FoF08828
Bellamyces Crous, Coppins & U. Braun (1,)*Note 66, Doth, FoF12034
Clavatispora Boonmee & K.D. Hyde (1)*Doth, FoF08829
Echinocatena R. Campb. & B. Sutton (1)*Wei et al. 2022c
Fuscohilum Crous, M. Shen & Y. Zhang ter (2)*Note 172, Doth, FoF12036
Fusicladium Bonord. (ca 75)*Doth, FoF08830
Guizhoumyces T.P. Wei & Y.L. Jiang (1)*Note 859
Helicopsis P. Karst. (*)*Wei et al. 2022c
Matsushimaea Subram. (4)*Doth, FoF08831
Melnikomyces Crous & U. Braun (3)*Hernandez-Restrepo et al. 2020
Mycosisymbrium Carris (1)*Doth, FoF06348
Neofusicladium Crous, M. Shen & Y. Zhang ter (3)*Doth, FoF12040
Ochroconis de Hoog & Arx (8)*Doth, FoF06349

Parafusicladium Crous, M. Shen & Y. Zhang ter (3)*Note 369, Doth, FoF12043
Pinaceicola Crous, M. Shen & Y. Zhang ter (2)*Note 400, Doth, FoF12045
Scolecobasidium E.V. Abbott (ca 60)*Doth, FoF09214
Sterila Crous, M. Shen & Y. Zhang ter (1)*Note 487, Doth, FoF12049
Sympoventuria Crous & Seifert (4)*Doth, FoF06347
Troposporella P. Karst. (4)*Doth, Wei et al. 2022c
Veronaeopsis Arzanlou & Crous (1)*Doth, FoF06350
Verruconis Samerp., H.J. Choi, van den Ende, Horré & de Hoog (11)*Doth, FoF06351
Yunnanomyces Tibpromma & K.D. Hyde (2)*Doth, FoF04518
Zenophaeosphaeria Crous & Osieck (1)*Crous et al. 2024b

Venturiaceae E. Müll. & Arx ex M.E. Barr, FoF06352
Apiosporina Höhn. (3)*Doth, FoF06354
Atopospora Petr. (4)*Doth, FoF06356
Coleroa Rabenh. (ca 30)*Doth, FoF06358
Dimeriella Speg. (ca 25)*Doth, FoF06359
Dimerosporiopsis Henn. (1)*Doth, FoF08832
Fagicola Crous, M. Shen & Y. Zhang ter (1)*Note 162, Doth, FoF12059
Fraxinicola Crous, M. Shen & Y. Zhang ter (4)*Note 169, Doth, FoF12061
Magnohelicospora R.F. Castañeda, Hern.-Restr., Gené & Guarro (2)*Doth, FoF06360
Metacoleroa Petr. (1)*FoF06361
Neocoleroa Petr. (5)*Doth, FoF06362
Protoventuria Berl. & Sacc. (ca 20)*Doth, FoF06363
Pseudoparodiella F. Stevens (1)*Doth, FoF06364
Spilodochium Syd. (4)*Doth
Tyrannosorus Unter. & Malloch (= *Caproventuria* U. Braun*Doth) (5)*Doth, FoF06365
Venturia Sacc. (ca 120)*Doth, FoF06353

Venturiales genera *incertae sedis**FoF06345
Cylindrosympodioides Crous & M.J. Wingf. (1)*Doth, Crous et al. 2016b
Lasiobotrys Kunze (4)*Doth

Zeloasperisporiales Hongsanan & K.D. Hyde*FoF551336
Zeloasperisporiaceae Crous*FoF08834
Zeloasperisporium R.F. Castañeda (8)*Doth, FoF08835

Dothideomycetes families *incertae sedis**FoF14145
Alinaceae Boonmee & K.D. Hyde*FoF03661
Alina Racib. (1)*Doth, FoF07866

Argynnaceae Shearer & J.L. Crane*FWF, FoF06386
Argynna Morgan (1)*Doth, FoF06387
Lepidopterella Shearer & J.L. Crane (2)*Doth, FWF, FoF06389

Ascoporiaceae Kutorga & D. Hawksw.*FoF07867
Ascoporia Samuels & A.I. Romero (1)*Doth, FoF07945

Balladynaceae Boonmee & K.D. Hyde*FoF03663
Balladyna Racib. (36)*Doth, FoF07868
Balladynocallia Bat. (3)*Doth, FoF07951
Balladynopsis Theiss. & Syd. (9)*Doth, FoF07952

Cleistosphaeraceae Boonmee & K.D. Hyde*FoF03669
Cleistosphaera Syd. & P. Syd. (1)*Doth, FoF07869

Coccoideaceae Henn. ex Sacc. & D. Sacc.*FoF07953
Coccoidea Henn. (2)*Doth, FoF07954
Coccoidella Höhn. (9)*Doth, FoF07956
Englerodothis Theiss. & Syd. (3)*Note 153, Doth, FoF09054

Cookellaceae Höhn. ex Sacc. & Trotter*FoF07870
Cookella Sacc. (4)*Doth, FoF07957
Pycnoderma Syd. & P. Syd. (2)*Doth, FoF07959

Dimeriaceae E. Müll. & Arx ex Arx & E. Müll.*FoF06390
Dimerium (Sacc. & P. Syd.) McAlpine (ca 70)*Doth, FoF06391

Dubujianaceae D. Pem, Doilom & K.D. Hyde*FoF06679
Dubujiana D.R. Reynolds & G.S. Gilbert (1)*Note 144, Doth, FoF09052

Dysrhynchaceae Boonmee & K.D. Hyde*FoF06393
Dysrhynchis Clem. (4)*Doth, FoF06394

Englerulaceae Henn.*FoF07960
Allosoma Syd. (4)*Doth, FoF08927
Digitosarcinella S. Hughes (1)*Doth, FoF08928
Englerula Henn. (9)*Doth, FoF07961
Goosia B. Song (1)*Doth, FoF07963
Parenglerula Höhn. (6)*Doth, FoF07964
Rhytidenglerula Höhn. (9)*Doth, FoF07965
Sarcinella Sacc. (ca 70)*Doth
Thrauste Theiss. (3)*Doth, FoF07967

Hyalomeliolinaceae Boonmee & K.D. Hyde*FoF06396
Hyalomeliolina F. Stevens (2)*Doth, FoF06397

Leptopeltidaceae Höhn. ex Trotter*FoF07969
Dothiopeltis E. Müll. (2)*Doth, FoF07971
Leptopeltis Höhn. (9)*Doth, FoF07970
Ronnigeria Petr. (1)*Doth, FoF07972
Staibia Bat. & Peres (1)*Doth, FoF07973

Macrovalsariaceae D. Pem, Doilom & K.D Hyde*FoF06682
Macrovalsaria Petr. (2)*Note 268, Doth, FoF09065

Meliolinaceae S. Hughes*FoF06889
Briania D.R. Reynolds (1)*Doth, FoF06892
Meliolina Syd. & P. Syd. (ca 50)*Doth, FoF06890

Mesnieraceae Arx & E. Müll.*FoF07871
Bondiella Piroz. (1)*Doth, FoF07873
Mesniera Sacc. & P. Syd. (3)*Doth, FoF07872
Stegasphaeria Syd. & P. Syd. (2)*Doth, FoF07875

Naetrocymbaceae Höhn. ex R.C. Harris, FoF07877
Bonaria Bat. (3)*Note 74, Doth, FoF05164
Jarxia D. Hawksw. (2)*Doth, FoF07879
Leptorhaphis Körb. (8)*Doth, FoF07880
Naetrocymbe Körb. (ca 20)*Doth, FoF07878
Tomasellia A. Massal. (ca 10)*Doth, FoF07881

Nematotheciaceae Boonmee & K.D. Hyde*FoF03700
Nematothecium Syd. & P. Syd. (5)*Doth, FoF07882
Nematostigma Syd. & P. Syd. (6)*Doth, FoF07883
Ophioparodia Petr. & Cif. (1)*Doth, FoF07884

Neoparodiaceae Boonmee & K.D. Hyde*FoF03683
Neoparodia Petr. & Cif. (1)*Doth, FoF07885

Paranectriellaceae Boonmee & K.D. Hyde*FoF07886
Paranectriella (Henn. ex Sacc. & D. Sacc.) Magnus. (= *Araneomyces* Höhn.) (8)*Doth, FoF07887
Puttemansia Henn. (16)*Doth, FoF00217

Parodiellaceae Theiss. & Syd. ex M.E. Barr*FoF07889
Parodiella Speg. (23)*Doth, FoF07890

Perisporiopsidaceae E. Müll. & Arx ex R. Kirschner & T.A. Hofm. (= *Parodiopsidaceae* Toro)*FoF07892
Asteronia (Sacc.) Henn. (2)*Note 51, Doth, FoF09029
Byssocallis Syd. (2)*Note 88, Doth, FoF09038
Chevalieropsis G. Arnaud (1)*Doth, FoF07894
Parodiellina Henn. ex G. Arnaud (1)*Doth, FoF07895
Perisporiopsis Henn. (ca 15)*Doth, FoF07893

Phaeodimeriellaceae Boonmee, Mapook & K.D. Hyde*FoF03689
Phaeodimeriella Speg. (27)*Doth, FoF01927

Pododimeriaceae Boonmee & K.D. Hyde*FoF03692
Chaetoscutula E. Müll. (1)*Doth, FoF07898
Pododimeria E. Müll. (4)*Doth, FoF03692

Polyclypeolinaceae Boonmee & K.D. Hyde*FoF03695
Polyclypeolina Bat. & I.H. Lima (1)*Doth, FoF07899

Polystomellaceae Theiss. & H. Syd.*FoF06489
Dermatodothella Viégas (1)*Doth, FoF06492
Dothidella Speg. (= *Polystomella* Speg.) (34)*Doth, FoF06490
Munkiella Speg. (1)*Doth, FoF06493
Parastigmatea Doidge (7)*Doth, FoF06494

Protoscyphaceae Kutorga & D. Hawksw.*FoF07900
Protoscypha Syd. (2)*Doth, FoF07901

Pseudoperisporiaceae Toro*FoF00122
Bryobroma Döbbeler & Greiff (= *Bryomyces* Döbbeler) (9)*Doth, FoF07904, Greiff & Döbbeler 2024a

Eudimeriolum Speg. (16)*Doth, FoF07905
Lasiostemma Theiss. (6)*Doth, FoF07903*Boonmee et al. 2017
Nematostoma Syd. & P. Syd. (17)*FoF07906

Pseudorobillardaceae Crous*FWF, FoF07907
Pseudorobillarda M. Morelet (19)*Coel, Doth, FWF, FoF07559

Pyrenidiaceae Zahlbr.*FoF07908
Pyrenidium Nyl (13)*Doth, FoF07909

Seynesiopeltidaceae K.D. Hyde*FoF06522
Seynesiopeltis F. Stevens & R.W. Ryan (1)*Doth, FoF07910

Stomatogeneceae Boonmee & K.D. Hyde*FoF03703
Stomatogene Theiss. (3)*Doth, FoF03704

Thyrinulaceae X.Y. Zeng, Hongsanan & K.D. Hyde*FoF06898
Blastacervulus H.J. Swart (4)*Doth, FoF06733, Girlado et al. 2017, Pem et al. 2024
Paraopeba V.P. Abreu, A.A.M. Gomes, Firmino & O.L. Pereira (1)*Doth, FoF06740
Thyrinula Petr. & Syd. (5)*Doth, FoF06728

Toroaceae Boonmee & K.D. Hyde*FoF03708
Toroa Syd. (1)*Doth, FoF07911

Trichopeltinaceae Bat., C.A.A. Costa & Cif.*FoF06203
Acrogenotheca Cif. & Bat. (3)*Doth, FoF07913
Brefeldiella Speg. (4)*Doth, FoF07914
Saccardinula Speg. (12)*Doth, FoF07915
Trichopeltella Höhn. (1)*Doth, FoF07916
Trichopeltheca Bat., C.C.A. Costa & Cif. (2)*Doth, FoF07917
Trichopeltina Theiss. (5)*Doth, FoF06204
Trichothyrinula Petr. (2)*Doth, FoF07918

Trichothyriaceae Theiss.*FoF06893
Lichenopeltella Höhn. (ca 50)*Doth, FoF06895
Macrographa Etayo (1)*FoF06896
Pachythyrium G. Arnaud ex Spooner & P.M. Kirk (1)*Doth, FoF06897
Trichothyrium Speg. (ca 25)*Doth, FoF06894

Vizellaceae H.J. Swart*FoF07920
Acarella Syd. (3)*Note 9, Doth, FoF09021
Blasdalea Sacc. & P. Syd. (1)*Doth, FoF07922
Licopolia Sacc., Syd. & P. Syd. (2)*Doth
Vizella Sacc. (= *Mycerema* Bat., J.L. Bezerra & Cavalc.) (ca 30)*Doth, FoF07921

Dothideomycetes genera *incertae sedis*
Acanthorus Bat. & Cavalc. (1) Doth
Acanthostigmella Höhn. (6)*Doth
Achorella Theiss. & Syd. (9)*Doth
Actinomyxa Syd. & P. Syd. (1)*Doth
Acroconidiella J.C. Lindq. & Alippi (3)*Doth
Alascospora Raja, Violi & Shearer (1)*Doth, Fp7, FWF

Alysidiella Crous (2)*Doth, Girlado et al. 2017, Pem et al. 2024
Ampullifera Deighton (= *Teratoschaeta* Bat. & O.M. Fonseca) (8)*Doth
Anopeltis Bat. & Peres (1)*Doth
Arkoola J. Walker & Stovold (1)*Doth
Armata W. Yamam. (1)
Asterinema Bat. & Gayão (3)*Doth
Asterodothis Theiss. (1)*Doth, FoF09026
Asteromassaria Höhn. (12)*Doth
Asteromella Pass. & Thüm. (ca 250)*Doth
Asteroporum Müll. Arg. (3)*Doth
Auerswaldia Sacc. (3)*Doth
Botryostroma Höhn. (3)*Doth
Brachyconidiella R.F. Castañeda & W.B. Kendr. (1)*Doth
Brooksia Hansf. (1)*Doth
Bryorella Döbbeler (13)*Doth
Bryostroma Döbbeler (9)*Doth
Bryothele Döbbeler (2)*Doth
Byssogene Syd. (2)*Doth
Callebaea Bat. (1)*Doth
Calyptra Theiss. & Syd. (5)*Doth
Capillataspora K.D. Hyde (1)*Doth
Caryosporella Kohlm. (1)*Doth
Catulus Malloch & Rogerson (1) Doth
Ceramoclasteropsis Bat. & Cavalc. (2) Doth
Ceratophoma Höhn. (1)*Doth
Cercidospora Körb. (ca 30)*Doth
Cerodothis Muthappa (1)*Doth
Chaetocrea Syd. (1)*Doth
Chaetosticta Petr. & Syd. (3)*Doth
Chionomyces Deighton & Piroz. (7)*Doth
Chuppia Deighton (2)*Doth
Cilioplea Munk (7)*Doth
Cirsosina Bat. & J.L. Bezerra (2)*Doth
Clavariopsis De Wild. (4)*Doth
Clypeostroma Theiss. & Syd. (2)*Doth
Cocciscia Norman (1)*Doth
Coccochora Höhn. (2)*Doth
Comesella Speg. (1)*Doth
Crauatamyces Viégas (1)*Doth
Crotone Theiss. & Syd. (2)*Doth
Cryomyces Selbmann, de Hoog, Mazzaglia, Friedmann & Onofri (4)*Doth
Cyclotheca Theiss. (17)*Doth
Dactuliophora C.L. Leakey (5)*Doth
Dawsomyces Döbbeler (2)*Doth
Dawsophila Döbbeler (3)*Doth
Dermatodothis Racib. ex Theiss. & Syd. (7)*Doth
Dianesea Inácio & P.F. Cannon (1)*Doth
Dictyoasterina Hansf. (1)*Doth
Dictyodochium Sivan. (1)*Doth
Dictyopeltis Theiss. (11)*Doth
Dictyostomiopelta Viégas (1)*Doth
Didymocyrtidium Vain. (3)*Note 134,*Doth, FoF09047

Didymolepta Munk (2)*Doth
Didymopleella Munk (2)*Doth
Dilophospora Desm. (1)
Diplochorina Gutner (1) Doth
Dothichiza Lib. ex Roum. (22)*Doth
Dothideopsella Höhn. (2)*Doth, FoF00295
Dothivalsaria Petr. (1)*Doth
Dubitatio Speg. (1)*Doth
Echinothecium Zopf (4)*Doth
Elmerinula Syd. (1)*Doth
Epibelonium E. Müll. (1)*Doth
Eriomycopsis Speg. (13)*Doth
Eriothyrium Speg. (3)*Doth
Extrusothecium Matsush. (2)*Doth
Floridaphiala Venkateswaran, A.M. Chander & N.K. Singh (1)*Chander et al. 2022
Gibbera Fr. (ca 50)*Doth
Gilletiella Sacc. & P. Syd. (3)*Doth
Gobabebomyces Crous (1)*Note 186, Doth
Globoa Bat. & H. Maia (2)*Doth
Gloeodiscus Dennis (1)*Doth
Goniopila Marvanová & Descals (1)*Note 1132
Govindua Bat. & H. Maia (1)*Doth
Griggsia F. Stevens & Dalbey (1)
Hansfordiella S. Hughes (7)*Doth
Hansfordiellopsis Deighton (5)*Doth
Hansfordiopsis Bat. (1)*Doth
Harknessiella Sacc. (1)*Doth
Helminthopeltis Sousa da Câmara (1)*Doth
Heptameria Rehm & Thüm. (3)*Doth
Heptaster Cif., Bat. & Nascim. (1)*Doth
Heterosphaeriopsis Hafellner (2)*Doth
Hidakaea I. Hino & Katum. (1)*Doth
Hyalocrea Syd. & P. Syd. (2)*Doth
Hyalosphaera F. Stevens (4)*Doth
Hyalotheles Speg. (1)*Doth
Hypobryon Döbbeler (8)*Doth
Hysteropsis Rehm (7)*Doth
Isomunkia Theiss. & Syd. (1)*Doth
Jaffuela Speg. (1)*Doth
Kabatia Bubák (ca 10)*Coel, Doth
Keratosphaera H.B.P. Upadhyay (6)*Doth
Kriegeriella Höhn. (4)*Doth
Kusanobotrys P. Henn. (2) Doth
Lanatosphaera Matzer (2) Doth
Lautitia S. Schatz (1)*Doth
Lazarenkoa Zerova (1) Doth
Lembosiniella Crous (2)*Doth, FoF12258
Lembosiopeltis Bat. & J.L. Bezerra (2) Doth
Leptomeliola Höhn. (13)*Doth
Letendraeopsis K.F. Rodriguez & Samuels (1)*Doth
Leveillina Theiss. & Syd. (3)*Doth
Limaciniopsis J.M. Mend. (1)*Doth

Linopeltis I. Hino & Katum. (1)*Doth
Lophiella Sacc. (1) Doth
Lucidascocarpa A. Ferrer, Raja & Shearer (1)*Doth, Fp3,*FWF
Macowaniella Doidge (2)*Doth
Maireella Syd. & Maire (1)*Doth
Malacaria Syd. (7)*Doth
Manginula G. Arnaud (6) Doth
Marquesius L.B. Conç., R.F. Castañeda & Gusmão (1)*Doth
Massariola Füisting (2)*Doth
Maublancia G. Arnaud (7)*Doth
Melioliphila Speg. (10)*Doth
Mendoziopeltis Bat. (2)*Doth
Microcyclella Theiss. (2)*Doth
Microdothella Syd. & P. Syd. (6)*Doth
Monoblastiopsis R.C. Harris & C.A. Morse (2)*Doth
Monodictys S. Hughes (ca 50)*Doth, FWF
Monorhizina Theiss. & Syd. (1)*Doth
Montagnella Speg. (10)*Doth
Muricopeltis Viégas (1)*Doth
Muroia I. Hino & Katum. (1)*Doth
Mycocryptospora J. Reid & C. Booth (1)*Doth
Mycoglaena Höhn. (13)*Doth
Mycoporellum Müll. Arg. (ca 25)*Doth
Mycoporopsis Müll. Arg. (ca 10)*Doth
Mycothyridium Petr. (ca 10)*Doth
Myriangiopsis Henn. (1)*Doth
Myriostigmella G. Arnaud (1)*Doth
Mytilostoma P. Karst. (2)*Doth
Myxophora Döbbeler & Poelt (7)*Doth
Neopeckia Sacc. (17)*Doth
Neosporidesmium Mercado & J. Mena (15)*Doth
Neothyriopsis Crous (1)*Note 330, Doth, FoF12340
Neottiosporina Subram. (10)*Doth
Neoventuria Syd. & P. Syd. (1)*Doth
Ocala Raja & Shearer (1)*Doth, FWF
Omphalospora Theiss. & Syd. (3)*Doth
Oncopodiella G. Arnaud ex Rifai (13)*Doth
Ophioirenina Sawada & W. Yamam. (1)*Doth
Ophiotrichum Kunze (2)
Otthia Nitschke ex Fuckel (ca 50)*Doth
Parmulariella Henn. (1)*Doth
Paropodia Cif. & Bat. (1)*Doth
Passeriniella Berl. (4)*Doth
Passerinula Sacc. (3)*Doth
Pauahia F. Stevens (1)*Doth
Peltaster Syd. & P. Syd. (ca 30)*Doth
Peltasterella Bat. & H. Maia (7)*Doth
Pendulispora M.B. Ellis (1)*Doth
Peroschaeta Bat. & A.F. Vital (1)*Doth
Petrakina Cif. (2)*Doth, FoF12369
Petrakiopeltis Bat., A.F. Vital & Cif. (1)
Phacidina Höhn. (1)*Doth

Phaeocyrtidula Vain. (2)*Doth
Phaeopeltosphaeria Berl. & Peglion (5)*Doth
Phaeostigme Syd. & P. Syd. (4)*Doth
Phaeotomasellia Katum. (1)*Doth
Phanerococculus Cif. (1)*Doth
Philobryon Döbbeler (1)*Doth
Philonectria Hara (9)*Doth
Phragmaspidium Bat. (3)*Doth
Phragmogibbera Samuels & Rogerson (2)*Doth
Phragmoscutella Woron. & Abramov (1)*Doth
Phragmosperma Theiss. & Syd. (3)*Doth
Phycorella Döbbeler (1)*Doth
Physalosporopsis Bat. & H. Maia (1) Doth
Pirozynskia Subram. (1) Doth
Placoasterina Toro (1)*Doth
Placodothis Syd. (1)*Doth
Placomelan Cif. (1)*Doth
Placosphaeria (De Not.) Sacc. (ca 100)*Doth
Plagiostromella Höhn. (4)*Doth
Plejobolus (E. Bommer, M. Rousseau & Sacc.) O.E. Erikss. (1)*Doth
Plenotrichaius Bat. & Valle (5)*Doth
Pleomerium Speg. (1)*Doth
Pleotrichiella Sivan. (1)*Doth
Polycyclinopsis Bat., A.F. Vital & I.H. Lima (1)*Doth
Polyrhizon Theiss., Syd. & P. Syd. (7)*Doth
Polysporidiella Petr. (1)*Doth
Polystomellopsis F. Stevens (1)*Doth
Proliferosphaera T.P. Devi (1)*Doth
Pseudoarthrographis Crous & Thangavel (1)*Doth
Pseudomorfea Punith. (1)*Doth
Pseudopleospora Petr. (3)*Doth
Punctillum Petr. & Syd. (1)*Doth
Pyrenobotrys Theiss. & Syd. (2)*Doth
Pyrenochium Link (1)*Doth
Pyrenocyclus Petr. (1)*Doth
Pyrenostigme Syd. (1)*Doth
Rhizotexis Theiss. & Syd. (1)*Doth
Rosellinula R. Sant. (4)*Doth
Rosenscheldia Speg. (6)*Doth
Roumegueria (Sacc.) Henn. (1)*Doth
Rupestriomyces Lei Su, Li Y. Guo & Xing Z. Liu (3)*Doth
Sapucchaka K. Ramakr. (1)*Doth
Saxomyces Selbmann & Isola (3)*Doth
Scolecobonaria Bat. (2)*Doth
Scolionema Theiss. & Syd. (1)*Doth
Semisphaeria K. Holm & L. Holm (1)*Doth
Septoidium G. Arnaud (ca 15)*Doth
Shivamyces Hosag. (2)*Doth
Sivanesaniella Gawande & D.K. Agarwal (1)*Doth
Solicorynespora R.F. Castañeda & W.B. Kendr. (ca 25)*Doth, Pem et al. 2024
Spissiomyces Lei Su, Li Y Guo & Xing Z. Liu (3)*Doth
Stegothyrium Höhn. (1)*Doth

Stephanotheca Syd. & P. Syd. (3)*Doth, FoF12490
Stigmatophragmia Tehon & G.L. Stout (1)*Doth
Symphaster Theiss. & Syd. (3)*Doth
Taphrophila Scheuer (4)*Doth
Teichosporella (Sacc.) P. Karst. (ca 20)*Doth
Tetracrium Henn. (5)*Doth
Thalassoascus Ollivier (3)*Doth
Thelenidia Nyl. (1)*Doth
Thryptospora Petr. (1)*Doth
Tilakiella Srinivas. (1)*Doth
Tomeoa I. Hino (1)*Doth
Torulopsiella Bender (2)*Doth
Trematosphaeriopsis Elenkin (1)*Doth
Tretospora M.B. Ellis (8)*Doth
Trichodothella Petr. (1)*Doth
Trichodothis Theiss. & Syd. (3)*Doth
Trichometasphaeria Munk (5)*Doth
Trichothyriella Theiss. (1)*Doth
Uredinophila Rossman (2)*Doth
Wentiomyces Koord. (ca 20)*Doth
Westea H.J. Swart (1)*Doth
Wettsteinina Höhn. (ca 40)*Doth, FWF
Xenomeris Syd. (11)*Doth
Xenostomella Syd. (3)*Doth
Xylopezia Höhn. (5)*Doth
Yoshinagaia Henn. (1)*Coel, Doth
Yoshinagella Höhn. (2)*Doth

Class *Eurotiomycetes* O.E. Erikss. & Winka
Subclass *Chaetothyriomycetidae* Doweld*FoF14243
Chaetothyriales M.E. Barr*Tian et al. 2021a
Chaetothyriaceae Hansf. ex M.E. Barr*FoF10323
Actinocymbe Höhn. (3)*FoF10326
Aithaloderma Syd. & P. Syd. (13)
Aphanophora Réblová & Unter. (1)*FoF10328
Arthrophiala W.S. Lisboa, Meir. Silva & R.W. Barreto (1) Crous et al. 2016b
Beelia F. Stevens & R.W. Ryan (3) FoF10330
Camptophora Réblová & Unter. (2) FoF10332
Ceramothyrium Bat. & H. Maia (38)
Ceratocarpia Rolland (2)*FoF10334
Chaetothyriomyces Pereira-Carv., Inácio & Dianese (1)*FoF10336
Chaetothyrium Speg. (48)*FoF10324
Cyphellophoriella Crous & A.J. Sm. (1)*FoF10338
Hermetothecium T.F. Nóbrega, B.W. Ferreira, H.C. Evans & R.W. Barreto (1)*Note 207
Longihyalospora D.S. Tennakoon, C.H Kuo & K.D. Hyde (2)
Nullicamyces Crous (1) Crous et al. 2018b
Phaeosaccardinula Henn. (30)*FoF04392
Stanhughesia Constant. (1)
Treubiomyces Höhn. (7)*FoF10342
Vonarxia Bat. (1)*FoF10344

Coccodiniaceae Höhn. ex O.E. Erikss.*FoF10352

Coccodinium A. Massal. (5)*FoF10434
Dennisiella Bat. & Cif. (= *Microxiphium* (Harv. ex Berk. & Desm.) Thüm.) (ca 15)*FoF10354
Limacinula Höhn. (16)*FoF10356

Cyphellophoraceae Réblová & Unter.*FoF10358
Anthopsis Fil. March., A. Fontana & Luppi Mosca (3)*FoF10361
Cyphellophora G.A. de Vries (37)*FoF10359

Epibryaceae S. Stenroos & Gueidan*FoF10363
Epibryon Döbbeler (49)*FoF10366

Herpotrichiellaceae Munk
Aciculomyces Torres-Garcia, Gené & Dania García (1)*Note 1209
Aculeata W. Dong, H. Zhang & K.D. Hyde (1)
Atrokylindriopsis Y.R. Ma & X.G. Zhang (1)*FoF10367, Tian et al. 2021a
Brycekendrickomyces Crous & M.J. Wingf. (1)*FoF10369
Capronia Sacc. (= *Herpotrichiella* Petr.) (83)*FoF10371
Cladophialophora Borelli (70)*FoF10373
Exophiala J.W. Carmich. (81)*FoF10374
Fonsecaea Negroni (8)*FoF10376
Marinophialophora J.F. Li, Phookamsak & K.D. Hyde (1)*Fp30, FoF02753
Melanoctona Qing Tian, Doilom & K.D. Hyde (1) Tian et al. 2016
Metulocladosporiella Crous, Schroers, J.Z. Groenew., U. Braun & K. Schub. (6)*FoF10378
Minimelanolocus R.F. Castañeda & Heredia (28)*FoF10379
Neoherpotrichiella Spetik, Eichmeier, Mahamedi & Berraf-Tebbal (1)*Note 847
Neosorocybe Crous & Akulov (1) FoF13227
Neoveronaea L. Qiu, K. Zhang, R.F. Castañeda & Jian Ma (1)*Note 1236
Petriomyces Thitla & Suwannar. (1)*Note 1354
Phialophora Medlar (37)*FoF10380
Pleomelogramma Speg. (2)*FoF10381
Rhinocladiella Nannf. (20)*FoF10382
Sorocybe Fr. (4)*FoF10383
Thysanorea Arzanlou, W. Gams & Crous (15)*FoF10384
Tiankengomelania Y.Y. Long, Ling Xie & Q. Nong (1)*Long et al. 2022
Valentiella J.D.P. Bezerra, H.M.C. Navarro, J.H. Almeida, C.R. Félix & M.F. Landell (1)*Note 848
Veronaea Cif. & Montemart. (21)*FoF10386

Lyrommataceae Lücking*FoF10387
Lyromma Bat. & H. Maia (8)*FoF10446

Microtheliopsidaceae O.E. Erikss.*FoF10388
Microtheliopsis Müll. Arg. (4)

Paracladophialophoraceae Crous*FoF10389
Paracladophialophora Crous (3)*FoF10390

Pyrenotrichaceae Zahlbr*FoF10391
Pyrenothrix Riddle (2)
Neophaeococcomyces Crous & M.J. Wingf. (4)*FoF10393

Trichomeriaceae Chomnunti & K.D. Hyde (= *Strelitzianaceae* Crous & M.J. Wingf.)*FoF10394

Anthracina L. Su, W. Sun & M.C. Xiang (2)*Note 31
Arthrocladium Papendorf (4)*FoF10397
Bradymyces Hubka, Réblová, Selbmann & M. Kolařík (5)*FoF10398
Formicomyces Siedlecki & Piątek (1)*Siedlecki et al. 2023
Incumbomyces Y. Quan, D. Shi, S.A. Ahmed, Al-Hatmi & de Hoog (2)*Note 828, FoF
Knufia L.J. Hutchison & Unter. (24)*FoF10399
Lithohypha Selbmann & Isola (= *Lithophila* Selbmann & Isola) (3)*FoF10400
Neostrelitziana Crous & M.J. Wingf. (1)*FoF10401
Pararthrophiala Crous & Akulov (1)*Crous et al. 2024b
Pasadenomyces Venkateswaran, A.M. Chander & N.K. Singh (1)*Chander et al. 2022
Strelitziana Arzanlou & Crous (9)*FoF10402
Trichomerium Speg. (35)*FoF10395

Chaetothyriales family *incertae sedis*
Metacapnodiaceae S. Hughes & Corlett*Note 686, FoF06842
Hyphosoma Syd. (4)*FoF06846
Metacapnodium Speg. (= *Antennularia* Rchb.; = *Capnobotrys* S. Hughes) (ca 15)*Note 686, FoF06843

Chaetothyriales genera *incertae sedis*
Bacillicladium Hubka, Réblová & Thureborn (1)*FoF10403
Bahusutrabeeja Subram. & Bhat (5)
Euceramia Bat. & Cif. (1)*FoF10346
Hyaloscolecostroma Bat. & J. Oliveira (1)
Lichenodiplis Dyko & D. Hawksw. (= *Laeviomyces* D. Hawksw.) (13)*FoF10404
Lichenodiplisiella S.Y. Kondr. & Kudratov (1)
Melanina Grube, Muggia & de Hoog (1)*Note 646, FoF10460
Minutoexcipula V. Atienza & D. Hawksw. (8)
Muellerella Hepp ex Müll. Arg. (19)
Sarcinomyces Lindner (3)
Staninwardia B. Sutton (2)*FoF06853
Uncispora R.C. Sinclair & Morgan-Jones (4)*FoF10385

Phaeomoniellales K.H. Chen, A.E. Arnold, Gueidan & Lutzoni
Celotheliaceae Lücking, Aptroot & Sipman (= *Phaeomoniellaceae* P.M. Kirk)
Aequabiliella Crous (2)*FoF15736
Celothelium A. Massal. (12)
Celerioriella Crous (5)*FoF15737
Minutiella Crous (3)*FoF15738
Moristroma A.I. Romero & Samuels (6)
Neophaeomoniella Roon.-Lath. & Crous (7)
Nothophaeomoniella Crous (1)*Note 1407, FoF13229
Paraphaeomoniella Crous (1)
Phaeomoniella Crous & W. Gams (2)
Pseudophaeomoniella Nigro, Antelmi & Crous (2)
Xenocylindrosporium Crous & Verkley (2)

Phaeomoniellales genera *incertae sedis*
Dolabra C. Booth & W.P. Ting (1)
Heterophaeomoniella L. Mostert, C.F.J. Spies, Halleen & Gramaje (1)*Note 640
Vredendaliella C.F.J. Spies, Moyo, Halleen & L. Mostert (1)*Note 536, FoF13230

Pyrenulales Fink ex D. Hawksw. & O.E. Erikss.*FoF14244
Pyrenulaceae Rabenh.*FoF14245
Anthracothecium Hampe ex A. Massal. (107)*FoF14246
Blastodesmia A. Massal. (3)
Clypeopyrenis Aptroot (2)
Granulopyrenis Aptroot (6)
Lithothelium Müll. Arg. (33)
Mazaediothecium Aptroot (3)
Pyrenographa Aptroot (3)
Pyrenowilmsia R.C. Harris & Aptroot (1)
Pyrenula Ach. (= *Heufleridium* Müll. Arg.; = *Stromatothelium* Trevis.) (ca 200)*FoF14247
Pyrgillus Nyl. (18)
Serusiauxia Ertz & Diederich (1)*Note 471, FoF13231
Sulcopyrenula H. Harada (5)

Pyrenulales genera *incertae sedis*
Rhaphidicyrtis Vain. (1)
Xenus Kohlm. & Volkm.-Kohlm. (1)

Verrucariales Mattick ex D. Hawksw. & O.E. Erikss.
Adelococcaceae Triebel
Adelococcus Theiss. & Syd. (5)
Pseudopyrenidium Nav.-Ros., Zhurb. & Cl. Roux (2)
Sagediopsis Sacc. ex Vain. (13)

Sarcopyreniaceae Nav.-Ros. & Cl.Roux
Sarcopyrenia Nyl. (12)

Verrucariaceae Zenker
Agonimia Zahlbr. (25)
Anthracocarpon Breuss (3)
Atla S. Savić & Tibell (9)
Awasthiella Kr.P. Singh (1)
Bagliettoa A. Massal. (21)
Bellemerella Nav.-Ros. & Cl. Roux (4)
Catapyrenium Flot. (65)
Clauzadella Nav.-Ros. & Cl. Roux (1)
Clavascidium Breuss (10)
Dermatocarpon Eschw. (172)
Endocarpon Hedw. (ca 20)
Flakea O.E. Erikss. (1)
Glomerilla Norman (1)
Haleomyces D. Hawksw. & Essl. (1)
Halospora (Zschacke) Tomas. & Cif. (2)
Henrica B. de Lesd. (4)
Heterocarpon Müll. Arg. (1)
Heteroplacidium Breuss (12)
Hydropunctaria C. Keller, Gueidan & Thüs (11)
Involucropyrenium Breuss (10)
Mastodia Hook.f. & Harv. (= *Turgidosculum* Kohlm. & E. Kohlm.) (6)
Moriola Norman (= *Moriolomyces* Cif. & Tomas.) (17)*Doth
Neocatapyrenium H. Harada (5)

Nesothele Orange (5)*Note 942
Normandina Nyl. (= *Lauderlindsaya* J.C. David & D. Hawksw.) (4)
Norrlinia Theiss. & Syd. (2)
Parabagliettoa Gueidan & Cl. Roux (5)
Phaeospora Hepp (31)
Phylloblastia Vain. (19)
Placidiopsis Beltr. (33)
Placidium A. Massal. (38)
Placocarpus Trevis. (9)
Placopyrenium Breuss (20)
Placothelium Müll. Arg. (1)
Plurisperma Sivan. (1)
Polyblastia A. Massal. (ca 30)
Psoroglaena Müll. Arg. (23)
Rhabdopsora Müll. Arg. (2)
Scleropyrenium H. Harada (2)
Servitia M.S. Christ. & Alstrup (1)
Spheconisca Norman (27)
Sporodictyon A. Massal. (24)
Staurothele Norman (ca 20)
Telogalla Nik. Hoffm. & Hafellner (2)
Thelidiopsis Vain. (4)
Thelidium A. Massal. (ca 30)
Trimmatothele Norman ex Zahlbr. (5)
Verrucaria Schrad. (ca 150)
Verrucariopsis Gueidan, Monnat & Cl. Roux (2)*Note 940
Verrucula J. Steiner (20)
Verruculopsis Gueidan, Nav.-Ros. & Cl. Roux (5)
Wahlenbergiella Gueidan & Thüs (3)
Willeya Müll. Arg. (16)*Fp92

Verrucariales genera *incertae sedis*
Botryolepraria Canals, Hern.-Mar., Gómez-Bolea & Llimona (2)
Gemmaspora D. Hawksw. & Halıcı (1)
Kalbiana Henssen (1)
Merismatium Zopf (10)

Chaetothyriomycetidae family *incertae sedis*
Pleostigmataceae Grube, Muggia, de Hoog*Note 1017
Pleostigma Kirschst. (12)

Rhynchostomataceae Winka & O.E. Erikss.
Rhynchomeliola Speg. (7)
Rhynchostoma P. Karst. (20)

Subclass ***Coryneliomycetidae*** A.R. Wood, Damm, J.Z. Groenew., Cheew. & Crous
Coryneliales Seaver & Chardon
Coryneliaceae Sacc. ex Berl. & Voglino
Caliciopsis Peck (30)
Corynelia Ach. ex Fr.(14)
Coryneliopsis Butin (2)
Coryneliospora Fitzp. (2)

Fitzpatrickella Benny, Samuelson & Kimbr. (1)
Lagenulopsis Fitzp. (1)
Pewenomyces F. Balocchi, I. Barnes & M.J. Wingfield (4)*Notes 388, 860, FoF13233
Tripospora Sacc. (4)

Subclass *Eurotiomycetidae* Tehler
Arachnomycetales Gibas, Sigler & Currah
Arachnomycetaceae Gibas, Sigler & Currah
Arachnomyces Massee & E.S. Salmon (= *Onychocola* Sigler; = *Xanthothecium* Arx & Samson) (15)*Fp219, Kandemir et al. 2022

Eurotiales G.W. Martin ex Benny & Kimbr.
Aspergillaceae Link (= *Monascaceae* J. Schröt.)
Aspergillago Samson, Houbraken & Frisvad (1)
Aspergillus P. Micheli ex Haller (453)
Dichlaena Durieu & Mont. (2)
Hamigera Stolk & Samson (9)
Leiothecium Samson & Mouch. (2)
Monascus Tiegh. (9)
Penicilliopsis Solms (4)
Penicillium Link (535)*FoF12565
Phialomyces P.C. Misra & P.H.B. Talbot (4)
Pseudohamigera Houbraken, Frisvad & Samson (1)*Note 420, FoF13235
Pseudopenicillium Guevara-Suarez, Cano & Guarro (3)
Sclerocleista Subram. (2)
Warcupiella Subram. (1)
Xerochrysium Pitt (3)
Xeromyces L.R. Fraser (1)

Elaphomycetaceae Tul. ex Paol.
Elaphomyces T. Nees (113)
Pseudotulostoma O.K. Miller & T.W. Henkel (2)

Penicillaginaceae Houbraken, Frisvad & Samson*FoF13236
Penicillago M. Guevara-Suarez, J. Gené & D. García (4)*FoF13237

Thermoascaceae Apinis
Paecilomyces Bainier (13)
Thermoascus Miehe (7)

Trichocomaceae E. Fisch.
Acidotalaromyces Houbraken, Frisvad & Samson (1)*Notes 12, 561, FoF13238
Ascospirella Houbraken, Frisvad & Samson (1)*Note 49, FoF13239
Dendrosphaera Pat. (1)
Evansstolkia Houbraken, Frisvad & Samson (1)*Note 161, FoF12967
Rasamsonia Houbraken & Frisvad (15)
Sagenomella W. Gams (6)
Talaromyces C.R. Benj. (ca 230)
Thermomyces Tsikl. (2)
Trichocoma Jungh. (1)

Onygenales Cif. ex Benny & Kimbr.

Ajellomycetaceae Unter., J.A. Scott & Sigler
Blastomyces Gilchrist & W.R. Stokes (= *Ajellomyces* McDonough & A.L Lewis; (10)*Kandemir et al. 2022
Emergomyces Dukik, Sigler & de Hoog (= *Emmonsia* Cif. & Montemart.) (7)*Kandemir et al. 2022
Emmonsiellopsis Y. Marín, Stchigel, Guarro & Cano (3)*Fp243, Kandemir et al. 2022
Helicocarpus Y. Marín, Guarro, Cano & Stchigel (1)*Kandemir et al. 2022
Histoplasma Darling (7)*Kandemir et al. 2022
Lacazia Taborda, V.A. Taborda & McGinnis (= *Loboa* Cif., P.C. Azevedo, Campos & Carneiro) (1)*Kandemir et al. 2022
Paracoccidioides F.P. Almeida (11)*Kandemir et al. 2022

Apinisiaceae M. Li, Raza & L. Cai*Li et al. 2023a
Apinisia La Touche (5)
Arachnotheca Arx (2)

Arthrodermataceae Locq. ex Currah*Note 728
Arthroderma Curr. (45)*Note 728, Kandemir et al. 2022
Ctenomyces Eidam (11)*Note 728, Kandemir et al. 2022
Epidermophyton Sabour. (25)*Note 728, Kandemir et al. 2022
Guarromyces Y Gräser & de Hoog (1)*Note 728, Kandemir et al. 2022
Lophophyton Matr. & Dassonv. (1)*Note 728, Kandemir et al. 2022
Microsporum Gruby (56)*Note 728, Kandemir et al. 2022
Nannizzia Stockdale (15)*Note 728, Kandemir et al. 2022
Paraphyton Y. Gräser, Dukik & de Hoog (4)*Note 728, Kandemir et al. 2022
Trichophyton Malmsten (143)*Note 728, Kandemir et al. 2022

Ascosphaeraceae L.S. Olive & Spiltoir
Ascosphaera L.S. Olive & Spiltoir (27)*Kandemir et al. 2022

Eremascaceae Engl. & E. Gilg
Dactylodendron Stchigel, Rodr.-Andr. & Cano (3)*Note 130, FoF13234, Kandemir et al. 2022
Eremascus Eidam (2)*Kandemir et al. 2022

Helicoarthrosporaceae Stchigel, Rodr.-Andrade & Cano*Rodríguez-Andrade et al. 2019
Helicoarthrosporum Stchigel, Cano & Rodríguez-Andrade (1) Rodríguez-Andrade et al. 2019
Strongyloarthrosporum Rodr.-Andr., Cano & Stchigel (1) Rodríguez-Andrade et al. 2019

Gymnoascaceae Baran.
Arachniotus J. Schröt. (15)*Kandemir et al. 2022
Diploöspora Grove (ca 7)*Tanney et al. 2015
Gymnascella Peck (= *Petalosporus* G.R. Ghosh, G.F. Orr & Kuehn) (12)*Kandemir et al. 2022
Gymnoascus Baran. (ca 20)*Kandemir et al. 2022
Gymnoascoideus G.F. Orr, K. Roy & G.R. Ghosh. (3)*Kandemir et al. 2022
Kraurogymnocarpa Udagawa & Uchiy. (1)*Kandemir et al. 2022
Narasimhella Thirum. & P.N. Mathur (= *Mallochia* Arx & Samson) (6)*Kandemir et al. 2022
Oncocladium Wallr. (1)*Kandemir et al. 2022
Pseudoarthropsis Stchigel, Rodr.-Andr. & Cano (2)*Note 650, Kandemir et al. 2022

Malbrancheaceae Kandemir & de Hoog*****Note 929
Malbranchea Sacc. (= *Auxarthron* G.F. Orr & Kuehn) (38)*Note 930, Fp244, Kandemir et al. 2022

Nannizziopsidaceae Guarro, Stchigel, Deanna A. Sutton & Cano

Nannizziopsis Currah (16)*Kandemir et al. 2022
Paranannizziopsis Sigler, Hambl. & Paré, (5)*Kandemir et al. 2022

Neoarthropsidaceae Torres-Garcia & Gené*Note 1492
Neoarthropsis Torres-García, Cano & Gené (2)*Note 1492

Neogymnomycetaceae Kandemir & de Hoog*Note 931
Auxarthronopsis Rah. Sharma, Y. Gräser & S.K. Singh (6)*Kandemir et al. 2022
Canomyces Rahul Sharma & Shouche (1)*Note 98, FoF13278, Kandemir et al. 2022
Currahomyces Rahul Sharma & Shouche (2)*Note 126, Kandemir et al. 2022
Neogymnomyces G.F. Orr (= *Chlamydosauromyces* Sigler, Hambl. & Paré) (3)*Note 932, Kandemir et al. 2022
Renispora Sigler & J.W. Carmich. (1)*Kandemir et al. 2022

Onygenaceae Berk.*Kandemir et al. 2022
Amauroascus J. Schröt. (= *Kuehniella* G.F. Orr) (ca 15)
Aphanoascella Sutton et al. (= *Neoxenophila* Apinis & B.M. Clark; = *Xynophila* Malloch & Cain) (1)*Kandemir et al. 2022
Aphanoascus Zukal (19)*Fp242,*Kandemir et al. 2022
Ascocalvatia Malloch & Cain (1)*Kandemir et al. 2022
Bifidocarpus Cano, Guarro & R.F. Castañeda (2)*Kandemir et al. 2022
Brunneospora Guarro & Punsola (2)*Kandemir et al. 2022
Byssoonygena Guarro, Punsola & Cano (1)*Kandemir et al. 2022
Castanedomyces Cano, L.B. Pitarch & Guarro (1)*Fp91, Kandemir et al. 2022
Coccidioides G.W. Stiles (4)*Kandemir et al. 2022
Emydomyces Mill. & Woodburn*Kandemir et al. 2022
Keratinophyton Randhawa & Sandhu*Kandemir et al. 2022
Onygena Pers. (12)*Kandemir et al. 2022
Ophidiomyces Sigler, Hambl. & Paré (1)*Kandemir et al. 2022
Pectinotrichum Varsavsky & G.F. Orr (1)*Kandemir et al. 2022
Pseudoamauroascus Cano, M. Solé & Guarro (1)*Kandemir et al. 2022
Pseudomalbranchea Rodr.-Andr., Cano & Stchigel (1)*Note 631, Fp246, Kandemir et al. 2022
Uncinocarpus Sigler & G.F. Orr (2)*Kandemir et al. 2022

Spiromastigoidaceae Guarro, Cano & Stchigel (= ***Spiromastigaceae*** Guarro, Cano & Stchigel)
Pseudospiromastix Guarro, Stchigel & Cano (1)*Kandemir et al. 2022
Sigleria Hirooka, Tanney & Seifert (2)*Fp247, Kandemir et al. 2022
Spiromastigoides Doweld (= *Spiromastix* Kuehn & G.F. Orr) (15)*Kandemir et al. 2022

Onygenales genera *incertae sedis*
Amaurascopsis Guarro, Gené & De Vroey (1)*Kandemir et al. 2022
Chrysosporium Corda (63)*Kandemir et al. 2022
Harorepupu P.R. Johnst., H.D.T. Nguyen, D.C. Park & Hirooka (1)*Kandemir et al. 2022
Leucothecium Arx & Samson (2)*Kandemir et al. 2022
Inopinatus J. Brasch, Y. Gräser, K. Voss, K.A. Langen & A. Yurkov (1)*Brasch et al. 2024
Myotisia Kubátová, M. Kolařík & Hubka (1)*Fp245, Kandemir et al. 2022
Myriodontium Samson & Polon. (1)*Kandemir et al. 2022
Polytolypa J.A. Scott & Malloch (1)*Kandemir et al. 2022
Pseudoamaurascopsis Torres-Garcia, Dania García & Gené (1)*Torres-Garcia et al. 2023b
Shanorella R.K. Benj. (1)*Kandemir et al. 2022
Testudomyces Cano, M. Solé & Guarro (1)*Kandemir et al. 2022

Eurotiomycetidae genera *incertae sedis*
Azureothecium Matsush. (1)
Pisomyxa Corda (1)
Samarospora Rostr. (1)
Veronaia Benedek (2)

Eurotiomycetes order *incertae sedis*
Tuberculiformales Zhi Yuan Zhang & Y.F. Han*Zhang et al. 2024f
Tuberculiformaceae Zhi Yuan Zhang & Y.F. Han*Zhang et al. 2024f
Tuberculiforma Zhi Yuan Zhang & Y.F. Han (2)*Zhang et al. 2024f

Subclass *Mycocaliciomycetidae* Tibell
Mycocaliciales Tibell & Wedin
Mycocaliciaceae A.F.W. Schmidt (= *Sphinctrinaceae* M. Choisy)*FoF15501
Brunneocarpos A. Giraldo & Crous (1)
Chaenothecopsis Vain. (ca 50)
Mycocalicium Vain. (33)*FoF15500
Phaeocalicium A.F.W. Schmidt (23)
Pyrgidium Nyl. (3)
Sphinctrina Fr. (9)
Stenocybe Nyl. ex Körb. (14)

Subclass *Sclerococcomycetidae* Réblová, Unter. & W. Gams
Sclerococcales Réblová, Unter. & W. Gams
Dactylosporaceae Bellem. & Hafellner (= *Sclerococcaceae* Réblová, Unter. & W. Gams)
Cylindroconidiis H. Zhang & X.D. Yu (1)
Fusichalara S. Hughes & Nag Raj (6)*Note 175
Gamsomyces Hern.-Restr. & Réblová (3)*Note 178, FoF13280
Rhopalophora Réblová, Unter. & W. Gams (2)
Sclerococcum Fr. (103) (= *Dactylospora* Körb.) (ca 80)*Note 785

Class *Laboulbeniomycetes* Engl.
Herpomycetales Haelew. & Pfister
Herpomycetaceae I.I. Tav.
Herpomyces Thaxt. (27)*Note 208

Laboulbeniales Lindau
Ceratomycetaceae S. Colla
Autoicomyces Thaxt. (28)
Ceratomyces Thaxt. (35)
Drepanomyces Thaxt. (1)
Eusynaptomyces Thaxt. (6)
Helodiomyces F. Picard (1)
Phurmomyces Thaxt. (1)
Plectomyces Thaxt. (1)
Rhynchophoromyces Thaxt. (8)
Synaptomyces Thaxt. (1)
Tettigomyces Thaxt. (16)
Thaumasiomyces Thaxt. (3)
Thripomyces Speg. (2)

Euceratomycetaceae I.I. Tav.

Cochliomyces Speg. (2)
Colonomyces R.K. Benj. (1)
Euceratomyces Thaxt. (1)
Euzodiomyces Thaxt. (2)
Pseudoecteinomyces W. Rossi (1)

Laboulbeniaceae G. Winter
Acallomyces Thaxt. (3)
Acompsomyces Thaxt. (8)
Acrogynomyces Thaxt. (6)
Amorphomyces Thaxt. (14)
Amphimyces Thaxt. (1)
Apatelomyces Thaxt. (1)
Apatomyces Thaxt. (1)
Aphanandromyces W. Rossi (1)
Aporomyces Thaxt. (11)
Appendiculina Berl. (3)
Arthrorhynchus Kolen. (4)
Asaphomyces Thaxt. (4)
Autophagomyces Thaxt. (18)
Benjaminiomyces I.I. Tav. (4)
Blasticomyces I.I. Tav. (3)
Bordea Maire (15)
Camptomyces Thaxt. (9)
Cantharomyces Thaxt. (33)
Capillistichus Santam. (1)
Carpophoromyces Thaxt. (1)
Cesariella W. Rossi & Santam. (1)
Chaetarthriomyces Thaxt. (4)
Chaetomyces Thaxt. (1)
Chitonomyces Peyr. (89)
Clematomyces Thaxt. (5)
Clonophoromyces Thaxt. (2)
Columnomyces R.K. Benj. (4)*Note 111
Compsomyces Thaxt. (6)
Coreomyces Thaxt. (21)
Corethromyces Thaxt. (106)
Corylophomyces R.K. Benj. (5)
Cryptandromyces Thaxt. (= *Peyerimhoffiella* Maire) (23)
Cucujomyces Speg. (20)
Cupulomyces R.K. Benj. (= *Balazucia* R.K. Benj.) (1)
Dermapteromyces Thaxt. (3)
Diandromyces Thaxt. (2)
Diaphoromyces Thaxt. (5)
Diclonomyces Thaxt. (3)
Dimeromyces Thaxt. (118)
Dimorphomyces Thaxt. (32)
Dioicomyces Thaxt. (28)
Diphymyces I.I. Tav. (27)
Diplomyces Thaxt. (3)
Diplopodomyces W. Rossi & Balazuc (6)
Dipodomyces Thaxt. (2)

Distolomyces Thaxt. (4)
Dixomyces I.I. Tav. (14)
Ecteinomyces Thaxt. (4)
Enarthromyces Thaxt. (1)
Eucantharomyces Thaxt. (30)
Euhaplomyces Thaxt. (1)
Eumonoicomyces Thaxt. (2)
Euphoriomyces Thaxt. (19)
Fanniomyces T. Majewski (3)
Filariomyces Shanor (1)
Gloeandromyces Thaxt. (10)
Haplomyces Thaxt. (3)
Hesperomyces Thaxt. (12)
Histeridomyces Thaxt. (6)
Homaromyces R.K. Benj. (1)
Hydraeomyces Thaxt. (1)
Hydrophilomyces Thaxt. (16)
Idiomyces Thaxt. (1)
Ilyomyces F. Picard (4)
Ilytheomyces Thaxt. (15)
Kainomyces Thaxt. (4)
Kleidiomyces Thaxt. (4)
Kruphaiomyces Thaxt. (1)
Kyphomyces I.I. Tav. (15)
Laboulbenia Mont. & C.P. Robin (= *Botryandromyces* I.I. Tav. & T. Majewski; = *Scalenomyces* I.I. Tav.) (685)*Van Caenegem et al. 2023
Limnaiomyces Thaxt. (3)
Majewskia Y.B. Lee & Sugiy. (1)
Meionomyces Thaxt. (5)
Microsomyces Thaxt. (2)
Mimeomyces Thaxt. (18)
Misgomyces Thaxt. (10)
Monoicomyces Thaxt. (56)
Nanomyces Thaxt. (3)
Neohaplomyces R.K. Benj. (3)
Nycteromyces Thaxt. (2)
Opilionomyces Santam., Enghoff, Gruber & Reboleira (1)
Ormomyces I.I. Tav. (1)
Osoriomyces Terada (1)
Parvomyces Santam. (1)
Peyritschiella Thaxt. (49)
Phalacrichomyces R.K. Benj. (2)
Phaulomyces Thaxt. (14)
Picardella I.I. Tav. (2)
Polyandromyces Thaxt. (= *Monandromyces* R.K. Benj.) (1)
Polyascomyces Thaxt. (1)
Porophoromyces Thaxt. (2)
Prolixandromyces R.K. Benj. (23)
Pselaphidomyces Speg. (1)
Pseudozeugandromyces De Kesel & Haelew. (1)*Note 427
Rhachomyces Thaxt. (96)
Rhadinomyces Thaxt. (1)

Rhipidiomyces Thaxt. (1)
Rhizomyces Thaxt. (10)
Rhizopodomyces Thaxt. (7)
Rickia Cavara (155)
Rodaucea W. Rossi & Santam. (2)
Rossiomyces R.K. Benj. (1)
Sandersoniomyces R.K. Benj. (1)
Scaphidiomyces Thaxt. (5)
Scelophoromyces Thaxt. (1)
Scepastocarpus Santam. (1)
Siemaszkoa I.I. Tav. & T. Majewski (7)
Smeringomyces Thaxt. (4)
Sphaleromyces Thaxt. (6)
Stemmatomyces Thaxt. (2)
Stichomyces Thaxt. (6)
Stigmatomyces H. Karst. (177)
Sugiyamaemyces I.I. Tav. & Balazuc (1)
Symplectromyces Thaxt. (3)
Sympodomyces R.K. Benj. (1)
Synandromyces Thaxt. (11)
Tanmaurkiella Santam. (2)*Note 502
Tavaresiella T. Majewski (4)
Teratomyces Thaxt. (10)
Tetrandromyces Thaxt. (6)
Thaxterimyces Santam., Reboleira & Enghoff (1)
Trenomyces Chatton & F. Picard (12)
Triainomyces W. Rossi & A. Weir (1)
Triceromyces T. Majewski (11)
Trochoideomyces Thaxt. (1)
Troglomyces S. Colla (9)
Zeugandromyces Thaxt. (4)
Zodiomyces Thaxt. (5)

Pyxidiophorales P.F. Cannon
Pyxidiophoraceae G.R.W. Arnold
Acariniola T. Majewski & J. Wiśn. (3)
Gliocephalis Matr. (2)
Mjuua Crous & Sand.-Den. (1)*Crous et al. 2024a
Mycorhynchidium Malloch & Cain (1)
Pleurocatena G. Arnaud (3)
Pyxidiophora Bref. & Tavel (= *Amphoropsis* Speg.; = *Endosporella* Thaxt.; = *Entomocosma* Speg.; *Myriapodophila* Speg.; *Thaxteriola* Speg.) (27)

Laboulbeniomycetes genera *incertae sedis*
Chantransiopsis Thaxt. (4)
Coreomycetopsis Thaxt. (1)
Laboulbeniopsis Thaxt. (1)
Subbaromyces Hesselt. (2)*FWF, FoF10511
Tetrameronycha Speg. ex W. Rossi & M. Blackw. (1)

Class *Lecanoromycetes* O.E. Erikss. & Winka
Subclass *Acarosporomycetidae* V. Reeb, Lutzoni & Cl. Roux

Acarosporales V. Reeb, Lutzoni & Cl. Roux
Acarosporaceae Zahlbr.*FoF15502
Acarospora A. Massal. (ca 100)
Caeruleum K. Knudsen & Arcadia (2)
Glypholecia Nyl. (7)
Lithoglypha Brusse (1)
Myriospora Nägeli ex Uloth (= *Trimmatothelopsis* Zschacke) (11)
Neoacrodontiella Crous & M.J. Wingf. (1)*Note 298, FoF13328
Nothoramularia Crous, J. Kruse & U. Braun (1)*Note 1202
Pleopsidium Körb. (6)
Polysporina Vězda (10)
Sarcogyne Flot. (ca 30)
Thelocarpella Nav.-Ros. & Cl. Roux (1)
Timdalia Hafellner (1)

Eigleraceae Hafellner
Eiglera Hafellner (2)

Acarosporales genus *incertae sedis*
Vanderaaea Crous (1)*Note 529, FoF13329

Subclass ***Cryptocaliciomycetidae*** M. Prieto, Etayo & Olariaga*Note 953
Cryptocaliciales M. Prieto, Etayo & Olariaga*Note 952
Cryptocaliciaceae Etayo, Olariaga & M. Prieto*Note 960
Cryptocalicium Etayo, Olariaga & M. Prieto (1)*Note 1456
Resinogalea Rikkinen & A.R. Schmidt (3)*Balocchi et al. 2023

Subclass ***Lecanoromycetidae*** P.M. Kirk, P.F. Cannon, J.C. David & Stalpers ex Miądl., Lutzoni & Lumbsch
Caliciales Bessey
Caliciaceae Chevall.*FoF09427
Acolium (Ach.) Gray (23)*FoF09428
Acroscyphus Lév. (1)
Allocalicium M. Prieto & Wedin (1)
Amandinea M. Choisy ex Scheid. & M. Mayrhofer (99)
Australiaena Matzer, H. Mayrhofer & Elix (1)
Baculifera Marbach & Kalb (19)
Buellia De Not. (= *Dirinastrum* Müll. Arg.) (ca 200)
Burrowsia Fryday & I. Medeiros (1)*Note 87, FoF14956
Calicium Pers. (= *Caliciella* Vain.; = *Cyphelium* Ach.) (ca 40)
Chrismofulvea Marbach (3)
Ciposia Marbach (1)
Cratiria Marbach (ca 25)
Culbersonia Essl. (1)
Dermatiscum Nyl. (6)
Dermiscellum Hafellner, H. Mayrhofer & Poelt (1)
Dimelaena Norman (39)
Diploicia A. Massal. (ca 18)
Diplotomma Flot. (ca 10)
Dirinaria (Tuck.) Clem. (ca 20)
Efflorellia Kalb & Aptroot (1)*Kalb & Aptroot 2024
Endohyalina Marbach (11)

Fluctua Marbach (1)
Gassicurtia Fée (35)
Hypoflavia Marbach (3)
Monerolechia Trevis. (5)
Orcularia (Malme) Kalb & Giralt (4)
Pseudothelomma M. Prieto & Wedin (2)
Pyxine Fr. (ca 45)
Redonia C.W. Dodge (1)
Santessonia Hale & Vobis (9)
Sculptolumina Marbach (6)
Sphinctrinopsis Woron. (1)
Stigmatochroma Marbach (9)
Tetramelas Norman (38)
Texosporium Nádv. ex Tibell & Hofsten (1)
Thelomma A. Massal. (4)
Tholurna Norman (1)

Physciaceae Zahlbr.
Anaptychia Körb. (3)
Coscinocladium Kunze (2)
Helmutiopsis S.Y. Kondr., Lőkös & Hur (3)*Note 660
Heterodermia Trevis. (ca 50)
Huriopsis S.Y. Kondr. & Lőkös (7)*Note 662
Hyperphyscia Müll. Arg. (23)
Johnsheardia S.Y. Kondr., Kärnefelt & A. Thell (5)*Note 663
Kashiwadia S.Y. Kondr., Lőkös & Hur(6)
Klauskalbia S.Y. Kondr., Lőkös, E. Farkas & Hur (4)*Note 664
Kudratovia S.Y. Kondr., Lőkös & Hur (8)*Note 945
Kurokawia S.Y. Kondr., Lőkös & Hur (70)*Note 948
Leucodermia Kalb (10)
Mischoblastia A. Massal. (6)
Mobergia H. Mayrhofer & Sheard (2)
Oxnerella S.Y. Kondr., Lőkös & Hur (2)
Phaeophyscia Moberg (53)
Phaeorrhiza H. Mayrhofer & Poelt (2)
Physcia (Schreb.) Michx. (ca 40)
Physciella Essl. (8)
Physconia Poelt (ca 10)
Poeltonia S.Y. Kondr., Lőkös & Hur (5)*Note 668
Polyblastidium Kalb (22)
Rinodina (Ach.) Gray (ca 100)
Rinodinella H. Mayrhofer & Poelt (6)
Tornabea Østh. (2)

Lecanorales Nannf.
Biatorellaceae M. Choisy ex Hafellner & Casares
Biatorella De Not. (8)

Bruceomycetaceae Rikkinen & A.R. Schmidt
Bruceomyces Rikkinen (1)

Catillariaceae Hafellner

Austrolecia Hertel (1)
Catillaria A. Massal. (ca 50)
Placolecis Trevis. (6)
Solenopsora A. Massal. (32)
Xanthopsorella Kalb & Hafellner (2)

Cladoniaceae Zenker (= *Squamarinaceae* Hafellner; = *Stereocaulaceae* Chevall.)
Calathaspis I.M. Lamb & W.A. Weber (1)
Carassea S. Stenroos (1)
Cetradonia J.C. Wei & Ahti (1)
Cladia Nyl. (ca 20)
Cladonia P. Browne (= *Verrucaster* Tobler) (ca 200)
Herteliana P. James (4)
Hertelidea Printzen & Kantvilas (8)
Heteromyces Müll. Arg. (1)
Lepraria Ach. (75)
Metus D.J. Galloway & P. James (3)
Notocladonia S. Hammer (2)
Paralecia Brackel, Greiner, Peršoh & Rambold (1)*FoF00563
Pilophorus Th. Fr. (21)
Pulchrocladia S. Stenroos, Pino-Bodas, Lumbsch & Ahti (3)
Pycnothelia (Ach.) Dufour (7)
Sphaerophoropsis Vain. (2)
Squamarina Poelt (34)
Squamella S. Hammer (1)
Stereocaulon Hoffm. (ca 50)
Thysanothecium Mont. & Berk. (10)
Xyleborus R.C. Harris & Ladd (2)

Gypsoplacaceae Timdal
Gypsoplaca Timdal (6)

Haematommataceae Hafellner
Haematomma A. Massal. (ca 25)

Lecanoraceae Körb. (= *Carbonicolaceae* Bendiksby & Timdal)
Adelolecia Hertel & Hafellner (4)
Ameliella Fryday & Coppins (2)
Bryodina Hafellner (2)
Bryonora Poelt (13)
Carbonea (Hertel) Hertel (28)
Carbonicola Bendiksby & Timdal (3)
Cladidium Hafellner (2)
Claurouxia D. Hawksw. (1)
Clauzadeana Cl. Roux (1)
Edrudia W.P. Jordan (1)
Frutidella Kalb (3)
Glaucomaria M. Choisy (ca 10)*Kondratyuk et al. 2019
Japewia Tønsberg (4)
Japewiella Printzen (6)
Lecanora Ach. (ca 250)
Lecanoropsis M. Choisy (2)*Kondratyuk et al. 2019

Lecidella Körb. (162)
Maronina Hafellner & R.W. Rogers (2)
Maronora Kalb & Aptroot (1)
Nimisora Pérez-Ort., M. Svenss. & J.C. Zamora (1)*Note 1047
Miriquidica Hertel & Rambold (37)
Omphalodina M. Choisy (ca 10)*Kondratyuk et al. 2019
Palicella Rodr. Flakus & Printzen (6)
Polyozosia A. Massal. (= *Myriolecis* Clements) (43)
Protoparmeliopsis M. Choisy (= *Sedelnikovaea* S.Y. Kondr., M.H. Jeong & Hur) (ca 50)
Psorinia Gotth. Schneid. (3)
Pulvinora Davydov, Yakovch. & Printzen (2)*Note 700, FoF13332
Punctonora Aptroot (2)
Pyrrhospora Körb. (9)
Rhizoplaca Zopf (29)
Sagema Poelt & Grube (1)
Straminella M. Choisy (7)*Kondratyuk et al. 2019
Traponora Aptroot (7)
Vainionora Kalb (11)
Verseghya S.Y. Kondr., Lőkös & Hur (2)*Kondratyuk et al. 2019
Xanthosyne Lendemer, R.C. Harris, Brodo & McMullin (1)*Brodo et al. 2024

Malmideaceae Kalb, Rivas Plata & Lumbsch
Australidea Kantvilas, Wedin & M. Svenss. (1)*Note 795
Cheiromycina B. Sutton (4)
Crustospathula Aptroot (5)
Kalbionora Sodamuk, S.D. Leav. & Lumbsch (1)
Malmidea Kalb, Rivas Plata & Lumbsch (74)
Savoronala Ertz, Eb. Fisch., Killmann, Razafindr. & Sérus (1)*Fp140
Sprucidea M. Cáceres, Aptroot & Lücking (6)
Zhurbenkoa Flakus, Etayo, Pérez-Ortega & Rodr. Flakus (3)

Megalariaceae Hafellner
Catillochroma Kalb (9)
Megalaria Hafellner (ca 48)

Pachyascaceae Poelt ex P.M. Kirk, P.F. Cannon & J.C. David
Pachyascus Poelt & Hertel (1)

Parmeliaceae F. Berchtold & J. Presl
Alectoria Ach. (= *Gowardia* Halonen, Myllys, Velmala & Hyvärinen) (121)
Allantoparmelia (Vain.) Essl. (3)
Anzia Stizenb. (52)
Arctoparmelia Hale (6)
Asahinea W.L. Culb. & C.F. Culb. (4)
Austromelanelixia Divakar, A. Crespo & Lumbsch (5)
Austroparmelina A. Crespo, Divakar & Elix (16)
Brodoa Goward (2)
Bryocaulon Kärnefelt (4)
Bryoria Brodo & D. Hawksw. (ca 79)
Bulbothrix Hale (70)
Canoparmelia Elix & Hale (39)

Cetraria Ach. (= *Allocetraria* Kurok. & M.J. Lai; = *Cetrariella* Kärnefelt & A. Thell; = *Usnocetraria* M.J. Lai & J.C. Wei; = *Vulpicida* J.-E. Mattson & M.J. Lai) (ca 15)
Cetrelia W.L. Culb. & C.F. Culb. (18)
Cladocetraria Chesnokov, Prokopiev & Konoreva (1)*Chesnokov et al. 2023
Coelopogon Brusse & Kärnefelt (2)
Cornicularia (Schreb.) Ach. (24)
Crespoa (D. Hawksw.) Lendemer & B.P. Hodk. (5)
Dactylina Nyl. (5)
Davidgallowaya Aptroot (1)
Dolichousnea (Y. Ohmura) Articus (3)
Emodomelanelia Divakar & A. Crespo (1)
Esslingeriana Hale & M.J. Lai (1)
Eumitria Stirt. (8)
Evernia Ach. (40)
Everniopsis Nyl. (2)
Flavoparmelia Hale (39)
Flavopunctelia (Krog) Hale (6)
Foveolaria Chesnokov, Prokopiev, Konoreva & Davydov (1)*Chesnokov et al. 2023
Himantormia I.M. Lamb (2)
Hypogymnia (Nyl.) Nyl. (126)
Hypotrachyna (Vain.) Hale (303)
Imshaugia S.L.F. Mey. (7)
Letharia (Th. Fr.) Zahlbr. (17)
Lethariella (Motyka) Krog (11)
Melanelia Essl. (8)
Melanelixia O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch (13)
Melanohalea O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch (30)
Menegazzia A. Massal. (100)
Montanelia Divakar, A. Crespo, Wedin & Essl. (8)
Myelochroa (Asahina) Elix & Hale (32)
Neoprotoparmelia Garima Singh, Lumbsch & I. Schmitt (24)
Nephromopsis Müll. Arg. (= *Ahtiana* Goward; = *Arctocetraria* Kärnefelt & A. Thell; = *Cetrariopsis* Kurok.; = *Flavocetraria* Kärnefelt & A. Thell; = *Flavocetrariella* D.D. Awasthi; = *Kaernefeltia* A. Thell & Goward; = *Masonhalea* Kärnefelt; = *Tuckermanella* Essl.; = *Tuckermannopsis* Gyeln.) (ca 60)
Nipponoparmelia (Kurok.) K.H. Moon, Y. Ohmura & Kashiw. (5)
Nodobryoria Common & Brodo (3)
Notoparmelia A. Crespo, Ferencová & Divakar (18)
Omphalodium Meyen & Flot. (12)
Omphalora T.H. Nash & Hafellner (1)
Oropogon Th. Fr. (39)
Pannoparmelia (Müll. Arg.) Darb. (6)
Parmelia Ach. (= *Cryptodictyon* A. Massal.) (ca 20)
Parmelina Hale (33)
Parmelinella Elix & Hale (14)
Parmeliopsis (Nyl.) Nyl. (11)
Parmotrema A. Massal. (ca 150)
Parmotremopsis Elix & Hale (3)
Phacopsis Tul. (14)
Platismatia W.L. Culb. & C.F. Culb. (11)
Pleurosticta Petr. (2)
Protoparmelia M. Choisy (26)

Protousnea (Motyka) Krog (9)
Pseudephebe M. Choisy (4)
Pseudevernia Zopf (12)
Pseudoparmelia Lynge (47)
Psiloparmelia Hale (13)
Punctelia Krog (58)
Relicina (Hale & Kurok.) Hale (60)
Remototrachyna Divakar & A. Crespo (20)
Sulcaria Bystrek (5)
Usnea Dill. ex Adans. (ca 100)
Xanthoparmelia (Vain.) Hale (ca 500)

Pilocarpaceae Zahlbr.
Aquacidia Aptroot (3)
Badimiella Malcolm & Vězda (1)
Baflavia Lücking (1)
Bapalmuia Sérus. (24)
Barubria Vězda (2)
Brasilicia Lücking, Kalb & Serus. (5)
Bryogomphus Lücking, W.R. Buck, Sérus. & L.I. Ferraro (1)
Byssolecania Vain. (9)
Byssoloma Trevis. (= *Pilocarpon* Vain.) (80)
Calopadia Vězda (27)
Calopadiopsis Lücking & R. Sant. (2)
Eugeniella Lücking, Sérus. & Kalb (13)
Fellhanera Vězda (ca 50)
Fellhaneropsis Sérus. & Coppins (11)
Jejulea J.P. Halda, J.J. Woo & Hur (1)*Note 955
Kantvilasia P.M. McCarthy, Elix & Sérus. (1)
Lasioloma R. Sant. (9)
Leimonis R.C. Harris (2)
Loflammia Vězda (2)
Loflammiopsis Lücking & Kalb (1)
Logilvia Vězda (1)
Micarea Fr. (ca 100)
Podotara Malcolm & Vězda (1)
Pseudocalopadia Lücking (2)
Roccellinastrum Follmann (7)
Schadonia Körb. (4)
Septotrapelia Aptroot & Chaves (4)
Sporopodiopsis Sérus. (2)
Sporopodium Mont. (53)
Szczawinskia A. Funk (4)
Tapellaria Müll. Arg. (25)
Tapellariopsis Lücking (1)

Psilolechiaceae S. Stenroos, Miądl. & Lutzoni
Psilolechia A. Massal. (6)

Psoraceae Zahlbr.
Brianaria S. Ekman & M. Svenss. (4)
Glyphopeltis Brusse (2)

Protoblastenia (Zahlbr.) J. Steiner (30)
Protomicarea Hafellner (3)
Psora Hoffm. (141)
Psorula Gotth. Schneid. (1)

Ramalinaceae C. Agardh
Appressodiscus Aptroot & L.A. Santos (2)*Note 1235
Auriculora Kalb (1)
Bacidia De Not. (= *Bacidiopsora* Kalb) (ca 100)
Bacidina Vězda (78)
Badimia Vězda (20)
Bellicidia Kistenich, Timdal, Bendiksby & S. Ekman (1)
Biatora Fr. (= *Myrionora* R.C. Harris; = *Ivanpisutia* S.Y. Kondr., Lőkös & Hur) (ca 40)
Bibbya J.H. Willis (10)
Bilimbia De Not. (= *Myxobilimbia* Hafellner) (158)
Cenozosia A. Massal. (3)
Cliostomum Fr. (31)
Echidnocymbium Brusse (1)
Eschatogonia Trevis. (7)
Heppsora D.D. Awasthi & Kr.P. Singh (2)
Jarmania Kantvilas (2)
Kiliasia Hafellner (10)
Krogia Timdal (6)
Lecania A. Massal. (207)
Lithocalla Orange (2)*FoF13334
Lueckingia Aptroot & L. Umaňa (1)
Mycobilimbia Rehm (20)
Myelorrhiza Verdon & Elix (2)
Namibialina Spjut & Sérus. (1)*Note 291, Fp173, FoF13335
Niebla Rundel & Bowler (60)
Parallopsora Kistenich, Timdal & Bendiksby (3)
Phyllopsora Müll. Arg. (= *Crocynia* (Ach.) A. Massal.) (107)
Physcidia Tuck. (9)
Pseudolepraria Kukwa, Jabłońska, Kosecka & Guzow-Krzem. (1)*Note 1394
Ramalina Ach. (ca 100)
Rolfidium Moberg (4)
Scutula Tul. (= *Karsteniomyces* D. Hawksw.; = *Libertiella* Speg. & Roum.) (45)
Sporacestra A. Massal. (1)
Stirtoniella D.J. Galloway, Hafellner & Elix (1)
Tamasia Farkas (1)*Note 1312
Thalloidima A. Massal. (59)
Thamnolecania (Vain.) Gyeln. (7)
Tibellia Vězda & Hafellner (1)
Toninia A. Massal. (= *Arthrosporum* A. Massal.) (136)
Toniniopsis Frey (15)
Tylocliostomum van den Boom & Magain (1)*Note 525, FoF13337
Tylothallia P. James & H. Kilias (3)
Vermilacinia Spjut & Hale (22)
Waynea Moberg (7)

Ramboldiaceae S. Stenroos, Miądl. & Lutzoni
Ramboldia Kantvilas & Elix (40)

Scoliciosporaceae Hafellner
Scoliciosporum A. Massal. (15)

Sphaerophoraceae Fr.
Austropeltum Henssen, H. Döring & Kantvilas (1)
Bunodophoron A. Massal. (27)
Calycidium Stirt. (2)
Gilbertaria M. Svensson & Fryday (4)*Note 961
Leifidium Wedin (1)
Neophyllis F. Wilson (2)
Sphaerophorus Pers. (37)

Tephromelataceae Hafellner
Calvitimela Hafellner (11)
Mycoblastus Norman (29)
Tephromela M. Choisy (ca 50)
Violella T. Sprib. (2)

Lecanorales genera *incertae sedis*
Catinaria Vain. (12)
Compsocladium I.M. Lamb (2)
Coronoplectrum Brusse (1)
Corticiruptor Wedin & Hafellner (2)
Lichenosticta Zopf (6)
Myochroidea Printzen, T. Sprib. & Tønsberg (4)
Neopsoromopsis Gyeln. (1)
Nimisiostella Calat., Barreno & O.E. Erikss. (1)
Psoromella Gyeln. (1)
Puttea S. Stenroos & Huhtinen (4)
Ramalea Nyl. (3)
Tasmidella Kantvilas, Hafellner & Elix (1)
Umbilithecium Etayo (1)
Umushamyces Etayo (2)

Lecideales Vain.
Lecideaceae Chevall.
Amygdalaria Norman (9)
Bahianora Kalb (1)
Bellemerea Hafellner & Cl. Roux (9)
Bryobilimbia Fryday, Printzen & S. Ekman (9)
Catarrhospora Brusse (2)
Cecidonia Triebel & Rambold (2)
Clauzadea Hafellner & Bellem. (5)
Eremastrella S. Vogel (2)
Farnoldia Hertel (7)
Immersaria Rambold & Pietschm. (9)
Imsharria Fryday & U. Rupr. (1)*Fryday et al. 2024a
Koerberiella Stein (24)
Labyrintha Malcolm, Elix & Owe-Larss. (1)
Lecaimmeria C.M. Xie, Lu L. Zhang & Li S. Wang (11)*Note 665
Lecidea Ach. (ca 100)

Lecidoma Gotth. Schneid. & Hertel (1)
Melanolecia Hertel (4)
Pachyphysis R.C. Harris & Ladd (1)
Paraporpidia Rambold & Pietschm. (4)
Poeltiaria Hertel (6)
Poeltidea Hertel & Hafellner (2)
Porpidia Körb. (57)
Porpidinia Timdal (2)
Pseudopannaria (B. de Lesd.) Zahlbr. (1)
Rhizolecia Hertel (1)
Romjularia Timdal (1)
Schizodiscus Brusse (1)
Stenhammarella Hertel (1)
Stephanocyclos Hertel (1)
Xenolecia Hertel (3)

Lopadiaceae Hafellner
Lopadium Körb. (110)

Leprocaulales Lendemer & B.P. Hodk.
Leprocaulaceae Lendemer & B.P. Hodk.
Halecania M. Mayrhofer (24)
Leprocaulon Nyl. ex Lamy (13)
Speerschneidera Trevis. (1)

Peltigerales Walts. Watson
Coccocarpiaceae Henssen
Coccocarpia Pers. (ca 20)
Peltularia R. Sant. (4)
Spilonema Bornet (11)

Collemataceae Zenker
Blennothallia Trevis. (4)
Callome Otálora & Wedin (1)
Collema F.H. Wigg. (ca 25)
Enchylium (Ach.) Gray (18)
Hondaria Kitaura & A.P. Lorenz (1)*Note 661, FoF
Lathagrium (Ach.) Gray (23)
Leptogium (Ach.) Gray (ca 85)
Pseudoleptogium Müll. Arg. (2)
Rostania Trevis. (ca 9)
Scytinium (Ach.) Gray (50)

Koerberiaceae T. Sprib. & Muggia
Henssenia Ertz, R.S. Poulsen & Søchting (4)
Koerberia A. Massal. (3)
Tingiopsidium Werner (= *Vestergrenopsis* Gyeln.) (5)

Massalongiaceae Wedin, P.M. Jørg. & E. Wiklund.
Leptochidium M. Choisy (2)
Massalongia Körb. (4)
Polychidium (Ach.) Gray (9)

Pannariaceae Tuck.
Atrophysma T. Sprib. (1)*Note 52, FoF13339
Austrella P.M. Jørg. (3)
Degelia Arv. & D.J. Galloway (15)
Erioderma Feé (46)
Fuscoderma (D.J. Galloway & P.M. Jørg.) P.M. Jørg. & D.J. Galloway (3)
Fuscopannaria P.M. Jørg. (= *Kroswia* P.M. Jørg.) (50)
Gibbosporina Elvebakk, S.G. Hong & P.M. Jørg. (13)
Hispidopannaria Elvebakk, S.G. Hong & C.H. Park (2)*Note 212, FoF13341
Homothecium A. Massal. (5)
Joergensenia Passo, S. Stenroos & Calvelo (1)
Leciophysma Th. Fr. (4)
Leightoniella Henssen (1)
Leioderma Nyl. (9)
Lepidocollema Vain. (24)
Leptogidium Nyl. (6)
Nebularia P.M. Jørg. (2)
Nevesia P.M.Jørg, L. Lindblom, Wedin & S. Ekman (1)
Pannaria Delise ex Bory (ca 70)
Parmeliella Müll. Arg. (ca 40)
Pectenia P.M. Jørg., L. Lindblom, Wedin & S. Ekman (4)
Phormopsora Elvebakk, S.G. Hong & C.H. Park (1)*Note 395, FoF13343
Physma A. Massal. (30)
Protopannaria (Gyeln.) P.M. Jørg. & S. Ekman (7)
Psoroma Ach. ex Michx. (ca 30)
Psoromaria Nyl. ex Hue (= *Degeliella* P.M. Jørg.) (3)
Psoromidium Stirt. (2)
Ramalodium Nyl. (6)
Siphulastrum Müll. Arg. (7)
Staurolemma Körb. (10)
Steineropsis T. Sprib. & Muggia (2)

Peltigeraceae Dumort. (= *Lobariaceae* Chevall.; = *Nephromataceae* Wetmore ex J.C. David & D. Hawksw.)
Crocodia Link (7)
Dendriscosticta B. Moncada & Lücking (10)
Emmanuelia Ant. Simon, Lücking & Goffinet (12)*FoF13345
Lobaria (Schreb.) Hoffm. (ca 30)
Lobariella Yoshim. (29)
Lobarina Nyl. ex Cromb. (7)
Nephroma Ach. (ca 10)
Peltigera Willd. (ca 50)
Podostictina Clem. (13)
Pseudocyphellaria Vain. (= *Parmostictina* Nyl. (ca 60)
Ricasolia De Not. (31)
Sinuicella D.F. Stone, McCune & Miądl. (1)*Notes 475, 957, FoF13346
Solorina Ach. (4)
Sticta (Schreb.) Ach. (ca 100)
Yarrumia D.J. Galloway (2)
Yoshimuriella B. Moncada & Lücking (9)

Placynthiaceae E. Dahl
Hertella Henssen (3)
Placynthiopsis Zahlbr. (1)
Placynthium (Ach.) Gray (ca 20)

Vahliellaceae Wedin, P.M. Jørg. & S. Ekman
Vahliella P.M. Jørg. (9)

Peltigerales genera *incertae sedis*
Aberratus W.L Strong (1)*Strong et al. 2024
Erinacellus T. Sprib., Muggia & Tønsberg (2)

Rhizocarpales Miądl. & Lutzoni ex Miądl. & Lutzoni
Rhizocarpaceae M. Choisy ex Hafellner
Catolechia Flot. (1)
Epilichen Clem. (1)
Haugania E.J. Möller & Timdal (2)*Fryday et al. 2024b
Poeltinula Hafellner (2)
Rhizocarpon Ramond ex DC. (ca 80)

Sporastatiaceae Bendiksby & Timdal
Sporastatia A. Massal. (4)
Toensbergia Bendiksby & Timdal (3)

Teloschistales D. Hawksw. & O.E. Erikss.
Brigantiaeaceae Hafellner & Bellem. (= *Letrouitiaceae* Hafellner & Bellem.)
Brigantiaea Trevis. (ca 15)
Letrouitia Hafellner & Bellem. (ca 20)

Megalosporaceae Vězda ex Hafellner & Bellem.
Megaloblastenia Sipman (2)
Megalospora Meyen (ca 25)
Sipmaniella Kalb (1)

Teloschistaceae Zahlbr.
Amundsenia Søchting, Garrido-Ben., Arup & Frödén (2)
Apatoplaca Poelt & Hafellner (1)
Aridoplaca Wilk, Pabijan & Lücking (1)*Notes 45, 950, FoF13604
Athallia Arup, Frödén & Søchting (= ?*Coppinsiella* S.Y. Kondr. & Lőkös; = ?*Fominiella* S.Y. Kondr., Upreti & Hur) (ca 10)
Austroplaca Søchting, Frödén & Arup (13)
Blastenia A. Massal. (ca 30)
Brownliella S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (2)*Note 962
Bryoplaca Søchting, Frödén & Arup (3)
Calogaya Arup, Frödén & Søchting (= *Lazarenkoella* S.Y. Kondr. et al.; = *Seawardiella* S.Y. Kondr. et al.) (ca 20)
Caloplaca Th. Fr. (ca 150)
Catenarina Søchting, Søgaard, Arup, Elvebakk & Elix (3)
Cephalophysis (Hertel) H. Kilias (1)
Cerothallia Arup, Frödén & Søchting (4)
Charcotiana Søchting, Garrido-Ben. & Arup (1)
Cinnabaria Wilk, Pabijan & Lücking (1)*Notes 107, 951, FoF13605

Dijigiella S.Y. Kondr. & Lőkös (2)

Dufourea Ach. (= *Xanthodactylon* P.A. Duvign.) (ca 20)

Eilifdahlia S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (3)

Erichansenia S.Y. Kondr., Kärnefelt & A. Thell (3)*Note 158, FoF11740

Fauriea S.Y. Kondr., Lőkös & Hur (7)

Filsoniana S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (= *Harusavskia* S.Y. Kondr.; = *Nevilleiella* S.Y. Kondr. & Hur; = *Thelliana* S.Y. Kondr. et al.) (6)

Flavoplaca Arup, Søchting & Frödén (ca 30)

Follmannia C.W. Dodge (3)

Franwilsia S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (3)

Gondwania Søchting, Frödén & Arup (3)

Gyalolechia A. Massal. (= *Hanstrassia* S.Y. Kondr.; = *Laundonia* S. Y. Kondr., Lőkös & Hur; = *Lazarenkoiopsis* S.Y. Kondr., Lőkös & Hur; = *Opeltia* S.Y. Kondr. & Lőkös; = *Oxneriopsis* S.Y. Kondr., Upreti & Hur) (ca 20)

Haloplaca Arup, Søchting & Frödén (3)

Hosseusiella S.Y. Kondr., Lőkös, Kärnefelt & A. Thell (3)

Hueidea Kantvilas & P.M. McCarthy (= *Huea* C.W. Dodge & G.E. Baker) (1)*Søchting et al. 2024

Huneckia S.Y. Kondr., Elix, Kärnefelt, A. Thell & Hur (4)

Ioplaca Poelt (3)

Iqbalia Fayyaz, Afshan & S.Y. Kondr. (1)*Note 954

Jasonhuria S.Y. Kondr., Lőkös & S.O. Oh (1)

Josefpoeltia S.Y. Kondr. & Kärnefelt (3)

Kaernefia S.Y. Kondr., Elix, A. Thell & Hur (3)

Lacrima Bungartz, Arup & Søchting (4)*FoF13606

Leproplaca (Nyl.) Nyl. (5)

Loekoesia S.Y. Kondr., S.O. Oh & Hur (3)

Loekoeslaszloa S.Y. Kondr., Kärnefelt, A. Thell & Hur (= *Oceanoplaca* Arup, Søchting & Bungartz (3)

Marchantiana S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (= *Streimanniella* S.Y. Kondr. et al.) (2)

Neoplaca I.V. Frolov, Prokopiev & Konoreva (1)*Frolov et al. 2023

Obscuroplaca Søchting, Arup & Bungartz (= *Phaeoplaca* Søchting, Arup & Bungartz FoF13612) (6)*Note 667, FoF,

Olegblumia S.Y. Kondr., Lőkös & Hur (1)*FoF13610

Orientophila Arup, Søchting & Frödén (ca 10)

Pachypeltis Søchting, Arup & Frödén (6)

Parvoplaca Arup, Søchting & Frödén (6)

Pisutiella S.Y. Kondr., Lőkös & Farkas (5)*Note 402

Polycauliona Hue (= *Tomnashia* S.Y. Kondr. & Hur) (ca 25)

Pyrenodesmia A. Massal. (ca 25)

Rufoplaca Arup, Søchting & Frödén (ca 10)

Rusavskia S.Y. Kondr. & Kärnefelt (= *Zeroviella* S.Y. Kondr. & Hur) (ca 10)

Sanguineodiscus I.V. Frolov & Vondrák (1)*Note 701, FoF

Scutaria Søchting, Arup & Frödén (1)

Seirophora Poelt (8)

Shackletonia Søchting, Frödén & Arup (4)

Sirenophila Søchting, Arup & Frödén (= *Elixjohnia* S.Y. Kondr. & Hur; = *Tarasginia* S.Y. Kondr. et al.) (4)

Solitaria Arup, Søchting & Frödén (1)

Squamulea Arup, Søchting & Frödén (= *Huriella* S.Y. Kondr.) (ca 15)

Stellarangia Frödén, Arup & Søchting (3)

Sucioplaca Bungartz, Søchting & Arup (1)*FoF13614

Tassiloa S.Y. Kondr., Kärnefelt, A. Thell, Elix & Hur (2)

Tayloriellina S.Y. Kondr., Kärnefelt, A. Thell, Elix & Hur (= *Tayloriella* S.Y. Kondr. et al. (1)
Teloschistes Norman (8)
Teloschistopsis Frödén, Søchting & Arup (3)
Teuvoahtiana S.Y. Kondr. & Hur (3)
Transdrakea Søchting & Arup (2)*Søchting et al. 2023
Upretia S.Y. Kondr., A. Thell & Hur (3)
Usnochroma Søchting, Arup & Frödén (2)
Variospora Arup, Søchting & Frödén (ca 15)
Villophora Søchting, Arup & Frödén (= *Raesaeneniana* S.Y. Kondr. et al.) (9)*Note 958
Wetmoreana Arup, Søchting & Frödén (= *Fulgogasparrea* S.Y. Kondr. et al.) (2)
Wilketalia S.Y. Kondr. (= *Andina* Wilk, Pabijan & Lücking, **nom. inval.**) (1)*Notes 29, 949, 959
Xanthocarpia A. Massal. & De Not. (ca 10)
Xanthomendoza S.Y. Kondr. & Kärnefelt (9)
Xanthopeltis R. Sant. (1)
Xanthoria (Fr.) Th. Fr. (ca 20)
Yoshimuria S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur (= *Ikaeria* S.Y. Kondr. et al.) (4)

Teloschistales genus *incertae sedis*
Malcolmiella Vězda (2)

Lecanoromycetidae family *incertae sedis*
Helocarpaceae Hafellner
Helocarpon Th. Fr. (2)

Subclass ***Ostropomycetidae*** V. Reeb, Lutzoni & Cl. Roux
Baeomycetales Lumbsch, Huhndorf & Lutzoni (= *Arctomiales* S. Stenroos et al.; = *Hymeneliales* S. Stenroos et al.; = *Trapeliales* B.P. Hodk. & Lendemer)
Arctomiaceae Th. Fr.
Arctomia Th. Fr. (= *Gabura* Adans.) (7)
Gregorella Lumbsch (1)
Steinera Zahlbr. (10)
Wawea Henssen & Kantvilas (1)

Arthrorhaphidaceae Poelt & Hafellner
Arthrorhaphis Th. Fr. (8)

Baeomycetaceae Dumort.
Ainoa Lumbsch & I. Schmitt (3)
Anamylopsora Timdal (4)
Baeomyces Pers. (6)
Parainoa Resl & T. Sprib. (1)
Phyllobaeis Gierl & Kalb (6)

Cameroniaceae Kantvilas & Lumbsch
Cameronia Kantvilas (2)

Hymeneliaceae Körb.
Hymenelia Kremp. (14)
Ionaspis Th. Fr. (6)
Tremolecia M. Choisy (2)

Protothelenellaceae Vězda, H. Mayrhofer & Poelt (= *Thrombiaceae* Poelt & Vězda ex J.C. David & D. Hawksw.)
Mycowinteria Sherwood (1)
Protothelenella Räsänen (6)
Thrombium Wallr. (ca 15)

Trapeliaceae M. Choisy ex Hertel
Amylora Rambold (1)
Aspiciliopsis (Müll. Arg.) M. Choisy (2)
Coppinsia Lumbsch & Heibel (1)
Ducatina Ertz & Søchting (1)
Farkasiella S. Y. Kondr. & Lőkös (2)*Note 797
Gallowayiopsis S.Y. Kondr. (4)*Note 659
Kleopowiella S.Y. Kondr. (3)*Note 944
Lignoscripta B.D. Ryan (1)
Orceolina Hertel (1)
Placopsis (Nyl.) Linds. (ca 30)
Placynthiella Elenkin (9)
Rimularia Nyl. (ca 25)
Trapegintarasia S.Y. Kondr. (3)*Note 946
Trapejamesia S.Y. Kondr. (2)*Note 947
Trapelia M. Choisy (ca 25)
Trapeliopsis Hertel & Gotth. Schneid. (ca 20)

Xylographaceae Tuck.
Brianiopsis S.Y. Kondr. (7)*Note 796
Lambiella Hertel (ca 15)
Lithographa Nyl. (6)
Ptychographa Nyl. (1)
Xyloelixia S.Y. Kondr. (4)*Note 943
Xylographa (Fr.) Fr. (ca 20)

Graphidales Bessey
Diploschistaceae Zahlbr.
Acanthothecis Clem. (ca 40)
Acanthotrema Frisch (6)
Aggregatorygma M. Cáceres, Aptroot & Lücking (2)
Ampliotrema Kalb (ca 10)
Asteristion Leight. (7)
Austrotrema I. Medeiros, Lücking & Lumbsch (3)
Borinquenotrema Merc.-Díaz, Lücking & Parnmen (1)
Byssotrema M. Cáceres, Aptroot & Lücking (1)
Carbacanthographis Staiger & Kalb (ca 25)
Compositrema Rivas Plata, Lücking & Lumbsch (4)
Corticorygma M. Cáceres, S.C. Feuerst., Aptroot & Lücking (1)
Diploschistes Norman (ca 30)
Fibrillithecis A. Frisch (ca 15)
Gintarasia Kraichak, Lücking & Lumbsch (7)
Glaucotrema Rivas Plata & Lumbsch (5)
Gyrotrema Frisch (6)
Heiomasia Nelsen, Lücking & Rivas Plata (5)
Melanotopelia Lumbsch & Mangold (4)

Melanotrema Frisch (ca 10)
Myriochapsa M. Cáceres, Lücking & Lumbsch (3)
Myriotrema Fée (ca 80)
Nadvornikia Tibell (3)
Nitidochapsa Parnmen, Lücking & Lumbsch (5)
Ocellularia G. Mey. (ca 350)
Phaeographopsis Sipman (3)
Pseudoramonia Kantvilas & Vězda (4)
Redingeria Frisch (9)
Reimnitzia Kalb (1)
Rhabdodiscus Vain. (ca 35)
Sanguinotrema Lücking (1)
Schizotrema Mangold & Lumbsch (7)
Stegobolus Mont. (ca 15)
Topeliopsis Kantvilas & Vězda (ca 20)
Wirthiotrema Rivas Plata, Kalb, Frisch & Lumbsch (6)*Fp58
Xalocoa Kraichak, Lücking & Lumbsch (1)

Fissurinaceae B.P. Hodk.
Clandestinotrema Rivas Plata, Lücking & Lumbsch (ca 15)
Cruentotrema Rivas Plata, Papong, Lumbsch & Lücking (7)
Dyplolabia A. Massal. (5)
Enigmotrema Lücking (1)
Fissurina Fée (ca 100)
Pycnotrema Rivas Plata & Lücking (2)

Gomphillaceae Walt. Watson
Actinoplaca Müll. Arg. (2)
Adelphomyces Xavier-Leite, M. Cáceres & Lücking (3)*Note 1379
Aderkomyces Bat. (ca 30)
Aplanocalenia Lücking, Sérus. & Vězda (1)
Aptrootidea Xavier-Leite, M. Cáceres & Lücking (6)*Note 1347
Arthotheliopsis Vain. (5)
Asterothyrium Müll. Arg. (ca 12)
Aulaxina Fée (4)
Aulaxinella Xavier-Leite, M. Cáceres & Lücking (3)*Note 1348
Batistomyces Xavier-Leite, M. Cáceres & Lücking (2)*Note 1331
Bezerroplaca Xavier-Leite, M. Cáceres & Lücking (5)*Note 1332
Calenia Müll. Arg. (ca 20)
Caleniella Xavier-Leite, M. Cáceres & Lücking (2)*Note 1333
Caleniopsis Vězda & Poelt (2)
Cladosterigma Pat. (1)*Guterres et al. 2020
Corticifraga D. Hawksw. & R. Sant. (9)
Diploschistella Vain. (5)
Echinoplaca Fée (ca 20)
Ferraroa Lücking, Sérus. & Vězda (1)
Gomphillus Nyl. (4)
Gyalectidium Müll. Arg. (ca 40)
Gyalidea Lettau (ca 30)
Gyalideopsis Vězda (ca 50)
Hippocrepidea Sérus. (1)
Jamesiella Lücking, Sérus. & Vězda (4)

Lithogyalideopsis Lücking, Sérus. & Vězda (4)
Microxyphiomyces Bat., Valle & Peres (ca 15)*Note 1381
Monocalenia Xavier-Leite, M. Cáceres & Lücking (1)*Note 1134
Paragyalideopsis Etayo (4)
Paratricharia Lücking (1)
Phyllogyalidea Lücking & Aptroot (2)
Psathyromyces Bat. & Peres (4)*Note 1380
Pseudocalenia Xavier-Leite, M. Cáceres & Lücking (1)*Note 1335
Psorotheciopsis Rehm (3)
Rolueckia Papong, Thammath. & Boonpr. (3)
Roselviria Xavier-Leite, M. Cáceres & Lücking (2)*Note 1336
Santricharia Xavier-Leite, M. Cáceres & Lücking (1)*Note 1378
Sipmanidea Xavier-Leite, M. Cáceres & Lücking (2)
Spinomyces Bat. & Peres ex Xavier-Leite, M. Cáceres & Lücking (9)*Note 1382
Sporocybomyces H. Maia (4)*Note 1375
Taitaia Suija, Kaasal., Kirika & Rikkinen (1)
Tricharia Fée (ca 15)
Verruciplaca Xavier-Leite, M. Cáceres & Lücking (2)
Vezdamyces Xavier-Leite, M. Cáceres & Lücking (2)*Note 1377

Graphidaceae Dumort.*FoF15503
Allographa Chevall. (ca 200)
Amazonotrema Kalb & Lücking (1)
Anomalographis Kalb (2)
Anomomorpha Nyl. ex Hue (8)
Creographa A. Massal. (2)
Cryptoschizotrema Aptroot, Lücking & M. Cáceres (2)
Diaphorographis A.W. Archer & Kalb (2)
Diorygma Eschw. (ca 80)
Flegographa A. Massal. (1)
Glyphis Ach. (9)
Graphis Adans. (ca 200)
Halegrapha Rivas Plata & Lücking (ca 10)
Hemithecium Trevis. (ca 20)
Jocatoa R. Miranda (1)*Note 229, FoF13846
Kalbographa Lücking (5)
Leiorreuma Eschw. (ca 20)
Malmographina M. Cáceres, Rivas Plata & Lücking (1)
Mangoldia Lücking, Parnmen & Lumbsch (2)
Pallidogramme Staiger, Kalb & Lücking (8)
Phaeographis Müll. Arg. (ca 70)
Platygramme Fée (25)
Platythecium Staiger (ca 25)
Pliariona A. Massal. (= *Phaeographina* Müll. Arg.) (1)
Polistroma Clemente (1)
Pseudochapsa Parnmen, Lücking & Lumbsch (ca 20)
Pseudotopeliopsis Parnmen, Lücking & Lumbsch (2)
Sarcographa Fée (ca 20)
Sarcographina Müll. Arg. (6)
Schistophoron Stirt. (5)
Thalloloma Trevis. (ca 20)
Thecaria Fée (4)

Thecographa A. Massal. (3)

Redonographaceae (Lücking, Tehler & Lumbsch) Lumbsch
Gymnographopsis C.W. Dodge (3)
Redonographa Lücking, Tehler & Lumbsch (5)

Thelotremataceae Stizenb.
Astrochapsa Parnmen, Lücking & Lumbsch (ca 30)
Chapsa A. Massal. (ca 50)
Chroodiscus (Müll. Arg.) Müll. Arg. (ca 20)
Crutarndina Parnmen, Lücking & Lumbsch (1)
Leucodecton A. Massal. (ca 30)
Paratopeliopsis Merc.-Díaz, Lücking & Parnmen (1)
Thelotrema Ach. (= *Tremotylium* Nyl.) (ca 150)

Gyalectales Henssen ex D. Hawksw. & O.E. Erikss.
Coenogoniaceae Stizenb.
Coenogonium Ehrenb. (ca 100)

Gyalectaceae Stizenb.
Cryptolechia A. Massal. (9)
Francisrosea Ertz & Sanderson (1)*Notes 168, 1083, FoF13848
Gyalecta Ach. (ca 40)
Neopetractis Ertz (2)*Notes 319, 939, FoF13850
Ramonia Stizenb. (ca 20)
Semigyalecta Vain. (1)

Phlyctidaceae Poelt ex J.C. David & D. Hawksw.
Phlyctis (Wallr.) Flot. (ca 20)
Psathyrophlyctis Brusse (1)

Sagiolechiaceae Baloch, Lücking, Lumbsch & Wedin
Rhexophiale Th. Fr. (1)
Sagiolechia A. Massal. (5)

Trichotheliaceae Bitter & F. Schill. (= *Porinaceae* Walt. Watson; = *Porinaceae* Rchb.)
Clathroporina Müll. Arg. (ca 35)
Flabelloporina Sobreira, M. Cáceres & Lücking (1)
Myeloconis P.M. McCarthy & Elix (4)
Porina Müll. Arg. (ca 150)
Pseudosagedia (Müll. Arg.) M. Choisy (ca 30)
Saxiloba Lücking, Moncada & Viñas (3)*Note 466, FoF13851
Segestria Fr. (ca 10)
Trichothelium Müll. Arg. (ca 20)

Odontotrematales Lücking*Note 355, FoF13852
Odontotremataceae D. Hawksw. & Sherwood
Coccomycetella Höhn. (1)
Odontotrema Nyl. (2)
Odontura Clem. (1)
Paralethariicola Calat., Etayo & Diederich (1)
Parakarstenia C.L. Yang, H.O. Baral & X.L. Xu (1)

Potriphila Döbbeler (3)
Rogellia Döbbeler (2)
Stromatothecia D.E. Shaw & D. Hawksw. (1)
Tryblis Clem. (2)
Xerotrema Sherwood & Coppins (2)

Ostropales Nannf.
Claviradulomycetaceae L.L. Duarte, D.M. Macedo & R.W. Barreto*Note 941
Claviradulomyces P.R. Johnst., D.C. Park, H.C. Evans, R.W. Barreto & D.J. Soares (7)*Note 941, Fp69

Phaneromycetaceae Gamundí & Spinedi*Note 391
Phaneromyces Speg. & Har. (2)

Spirographaceae Flakus, Etayo & Miadlikowska*Note 6, FoF13853
Spirographa Zahlbr. (= *Asteroglobulus* Brackel; = *Cornutispora* Piroz.; = *Pleoscutula* Vouaux) (ca 25)*Note 6, FoF13854

Stictidaceae Fr.
Absconditonia Suija & van den Boom (2)*Note 1404
Absconditella Vězda (ca 15)
Acarosporina Sherwood (3)
Biostictis Petr. (5)
Carestiella Bres. (2)
Conotremopsis Vězda (1)
Cryptodiscus Corda (= *Lettauia* D. Hawksw. & R. Sant.; = *Paschelkiella* Sherwood) (ca 15)
Cyanodermella O.E. Erikss. (4)
Delpontia Penz. & Sacc. (1)
Dendroseptoria Alcalde (1)
Fitzroyomyces Crous (5)
Geisleria Nitschke (3)
Glomerobolus Kohlm. & Volkm.-Kohlm. (1)
Ingvariella Guderley & Lumbsch (1)
Irregularispora W. Dong, K.D. Hyde & Doilom (1)*Note 1376
Karstenia Fr. (ca 10)
Lillicoa Sherwood (4)
Nanostictis M.S. Christ. (8)
Neofitzroyomyces Crous (1)
Neohormodochis D.P. Wei & K.D. Hyde (1)*Note 964, FoF12297
Neoostropa Y.Y. Yang, A.R. Gomes de Farias & K.D. Hyde (1)*Note 1330
Neostictis Ekanayaka, Camporesi & K.D. Hyde (1)*Note 329, FoF07338
Ostropa Fr. (1)
Ostropomyces Thiyagaraja, Lücking, Ertz & K.D. Hyde (2)*Note 359, FoF09511
Propoliopsis Rehm (1)
Robergea Desm. (ca 15)
Schizoxylon Pers. (ca 10)
Sphaeropezia Sacc. (= *Lethariicola* Grummann) (ca 20)
Stictis Pers. (ca 40)
Stictophacidium Rehm (1)
Thelopsis Nyl. (ca 10)
Topelia P.M. Jørg. & Vězda (ca 10)
Trinathotrema Lücking, Rivas Plata & Mangold (3)

Xyloschistes Vain. ex Zahlbr. (1)

Ostropales genera *incertae sedis*
Aabaarnia Diederich (1)
Biazrovia Zhurb. & Etayo (1)
Elongaticonidia W.J. Li, E. Camporesi & K.D. Hyde (1)*Coel, Fp74, Note 149, FoF07359
Mulderomyces Crous, Jacq. Edwards & P.W.J. Taylor (1)*Crous et al. 2016a
Normanogalla Diederich (1)

Pertusariales M. Choisy ex D. Hawksw. & O.E. Erikss.
Agyriaceae Corda (= *Miltideaceae* Hafellner)
Agyrium Fr. (2)
Miltidea Stirt. (1)

Coccotremataceae Henssen ex J.C. David & D. Hawksw.
Coccotrema Müll. Arg. (ca 10)
Gyalectaria I. Schmitt, Kalb & Lumbsch (3)
Parasiphula Kantvilas & Grube (7)

Icmadophilaceae Triebel
Dibaeis Clem. (6)
Endocena Cromb. (= *Chirleja* Lendemer & B.P. Hodk.) (2)
Icmadophila Trevis. (2)
Knightiellastrum L. Ludw. & Kantvilas (1)*Note 236, FoF13856
Pseudobaeomyces M. Satô (1)
Siphula Fr. (ca 15)
Siphulella Kantvilas, Elix & P. James (1)
Siphulopsis Kantvilas & A.R. Nilsen (1)*Note 476, FoF13858
Thamnolia Ach. ex Schaer. (6)

Megasporaceae Lumbsch
Aspicilia A. Massal. (ca 85)
Aspiciliella M. Choisy (4)*Note 704, Habib et al. 2021
Circinaria Link (ca 35)
Lobothallia (Clauzade & Cl. Roux) Hafellner (ca 20)
Megaspora (Clauzade & Cl. Roux) Hafellner & V. Wirth (4)
Oxneriaria S.Y. Kondr. & Lőkös (17)*Note 1593, Usman et al. 2024, Manawasinghe et al. 2024
Sagedia Ach. (ca 15)
Teuvoa Sohrabi & S. Leavitt (5)

Microcaliciaceae Tibell
Microcalicium Vain. (4)

Ochrolechiaceae R.C. Harris ex Lumbsch & I. Schmitt
Ochrolechia A. Massal. (ca 40)

Pertusariaceae Körb. ex Körb.
Loxosporopsis Henssen (1)
Pertusaria DC. (ca 300)
Thamnochrolechia Aptroot & Sipman (1)

Varicellariaceae B.P. Hodk., R.C. Harris & Lendemer ex Lumbsch & Leavitt

Varicellaria Nyl. (9)

Variolariaceae Fée ex Zenker
Lepra Scop. (= *Marfloraea* S.Y. Kondr. et al., *Variolaria* Pers.) (ca 100)

Sarrameanales B.P. Hodk. & Lendemer
Sarrameanaceae Hafellner
Chicitaea Guzow-Krzem., Kukwa & Lendemer (4)*Ptach-Styn et al. 2024
Loxospora A. Massal. (ca 10)
Sarrameana Vězda & P. James (2)

Schaereriales Lumbsch & Leavitt
Schaereriaceae M. Choisy ex Hafellner
Schaereria Körb. (= *Hafellnera* Houmeau & Cl. Roux) (ca 10)

Thelenellales Lumbsch & Leavitt
Thelenellaceae O.E. Erikss. ex H. Mayrhofer
Aspidothelium Vain. (ca 15)
Chromatochlamys Trevis. (3)
Thelenella Nyl. (= *Finkia* Vain.) (ca 20)

Ostropomycetidae familia incertae sedis
Epigloeaceae Zahlbr.
Epigloea Zukal (ca 10)

Ostropomycetidae genera *incertae sedis*
Amphorothecium P.M. McCarthy, Kantvilas & Elix
Anzina Scheid. (1)
Aspilidea Hafellner (1)
Bachmanniomyces D. Hawksw. (= *Phaeopyxis* Rambold & Triebel) (8)
Dictyocatenulata Finley & E.F. Morris (1)
Malvinia Döbbeler (1)
Pleiopatella Rehm (1)

Subclass *Umbilicariomycetidae* Bendiksby, Hestmark & Timdal
Umbilicariales Lumbsch, Hestmark & Lutzoni
Elixiaceae Lumbsch
Elixia Lumbsch (2)
Meridianelia Kantvilas & Lumbsch (1)

Fuscideaceae Hafellner
Fuscidea V. Wirth & Vězda (ca 30)
Maronea A. Massal. (2)
Orphniospora Körb. (2)

Ophioparmaceae R.W. Rogers & Hafellner
Boreoplaca Timdal (1)
Hypocenomyce M. Choisy (5)
Ophioparma Norman (6)

Ropalosporaceae Hafellner
Ropalospora A. Massal. (9)

Umbilicariaceae Chevall.
Fulgidea Bendiksby & Timdal (2)
Umbilicaria Hoffm. (= *Lasallia* Mérat) (ca 100)
Xylopsora Bendiksby & Timdal (3)

Lecanoromycetes order *incertae sedis*
Micropeltidales X.Y. Zeng, H.X. Wu & K.D. Hyde*Zeng et al. 2019
Micropeltidaceae Clem. & Shear*Zeng et al. 2019
Dictyopeltella Bat. & I.H. Lima (2)
Dictyothyriella Speg. (ca 15)
Dictyothyrina Theiss. (4)*FoF05132
Dictyothyrium Theiss. (ca 25)
Haplopeltheca Bat., J.L. Bezerra & Cavalc. (1)
Microcallis Syd. (9)*FoF10348, Tian et al. 2021a
Micropeltis Mont. (ca 150)
Scolecopeltidium F. Stevens & Manter (ca 75)
Stomiopeltopsis Bat. & Cavalc. (3)

Micropeltidaceae genera *incertae sedis*
Cyclopeltella Petr. (1)
Neopeltella Petr. (1)
Stomiotheca Bat. (2)

Turquoiseomycetales Crous
Turquoiseomycetaceae Crous
Turquoiseomyces Crous (1)

Lecanoromycetes genera *incertae sedis*
Argopsis Th. Fr. (1)
Ascographa Velen. (1)
Bartlettiella D.J. Galloway & P.M. Jørg. (1)
Bouvetiella Øvstedal (1)
Buelliastrum Zahlbr. (1)
Deltopyxis Baral & G. Marson (1)*Note 1254
Haploloma Trevis. (1)
Hosseusia Gyeln. (1)
Korfiomyces Iturr. & D. Hawksw. (1)
Maronella M. Steiger (2)
Notolecidea Hertel (1)
Petractis Fr. (2)
Piccolia A. Massal. (10)
Ravenelula Speg. (1)
Robincola Velen. (1)
Roburnia Velen. (1)

Class *Leotiomycetes* O.E. Erikss. & Winka
Chaetomellales Crous & Denman
Chaetomellaceae Baral, P.R. Johnst. & Rossman
Chaetomella Fuckel (25)*Fp21, Coel
Pilidium Kunze (22)*Coel
Sphaerographium Sacc. (23)*Coel

Synchaetomella Decock & Seifert (3)*Fp87
Xeropilidium Baral & Pärtel (1)*Note 1176

Helotiales Nannf. ex Korf & Lizoň (= *Cyttariales* Luttr. ex Gamundí; = *Medeolariales* Korf)*Notes 206, 1275, FoF13859
Amorphothecaceae Parbery
Amorphotheca Parbery (1)

Arachnopezizaceae Hosoya, J.G. Han & Baral
Arachnopeziza Fuckel (ca 35)
Eriopezia (Sacc.) Rehm (20)
Leochalara W.P. Wu (1)*Note 1138
Parachnopeziza Korf (8)
Thamnochortomyces Crous (1)*Crous et al. 2024b

Ascocorticiaceae J. Schröt.
Ascocorticiellum Julich & B. de Vries (1)
Ascocorticium Bref. (2)
Ascosorus Henn. & Ruhland (1)

Ascodichaenaceae D. Hawksw. & Sherwood
Ascodichaena Butin (= *Phloeoscoria* Wallr.; = *Polymorphum* Chevall.; = *Psilospora* Rabenh.) (2)*Coel
Delpinoina Kuntze (1)

Bryoglossaceae Ekanayaka & K.D. Hyde
Bryoclaviculus L. Ludw., P.R. Johnst. & Steel (1)
Bryoglossum Redhead (2)
Neocudoniella S. Imai (3)

Calloriaceae Marchand
Aivenia Svrček (4)
Calloria Fr. (26)
Chaetonaevia Arx (3)
Diplonaevia Sacc. (33)
Duebenia Fr. (6)
Eupropolella Höhn. (8)
Hyalacrotes (Korf & L.M. Kohn) Raitv. (5)
Iridinea Velen. (2)
Laetinaevia Nannf. (22)
Loricella Velen. (6)
Micropodia Boud. (15)
Naeviella Clem. (3)
Naeviopsis B. Hein (14)
Ploettnera Henn. (6)
Tricellula Beverw. (7)*Note 1167

Cenangiaceae Rehm (= *Hemiphacidiaceae* Korf)*FoF05955
Calycellinopsis W.Y. Zhuang (2)*Note 1246
Cenangiopsis Rehm (10)
Cenangium Fr. (ca 45)
Chlorencoelia J.R. Dixon (4)*FoF14250

Crumenulopsis J.W. Groves (= *Digitosporium* Gremmen) (3)
Encoelia (Fr.) P. Karst. (ca 35)
Fabrella Kirschst. (1)
Heyderia Link (4)
Hymenobolus Durieu & Mont. (2)*Note 1266
Hysterostegiella Höhn. (11)*Note 1270
Mycosphaerangium Verkley (4)*Note 1280
Neomelanconium Petr. (2)*Note 1145
Rhabdocline Syd. (= *Hartigiella* Syd. & P. Syd.; = *Meria* Vuill.; = *Rhabdogloeum* Syd.) (7)*Coel
Sarcotrochila Höhn. (= *Hemiphacidium* Korf; = *Rhabdogloeopsis* Petr.*Coel) (7)
Trochila Fr. (37)*Note 513
Velutarina Korf (3)
Vestigium Piroz. & Shoemaker (2)*Note 1173, Coel

Chlorociboriaceae Baral & P.R. Johnst.
Brahmaculus P.R. Johnst. (4)*Notes 78, 840, FoF13900
Chlorociboria Seaver ex C.S. Ramamurthi, Korf & L.R. Batra (= *Dothiorina* Höhn.) (ca 25)*FoF14250

Chlorospleniaceae Ekanayaka & K.D. Hyde
Chlorosplenium Fr. (19)

Chrysodiscaceae Baral & Haelew.
Chrysodisca Baral, Polhorský & G. Marson (1)

Cordieritidaceae Sacc.
Ameghiniella Speg. (2)
Annabella Fryar, Haelew. & D.E.A. Catches. (1)
Austrocenangium Gamundí (2)
Cordierites Mont. (5)
Diplocarpa Massee (3)
Diplolaeviopsis Giralt & D. Hawksw. (4)
Ionomidotis E.J. Durand ex Thaxt. (4)
Lawreyella Etayo, Kukwa & Rodr. Flakus (1)
Llimoniella Hafellner & Nav.-Ros. (ca 20)
Macroskyttea Etayo, Flakus, Suija & Kukwa (1)
Midotiopsis Henn. (2)
Rhymbocarpus Zopf (10)
Sabahriopsis Crous & M.J. Wingf. (1)*FoF15739
Skyttea Sherwood, D. Hawksw. & Coppins (31)
Skyttella D. Hawksw. & R. Sant. (2)
Thamnogalla D. Hawksw. (2)
Unguiculariopsis Rehm (= *Xenostroma* Höhn.) (ca 25)

Cyttariaceae Lév.
Cyttaria Berk. (13)

Dermateaceae Fr.
Chaetophiophoma Speg. (2)*Note 1117, Coel
Coleophoma Höhn. (= *Parafabraea* Chen Chen, Verkley & Crous; = *Xenodomus* Petr.) (38)*FoF00069
Corniculariella P. Karst. (ca 10)

Davidhawksworthia Crous (2)*Note 1126
Dermea Fr. (ca 25)*Coel
Gelatinoamylaria Prasher & R. Sharma (1)
Neodermea W.J. Li, D.J. Bhat & K.D. Hyde (2)*FoF07471
Neofabraea H.S. Jacks. (ca 10)
Neogloeosporidina W.J. Li, Camporesi & K.D. Hyde (1)*Coel, FoF07519
Pezicula Tul. & C. Tul.*FoF07484
Phlyctema Desm. (ca 60)*Coel
Pseudofabraea Chen Chen, Verkley & Crous (1)
Rhizodermea Verkley & J.D. Zijlstra (1)
Schizothyrioma Höhn. (4)
Verkleyomyces Y. Marín & Crous (1)

Discinellaceae Ekanayaka & K.D. Hyde
Acidea Hujslová & M. Kolařík (1)*Note 1026
Articulospora Ingold (6)
Cladochasiella Marvanová (1)
Discinella Boud. (ca 10)
Fontanospora Dyko (4)
Gyoerffyella Kol (9)
Lemonniera De Wild. (8)
Margaritispora Ingold (= *Goniopila* Marvanová & Descals (2)*Note 1132
Naevala B. Hein (5)
Pezoloma Clem. (ca 10)
Pseudopezicula Korf (4)
Tetrachaetum Ingold (1)
Varicosporium W. Kegel (9)

Drepanopezizaceae Baral
Blumeriella Arx (= *Microgloeum* Petr.; = *Phloeosporella* Höhn.) (5)
Diplocarpon F.A. Wolf (fide Johnston et al. 2014: = *Bostrichonema* Ces.; = *Entomosporium* Lév.; *Marssonina* Magnus; *Morthiera* Fuckel) (ca 10)*Coel
Drepanopeziza (Kleb.) Höhn. (= *Gloeosporium* Desm. & Mont.) (ca 15)*Coel
Felisbertia Viégas (1)
Leptotrochila P. Karst. (ca 20)*Coel
Pseudopeziza Fuckel (ca 50)
Spilopodia Boud. (8)
Spilopodiella E. Müll. (1)
Thedgonia B. Sutton (6)*Note 1298

Erysiphaceae Tul. & C. Tul.*FoF05856
Arthrocladiella Vassilkov (1)
Blumeria Golovin ex Speer (8)
Brasiliomyces Viégas (4)
Bulbomicroidium Marm., Siahaan, S. Takam. & U. Braun (1)
Caespitotheca S. Takam. & U. Braun (1)
Cystotheca Berk. & M.A. Curtis (11)
Erysiphe R. Hedw. ex DC. (= *Typhulochaeta* Ito & Hara) (487)*FoF09218
Golovinomyces (U. Braun) V.P. Heluta (= *Euoidium* Y.S. Paul & J.N. Kapoor) (75)
Leveillula G. Arnaud (49)
Microidium (To-anun & S. Takam.) To-anun & S. Takam. (3)
Neoerysiphe U. Braun (17)

Parauncinula S. Takam. & U. Braun (4)
Phyllactinia Lév. (124)
Pleochaeta Sacc. & Speg. (10)
Podosphaera Kunze (133)
Queirozia Viégas & Cardoso (1)
Salmonomyces Chidd. (2)
Sawadaea Miyabe (10)
Takamatsuella U. Braun & A.N. Shi (1)

Gelatinodiscaceae S.E. Carp
Ascocoryne J.W. Groves & D.E. Wilson (= *Coryne* Nees; = *Pirobasidium* Höhn.; = *Didymocoryne* Sacc. & Trotter; = *Pleurocolla* Petr.; = *Endostilbum* Malençon) (8)
Ascotremella Seaver (2)
Chloroscypha Seaver (= *Gelatinodiscus* Kanouse & A.H. Sm.) (ca 15)
Dimorphospora Tubaki (1)*Note 1185
Neobulgaria Petr. (ca 10)
Ombrophila Fr. (ca 100)
Phaeangellina Dennis (1)
Skyathea Spooner & Dennis (1)
Xerombrophila Baral (1)

Godroniaceae Baral
Ascocalyx Naumov (8)*Coel, FoF07120
Atropellis Zeller & Goodd. (3)
Godronia Moug. & Lév. (ca 50)
Gremmeniella M. Morelet (= *Brunchorstia* Erikss.) (4)
Grovesiella M. Morelet (2)

Hamatocanthoscyphaceae Ekanayaka & K.D. Hyde*Note 1262
Ciliolarina Svrček (7)*Note 1249
Constrictochalara W.P. Wu & Y.Z. Diao (6)*Note 1121
Curviclavula G. Delgado, F.A. Fernández & A.N. Mill. (1)*Note 1253
Cylindrochalara W.P. Wu & Y.Z. Diao (2)*Note 1125
Gemmina Raitv. (2)*Note 1129
Hamatocanthoscypha Svrček (ca 20)*Note 1261
Hyalodendriella Crous (2)*Note 1265
Infundichalara Réblová & W. Gams (2)*Note 1271
Kukwaea Suija, Motiej. & Zhurb. (1)*Note 1136
Psilachnum Höhn. (ca 30)*Note 1286
Stipitochalara W.P. Wu & Y.Z. Diao (3)*Note 1165
Xenochalara M.J. Wingf. & Crous (1)*Note 1301
Xenopolyscytalum Crous (1)*Note 1302

Helotiaceae Rehm*FoF05896
Amylocarpus Curr. (1)*Note 1181
Ascoconidium Seaver (3)
Bispora Corda (= *Bisporella* Sacc.) (ca 25)*Note 1351
Brunaudia (Sacc.) Kuntze (1)*Note 1112
Bryoscyphus Spooner (ca 10)
Bulgariella P. Karst. (3)*Note 1244
Calycella Sacc. (ca 25)
Chaetoscypha Syd. (4)*Note 1118

Cyathicula De Not. (= *Glarea* Bills & Paláez) (ca 25)
Dicephalospora Spooner (ca 15)*Note 606, Fp86
Discorehmia Kirschst. (4)
Endoscypha Syd. (1)*Note 1186
Eubelonis Höhn. (1)
Gloeotinia M. Wilson, Noble & E.G. Gray (= *Endoconidium* Prill. & Delacr.) (2)
Gremmenia Korf (3)
Helicodendron Peyronel (21)
Hispidula P.R. Johnst. (5)*Note 1134
Hymenoscyphus Gray (ca 200)
Hymenotorrendiella P.R. Johnst., Baral & R. Galán (11)*FoF14251
Muscicola Velen. (1)
Mytilodiscus Kropp & S.E. Carp. (1)
Phaeohelotium Kanouse (ca 30)
Pithyella Boud. (7)
Poculopsis Kirschst. (1)
Pseudoniptera Velen. (1)
Pseudoxenochalara Iliushin & Kirtsideli (1)*Note 1157
Roesleria Thüm. & Pass. (4)
Symphyosirinia E.A. Ellis (7)
Tatraea Svrček (2)*FoF14262
Xylogramma Wallr. (= *Plasia* Sherwood) (ca 15)

Heterosphaeriaceae Rehm
Heterosphaeria Grev. (ca 15)*Coel

Hyaloscyphaceae Nannf.
Ambrodiscus S.E. Carp. (1)
Amicodisca Svrček (3)
Arbusculina Marvanová & Descals (2)
Crucellisporiopsis Nag Raj (4)*Coel
Dimorphotricha Spooner (1)
Echinula Graddon (1)
Eupezizella Höhn. (6)*Note 1127
Graddonidiscus Raitv. & R. Galán (3)
Grahamiella Spooner (2)
Hegermila Raitv. (4)
Hyalopeziza Fuckel (ca 25)
Hyaloscypha Boud. (ca 100)
Incrupila Raitv. (12)
Isthmosporiella Crous (1)*Note 1480, Crous et al. 2023b
Meliniomyces Hambl. & Sigler (3)
Mimicoscypha T. Kosonen, Huhtinen & K. Hansen (3)*Note 283, FoF14070
Olla Velen. (= *Protounguicularia* Raitv. & Galán) (ca 10)*Kosonen et al. 2021
Polaroscyphus Huhtinen (1)
Proprioscypha Spooner (2)
Pseudaegerita J.L. Crane & Schokn. (7)
Pseudoclathrosphaerina Voglmayr (2)*Note 1155
Psilocistella Svrček (12)
Resinoscypha T. Kosonen, Huhtinen & K. Hansen (2)*Note 447, FoF14072
Rhizoscyphus W.Y. Zhuang & Korf (1)
Thindiomyces Arendh. & R. Sharma (1)

Unguiculariella K.S. Thind & R. Sharma (1)
Unguiculella Höhn. (= *Globulina* Speg.*Doth) (ca 20)

Hyphodiscaceae Ekanayaka & K.D. Hyde*Note 1267
Fuscolachnum J.H. Haines (7)*Note 1187
Gamarada D.J. Midgley & Tran-Dinh (1)*Note 1188
Glutinomyces Nor. Nakam. (4)*Note 1131
Helicoscypha Baral (1)*Note 1521
Hyphodiscus Kirschst. (14)*Note 1268
Hyphopeziza J.G. Han, Hosoya & H.D. Shin (1)*Note 1269
Microscypha Syd. & P. Syd. (6, 9)*Note 1276
Purimyces D.O. Ramos & O.L. Pereira (1)*Note 1573, Crous et al. 2024b
Scolecolachnum Guatim., R.W. Barreto & Crous (2)*Note 1291
Soosiella Hujslová & M. Kolařík (1)*Note 1295
Venturiocistella Raitv (8)*Note 1300
Venturioscypha Baral, T. Kosonen & Polhorský (1)*Note 1172

Lachnaceae Raitv.
Albotricha Raitv. (19)
Asperopilum Spooner (1)*Note 1238
Belonidium Mont. & Durieu (ca 40)
Brunnipila Baral (ca 10)
Cadophorella Crous & Hülsewig (1)*Visagie et al. 2024a
Capitotricha (Raitv.) Baral (6)
Dasyscyphella Tranzschel (ca 30)
Erioscyphella Kirschst. (ca 10)
Incrucipulum Baral (ca 10)
Lachnellula P. Karst. (ca 40)
Lachnopsis Guatim., R.W. Barreto & Crous (2)
Lachnum Retz. (= *Schnablia* Sacc. & P. Syd.) (ca 250)*Jaklitsch et al. 2016
Neodasyscypha Suková & Spooner (2)
Perrotia Boud. (ca 20)
Proliferodiscus J.H. Haines & Dumont (11)
Tubolachnum Velen (2)
Velebitea I. Kušan, Matočec & Jadan (1)*Note 1171

Leptodontidiaceae Hern.-Restr., Crous & Gené
Leptodontidium de Hoog. (11)

Medeolariaceae Korf
Medeolaria Thaxt. (1)*Note 1275

Mitrulaceae Rchb.*GBIF
Mitrula Fr. (16)

Mollisiaceae Rehm (= *Loramycetaceae* Dennis ex Digby & Goos)*Note 1277, Tanney & Seifert 2020
Acephala Grunig & T.N. Sieber (2)*Note 1179
Barrenia E. Walsh & N. Zhang (2)
Belonopsis (Sacc.) Rehm (ca 20)*Note 7
Bulbomollisia Graddon (3)
Cheirospora Moug. & Fr. (2)

Cystodendron Bubák (2)
Discocurtisia Nannf. (1)
Loramyces W. Weston (2)*Note 1274
Mollisia (Fr.) P. Karst. (= *Neomollisia* Ekanayaka & K.D. Hyde*Note 1147; = *Tapesia* (Pers.) Fuckel) (ca 200)*Tanney & Seifert 2020
Neobelonopsis Itagaki & Hosoya (9)*Note 1201
Neopyrenopeziza Ekanayaka & K.D. Hyde (1)*Note 1148
Neotapesia E. Müll. & Hütter (3)
Niptera Fr. (ca 75)
Nipterella Starbäck ex Dennis (3)
Obtectodiscus E. Müll., Petrini & Samuels (2)*Note 1283
Phialocephala W.B. Kendr. (= *Fuscosclera* Hern.-Restr., J. Mena & Gené) (ca 35)
Pseudonaevia Dennis & Spooner (2)
Pulvinata Ekanayaka & K.D. Hyde (1)*Note 1159
Sarconiptera Raitv. (1)
Scutobelonium Graddon (1)
Scutomollisia Nannf. (13)
Trimmatostroma Corda (ca 35)
Variocladium Descals & Marvanová (2)

Myxotrichaceae Locq. ex Currah
Byssoascus Arx (1)
Mycosylva M.C. Tulloch (3)*Note 1144
Myxotrichum Kunze (17)
Oidiodendron Robak (26)
Skoua A.A. Wynns (2)

Neodictyocheirosporaceae W.H. Tian, K.D. Hyde & Maharachch.*Tian et al. 2024a
Neodictyocheirospora W.H. Tian, K.D. Hyde & Maharachch. (1)*Tian et al. 2024a

Neolauriomycetaceae Crous
Exochalara W. Gams & Hol.-Jech. (3)
Lareunionomyces Crous & M.J. Wingf. (4)
Minichalara W.P. Wu & Y.Z. Diao (2)*Note 1142
Neolauriomyces Crous (1)

Patellariopsidaceae Karun., Camporesi & K.D. Hyde*Note 380, FoF06573
Patellariopsis Dennis (5)*FoF06575
Velutinus N. Wu & Jian K. Liu (1)*Wu et al. 2024

Pezizellaceae Velen. (= *Porodiplodiaceae* Crous; = *Bloxamiaceae* Locq.)*Notes 1242, 1285
Allophylaria (P. Karst.) P. Karst. (ca 15)
Antinoa Velen. (5)
Apiculospora Wijayaw., Camporesi, A.J.L. Phillips & K.D. Hyde (2)*Note 1183
Austropezia Spooner (1)*Note 1239
Bloxamia Berk. & Broome (= *Trichotheca* P. Karst.) (ca 15)*Note 1242
Bloxamiella W.P. Wu & Y.Z. Diao (1)*Note 1243
Calycellina Höhn. (ca 50)
Calycina Nees ex Gray (ca 25)
Chalara (Corda) Rabenh. (= *Chaetochalara* B. Sutton & Piroz.) (ca 100)*Note 1247
Cylindrocephalum Bonord. (3)*Note 1124
Endoradiciella G. Delgado & Maciá-Vicente (8)*Note 1001, FoF15025

Micropeziza Fuckel (11)
Mollisina Höhn. ex Weese (ca 10) (= *Acidomelania* E. Walsh & N. Zhang) (1)
Mollisinopsis Arendh. & R. Sharma (3)
Moserella Pöder & Scheuer (1)
Nagrajchalara W.P. Wu & Y.Z. Diao (ca 50)*Note 1178
Neochalara Crous (1)*Note 773
Newbrunswickomyces Crous & Malloch (1)*Note 1149
Parachalara W.P. Wu & Y.Z. Diao (1)*Note 1152
Phaeoscypha Spooner (2)
Phialina Höhn. (5)
Poculinia Spooner (1)
Porodiplodia Crous (2)*Note 1285
Rodwayella Spooner (4)
Rubropezicula Ekanayaka & K.D. Hyde (1)*Note 1162
Scleropezicula Verkley (ca 100)
Velutaria Fuckel (ca 10)
Zymochalara Guatim., R.W. Barreto & Crous (2)

Pleuroascaceae Unter. & Réblová*Note 1153
Entimomentora Unter. & Réblová (1)*Note 1153
Pleuroascus Massee & E.S. Salmon (3)
Venustampulla Unter. & Réblová (2)*Note 1153

Pyrenopezizaceae Velen. (= *Ploettnerulaceae* Kirschst.)*Note 1287
Collembolispora Marvanová & Pascoal (3)
Cylindrosporium Grev. (ca 150)
Dennisiodiscus Svrček (7)
Helgardiomyces Crous (1)*Note 1133, FoF14535
Lasiomollisia Raitv. & Vesterh. (1)
Leptodophora Koukol & Maciá-Vicente (4)*Note 780
Mastigosporium Riess (6)
Mycochaetophora Hara & Ogawa (2)
Neospermospora Crous & U. Braun (1)*Note 328, FoF14074
Nothophacidium J. Reid & Cain (2)
Oculimacula Crous & W. Gams (2)
Pirottaea Sacc. (ca 50)
Pyrenopeziza Fuckel (= *Cylindrodochium* Bonord.; = *Cylindrosporium* Grev.) (ca 150)
Rhexocercosporidium U. Braun (5)*Note 1289
Rhynchobrunnera B.A. McDonald, U. Braun & Crous (2)*Note 1161, FoF14537
Rhynchosporium Heinsen ex A.B. Frank (4)
Ypsilina J. Webster, Descals & Marvanová (1)*Note 1177

Rutstroemiaceae Holst-Jensen, L.M. Kohn & T. Schumach.
Arboricolonus S. Bien & Damm (1)*Note 42, Doth, FoF11362
Banksiamyces G.W. Beaton (4)
Bicornispora Checa, Barrasa, M.N. Blanco & A.T. Martínez (2)
Bryorutstroemia Sochorová & Baral (1)*Note 1371
Clarireedia L.A. Beirn, B.B. Clarke, C. Salgado & J.A. Crouch (6)*Note 1119
Crassitunica Yan J. Zhao & T. Hosoya (1)*Note 624
Dencoeliopsis Korf (2)
Lambertella Höhn. (ca 50)
Lanzia Sacc. (ca 40)

Moellerodiscus Henn. (ca 15)*Note 1143
Neometulocladosporiella Crous & M.J. Wingf. (2)*Note 1146
Poculum Velen. (ca 15)*Note 1154
Pseudolanzia Baral & G. Marson (1)
Rutstroemia P. Karst. (ca 75)
Scleromitrula S. Imai (7)*Note 1290
Torrendiella Boud. & Torrend (3)

Sclerotiniaceae Whetzel
Amphobotrys Hennebert (1)
Botrytis P. Micheli ex Pers. (ca 70)
Ciboria Fuckel (ca 80)
Ciborinia Whetzel (ca 20)
Cristulariella Höhn. (3)
Cudoniopsis Speg. (1)
Dumontinia L.M. Kohn (1)
Elliottinia L.M. Kohn (1)
Grovesinia M.N. Cline, J.L. Crane & S.D. Cline (3)
Haradamyces Masuya, Kusunoki, Kosaka & Aikawa (1)
Kohninia Holst-Jensen, Vrålstad & T. Schumach. (1)
Martininia Dumont & Korf (1)
Microstrobilinia Beenken & Andr. Gross (1)*Note 1141
Monilinia Honey (= *Monilia* Bonord.) (ca 35)
Mycopappus Redhead & G.P. White (3)
Myrioconium Syd. & P. Syd. (8)
Myriosclerotinia N.F. Buchw. (9)
Ovulinia F.A. Weiss (2)
Phaeosclerotinia Hori (2)
Pseudociboria Kanouse (1)
Pycnopeziza W.L. White & Whetzel (= *Acarosporium* Bubák & Vleugel ex Bubák; *Chaetalysis* Peyronel) (5)*Coel
Redheadia Y. Suto & Suyama (1)
Schroeteria G. Winter (ca 10)*Note 1164
Sclerencoelia Pärtel & Baral (3)
Sclerotinia Fuckel (ca 75)
Sclerotium Tode (5)
Seaverinia Whetzel (1)
Septotinia Whetzel ex J.W. Groves & M.E. Elliottn (= *Septotis* N.F. Buchw. ex Arx) (2)
Streptotinia Whetzel (3)
Stromatinia (Boud.) Boud. (ca 15)
Valdensia Peyronel (1)*Fp261

Solenopeziaceae Ekanayaka & K.D. Hyde*Note 1293
Lasiobelonium Ellis & Everh. (ca 20)*Note 1272
Solenopezia Sacc. (ca 10)
Trichopeziza Fuckel (ca 80)
Trichopezizella Dennis ex Raitv. (ca 15)*Note 1168

Tricladiaceae P.R. Johnst. & Baschien*Notes 517, 1299, FoF14076
Cudoniella Sacc. (ca 20)*Note 1252
Geniculospora Sv. Nilsson ex Marvanová & Sv. Nilsson (2)*Note 1189
Graddonia Dennis (1)*Note 1190

Halenospora E.B.G. Jones (1)*Note 1260
Mycofalcella Marvanová, Om-Kalth. & J. Webster (2)
Spirosphaera Beverw. (5)*Note 1296
Tricladium Ingold (ca 30)*Note 517, FoF14077

Vandijckellaceae Sand.-Den.
Basingstokeomyces Crous & Denman (1)*Note 1227
Cryonesomyces Unter. & Réblová (1)*Note 1123
Tetracladium De Wild. (12)
Vandijckella Sand.-Den. (1)

Vibrisseaceae Korf
Leucovibrissea (A. Sánchez) Korf (1)
Vibrissea Fr. (= *Pocillum* De Not.) (ca 35)

Helotiales genera *incertae sedis**FoF13859
Aeruginoscyphus Dougoud (1)*Note 1180
Algincola Velen. (1)
Aphanodesmium Réblová & Hern.-Restr. (1)*Note 33, FoF 14078
Aquadiscula Shearer & J.L. Crane (2)
Aquapoterium Raja & Shearer (1)
Arachnoscypha Boud. (4)*Note 1184
Ascluella DiCosmo, Nag Raj & W.B. Kendr. (1)
Ascoclavulina Otani (1)
Asterocalycella Höhn. ex R. Kirschner (1)*Note 1109
Belonioscyphella Höhn. (3)
Benguetia Syd. & P. Syd. (1)
Bioscypha Syd. (2)
Blastosporium Z.F. Yu & H. Zheng (1)*Note 1111
Brachyalara Réblová & W. Gams (1)
Brefeldochium Verkley (1)
Bulgariopsis Henn. (3)
Cadophora Lagerb. & Melin (ca 30)*Note 1245
Caesiodiscus Holien & Suija (1)*Note 608
Cairneyella D.J. Midgley & N. Tran-Dinh (1)*Note 1113, 1528
Capillipes R. Sant. (2)
Capricola Velen. (1)
Cashiella Petr. (4)
Cejpia Velen. (3)
Cenangiumella J. Fröhl. & K.D. Hyde (1)
Chloroepilichen Etayo (1)
Chlorospleniella P. Karst. (3)
Chlorovibrissea L.M. Kohn (7)*Note 1248
Chondroderris Maire (1)
Ciliella Sacc. & P. Syd. (1)
Cistella Quél. (ca 50)
Clathrosphaerina Beverw. (2)*Note 1250
Clathrosporium Nawawi & Kuthub. (4)
Coleosperma Ingold (1)
Colipila Baral & Guy García (2)
Comesia Sacc. (3)
Cornuntum Velen. (1)

Coronellaria (P. Karst.) P. Karst. (8)
Criserosphaeria Speg. (1)
Crocicreas Fr. (ca 50)
Crucellisporium M.L. Farr (3)*Coel
Crumenella P. Karst. (= *Obscurodiscus* Raitv., **nom. inval.**) (2)
Cryptohymenium Samuels & L.M. Kohn (1)
Cryptopezia Höhn. (1)
Dactylaria Sacc. (ca 100)
Dawsicola Döbbeler (1)
Dematioscypha Svrček (protected over *Haplographium* Berk. & Broome and *Schizocephalum* Preuss) (8)*Note 1255, Johnston et al. 2014
Dermateopsis Nannf. (2)
Didonia Velen. (7)
Didymascella Maire & Sacc. (5)
Discomycella Höhn. (1)
Durella Tul. & C. Tul. (23)
Encoeliopsis Nannf. (4)
Episclerotium L.M. Kohn (2)
Erikssonopsis M. Morelet (1)
Eustilbum Rabenh. (1)*Note 1128
Filosporella Nawawi (6)*Note 1256
Gloeopeziza Zukal (7)
Godroniopsis Diehl & E.K. Cash (2)
Gorgoniceps (P. Karst.) P. Karst. (ca 25)
Grimmicola Döbbeler & Hertel (1)
Grovesia Dennis (1)
Helicocentralis Sri-indr., Chuaseehar., Boonyuen, K. Yamag., Suetrong & C.K.M. Tsui (1)*Note 1263
Hemiglossum Pat. (3)
Hydrocina Scheuer (1)
Hyphoscypha Bres. (2)
Hysteronaevia Nannf. (12)
Hysteropezizella Höhn. (26)
Involucroscypha Raitv. (1)
Jacobsonia Boedijn (1)
Korfia J. Reid & Cain (1)
Lanceolata Ekanayaka & K.D. Hyde (1)*Note 1137
Larissia Raitv. (1)
Lasseria Dennis (1)
Lemalis Fr. (6)
Leohumicola N.L. Nickersen, Hambleton & Seifert (7)*Note 1273
Libartania Nag Raj (4)
Livia Velen. (1)
Masseea Sacc. (3)
Melanopeziza Velen. (1)
Merodontis Clem. (1)
Microdiscus Sacc. (1)
Miricatena Punith. & Spooner (1)*Crous et al. 2023a
Mitrulinia Spooner (1)
Monochaetiellopsis B. Sutton & DiCosmo (= *Hypnotheca* Tommerup, *fide* Johnston et al. 2014) (2)*Coel
Mycoarthris Marvanová & P.J. Fisher (1)*Note 1278

Neonematogonum Crous & Akulov (1)*Note 1199
Neosatchmopsis Crous, M.A. Delgado & R.K. Schumach. (1)*Visagie et al. 2024a
Obconicum Velen. (2)
Orbiliopsis (Sacc. & D. Sacc.) Syd. & P. Syd. (1)
Otwaya G.W. Beaton (1)
Pachydisca Boud. (32)
Parencoelia Petr. (4)
Patinellaria H. Karst. (2)
Peltigeromyces Möller (3)
Pezolepis Syd. (3)
Pezomela Syd. (1)
Phacidiella P. Karst.
Phaeofabraea Rehm (4)
Phragmonaevia Rehm (ca 15)
Piceomphale Svrček (1)
Pleoscutula Vouaux (1)
Podophacidium Niessl (2)
Polydesmia Boud. (6)
Polyphilus D.G. Knapp, Ashrafi, W. Maier & Kovács (2)
Populomyces Hern.-Restr. (2)*FoF14115
Potridiscus Döbbeler & Triebel (1)
Pseudohelotium Fuckel (ca 25)
Pseudolachnum Velen. (1)
Pseudomitrula Gamundí (1)
Pseudopeltis L. Holm & K. Holm (2)
Pseudotryblidium Rehm (1)
Psilophana Syd. (1)
Psychrophila M.M. Wang & Xing Z. Liu, **nom. inval.** (4)*Note 1158
Pteromyces E. Bommer, M. Rousseau & Sacc. (1)
Pubigera Baral, Gminder & Svrček (1)
Radotinea Velen. (1)
Rhizocladosporium Crous & U. Braun (1)
Rhizothyrium Naumov (2)
Rommelaarsia Baral & Haelew. (1)
Roseodiscus Baral (5)
Sageria A. Funk (1)
Sambucina Velen. (1)
Sarcomyces Massee (1)
Sclerocrana Samuels & L.M. Kohn (1)
Scutulopsis Velen. (1)
Scytalidium Pesante (ca 25)*Note 1292
Sorokina Sacc. (9)
Sorokinella J. Fröhl. & K.D. Hyde (2)
Srinivasanomyces S. Rana & S.K. Singh (1)*Notes 482, 1297, FoF06119
Stamnaria Fuckel (7)*Coel
Stilbopeziza Speg. (1)
Strossmayeria Schulzer (ca 20)*Note 1297
Themisia Velen. (2)
Tovariella Syd. (1)
Trichohelotium Killerm. (2)
Triposporium Corda (ca 20)
Unguicularia Höhn. (ca 10)*Note 606

Urceolella Boud. (ca 40)
Waltonia Saho (1)
Woodiella Sacc. & P. Syd. (1)
Xeromedulla Korf & W.Y. Zhuang (3)
Zugazaea Korf, Iturr. & Lizoň (1)

Lahmiales O.E. Erikss.
Lahmiaceae O.E. Erikss.
Lahmia Körb. (2)

Lauriomycetales Hern.-Restr., R.F. Castañeda & Guarro
Lauriomycetaceae Hern.-Restr., R.F. Castañeda & Guarro
Lauriomyces R.F. Castañeda (ca 10)

Leotiales Korf & Lizoň (= *Lichinodiales* M. Prieto, M. Schultz, Olariaga & Wedin)*Note 245, FoF14117
Leotiaceae Corda
Leotia Pers. (ca 20)
Microglossum Gillet (ca 25)
Miniancora Marvanová & Bärl. (1)

Lichinodiaceae M. Prieto, M. Schultz, Olariaga & Wedin
Lichinodium Nyl. (1)

Mniaeciaceae Baral
Epithamnolia Zhurb. (8)*Fp169
Mniaecia Boud. (3)

Tympanidaceae Baral & Quijada
Capturomyces S. Bien, C. Kraus & Damm (2)*Note 1116
Collophorina Damm & Crous (7)
Durandiella Seaver (15)
Flexuomyces Crous (1)*Note 625, FoF
Gelatinosporium Peck (12)
Myriodiscus Boedijn (2)
Pragmopora A. Massal. (8)*Coel
Ramoconidiophora S. Bien & Damm (1)*Note 1160
Tympanis Tode (ca 60)*Coel
Vexillomyces S. Bien, C. Kraus & Damm (ca 12)*Note 1074

Leotiales genera *incertae sedis**FoF14117
Alatospora Ingold (5)
Aotearoamyces P.R. Johnst., J.A. Cooper & Quijada (1)
Calyptrozyma Boekhout & Spaay (1)*Note 1115
Flagellospora Ingold (6)
Gorgomyces M. Gönczöl & Révay (2)*Note 1259
Mycosymbioces J.L. Frank (1)*Note 1281
Pallidophorina S. Bien & Damm (1)*Note 1151
Scolecoleotia H.B. Jiang, Phookamsak & K.D. Hyde (1)*Note 606, FoF09763
Variabilispora S. Bien, C. Kraus & Damm (2)*Note 1170

Marthamycetales P.R. Johnst. & Baral

Marthamycetaceae Baral, Lantz, Hustad & Minter
Cyclaneusma DiCosmo, Peredo & Minter (2)
Marthamyces Minter (ca 20)
Mellitiosporiella Höhn. (3)
Mellitiosporium Corda (9)
Naemacyclus Fuckel (ca 10)
Phragmiticola Sherwood (1)
Propolina Sacc. (1)
Propolis (Fr.) Corda (8)
Ramomarthamyces P.R. Johnst. (4)

Micraspidales Quijada & Tanney
Micraspidaceae Quijada & Tanney
Micraspis Darker (3)*Coel

Phacidiales C.E. Bessey
Helicogoniaceae Baral
Calloriopsis Syd. & P. Syd. (1)
Eleutheromycella Höhn. (1)
Eleutheromyces Fuckel (2)*Coel
Gelatinipulvinella Hosoya & Y. Otani (1)
Geltingia Alstrup & D. Hawksw. (1)
Helicogonium W.L. White (19)*Groenewald et al. 2023

Phacidiaceae Fr.
Allantophomopsiella Crous (1)*Fp66, Coel, FoF07103
Allantophomopsis Petr. (4)*Coel, FoF07105
Bacilliformis Ekanayaka & K.D. Hyde (1)*Note 1110
Bulgaria Fr. (9)
Calvophomopsis J.B. Tanney & Seifert (1)*Note 1114
Chionobium Iwakiri & Hirooka (1)*Iwakiri et al. 2024
Cornibusella J.B. Tanney & Seifert (1)*Note 1122
Darkera H.S. Whitney, J. Reid & Piroz. (5)*Coel
Gloeopycnis J.B. Tanney & Seifert (1)*Note 1130
Lophophacidium Lagerb. (2)
Phacidiopycnis Potebnia (6)
Phacidium Fr. (ca 40)*Coel
Pseudophacidium P. Karst. (11)
Starbaeckia Rehm ex Starback (1)
Strasseria Bres. & Sacc. (ca 15)*Note 1166, Coel
Xenosphaeropsis F. Liu, Crous & L. Cai (2)*Notes 620, 1175, FoF12731

Phacidiales genus *incertae sedis*
Coma Nag Raj & W.B. Kendr. (1)

Rhytismatales M.E. Barr ex Minter
Cudoniaceae P.F. Cannon
Cudonia Fr. (9)
Spathularia Pers. (7)

Rhytismataceae Chevall.
Bifusella Höhn. (9)

Bifusepta Darker (1)
Bivallum P.R. Johnst. (7)
Canavirgella W. Merr, N.G. Wenner & Dreisbach (1)
Cavaraella Speg. (1)
Ceratophacidium J. Reid & Piroz. (1)
Cerion Massee (2)
Coccomyces De Not. (ca 100)
Colpoma Wallr. (ca 15)*Coel
Criella (Sacc.) Henn. (2)
Davisomycella Darker (11)
Densorhytisma C.L. Hou, Q.T. Wang & P.F. Cannon (2)*Note 1085
Discocainia J. Reid & A. Funk (4)
Duplicaria Fuckel (1)
Duplicariella B. Erikss. (1)
Elytroderma Darker (3)
Fanglania C.L. Hou, Q.T. Wang & P.F. Cannon (7)*Note 1049
Gelineostroma H.J. Swart (2)
Hypoderma De Not. (= *Leptothyrina* Höhn.; = *Phaeophomopsis* Höhn.) (ca 50)
Hypodermella Tubeuf (3)
Hypodermellina Höhn. (1)
Hypohelion P.R. Johnst. (= *Leptostroma* Fr.) (4)*Coel
Isthmiella Darker, **nom. inval.** (4)*Note 1135
Johnstoniella C.L. Hou & P.F. Cannon (3)*Note 1413
Lasiostictella Sherwood (1)
Lirula Darker (12)
Lophodermella Höhn. (9)
Lophodermina Höhn. (ca 20)*Wang et al. 2023d
Lophodermiopsis M.J. Guo & C.L. Hou (1)*Guo et al. 2024a
Lophodermium Chevall. (ca 180)
Macroderma Höhn. (2)
Meloderma Darker (5)
Moutoniella Penz. & Sacc. (1)
Mycomelanea Velen. (1)
Myriophacidium Sherwood (6)
Nematococcomyces C.L. Hou, M. Piepenbr. & Oberw. (2)
Neococcomyces Y.R. Lin, C.T. Xiang & Z.Z. Li (3)
Neophacidium Petr. (2)
Neorhytisma M. Piepenbr., T.A. Hofm., Gronefeld & C.L. Hou (1)*Note1419
Neotryblidiopsis M.J. Guo & C.L. Hou (2)*Guo et al. 2024a
Nothorhytisma Minter, P.F. Cannon, A.I. Romero & Peredo (1)
Occultimyces M.J. Guo & C.L. Hou (1)*Guo et al. 2024a
Parvacoccum R.S. Hunt & A. Funk (1)
Phaeophacidium Henn. & Lindau (3)
Placuntium Ehrenb (1)*Wang et al. 2023d
Ploioderma Darker. (8)
Propolidium Sacc. (ca 15)
Pseudographis Nyl. (ca 10)
Pseudorhytisma Juel (1)
Pureke P.R. Johnst. (1)
Rhodohypoderma M.J. Guo, M. Piepenbr. & C.L. Hou (4)*Guo et al. 2024a
Rhytisma Fr. (= *Cryptomyces* Grev.; = *Vladracula* P.F. Cannon, Minter & Kamal) (ca 30)*Coel, Wang et al. 2023d

Septofusella M.J. Guo & C.L. Hou (1)*Guo et al. 2024a
Septomyces M.J. Guo & C.L. Hou (1)*Guo et al. 2024a
Shiqia C.L. Hou, Q.T. Wang & P.F. Cannon (2)*Note 1324
Shuqunia M.J. Guo, M. Piepenbr. & C.L. Hou (1)*Guo et al. 2024a
Soleella Darker (7)
Sporomega Corda (1)
Terriera B. Erikss. (ca 40)
Therrya Sacc. (7)
Tryblidiopsis P. Karst. (= *Tryblidiopycnis* Höhn.) (5)*Coel
Virgella Darker (1)
Yingrenia M.J. Guo, M. Piepenbr. & C.L. Hou (8)*Guo et al. 2024a
Xyloma Pers. (7)*Wang et al. 2023d
Xyloschizon Syd. (2)
Zeus Minter & Diam. (1)

Triblidiaceae Rehm
Triblidium Rebent. (= *Huangshania* O.E. Erikss.) (ca 15)*Lv et al. 2019

Rhytismatales genera *incertae sedis*
Angelina Fr. (1)*Note 1182
Apiodiscus Petr. (1)
Bonanseja Sacc. (1)
Didymascus Sacc. (1)
Haplophyse Theiss. (1)
Irydyonia Racib. (1)
Laquearia Fr. (2)
Lophomerum Ouell. & Magasi (9)*Note 1140
Nymanomyces Henn. (2)
Pseudotrochila Höhn. (1)

Thelebolales P.F. Cannon
Holwayaceae Quijada, Matočec & I. Kušan*Note 1008, FoF15026
Holwaya Sacc. (= *Crinium* Fr.; = *Crinula* Fr.) (2)
Patinella Sacc. (ca 20)*Note 1284
Ramgea Brumm. (2)*Note 1288

Pseudeurotiaceae Malloch & Cain
Beskidomyces Czachura & Piątek (1)*Note 1240, FoF15326
Connersia Malloch (1)
Geomyces Traaen (10)
Gymnostellatospora Udagawa, Uchiy. & Kamiya (6)
Leuconeurospora Malloch & Cain (3)
Neelakesa Udaiyan & Hosag. (3)
Ovadendron Sigler & J.W. Carmich. (1)*Note 1150
Pseudeurotium J.F.H. Beyma (8)
Pseudogeomyces Zhi. Y. Zhang & Y.F. Han (3)*Note 1156, Crous et al. 2023c
Pseudogymnoascus Raillo (ca 20)*Note 1156, Crous et al. 2023c
Solomyces Zhi Y. Zhang, Y.F. Han & Z.Q. Liang (3)*Notes 478, 1294, FoF08688
Xerogeomyces Minnis & D.L. Lindner (1)

Thelebolaceae (Brumm.) Eckblad
Antarctomyces Stchigel & Guarro (2)

Ascophanus Boud. (56)
Ascozonus (Renny) E.C. Hansen (9)
Caccobius Kimbr. (1)
Cleistothelebolus Malloch & Cain (1)
Coprobolus Cain & Kimbr. (1)
Inopinatum Haelew. & Aime. (1)*Note 1084, FoF14381
Leptokalpion Brumm. (1)
Pseudascozonus Brumm. (1)
Thelebolus Tode (= *Pezizella* P. Karst.) (16)

Thelebolales genera *incertae sedis*
Bettsia Skou (2)*Note 1241
Zongqia Zhi Y. Zhang & Y.F. Han (1)*Note 739, FoF14382

Umbellidiales G.G. Barreto & Gusmão*Note 1169
Umbellidiaceae G.G. Barreto & Gusmão*Note 1169
Umbellidion B. Sutton & Hodges (1)*Note 1169

Leotiomycetes family *incertae sedis*
Neocrinulaceae Crous*Note 1282
Neocrinula Crous (2)

Leotiomycetes order *incertae sedis*
Cochlearomycetaceae Crous*Note 1120
Cochlearomyces Crous (1)
Satchmopsis B. Sutton & Hodges (= *Zelosatchmopsis* Nag Raj*Coel) (6)*Note 1163, Coel

Leotiomycetes genera *incertae sedis*
Adelodiscus Syd. (1)
Bagnisimitrula S. Imai (1)
Callerascus Whitton, K.D. Hyde & McKenzie (1)
Claussenomyces Kirschst. (= *Dendrostilbella* Höhn.) (9)*Note 1251
Epicladonia D. Hawksw. (6)
Fulvoflamma Crous (1)*Note 1257
Gelatinopsis Rambold & Triebe (8)*Note 1258
Helotiella Sacc. (17)
Humicolopsis Cabral & S. Marchand (1)*Note 1264
Melanormia Körb. (1)
Metapezizella Petr. (1)
Nannfeldtia Petr. (2)*Note 292
Ocotomyces H.C. Evans & Minter (1)
Phyllopezis Petr. (1)
Physmatomyces Rehm (1)
Polydiscina Syd. (1)
Psilothecium Clem. (1)
Trullula Ces. (6)

Class *Lichinomycetes* V. Reeb, Lutzoni & Cl. Roux (= ***Candelariomycetes*** Voglmayr & Jaklitsch; = ***Coniocybomycetes*** M. Prieto & Wedin; = ***Geoglossomycetes*** Zheng Wang, C.L. Schoch & Spatafora; ***Sareomycetes*** Beimforde, A.R. Schmidt, Rikkinen & J.K. Mitch.*Note 5; ***Xylonomycetes*** Gazis & P. Chaverri)*Díaz-Escandón et al. 2024

Candelariales Miądl., Lutzoni & Lumbsch
Candelariaceae Hakul.
Candelaria A. Massal. (= *Opeltiella* S.Y. Kondr.) (8)
Candelariella Müll. Arg. (= *Candelinella* S.Y. Kondr.) (ca 55)
Candelina Poelt (3)
Placomaronea Räsänen (6)
Protocandelariella Poelt ex D. Liu, Hur & S.Y. Kondr. (2)*Note 411

Pycnoraceae Bendiksby & Timdal
Pycnora Hafellner (3)

Coniocybales M. Prieto & Wedin
Coniocybaceae Rchb.
Chaenotheca (Th. Fr.) Th. Fr. (= *Coniocybe* Ach.) (ca 25)
Chaenotricha Suija, McMullin & P. Lõhmus (2)*Suija et al. 2023
Sclerophora Chevall. (8)

Geoglossales Zheng Wang, C.L. Schoch & Spatafora
Geoglossaceae Corda
Geoglossum Pers. (ca 50)
Glutinoglossum Hustad, A.N. Mill., Dentinger & P.F. Cannon (15)
Hemileucoglossum Arauzo (6)
Leucoglossum S. Imai (2)
Maasoglossum K.S. Thind & R. Sharma (2)
Sabuloglossum Hustad, A.N. Mill., Dentinger & P.F. Cannon (2)
Trichoglossum Boud. (27)

Geoglossomycetes genera *incertae sedis*
Nothomitra Maas Geest. (2)
Sarcoleotia S. Ito & S. Imai (4)

Lichinales Henssen & Büdel
Gloeoheppiaceae Henssen
Gloeoheppia Gyeln. (5)
Gudelia Henssen (1)
Pseudopeltula Henssen (4)

Lichinaceae Nyl.
Anema Nyl. ex Forssell (2)
Calotrichopsis Vain. (1)
Cryptothele Th. Fr. (3)
Digitothyrea P.P. Moreno & Egea (4)
Edwardiella Henssen (1)
Ephebe Fr. (6)
Gyrocollema Vain. (2)
Heppia Nägeli ex A. Massal (4)
Jenmania W. Wächt. (3)
Lecidopyrenopsis Vain. (1)
Lemmopsis (Vain.) Zahlbr. (3)
Lempholemma Körb. (ca 15)
Leprocollema Vain. (4)
Lichina C. Agardh (7)

Lichinella Nyl. (= *Thallinocarpon* E. Dahl) (6)
Metamelanea Henssen (3)
Paulia Fée (ca 15)
Peccania A. Massal. ex Arnold (5)
Phloeopeccania J. Steiner (5)
Phylliscidium Forssell (1)
Phyllisciella Henssen (3)
Phylliscum Nyl. (ca 20)
Porocyphus Körb. (8)
Pseudoheppia Zahlbr. (1)
Pseudopaulia M. Schultz (1)
Psorotichia A. Massal. (ca 100)
Pterygiopsis Vain. (ca 15)
Pyrenocarpon Trevis. (1)
Pyrenopsis (Nyl.) Nyl. (ca 100)
Stromatella Henssen (1)
Synalissa Fr. (ca 30)
Thelignya A. Massal. (2)
Thermutis Fr. (2)
Thermutopsis Henssen (1)
Thyrea A. Massal. (ca 10)
Watsoniomyces D. Hawksw., M. Powell & T. Sprib. (1)*Note 609
Zahlbrucknerella Herre (ca 10)

Peltulaceae Büdel
Peltula Nyl. (= *Corynecystis* Brusse; = *Phylliscidiopsis* Sambo; = *Solorinaria* (Vain.) Gyeln.) (1)

Sareales Beimforde, A.R. Schmidt, Rikkinen & J.K. Mitch.*Note 5
Sareaceae Beimforde, A.R. Schmidt, Rikkinen & J.K. Mitch.*Note 5
Atrozythia J.K. Mitch., Quijada, Garrido-Ben. & Pfister (2)*Notes 52, 803
Sarea Fr. (3)*Note 5, Mitchell et al. 2021
Zythia Fr. (1)*Mitchell et al. 2021

Symbiotaphrinales Baral & E. Weber
Symbiotaphrinaceae Baral & E. Weber
Symbiotaphrina Kühlw. & Jurzitza ex W. Gams & Arx (= *Tromeropsis* Sherwood) (ca 10)*Baral et al. 2018

Xylonales Gazis & P. Chaverri
Xylonaceae Gazis & P. Chaverri
Trinosporium Crous & Decock (1)
Xylona Gazis & P. Chaverri (1)

Class *Orbiliomycetes* O.E. Erikss. & Baral
Orbiliales Baral, O.E. Erikss., G. Marson & E. Weber
Orbiliaceae Nannf.
Amphosoma Baral (5)*Note 23, FoF14390
Arthrobotrys Corda (ca 100)*FoF14384
Bryorbilia Baral & E. Rubio (1)*Note 86, FoF14389
Dactylella Grove (ca 35)
Dactylellina M. Morelet (= *Gamsylella* M. Scholler et al.) (21), FoF14386
Dicranidion Harkn. (12)

Drechslerella Subram. (7)*FoF14385
Dwayaangam Subram. (7)
Helicoon Morgan (ca 15)
Hyalorbilia Baral & G. Marson (= *Microdochiella* Hern.-Restr. & Crous) (ca 40)
Liladisca Baral (1)*FoF14387
Lilapila Baral & G. Marson (3)*FoF14388
Mycoceros D. Magyar & Z. Merényi (1)
Orbilia Fr. (= *Pseudotripoconidium* Z.F. Yu & K.Q. Zhang) (ca 500)
Pseudorbilia Y. Zhang bis, Z.F. Yu, Baral & K.Q. Zhang (1)
Retiarius D.L. Olivier (4)
Vermispora Deighton & Piroz. (7)

Class ***Pezizomycetes*** O.E. Erikss. & Winka
Pezizales J. Schröt.
Ascobolaceae Boud. ex Sacc.
Ascobolus Pers. (ca 100)
Cleistoiodophanus J.L. Bezerra & Kimbr. (1)
Cubonia Sacc. (ca 7)
Saccobolus Boud. (ca 45)
Thecotheus Boud. (ca 20)

Ascodesmidaceae J. Schröt.
Ascodesmis Tiegh. (ca 10)
Cephaliophora Thaxt. (3)*Crous et al. 2023a
Chalazion Dissing & Sivertsen (3)
Coprotiella Jeng & J.C. Krug (1)
Dictyocoprotus J.C. Krug & R.S. Khan (1)
Eleutherascus Arx (4)
Lasiobolus Sacc. (ca 21)
Luciotrichus R. Galán & Raitv. (1)
Ochotrichobolus Kimbr. & Korf (1)
Trichobolus (Sacc.) Kimbr. & Cain (6)

Caloscyphaceae Harmaja
Caloscypha Boud. (2)

Chorioactidaceae Pfister
Chorioactis Kupfer ex Eckblad (1)
Desmazierella Lib. (5)
Neournula Paden & Tylutki (2)
Pseudosarcosoma M. Carbone, Agnello & P. Alvarado (1)
Trichaleurina Rehm (4)
Wolfina Seaver ex Eckblad (3)

Coprotaceae U. Lindem. & Van Vooren*Note 989, Fp85
Boubovia Svrček (7)
Coprotus Korf & Kimbr. (ca 25)*Fp338

Discinaceae Benedix*Dirks et al. in press
Discina (Fr.) Fr. (ca 20)
Gymnohydnotrya B.C. Zhang & Minter (1)
Gyromitra Fr. (ca 40)

Hydnotrya Berk. & Broome (ca 15)
Paragyromitra X.C. Wang & W.Y. Zhuang (5)*Note 1374
Pseudorhizina Jacz. (3)
Pseudodiscina X.C. Wang & W.Y. Zhuang (2)*Note 1339
Pseudoverpa (P.A. Moreau, Bellanger & Loizides) X.C. Wang & W.Y. Zhuang (1)*Note 1340

Geomoriaceae Kraisit., Pfister & M.E. Sm.
Geomorium Speg. (8)

Glaziellaceae J.L. Gibson
Glaziella Berk. (8)

Helvellaceae Fr.
Balsamia Vittad. (= *Barssia* Gilkey) (ca 25)*Hansen et al. 2019
Dissingia K. Hansen, X.H. Wang & T. Schumach. (4)*Note 140
Helvella L. (ca 150) FoF14391
Midotis Fr. (= *Wynnella* Boud.) (ca 20)*FoF14392, Hansen et al. 2019
Pindara Velen. (1)
Underwoodia Peck (2)

Kallistoskyphaceae Ekanayaka, K.D. Hyde, Q. Zhao & E.B.G. Jones
Kallistoskypha Pfister, Agnello, Lantieri & LoBuglio (1)

Karstenellaceae Harmaja
Karstenella Harmaja (1)

Morchellaceae H.G.L. Reichenbach
Disciotis Boud. (3)
Fischerula Mattir. (2)
Imaia Trappe & Kovács (1)*Fp2
Kalapuya M.J. Trappe, Trappe & Bonito (1)*Fp56
Leucangium Quél. (4)
Morchella Dill. ex Pers. (ca 100)
Verpa Sw. (9)

Otideaceae Eckblad*Zeng et al. 2022
Acervus Kanouse (ca 10)*FoF14419
Arpinia Berthet (5)
Ascosparassis Kobayasi (2)
Diehliomyces Gilkey (1)
Monascella Guarro & Arx (1)
Otidea (Pers.) Bonord. (ca 50)
Planamyces Crous & Decock (1)
Warcupia Paden & J.V. Cameron (2)
Wenyingia Zheng Wang & Pfister (1)

Pezizaceae Dumort. (= *Carbomycetaceae* Trappe)
Adelphella Pfister, Matočec & I. Kušan (1)
Ahmadea Aman, Khalid & Moncalvo (1)*Notes 15, 556, FoF09164
Amylascus Trappe (9)
Antrelloides P.S. Catches. & D.E.A. Catches. (1)
Aquapeziza D.M. Hu, L. Cai & K.D. Hyde (1)

Babosia D.G. Knapp, Zagyva, Trappe & Kovács (1)*Note 60, FoF14393
Boudiera Cooke (ca 25)
Calongea Healy, Bonito & Trappe (1)
Carbomyces Gilkey (3)
Cazia Trappe (2)
Chromelosporiopsis Hennebert (2)*Note 106, FoF14395
Delastria Tul. & C. Tul. (6)
Elaiopezia Van Vooren (6)*Note 147, FoF14397
Elderia McLennan (1)
Eremiomyces Trappe & Kagan-Zur (3)
Galactinia (Cooke) Boud. (ca 10)
Glischroderma Fuckel (1)*Note 7
Hansenopezia Matočec, I. Kušan & Jadan (2)*FoF07926
Hapsidomyces J.C. Krug & Jeng (1)
Hydnobolites Tul. & C. Tul. (8)
Hydnotryopsis Gilkey (4)
Iodophanus Korf (ca 15)
Iodowynnea Medel, Guzmán & S. Chacón (1)
Iodomarcelleina Sammut, P. Alvarado & Van Vooren (1)*Sammut et al. 2023
Ionopezia Van Vooren (2)*FoF 07927
Kalaharituber Trappe & Kagan-Zur (1)
Legaliana Van Vooren (6)*FoF14398
Lepidotia Boud. (1)
Luteoamylascus Cabero, P. Alvarado & G. Moreno (1)
Malvipezia Van Vooren (4)*FoF14399
Marcelleina Brumm., Korf & Rifai (ca 10)
Mattirolomyces E. Fisch. (5)
Mycoclelandia Trappe & G.W. Beaton (2)
Nothoamylascus R.A. Healy & M.E. Sm. (1)*Note 1337
Pachyella Boud. (ca 20)
Pachyphlodes Zobel (ca 20)
Paragalactinia Van Vooren (8)*FoF14400
Peziza Dill. ex Fr. (ca 200)
Phylloscypha Van Vooren (7)*FoF14401
Plicaria Fuckel (ca 45)
Plicariella (Sacc.) Rehm (4)
Purpureodiscus (G. Hirsch) Van Vooren (4)*Note 743, FoF
Rhodopeziza Hohmeyer & Moravec (1)
Rugosporella Pfister, Healy & LoBuglio (1)*Pfister et al. 2024
Ruhlandiella Henn. (8)
Sarcopeziza Loizides, Agnello & P. Alvarado (1)
Sarcosphaera Auersw. (6)
Scotopezia Van Vooren, Sammut & P. Alvarado (1)*Sammut et al. 2023
Sphaerozone Zobel (2)
Stouffera Kovács & Trappe (2)
Temperantia K. Hansen, Healy & Kovács (1)
Terfezia (Tul. & C. Tul.) Tul. & C. Tul. (ca 40)
Tirmania Chatin (3)
Ulurua Trappe, Claridge & Kovács (1)*Fp38
Urinopezia Van Vooren (1)*Note 1455
Velenovskya Albanese, Boragine, M. Carbone & P. Alvarado (1)*Note 1450

Pseudombrophilaceae Ekanayaka, K.D. Hyde, Q. Zhao & E.B.G. Jones
Heydenia Fresen. (4)
Orbicula Cooke (2)
Pseudombrophila Boud. (ca 40)

Pulvinulaceae Ekanayaka, K.D. Hyde, Q. Zhao & E.B.G. Jones*FoF04239
Lazuardia Rifai (1)
Pseudoboubovia U. Lindem., M. Vega, B. Perić & R. Tena (1)
Pulvinula Boud. (ca 25)

Pyronemataceae Corda
Aleuria Fuckel (ca 25)
Aleurina Massee (ca 30)
Anthracobia Boud. (ca 15)
Ascorhizoctonia Chin S. Yang & Korf (ca 15)*Van Vooren et al. 2017
Aurantiolachnea Van Vooren (1)*Note 55
Byssonectria P. Karst. (ca 10)
Chaetothiersia B.A. Perry & Pfister (4)
Cheilymenia Boud. (ca 50)
Cupulina Dougoud, Van Vooren & M. Vega (2)
Eoaleurina Korf & W.Y. Zhuang (1)
Fallacidiscus U. Lindem., Roffler & Van Vooren (1)*Note 607
Galeoscypha Svrček & J. Moravec (1)
Genabea Tul. & C. Tul. (4)
Genea Vittad. (ca 40)
Geneosperma Rifai (2)
Geopora Harkn. (ca 20)
Gilkeya M.E. Sm., Trappe & Rizzo (1)
Hellenicoscyphus U. Lindem., Van Vooren & Kaounas (1)*Note 731
Hoffmannoscypha Stielow, Göker & Klenk (1)
Humaria Fuckel (ca 50)
Lamprospora De Not. (ca 50)
Lasiobolidium Malloch & Cain (= *Paratrichophaea* Trigaux) (ca 10)*Van Vooren et al. 2021
Lasiocupulina Van Vooren & M. Vega (1)
Lathraeodiscus Dissing & Sivertsen (1)
Leucoscypha Boud. (ca 10)
Lotinia Pérez-Butrón Fern.-Vic. & P. Alvarado (1)
Melastiza Boud. (ca 10)
Miladina Svrček (1)
Moravecia Benkert, Caillet & Moyne (2)
Myrmecocystis Harkn. (7)
Neottiella (Cooke) Sacc. (ca 15)
Octospora Hedw. (= *Hiemsia* Svrček) (ca 100)*Zeng et al. 2022
Octosporella Döbbeler (ca 15)
Octosporopsis U. Lindem. & M. Vega (2)
Oviascoma Y.J. Yao & Spooner (1)
Paranthracobia Van Vooren & Valade (1)*Note 1514
Parascutellinia Svrček (1)
Paratricharina Van Vooren, U. Lindemann, M. Vega, Ribes, Illescas & Matočec (3)
Parawilcoxina Van Vooren (1)*Note 1451
Perilachnea Van Vooren (6)*Note 1440
Petchiomyces E. Fisch. & Mattir. (1)

Picoa Vittad. (2)
Pseudaleuria Lusk (2)
Pseudotricharina Van Vooren, Tello & M. Vega (3)
Pyronema Carus (12)
Ramsbottomia W.D. Buckley (3)
Rhizoblepharia Rifai (2)
Rhodoscypha Dissing & Sivertsen (1)*Note 7
Rhodotarzetta Dissing & Sivertsen (2)*Note 7
Scutellinia (Cooke) Lambotte (ca 100)
Selenaspora R. Heim & Le Gal (1)
Sepultariella Van Vooren, U. Lindemann & Healy (2)
Smarodsia Raitv. & Vimba (1)
Sowerbyella Nannf. (ca 15)
Spaniodiscus Van Vooren, U. Lindem. & Roffler (1)*Note 737
Sphaerosporium Schwein. (3)
Spooneromyces T. Schumach. & J. Moravec (5)
Tricharina Eckblad (ca 15)
Tricharinopsis U. Lindem., Van Vooren & Healy (1)*Note 7
Trichophaea Boud. (= *Sphaerosporella* (Svrček) Svrček & Kubička) (ca 40)*Zeng et al. 2022
Trichophaeopsis Korf & Erb (5)
Wilcoxina Chin S. Yang & Korf (5)

Pyropyxidaceae M. Zeng, Q. Zhao & K.D. Hyde*Zeng et al. 2022
Jafnea Korf (3)*FoF12610
Micronematobotrys Xiang Sun & L.D. Guo (1)
Pyropyxis Egger (1)
Smardaea Svrček (ca 10)

Rhizinaceae Bonord.
Phymatotrichopsis Hennebert (1)
Psilopezia Berk. (9)
Rhizina Fr. (2)

Sarcoscyphaceae Le Gal ex Eckblad*FoF04253
Aurophora Rifai (1)
Cookeina Kuntze (ca 20)*FoF09179
Kompsoscypha Pfister (4)*FoF09177
Microstoma Bernstein (8)
Nanoscypha Denison (8)
Phillipsia Berk. (ca 25)
Pithya Fuckel (9)
Pseudopithyella Seaver (2)
Sarcoscypha (Fr.) Boud. (ca 30)*FoF04253
Thindia Korf & Waraitch (1)

Sarcosomataceae Kobayasi
Conoplea Pers. (ca 10)
Donadinia Bellem. & Mel.-Howell (4)
Galiella Nannf. & Korf (9)
Korfiella D.C. Pant & V.P. Tewari (1)
Plectania Fuckel (ca 20)
Pseudoplectania Fuckel (ca 10)

Sarcosoma Casp. (ca 15)
Strumella Fr. (9)
Urnula Fr. (ca 10)

Strobiloscyphaceae Ekanayaka, K.D. Hyde, Q. Zhao & E.B.G. Jones
Strobiloscypha N.S. Weber & Denison (2)

Tarzettaceae Ekanayaka, K.D. Hyde, Q. Zhao & E.B.G. Jones
Densocarpa Gilkey (2)
Geopyxis (Pers.) Sacc. (ca 30)
Hydnocystis Tul. & C. Tul. (= *Stephensia* Tul. & C. Tul.) (7)
Paurocotylis Berk. (8)
Tarzetta (Cooke) Lambotte (= *Hypotarzetta* Donadini) (ca 20)

Tuberaceae Dumort.
Choiromyces Vittad. (7)
Dingleya Trappe (6)
Labyrinthomyces Boedijn (2)
Nothojafnea Rifai (2)
Reddellomyces Trappe, Castellano & Malajczuk (4)
Tuber P. Micheli ex F.H. Wigg. (= *Paradoxa* Mattir.) (ca 150)

Wynneaceae Pfister & Quijada*Pfister et al. 2020
Geodina Denison (2)
Wynnea Berk. & M.A. Curtis (7)

Pezizales genera *incertae sedis*
Aparaphysaria Speg. (2)
Ascocalathium Eidam ex J. Schröt. (1)
Boudierella Sacc. (1)
Cidaris Fr. (1)
Dennisiopsis Subram. & Chandrash. (2)
Filicupula Y.J. Yao & Spooner (3)
Microeurotium Ghatak (1)
Mycoarctium K.P. Jain & Cain (2)
Mycogalopsis Gjurašin (1)
Orcadia G.K. Sutherl. (1)
Sphaerosoma Klotzsch (ca 10)

Pezizomycetes genus *incertae sedis*
Hogelandia Hern.-Restr. (1)*Note 213, FoF14421

Class *Sordariomycetes* O.E. Erikss. & Winka*FoF14263
Subclass *Diaporthomycetidae* Senan., Maharachch. & K.D. Hyde*FoF00594
Annulatascales M.J. D'souza, Maharachch. & K.D. Hyde*FoF00620
Annulatascaceae S.W. Wong, K.D. Hyde & E.B.G. Jones*FoF01212
Annulatascus K.D. Hyde (ca 20)*FWF, FoF01213
Annulusmagnus J. Campb. & Shearer (1)*FWF, FoF28870
Aqualignicola Ranghoo, C.K.M. Tsui & K.D. Hyde (2)*FWF, FoF09688
Ascitendus J. Campb. & Shearer (2)*FWF, FoF09689
Ayria Fryar & K.D. Hyde (2)*FWF, FoF09690
Cataractispora K.D. Hyde, S.W. Wong & E.B.G. Jones (5)*FWF, FoF09691

Chaetorostrum Zelski, Raja, A.N. Mill. & Shearer (1)*FWF, FoF09692
Fusoidigranularius W. Dong, H. Zhang & K.D. Hyde (1)*Note 177, FoF09544
Longicollum Zelski, F.R. Barbosa, Raja, A.N. Mill. & Shearer (1)*FWF, FoF09693
Longivarius W. Dong, H. Zhang & K.D. Hyde (1)*Note 262, FoF09546
Submersisphaeria K.D. Hyde (5)*FWF, FoF09694
Vertexicola K.D. Hyde, Ranghoo & S.W. Wong (3)*FWF, FoF09695

Annulatascales genus *incertae sedis*
Clohiesia K.D. Hyde (3)*FoF09805

Atractosporales H. Zhang, K.D. Hyde & Maharachch.*FWF, FoF03333
Atractosporaceae H. Zhang, K.D. Hyde & Maharachch.*FWF, FoF03334
Atractospora Réblová & J. Fourn. (6)*FWF, Fp292, FoF05072
Rubellisphaeria Réblová & J. Fourn. (1)*FWF, Fp305, FoF12993

Barbatosphaeriales K.D. Hyde & Hongsanan*Notes 995, 907
Barbatosphaeriaceae H. Zhang, K.D. Hyde & Maharachch.*FWF, FoF03341
Appendopyricularia Crous & Osieck (1)*Note 1011
Barbatosphaeria Réblová (9)*FWF, FoF05073
Ceratostomella Sacc. (ca 15)*FoF10296
Xylomelasma Réblová (4)*FoF10297

Cancellidiales K.D. Hyde & Hongsanan*Note 906
Cancellidiaceae K.D. Hyde & Hongsanan*Notes 581, 909
Cancellidium Tubaki (7)*Note 581
Obliquiminima W. Dong, H. Zhang & K.D. Hyde (1)*Notes 351, 891

Conlariales K.D. Hyde & Hongsanan*Note 596, FoF09417
Conlariaceae H. Zhang, K.D. Hyde & Maharachch.*Note 596, FoF03336
Conlarium F. Liu & L. Cai (8)*Note 596, FoF05074
Riomyces A. Ferrer, A.N. Mill., Sarmiento & Shearer (1)*Note 596, FWF

Calosphaeriales M.E. Barr*FoF01133
Calosphaeriaceae Munk*FoF01133
Calosphaeria Tul. & C. Tul. (ca 40)*FoF01134
Flabellascus Réblová (1)*FoF09739
Jattaea Berl. (ca 25)*FoF07774
Togniniella Réblová, L. Mostert, W. Gams & Crous (1)*FoF13015

Pleurostomataceae Réblová, L. Mostert, W. Gams & Crous*FoF01136
Pleurostoma Tul. & C. Tul. (7)*FoF01137

Calosphaeriales genera *incertae sedis*
Calosphaeriopsis Petr. (1)*FoF09742
Enchnoa Fr. (ca 20)*FoF09743
Kacosphaeria Speg. (1)*FoF09740

Ceratolentales K.D. Hyde & Hongsanan*Note 595, FoF09414
Bullimycetaceae K.D. Hyde & Hongsanan*Note 604, FoF09416
Bullimyces A. Ferrer, A.N. Mill., Sarmiento & Shearer (3)*Note 604, FoF13716

Ceratolentaceae K.D. Hyde & Hongsanan*Note 582, FoF09415

Ceratolenta Réblová (1)*Note 582, FoF13718

Diaporthales Nannf.*FWF, FoF00593
Apiosporopsidaceae Senan., Maharachch. & K.D. Hyde*FoF03455
Apiosporopsis (Traverso) Mariani (3)*FoF04384

Apoharknessiaceae Senan., Maharachch. & K.D. Hyde*FoF03457
Apoharknessia Crous & S.J. Lee (3)*FoF01428
Lasmenia Speg. (5)*FoF04116

Asterosporiaceae Senan., Maharachch. & K.D. Hyde*FoF03459
Asterosporium Kunze (5)*Fp84, FoF01430

Aurantiopycnidiellaceae Senan., Maharachch. & K.D. Hyde*FoF03460
Aurantiopycnidiella Crous & Summerell (1)*FoF04385

Coryneaceae Corda (= *Pseudovalsaceae* M.E. Barr)*FoF06868
Coryneum Nees (ca 80)*FoF01464
Hyaloterminalis Rathnayaka, C.H. Kuo & K.D. Hyde (1)*Note 219

Cryphonectriaceae Gryzenh. & M.J. Wingf.*FoF03455
Amphilogia Gryzenh., H.F. Glen & M.J. Wingf. (2)*FoF04120
Aurantioporthe G. Beier & Blanchette (1)*FoF04123
Aurantiosacculus Dyko & B. Sutton (4)*Coel, FoF04125
Aurapex Gryzenh. & M.J. Wingf. (1)
Aurifilum Begoude, Gryzenh. & Jol. Roux (2)*FoF04129
Capillaureum M.E.S. Oliv., G.A. Sil., M.A. Ferr. (1)*FoF09807
Celoporthe Nakab., Gryzenh., Jol. Roux & M.J. Wingf. (ca 10)*FoF04131
Chromendothia Lar.N. Vassiljeva (2)*FoF04135
Chrysofolia Crous & M.J. Wingf. (2)*FoF04137
Chrysomorbus S.F. Chen (1)*FoF09808
Chrysoporthe Gryzenh. & M.J. Wingf. (9)*FoF04139
Corticimorbus S.F. Chen & M.J. Wingf. (1)*Fp298, FoF04133
Cryphonectria (Sacc.) Sacc. & D. Sacc. (ca 15)*Fp257*FoF02105
Cryptometrion Gryzenh. & M.J. Wingf. (2)*FoF04141
Diversimorbus S.F. Chen & Jol. Roux (1)*FoF04143
Endothia Fr. (9)*FoF04145
Eriocamporesia R.H. Perera, Samarak. & K.D. Hyde (1)*FoF06959
Holocryphia Gryzenh. & M.J. Wingf. (4)*FoF04149
Immersiporthe S.F. Chen, M.J. Wingf. & Jol. Roux (1)*FoF04151
Latruncellus M. Verm., Gryzenh. & Jol. Roux (1)*FoF04153
Luteocirrhus C. Crane & T.I. Burgess (1)*FoF04155
Microthia Gryzenh. & M.J. Wingf. (3)*FoF04159
Myrtonectria Marinc., D.B. Ali & J. Roux (1)*FoF09809
Parvomorbus Wen Wang & S.F. Chen (2)
Pseudocryphonectria Huayi Huang (1)*Note 642
Rostraureum Gryzenh. & M.J. Wingf. (2)*FoF04161
Ursicollum Gryzenh. & M.J. Wingf. (1)*FoF04163
Wuestneia Auersw. ex Fuckel (ca 10)*FoF04165
Xanthoporthe Suzuki Jol. Roux, M.J. Wingf. & Marinc. (1)*Suzuki et al. 2024

Cytosporaceae Fr. (= *Valsaceae* Tul. & C. Tul.)*FoF06870

Cryptascoma Ananthap. (2)*FoF04388
Cytospora Ehrenb. (ca 300)*Coel, FoF01378
Pachytrype Berl. ex M.E. Barr, J.D. Rogers & Y.M. Ju (3)*FoF10278
Paravalsa Ananthap. (1)*FoF10279
Waydora B. Sutton (1)*FoF10280
Xenotypa Petr. (1)*FoF10281

Diaporthaceae Höhn. ex Wehm.*FWF, FoF01383
Apioporthella Petr. (1)*FoF06281
Apiosphaeria Höhn. (5)*FoF09745
Chaetoconis Clem. (2)*Coel, FoF06283
Chiangraiomyces Senan. & K.D. Hyde (1)*FoF03469
Diaporthe Nitschke (= *Allantoporthe* Petr.; = *Clypeoporthella* Petr.) (ca 300)*Note 623, Coel, FWF, FoF00146
Hyaliappendispora Senan., Camporesi & K.D. Hyde (11)*FoF03473
Leucodiaporthe M.E. Barr & Lar.N. Vassiljeva (4)*FoF04173
Massariothea Syd. (ca 10)*FoF09744
Mazzantia Mont. (ca 15)*FoF04177
Ophiodiaporthe Y.M. Ju, H.M. Hsieh, C.H. Fu, Chi Y. Chen & T.T. Chang (1)*FoF04179
Paradiaporthe Senan., Camporesi & K.D. Hyde (1)*FoF03471
Phaeocytostroma Petr. (7)*FoF01562
Phaeodiaporthe Petr. (2)*FoF04183
Pseudophaeocytostroma Monkai & Phookamsak (1)*Note 893, FoF12716
Pustulomyces D.Q. Dai, Bhat & K.D. Hyde (1)*FoF01580
Pulvinaticonidioma X. Tang, Jayaward., J.C. Kang & K.D. Hyde (1)*Note 1341
Stenocarpella Syd. & P. Syd. (2)*FoF01708
Subellipsoidispora X. Tang, Jayaward., J.C. Kang & K.D. Hyde (1)*Note 1342

Diaporthostomataceae X.L. Fan & C.M. Tian*FoF05685
Diaporthostoma X.L. Fan & C.M. Tian (1)*FoF09182

Diaporthosporellaceae C.M. Tian & Q. Yang*FoF05684
Diaporthosporella C.M. Tian & Q. Yang (2)*FoF08398

Dwiroopaceae K.V. Xavier, A.N. Kc, J.Z. Groenew., Vallad & Crous*FoF06872
Dwiroopa Subram. & Muthumary (3)*FoF09181

Erythrogloeaceae Senan., Maharachch. & K.D. Hyde*FoF03478
Chrysocrypta Crous & Summerell (1)*FoF09809
Dendrostoma X.L. Fan & C.M. Tian (ca 20)*FoF04694
Disculoides Crous, Pascoe, I.J. Porter & Jacq. Edwards (5)*FoF09810
Erythrogloeum Petr. (2)*Coel, FoF07364

Foliocryphiaceae C.M. Tian, N. Jiang & Crous*Note 167, FoF14422
Foliocryphia Cheew. & Crous (2)*FoF04147
Neocryphonectria C.M. Tian, N. Jiang & Crous (2)*Note 306, FoF14423

Gnomoniaceae G. Winter*FWF, FoF01903
Alnecium Voglmayr & Jaklitsch (2)*FoF06300
Ambarignomonia Sogonov (1)*FWF, FoF06301
Amphiporthe Petr. (= *Amphicytostroma* Petr.) (3)*Note 3, Coel, FoF04410
Anisomyces Theiss. & Syd. (5)*FoF06303

Apiognomonia Höhn. (= *Discula* Sacc.) (ca 25)*Note 3, Coel, FoF07115
Apioplagiostoma M.E. Barr (3)*FoF04416
Asteroma DC. (ca 50)*FoF04418
Bagcheea E. Müll. & R. Menon (3)*FoF04420
Chadefaudiomyces Kamat, V.G. Rao, A.S. Patil & Ullasa(1)*FoF06308
Clypeoporthe Höhn. (5)*FoF09938
Cryphognomonia C.M. Tian & N. Jiang (1)*Note 123, FoF14424
Cryptosporella Sacc. (ca 30)*FoF06309
Dictyoporthe Petr. (4)*FoF06310
Diplacella Syd. (2)*FoF04281
Ditopella De Not. (ca 10)*FoF03659
Ditopellopsis J. Reid & C. Booth (4)*FoF04284
Flavignomonia C.M. Tian, Qin Yang & N. Jiang (1)*Jiang et al. 2019a
Gloeosporidina Petr. (6)*Coel, FoF04286
Gnomonia Ces. & De Not. (ca 100)*FWF, FoF02109
Gnomoniella Sacc. (= *Cylindrosporella* Höhn.) (ca 25)*FWF, FoF04288
Gnomoniopsis Berl. (ca 25)*FoF04290
Maculatipalma J. Fröhl. & K.D. Hyde (1)*FoF04292
Mamianiella Höhn. (= *Anisogramma* Theiss. & Syd.; = *Mamiania* Ces & De Not.) (2)*FoF04294
Marsupiomyces Senan. & K.D. Hyde (2)*FoF03484
Millerburtonia Cif. (1)*FoF04296
Neognomoniopsis Crous (1)*Note 310, FoF14426
Occultocarpon L.C. Mejía & Zhu L. Yang (1)*FoF04298
Ophiognomonia (Sacc.) Speg. (ca 50)*FoF06321
Phragmoporthe Petr. (3)*FoF06322
Phylloporthe Syd. (2)*FoF06323
Plagiostoma Fuckel (= *Diplodina* Westend.; = *Septomyxa* Sacc.) (ca 50)*FoF02128
Pleuroceras Riess (ca 20)*FoF06325
Sirococcus Preuss (ca 30)*Coel, FoF06326
Tenuignomonia Minosh., D.M. Walker & Hirooka (1)*FoF06328
Uleoporthe Petr. (1)*FoF02861
Valsalnicola D.M. Walker & Rossman (1)*FoF06331
Vismaya V.V. Sarma & K.D. Hyde (1)*FoF04300

Harknessiaceae Crous*FoF01387
Harknessia Cooke (ca 50)*FoF01683
Mebarria J. Reid & C. Booth (1)*FoF09939

Juglanconidaceae Voglmayr & Jaklitsch*FoF03489
Juglanconis Voglmayr & Jaklitsch (5)*FoF08844
Melanosporella C.M. Tian & Z. Du (1)

Lamproconiaceae Norph., T.C. Wen & K.D. Hyde*FoF02248
Hercospora Fr. (= *Rabenhorstia* Fr.) (ca 15)*FoF02250
Neolamproconium Crous & Akulov (1)*Note 315
Lamproconium (Grove) Grove (1)*FoF03491

Macrohilaceae Crous*FoF06269
Macrohilum H.J. Swart (1)*FoF02118

Mastigosporellaceae C.M. Tian, N. Jiang & Crous*Note 273, FoF14477
Mastigosporella Höhn. (5)*Coel, FoF04157

Melanconidaceae G. Winter*FoF01395
Melanconis Tul. & C. Tul. (ca 35)*FoF02119

Melanconiellaceae Senan., Maharachch. & K.D. Hyde*FoF03495
Dicarpella Syd. & P. Syd. (7)*FoF09976
Greeneria Scribn. & Viala (3)*FoF01493
Massariovalsa Sacc. (= *Melanconiopsis* Ellis & Everh.) (4)*FoF04304
Melanconiella Sacc. (ca 20)*FoF09978
Microascospora Senan. & K.D. Hyde (2)*FoF03498
Paraphomopsis Udayanga & Castl. (1)*Note 578
Septomelanconiella Samarak. & K.D. Hyde (1)*FoF04849
Sheathospora X.L. Fan (1)*FoF09979
Sinodiscula M.J. Guo & C.L. Hou (2)*Guo et al. 2024b
Sphaeronaemella P. Karst. (ca 20)

Neomelanconiellaceae Crous*FoF07079
Neomelanconiella Crous (1)*FoF09990

Phaeoappendicosporaceae Crous & M.J. Wingf.*FoF06297
Neophaeoappendicospora Crous & M.J. Wingf. (1)*FoF09991
Phaeoappendicospora Senan., Q.R. Li & K.D. Hyde (1)*FoF06297

Prosopidicolaceae Senan. & K.D. Hyde*FoF03502
Prosopidicola Crous & C.L. Lennox (2)*FoF04307

Pseudomelanconidaceae C.M. Tian & X.L. Fan*FoF04889
Micromelanconis C.M. Tian & N. Jiang (1)*Notes 280, 894, FoF14478
Neopseudomelanconis C.M. Tian & N. Jiang (1)*FoF04969
Pseudomelanconis C.M. Tian & X.L. Fan (1)*FoF04889

Pseudoplagiostomataceae Cheew., M.J. Wingf. & Crous*FoF01403
Pseudoplagiostoma Cheew., M.J. Wingf. & Crous (9)*FoF02128

Pyrisporaceae C.M. Tian & N. Jiang*Notes 437, 916, FoF14479
Pyrispora C.M. Tian & N. Jiang (1)*Note 436, FoF14480

Schizoparmaceae Rossman, D.F. Farr & Castl.*FoF01405
Coniella Höhn. (= *Pilidiella* Petr. & Syd.; = *Schizoparme* Shear) (ca 50)*Fp110, FoF04309

Stilbosporaceae Link*FoF01411
Crinitospora B. Sutton & Alcorn (1)*Coel, FoF04312
Natarajania Pratibha & Bhat (2)*FoF04314
Stegonsporium Corda (ca 40)*FoF01707
Stilbospora Pers. (ca 15)*FoF01711

Sydowiellaceae Lar.N. Vassiljeva*FoF06882
Alborbis Senan. & K.D. Hyde (2)*Fp12, FoF02835
Breviappendix Senan. & K.D. Hyde (3)*FoF02837
Cainiella E. Müll. (2)*FoF02839
Calosporella J. Schröt (4)*FoF02841
Caudospora Starbäck (2)*FoF04170

Chapeckia M.E. Barr (2)*FoF02843
Hapalocystis Auersw. (7)*FoF02845
Italiomyces Senan., Camporesi & K.D. Hyde (1)*FoF02845
Lambro Racib. (2)*FoF02849
Neodiaporthe J.F. Zhang & K.D. Hyde (1)*Zhang et al. 2023,
Paragnomonia Senan. & K.D. Hyde (1)*FoF02851
Ranulospora Senan., Camporesi & K.D. Hyde (1)*FoF02853
Rossmania Lar.N. Vassiljeva (= *Tunstallia* Agnihothr.) (2)*FoF02855
Sillia P. Karst. (8)*FoF02857
Sydowiella Petr. (ca 10)*FoF02136
Tenuiappendicula Senan., Camporesi & K.D. Hyde (1)*FoF02859
Tortilispora Senan. & K.D. Hyde (3)*FoF02863

Synnemasporellaceae X.L. Fan & J.D.P. Bezerra (1)*FoF05208
Synnemasporella X.L. Fan & J.D.P. Bezerra (2)*FoF04891

Tubakiaceae U. Braun, J.Z. Groenew. & Crous
Apiognomonioides U. Braun, J.Z. Groenew. & Crous (1)
Ellipsoidisporodochium S.B. Liu, J.W. Xia & X.G. Zhang (1)*Note 1007
Involutscutellula U. Braun & C. Nakash. (1)
Oblongisporothyrium U. Braun & C. Nakash. (1)
Obovoideisporodochium Z.X. Zhang, J.W. Xia & X.G. Zhang (1)*Note 615
Paratubakia U. Braun & C. Nakash. (2)
Phaeotubakia Ning Jiang (1)*Note 798
Racheliella Crous & U. Braun (2)
Saprothyrium U. Braun, Crous & J.Z. Groenew. (1)
Sphaerosporithyrium U. Braun, Crous, O. Moreno-Rico & Marm. (1)
Tubakia B. Sutton

Diaporthales family *incertae sedis*
Phaeochorellaceae Guterres, Galvão-Elias & Dianese*Guterres et al. 2019
Phaeochorella Theiss. & Syd. (= *Phomachorella* Petr.) (6)

Diaporthales genera *incertae sedis*
Ceratoporthe Petr. (1)
Cryptoleptosphaeria Petr. (1)
Cryptonectriella (Höhn.) Weese (2)
Cryptonectriopsis (Höhn.) Weese (1)
Cytomelanconis Naumov (1)
Diaporthella Petr. (5)
Diatrypoidiella Manohar., Kunwar & D.K. Agarwa (1)
Ditopellina J. Reid & C. Booth (1)
Durispora K.D. Hyde (2)
Exormatostoma Gray (8)
Fremineavia Nieuwl. (1)
Gibellia Sacc. (1)
Gyrostroma Naumov (3)*Coel
Hyalorostratum Raja & Shearer (1)
Hypophloeda K.D. Hyde & E.B.G. Jones (1)
Hypospilina (Sacc.) Traverso (4)
Kapooria J. Reid & C. Booth (1)
Keinstirschia J. Reid & C. Booth (1)

Kensinjia J. Reid & C. Booth (1)
Lollipopaia Inderb. (1)
Macrodiaporthe Petr. (1)
Melanamphora Lafl. (1)
Phragmodiaporthe Wehm. (3)
Phruensis Pinruan (1)*FWF
Plagiophiale Petr. (2)
Plagiostigme Syd. (6)
Prostratus Sivan., W.H. Hsieh & Chi Y. Chen (1)
Pseudocryptosporella J. Reid & C. Booth (1)
Pseudothis Theiss. & Syd. (11)
Pseudovalsella Höhn. (3)
Savulescua Petr. (1)
Skottsbergiella Petr. (1)
Sphaerognomoniella Naumov & Kusnezowa (1)
Stioclettia Dennis (1)
Trematovalsa Jacobesco (1)
Wehmeyera J. Reid & C. Booth (1)

Distoseptisporales Z.L. Luo, H.Y. Su & K.D. Hyde*FWF
Aquapteridosporaceae K.D. Hyde & Hongsanan*Notes 34, 580
Aquapteridospora Jiao Yang, K.D. Hyde & Maharachch. (5)*Notes 34, 580, FWF

Distoseptisporaceae K.D. Hyde & McKenzie*FWF
Distoseptispora K.D. Hyde, McKenzie & Maharachch. (54)*FWF, Fp275

Jobellisiales M.J. D'souza & K.D. Hyde*FWF
Jobellisiaceae Réblová*FWF
Jobellisia M.E. Barr (8)*FWF

Magnaporthales Thongk., Vijaykr. & K.D. Hyde*FWF
Ceratosphaeriaceae Z.L. Luo, H.Y. Su & K.D. Hyde*FWF
Ceratosphaeria Niessl (= *Tropohalonectria* R.H. Perera, E.B.G. Jones & K.D. Hyde) (27)*FWF, Fp288

Magnaporthaceae P.F. Cannon*FWF
Aquafiliformis Z.L. Luo, K.D. Hyde & H.Y. Su (1)*FWF
Atripes F.A. Custódio & O.L. Pereira (1)*Note 1572, Custódio et al. 2021
Bifusisporella R.M.F. Silva, R.J.V. Oliveira, J.D.P. Bezerra, Souza-Motta & G.A. Silva (2)
Budhanggurabania P. Wong, Khemmuk & R.G. Shivas (1)
Buergenerula Syd. (5)
Bussabanomyces Klaubauf, M.-H. Lebrun & Crous (1)
Candidacolonium P.L. Vines & M. Tomaso-Peterson (1)*Note 671
Clasterosphaeria Sivan. (2)
Clasterosporium Schwein. (41)
Clavatisporella K.D. Hyde (1)
Falciphora J. Luo & N. Zhang (1)
Falciphoriella Hern.-Restr. & Crous (1)
Gaeumannomycella Hern.-Restr. & Crous (2)
Gaeumannomyces Arx & D.L. Olivier (21)
Herbampulla Scheuer & Nograsek (1)
Kohlmeyeriopsis Klaubauf, M.-H. Lebrun & Crous (1)

Magnaporthiopsis J. Luo & N. Zhang (8)
Muraeriata Huhndorf, Greif, Mugambi & A.N. Mill. (2)
Nakataea Hara (= *Magnaporthe* R.A. Krause & R.K. Webster) (6)
Neoceratosphaeria J.F. Zhang & Z.Y. Liu (1)*Zhang et al. 2023c
Neogaeumannomyces D.Q. Dai & K.D. Hyde (1)
Omnidemptus P.F. Cannon & Alcorn (3)
Plagiosphaera Petr. (8)
Pseudomycoleptodiscus X.G. Tian, K.D. Hyde & Tibpromma (1)*Tian et al. 2024b
Pseudophialophora J. Luo & N. Zhang (9)
Pyriculariopsis M.B. Ellis (8)
Slopeiomyces Klaubauf, M.-H. Lebrun & Crous (1)

Ophioceraceae Klaubauf, E.G. LeBrun & Crous*FWF
Ceratosphaerella Huhndorf, Greif, Mugambi & A.N. Mill. (2)*Note 104
Ophioceras Sacc. (ca 30)*FWF

Pseudohalonectriaceae Hongsanan & K.D. Hyde*FWF
Pseudohalonectria Minoura & T. Muroi (ca 15)*FWF

Pyriculariaceae Klaubauf, E.G. LeBrun & Crous
Bambusicularia Klaubauf, M.-H. Lebrun & Crous (1)
Barretomyces Klaubauf, M.-H. Lebrun & Crous (1)
Deightoniella S. Hughes (ca 15)
Macgarvieomyces Klaubauf, M.-H. Lebrun & Crous (3)
Neocordana M. Hern.-Rest. & Crous (7)*Fp258
Neopyricularia Klaubauf, M.-H. Lebrun & Crous (1)
Proxipyricularia Klaubauf, M.-H. Lebrun & Crous (2)
Pseudopyricularia Klaubauf, M.-H. Lebrun & Crous (ca 10)
Pyricularia Sacc. (ca 45)*FoF01802
Pyriculariomyces Y. Marín, M.J. Wingf. & Crous (1)
Xenopyricularia Klaubauf, M.-H. Lebrun & Crous (2)

Myrmecridiales Crous*FWF
Myrmecridiaceae Crous*FWF
Myrmecridium Arzanlou, W. Gams & Crous (ca 15)*FWF
Neomyrmecridium Crous (6)

Ophiostomatales Benny & Kimbr.*FWF
Kathistaceae Malloch & M. Blackw.
Heinzbutinia Z.W. de Beer & M. Procter (3)*Note 1444
Kathistes Malloch & M. Blackw. (3)
Mattirolella S. Colla (2)
Termitariopsis M. Blackw., Samson & Kimbr. (1)

Ophiostomataceae Nannf.*FWF
Afroraffaelea C.C. Bateman, Y.T. Huang & D.R. Simmons (1)
Aureovirgo J.A. van der Linde, Z.W. de Beer & Jol. Roux (1)*Fp272
Ceratocystiopsis H.P. Upadhyay & W.B. Kendr. (9)
Chrysosphaeria W.J. Nel, Z.W. de Beer & T.A. Duong (1)*Note 612
Dryadomyces H. Gebhardt (4)
Esteya J.Y. Liou, J.Y. Shih & Tzean. (2)
Fragosphaeria Shear (2)

Graphilbum H.P. Upadhyay & W.B. Kendr. (ca 25)
Hausneria Jankowiak & H. Solheim (1)*Crous et al. 2024
Hawksworthiomyces Z.W. de Beer, Marinc. & M.J. Wingf. (4)*Fp299
Intubia W.J. Nel, Z.W. de Beer & T.A. Duong (2)*Note 613
Klasterskya Petr. (3)
Leptographium Lagerb. & Melin (= *Grosmannia* Goid.) (ca 100)
Ophiostoma Syd. & P. Syd. (= *Hyalorhinocladiella* H.P. Upadhyay & W.B. Kendr.; = *Pesotum* J.L. Crane & Schokn.) (ca 100)
Raffaelea Arx & Hennebert (ca 35)
Sporothrix Hektoen & C.F. Perkins (ca 100)
Spumatoria Massee & E.S. Salmon (1)

Ophiostomatales genera *incertae sedis*
Harringtonia Z.W. de Beer & Procter (4)*Note 830
Jamesreidia Z.W. de Beer & M. Procter (4)*Note 684
Masuyamyces Z.W. de Beer & M. Procter (8)*Note 685

Pararamichloridiales Crous
Neoeriomycopsidaceae Crous*Note 1491, Crous et al. 2023b
Neoeriomycopsis Crous & M.J. Wingf. (1)

Pararamichloridiaceae Crous
Pararamichloridium Crous (3)

Phomatosporales Senan., Maharachch. & K.D. Hyde*FWF
Phomatosporaceae Senan. & K.D. Hyde*FWF
Conicotenuis W. Dong & K.D. Hyde (1)*Note 1384
Lanspora K.D. Hyde & E.B.G. Jones (2)
Minimispora W. Dong & K.D. Hyde (1)*Note 1383
Phomatospora Sacc. (ca 50)*FWF
Tenuimurus Senan., Camporesi & K.D. Hyde (1)*Fp287

Rhamphoriales K.D. Hyde & Hongsanan*Note 915
Rhamphoriaceae Réblová*Note 597
Rhamphoria Niessl (ca 15)*Note 597
Rhamphoriopsis Réblová & Gardiennet (2)*Note 597
Rhodoveronaea Arzanlou, W. Gams & Crous (3)*Note 597
Xylolentia Réblová (2)

Sporidesmiales Crous
Sporidesmiaceae Fr.*FWF
Ellisembia Subram.*Delgado et al. 2024
Sporidesmium Link (ca 200)*FWF

Tirisporellales Suetrong, E.B.G. Jones & K.L. Pang*FWF
Tirisporellaceae Suetrong, E.B.G. Jones & K.L. Pang*FWF
Bacusphaeria Norlail., Alias & Suetrong (1)
Pseudothailandiomyces S.N. Zhang, E.B.G. Jones & K.D. Hyde (1)*Zhang et al. 2024a
Thailandiomyces Pinruan, Sakay., K.D. Hyde & E.B.G. Jones (1)*FWF
Tirisporella E.B.G. Jones, K.D. Hyde & Alias (1)

Togniniales Senan., Maharachch. & K.D. Hyde*FWF

Togniniaceae Réblová, L. Mostert, W. Gams & Crous*FWF
Phaeoacremonium W. Gams, Crous & M.J. Wingf. (= *Romellia* Berl., *Togninia* Berl.) (ca 50)*FWF

Xenospadicoidales Hern.-Restr., J. Mena & Gené*FWF
Xenospadicoidaceae Hern.-Restr., J. Mena & Gené (= *Lentomitellaceae* H. Zhang, K.D. Hyde & Maharachch.)*FWF
Calyptosphaeria Réblová & A.N. Mill. (2)
Gangliostilbe Subram. & Vittal (5)
Lentomitella Höhn. (13)
Neospadicoides Z.L. Luo, K.D. Hyde & H.Y. Su (5)*FWF
Pseudoannulatascus Z.L. Luo, Maharachch. & K.D. Hyde) (6)*FWF
Spadicoides S. Hughes (= *Xenospadicoides* Hern.-Restr., J. Mena & Gené) (ca 40)*FWF
Torrentispora K.D. Hyde, W.H. Ho, E.B.G. Jones, C.K.M. Tsui & S.W. Wong

Thyridiales R. Sugita & Kaz. Tanaka*Note 564
Thyridiaceae J.Z. Yue & O.E. Erikss (= *Phialemoniopsidaceae* K.D. Hyde & Hongsanan)*Notes 564, 908
Pleurocytospora Petr. (3)
Thyridium Nitschke (= *Phialemoniopsis* Perdomo, Dania García, Gené, Cano & Guarro)*Note 564 (ca 30)

Diaporthomycetidae families *incertae sedis**FWF
Acrodictyaceae J.W. Xia & X.G. Zhang*FWF
Acrodictys M.B. Ellis (ca 25)*FWF

Junewangiaceae J.W. Xia & X.G. Zhang*FWF
Dictyosporella Abdel-Aziz (6)
Junewangia W.A. Baker & Morgan-Jones (8)
Jennwenomyces Goh & C.H. Kuo (1)*Note 226
Sporidesmiella P.M. Kirk (ca 40)*Note 481

Melanascomaceae Fryar & D.E.A. Catches.*Note 1369
Melanascoma Fryar & D.E.A. Catches. (1)*Note 1370

Papulosaceae Winka & O.E. Erikss.
Brunneosporella V.M. Ranghoo & K.D. Hyde (1)
Fluminicola S.W. Wong, K.D. Hyde & E.B.G. Jones (5)
Papulosa Kohlm. & Volkm.-Kohlm. (1)
Wongia Khemmuk, Geering & R.G. Shivas. (4)

Pseudoproboscisporaceae H. Zhang, K.D. Hyde & Maharachch.*FoF03338
Diluviicola K.D. Hyde, S.W. Wong & E.B.G. Jones (2)*FoF09806
Neodiluviicola W. Dong & H. Zhang (1)*Notes 308, 892, FoF09565
Pseudoproboscispora Punith. (3)*FoF05075

Trichosphaeriaceae G. Winter (= *Plectosphaerellaceae* W. Gams, Summerb. & Zare)*FWF, Crous et al. 2023a, Hou et al. 2023
Acremoniisimulans Tibpromma & K.D. Hyde (1)
Allomusicillium L.W. Hou, L. Cai & Crous (1)*Note 1211, Hou et al. 2023
Brunneochlamydosporium Giraldo López & Crous (4)
Brunneomyces A. Giraldo, Gené & Guarro (3)

Chordomyces Bilanenko, Georgieva & Grum-Grzhim. (2)
Furcasterigmium Giraldo López & Crous (1)
Fuscohypha Giraldo López & Crous (2)*Crous et al. 2023a
Gibellulopsis Bat. & H. Maia (7)
Heteroverticillium S.L. Han, L. Cai & P. Zhao (1)*Note 1362
Houtenomyces Crous & Osieck (1)*Note 1359
Lectera P.F. Cannon (8)
Longitudinalis Tibpromma & K.D. Hyde (1)
Musicillium Zare & W. Gams (4)
Musidium Giraldo López & Crous (1)
Nigrocephalum Giraldo López & Crous (1)
Parafuscohypha L.W. Hou, L. Cai & Crous (1)*Note 1397, Hou et al. 2023
Paragibellulopsis Giraldo López & Crous (1)
Paramusicillium Giraldo López & Crous (1)
Phaeochloridium W.P. Wu & Y.Z. Diao (3)*Note 876
Phialoparvum Giraldo López & Crous (3)
Plectosphaerella Kleb. (25)
Sayamraella Giraldo López & Crous (1)
Sinochloridium W.P. Wu & Y.Z. Diao (1)*Note 1004
Sodiomyces A.A. Grum-Grzhim., Debets & Bilanenko (4)
Stachylidium Link (7)
Summerbellia Giraldo López & Crous (1)
Theobromium Giraldo López & Crous (1)
Trichosphaeria Fuckel (ca 45)*Crous et al. 2023a
Truncatascus J.F. Zhang & Jian K. Liu (1)*Zhang et al. 2023c
Verticillium Nees (80)
Xenoplectosphaerella Jayaward., Phukhams. & K.D. Hyde (1)*Note 540

Trichosphaeriaceae genera *incertae sedis*
Acrostalagmus Corda (13)
Brachysporium Sacc. (ca 25)*FWF
Chlamydosporiella Giraldo López & Crous (1)
Collematospora Jeng & Cain (1)
Coniobrevicolla Réblová (1)
Eriosphaeria Sacc. (ca 20)
Koorchaloma Subram. (= *Kananascus* Nag Raj) (13)*Coel
Rizalia Syd. & P. Syd. (8)
Schweinitziella Speg. (4)
Setocampanula Sivan. & W.H. Hsieh (1)
Unisetosphaeria Pinnoi, E.B.G. Jones, McKenzie & K.D. Hyde (1)*FWF

Woswasiaceae H. Zhang, K.D. Hyde & Maharachch.
Cyanoannulus Raja, J. Campb. & Shearer (1)
Woswasia Jaklitsch, Réblová & Voglmayr (1)
Xylochrysis Réblová (1)

Diaporthomycetidae genera *incertae sedis*
Aquimonospora J. Yang & K.D. Hyde (1)
Aquaticola W.H. Ho, C.K.M. Tsui, Hodgkiss & K.D. Hyde (4)
Biflagellospora Matsush. (= *Aquidictyomyces* W. Dong, H. Zhang & K.D. Hyde*Note 37) (5)
Brunneosporopsis Maharachch. & Wanas. (1)*Note 583
Fusoidispora D. Vijaykr., Jeewon & K.D. Hyde (1)

Kaarikia C. Mayers & T.C. Harr. (1)*Note 231
Paraproliferophorum Crous (1)*Note 885
Platytrachelon Réblová (1)
Proliferophorum G.N. Wang, H. Zhang, K.D. Hyde & Senan. (1)
Pseudoconlarium N.G. Liu, K.D. Hyde & J.K. Liu (1)

Subclass *Hypocreomycetidae* O.E. Erikss. & Winka*Bao et al. 2023
Coronophorales Nannf. (= *Melanosporales* N. Zhang & M. Blackw.; = *Parasympodiellales* Hern.-Restr., Gené, R.F. Castañeda & Crous)
Bertiaceae Smyk
Bertia De Not. (ca 30)
Gaillardiella Pat. (6)

Ceratostomataceae G. Winter
Acrospeira Berk. & Broome (1)*Li et al. 2020b
Arxiomyces P.F. Cannon & D. Hawksw. (3)
Dactylidispora Y. Marín, Stchigel, Guarro & Cano (3)
Echinusitheca Y. Marín, Stchigel, Dania García, Guarro, A.N. Mill. & Cano (1)*Fp16
Erythrocarpon Zukal (1)
Gonatobotrys Corda (6)
Harzia Costantin (13)
Melanospora Corda (= *Ceratostoma* Fr.) (ca 60)
Microthecium Corda (= *Pteridiosperma* J.C. Krug & Jeng) (ca 25)
Neotrotteria Sacc. (1, 2)
Paramicrothecium Crous, Krimhilde Müll., Siepe, Reul & Osieck (1)*Note 592
Pseudomicrothecium Y. Marín, Stchigel, Guarro & Cano (1)*Fp25
Pustulipora P.F. Cannon (1)
Rhytidospora Jeng & Cain (5)
Scopinella Lév. (9)
Setiferotheca Matsush. (1)
Syspastospora P.F. Cannon & D. Hawksw. (4)
Vittatispora P. Chaudhary, J. Campb., D. Hawksw. & K.N. Sastry (1)

Chaetosphaerellaceae Huhndorf, A.N. Mill. & F.A. Fernández
Chaetosphaerella E. Müll. & C. Booth (= *Oedemium* Link) (2)
Crassochaeta Réblová (1)
Spinulosphaeria Sivan. (2)

Coronophoraceae Höhn.
Coronophora Fuckel (16)

Nitschkiaceae (Fitzp.) Nannf.
Acanthonitschkea Speg. (9)
Biciliosporina Subram. & Sekar (1)
Botryola Bat. & J.L. Bezerra (1)
Fracchiaea Sacc. (ca 25)
Groenhiella Jørg. Koch, E.B.G. Jones & S.T. Moss (1)
Janannfeldtia Subram. & Sekar (1)
Lasiosphaeriopsis D. Hawksw. & Sivan. (7)
Loranitschkia Lar.N. Vassiljeva (1)
Neochaetosphaerella Lar.N. Vassiljeva, S.L. Stephenson & Chernyshev (1)
Nitschkia G.H. Otth ex P. Karst. (ca 50)

Rhagadostoma Körb. (8)
Rhagadostomella Etayo (2)
Tortulomyces Lar.N. Vassiljeva, S.L. Stephenson, Chernyshev & K.D. Hyde (1)

Parasympodiellaceae Hern.-Restr., Gené, Guarro & Crous
Parasympodiella Ponnappa (= *Arthrocristula* Sigler, M.T. Dunn & J.W. Carmich.) (ca 10)

Scortechiniaceae Huhndorf, A.N. Mill. & F.A. Fernández
Biciliospora Petr. (1)
Coronophorella Höhn. (1)
Euacanthe Theiss. (2)
Neocryptosphaerella S.K. Huang & K.D. Hyde (2)*Notes 124, 911
Neofracchiaea Teng (1)
Pseudocatenomycopsis Crous & L.A. Shuttlew. (1)
Pseudocryptosphaerella S.K. Huang & K.D. Hyde (4)*Note 912
Scortechinia Sacc. (3)
Scortechiniella Arx & E. Müll. (1)
Scortechiniellopsis Sivan. (1)
Tympanopsis Starbäck (6)
Yuxiensis Bundhun & K.D. Hyde (1)*Note 584

Coronophorales genera *incertae sedis*
Papulaspora Preuss (ca 30)
Sphaerodes Clem. (7)
Tengiomyces Réblová (1)*Note 503

Falcocladiales R.H. Perera, Maharachch., Somrith., Suetrong & K.D. Hyde
Falcocladiaceae Somrith., E.B.G. Jones & K.L. Pang
Falcocladium S.F. Silveira, Alfenas, Crous & M.J. Wingf. (7)

Glomerellales Chadef. ex Réblová, W. Gams & Seifert
Ascocodinaceae D.F. Bao, K.D. Hyde & Z.L. Luo*Note 1499, Bao et al. 2023
Ascocodinaea Samuels, Cand. & Magni (2)

Australiascaceae Réblová & W. Gams
Monilochaetes Halst. ex Harter (= *Australiasca* Sivan. & Alcorn) (6)

Glomerellaceae Locq. ex Seifert & W. Gams
Colletotrichum Corda (= *Glomerella* Spauld. & H. Schrenk) (ca 350)*Fp109, Coel

Malaysiascaceae Tibpromma & K.D. Hyde
Malaysiasca Crous & M.J. Wingf. (1)

Reticulascaceae Réblová & W. Gams
Blastophorum Matsush. (4)
Cylindrotrichum Bonord. (= *Reticulascus* Réblová & W. Gams) (16)
Kylindria DiCosmo, S.M. Berch & W.B. Kendr. (12)
Sporoschismopsis Hol-Jech. & Hennebert (8)

Glomerellales genus *incertae sedis*
Wenhsuisporus C.H. Kuo & Goh (1)*Note 697

Hypocreales Lindau
Acremoniopsidaceae M. Li, M. Raza & L. Cai*Li et al. 2023a
Acremoniopsis A. Giraldo, Gené & Guarro (2)
Nothoacremoniopsis M. Li, M. Raza & L. Cai (2)
Phaeocollarina M. Li, M. Raza & L. Cai (1)

Albomorchellophilaceae F.M. Yu, K.D. Hyde & Q. Zhao*Note 1501, Yu et al. 2024,
Albomorchellophila F.M. Yu, K.D. Hyde & Q. Zhao (1)*Yu et al. 2024

Bionectriaceae Samuels & Rossman (= *Spicariaceae* Nann.)
Acremonium Link (ca 100)
Alloacremonium L.W. Hou, L. Cai & Crous (2)*Note 1325
Anthonectria Döbbeler (1)*Fp67
Aphanotria Döbbeler (1)
Battarrina (Sacc.) Clem. & Shear (1)
Bryocentria Döbbeler (16)
Bryotria Döbbeler & P.G. Davison (2)
Bulbithecium Udagawa & T Muroi (7)*Hou et al. 2023
Caespitomonium Crous (3)*Note 617
Circumfusicillium J. Trovão, F. Soares, D.S. Paiva & A. Portugal (1)*Trovão et al. 2022
Clibanites (P. Karst.) P. Karst. (1)
Clonostachys Corda (= *Bionectria* Speg.; = *Spicaria* Harting) (ca 50)
Dimerosporiella Speg. (7)
Emericellopsis J.F.H. Beym (= *Stilbella* Lindau) (ca 50)*Bao et al. 2023, Hou et al. 2023
Fusariella Sacc. (17)
Gossypinidium L.W. Hou, L. Cai & Crous (1)*Hou et al. 2023
Geonectria Lechat & J. Fourn. (2)
Geosmithia J. Pitt (26)
Gliomastix Guég. (20)
Gracilistilbella Seifert (3)
Halonectria E.B.G. Jones (1)
Hapsidospora Malloch & Cain (= *Mycoarachis* Malloch & Cain; = *Nigrosabulum* Malloch & Cain) (9)*Hou et al. 2023
Hydropisphaera Dumort. (= *Heleococcum* C.A. Jørg.) (32)*Hou et al. 2023
Laniatria Döbbeler & P.G. Davison (1)
Lasionectria (Sacc.) Cooke (ca 15)
Lasionectriella Lechat & J. Fourn. (2)*Fp301
Lasionectriopsis Lechat & P.-A. Moreau (4)
Monohydropisphaera L.W. Hou, L. Cai & Crous (1)*Note 1329
Musananaesporium L.W. Hou, L. Cai & Crous (1)*Hou et al. 2023
Mycocitrus Möller (2)
Nectriella Nitschke ex Fuckel (ca 50)
Nectriopsis Maire (ca 70)
Ochronectria Rossman & Samuels (3)
Ovicillium Zare & W. Gams (5)*Fp303
Ovicuculispora Etayo (2)
Paracylindrocarpon Crous, Roets & L. Lombard (4)
Paranectria Sacc. (8)
Paragliomastix L.W. Hou, L. Cai & Crous (4)*Note 1087
Periantria Döbbeler & P.G. Davison (2)
Pseudosynnemellisia M. Li, M. Raza & L. Cai (1)*Li et al. 2023a
Proliferophialis L.W. Hou, L. Cai & Crous (1)*Note 1316

Pronectria Clem. (ca 45)
Protocreopsis Yoshim. Doi (12)
Proxiovicillium L.W. Hou, L. Cai & Crous (2)*Note 1225
Pseudoacremonium Crous (1)*Hou et al. 2023
Ramosiphorum L.W. Hou, L. Cai & Crous (3)*Note 1321
Rhopalocladium Schroers, Samuels & W. Gams (1)
Roumegueriella Speg. (3)
Selinia P. Karst. (5)
Septofusidium W. Gams (5)
Sesquicillium W. Gams (12)
Stanjemonium W. Gams, O'Donnell, Schroers & M. Chr. (4)
Stephanonectria Schroers & Samuels (1)
Stilbocrea Pat. (8)
Synnemellisia N.K. Rao, Manohar. & Goos (4)
Verruciconidia L.W. Hou, L. Cai & Crous (7)*Note 1430, Hou et al. 2023
Verrucostoma Hirooka, Tak. Kobay. & P. Chaverri (2)*Fp40
Waltergamsia L.W. Hou, L. Cai & Crous (14)*Hou et al. 2023

Calcarisporiaceae Jing Z. Sun, X.Z. Liu & K.D. Hyde
Calcarisporium Preuss (8)
Verticimonosporium Matsush. (3)

Chrysonectriaceae L.W. Hou, L. Cai & Crous*Note 1497, Hou et al. 2023
Chrysonectria Lechat & J. Fourn. (1)

Clavicipitaceae (Lindau) Earle ex Rogerson
Aciculosporium I. Miyake (= *Neoclaviceps* J.F. White, Bills, S.C. Alderman & Spatafora) (5)
Albacillium M.M. Ding & L.J. Xu (1)*Ding et al. 2024
Atkinsonella Diehl (2)
Balansia Speg. (= *Ephelis* Fr. *fide* Rossman et al. 2016) (ca 35)
Cavimalum Yoshim. Doi, Dargan & K.S. Thind (2)
Claviceps Tul. (= *Sphacelia* Lév.) (ca 70)
Collarina A. Giraldo, Gené & Guarro (1)
Commelinaceomyces E. Tanaka (4)*Note 112
Conoideocrella D. Johnson, G.H. Sung, Hywel-Jones & Spatafora (3)
Corallocytostroma Y.N. Yu & Z.Y. Zhang (2)
Dussiella Pat. (3)
Epichloe (Fr.) Tul. & C. Tul. (ca 50)
Epicrea Petr. (1)
Helicocollum Luangsa-ard, Mongkols., Noisripoom & Thanakitp. (3)
Helminthascus Tranzschel (1)
Heteroepichloe E. Tanaka, C. Tanaka, Gafur & Tsuda (2)
Hypocrella Sacc. (=*Aschersonia* Mont. *fide* Rossman et al. 2016) (ca 50)*Coel
Keithomyces Samson, Luangsa-ard & Houbraken (3)
Konradia Racib. (2)
Loculistroma F. Patt. & Charles (1)
Marquandomyces Samson, Houbraken & Luangsa-ard (1)
Metapochonia Kepler, S.A. Rehner & Humber (9)
Metarhiziopsis D.W. Li, R.S. Cowles & C.R. Vossbrinck (1)
Metarhizium Sorokīn (= *Chamaeleomyces* Sigler; = *Metacordyceps* G.H. Sung, J.M. Sung, Hywel-Jones & Spatafora; = *Nomuraea* Maubl.; = *Stereocrea* Syd. & P. Syd.) (ca 70)
Morakotia Mongkols., Noisrip., Khons., Thanakitp. & Luangsa-ard (1)*Note 550

Moelleriella Bres. (ca 50)
Mycomalus A. Möller (1)
Mycophilomyces Crous & M.J. Wingf. (1)
Myriogenospora G.F. Atk. (4)
Neobarya Lowen (11)
*Neoaraneomyces*W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang (1)*Note 963
Neocordyceps Kobayasi (1)
Nigelia Luangsa-ard, Tasan. & Thanak. (2)
Nigrocornus Ryley & Langdon (1)
Orbiocrella D. Johnson, G.H. Sung, Hywel-Jones & Spatafora (1)
Papiliomyces Luangsa-ard, Samson & Thanakitp. (1)
Parametarhizium S. Gao, W. Meng, Li Xiang Zhang, Q. Yue & L.J. Xu (2)
Paraneoaraneomyces Zhi Y. Zhang & Y.F. Han (1)*Note 1422
Parepichloe J.F. White & P.V. Reddy (4)
Periglandula U. Steiner, E. Leistner & Leuchtm. (2)
Petchia Thanakitp., Mongkols. & Luangsa-ard (2)
Pochonia Bat. & O.M. Fonseca (2)
Pseudomeria G.L. Barron (1)
Pseudometarhizium W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang (2)*Note 968
Purpureomyces Luangsa-ard, Samson & Thanakitp. (3)
Regiocrella Chaverri & K.T. Hodge (2)
Romanoa Thirum. (1)
Rotiferophthora G.L. Barron (ca 25)
Samuelsia Chaverri & K.T. Hodge (6)
Shimizuomyces Kobayasi (3)
Sphaerocordyceps Kobayasi (2)
Subuliphorum L.W. Hou, L. Cai & Crous (1)*Note 1426, Hou et al. 2023,
Sungia Luangsa-ard, Samson & Thanakitp. (1)
Tyrannicordyceps Kepler & Spatafora (5)
Ustilaginoidea Bref. (ca 15)
Yosiokobayasia Samson, Luangsa-ard & Thanakitp. (1)*Note 541

Cocoonihabitaceae W.Y. Zhuang & Z.Q. Zeng
Cocoonihabitus W.Y. Zhuang & Z.Q. Zeng (1)

Cordycipitaceae Kreisel ex G.H. Sung, J.M. Sung, Hywel-Jones & Spatafora
Akanthomyces Lebert (= *Torrubiella* Boud.) (ca 30)
Amphichorda Fr. (2)
Arachnidicola Khons., Thanakitp. & Luangsa-ard (1)*Khonsanit et al. 2024
Ascopolyporus Möller (7)
Beauveria Vuill. (ca 50)
Beejasamuha Subram. & Chandrash. (1)
Blackwellomyces Spatafora & Luangsa-ard (7)
Cordyceps (Fr.) Link (= *Isaria* Pers.; = *Microhilum* H.Y. Yip & A.C. Rath) (ca 200)
Coremiopsis Sizova & Suprun (2)
Corniculantispora Khons., Thanakitp. & Luangsa-ard (3)*Khonsanit et al. 2024
Corpulentispora Khons., Thanakitp. & Luangsa-ard (1)*Khonsanit et al. 2024
Engyodontium de Hoog (5)
Flavocillium H. Yu, Y.B. Wang, Y. Wang, Q. Fan & Zhu L. Yang (4)*Note 166
Gamszarea Z.F. Zhang & L. Cai (8)*Note 179
Gamszarella Crous (1)*Note 1503, Crous et al. 2023b
Gibellula Cavara (= *Granulomanus* de Hoog & Samson; = *Synsterigmatocystis* Costantin) (ca 30)

Hevansia Luangsa-ard, Hywel-Jones & Spatafora (8)
Hyperdermium J.F. White, R.F. Sullivan, Bills & Hywel-Jones (2)
Kanoksria Khons., Thanakitp. & Luangsa-ard (1)*Khonsanit et al. 2024
Jenniferia Mongkols., Noisrip. & Tasan. (3)*Note 956
Lecanicillium (Zimm) W. Gams & Zare (16)*Khonsanit et al. 2024
Leptobacillium Zare & W. Gams (6)*Fp302
Liangia H. Yu, Y.B. Wang, Y. Wang, Z.H. Chen & Zhu L. Yang (1)
Neobaryopsis Flakus, Etayo, Kukwa & Rodr. Flakus (1)
Neohyperdermium Thanakitp. & Luangsa-ard (2)*Note 732
Neotorrubiella Tasan., Thanakitp. & Luangsa-ard (1)
Niveomyces J.P.M. Araújo & de Bekker (6)*Note 965
Parahevansia Mongkols. & Noisrip. (1)*Note 966
Parengyodontium C.C. Tsang, J.F.W. Chan, W.M. Pong, J.H.K. Chen, A.H.Y. Ngan, M. Cheung, C.K.C. Lai, D.N.C. Tsang, S.K.P. Lau & P.C.Y. Woo (2)*Fp304
Polystromomyces Mongkols., Noisrip., Sakolrak & Himaman (1)*Note 967
Pseudogibellula Samson & H.C. Evans (1)
Pseudolecanicillium V.C.S. Alves, Souza-Motta & J.D.P. Bezerra (1)*Alves et al. 2022
Pseudoniveomyces Tasan., Noisrip. & Kobmoo (2)*Note 1230
Samsoniella Mongkols., Noisrip., Thanakitp., Spatafora & Luangsa-ard (ca 20)
Simplicillium W. Gams & Zare (ca 20)
Zarea Khons., Thanakitp. & Luangsa-ard (3)*Khonsanit et al. 2024
Zouia Khons., Thanakitp. & Luangsa-ard (1)*Khonsanit et al. 2024

Cylindriaceae Crous & L. Lombard
Cylindrium Bonord (= *Pseudoidriella* Crous & R.G. Shivas) (ca 10)

Flammocladiellaceae Crous, L. Lombard & R.K. Schumach.
Flammocladiella Crous, L. Lombard & R.K. Schumach. (2)

Hypocreaceae De Not. (= *Trichodermataceae* Fr.)
Arachnocrea Z. Moravec (3)
Dialhypocrea Speg. (1)
Escovopsioides H.C. Evans & J.O. Augustin (1)
Escovopsis J.J. Muchovej & Della Lucia (ca 10)
Hypocreopsis P. Karst. (= *Pseudosolidum* Lloyd) (ca 10)
Hypomyces (Fr.) Tul. & C. Tul. (= *Cladobotryum* Nees) (ca 100)*Fp96
Kiflimonium Summerb., J.A. Scott, Guarro & Crous (2)
Lichenobarya Etayo, Diederich & Lawrey (1)
Luteomyces Q.V. Montoya & A. Rodrigues (1)*Note 614
Mycogone Link (ca 15)
Protocrea Petch (6)
Rogersonia Samuels & Lodge (1)
Sepedonium Link (ca 25)
Sphaerostilbella (Henn.) Sacc. & D. Sacc. (= *Gliocladium* Corda) (ca 10)
Sporophagomyces K. Põldmaa & Samuels (3)
Stephanoma Wallr. (6)
Sympodiorosea Q.V. Montoya & A. Rodrigues (1)*Note 611
Trichoderma Pers. (= *Hypocrea* Fr.) (ca 500)

Ijuhyaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde*Note 1495, Perera et al. 2023
Ijuhya Starbäck (= *Peristomialis* (W. Phillips) Boud.) (22))*Perera et al. 2023
Kallichroma Kohlm. & Volkm.-Kohlm. (4)*Perera et al. 2023

Myrotheciomycetaceae Crous
Leucosphaerina Arx (2)
Myrotheciomyces Crous (1)
Trichothecium Link (ca 25)

Nectriaceae Tul. & C. Tul. (= *Tuberculariaceae* Fr.)
Albonectria Rossman & Samuels (1)
Allantonectria Earle (2)
Allonectella Petr. (2)
Aphanocladium W. Gams (4)
Aquanectria L. Lombard & Crous (7)
Atractium Link (5)
Austroacremonium Y.P. Tan, Sbaraini & E. Lacey(1)*Note 1212
Baipadisphaeria Pinruan (1)
Bisifusarium L. Lombard, Crous & W. Gams (ca 10)
Calonectria De Not. (ca 150)*Fp131
Calostilbe Sacc. & Syd. (4)
Campylocarpon Halleen, Schroers & Crous (3)
Chaetonectrioides Matsush. (1)
Chaetopsina Rambelli (ca 25)
Cinnamomeonectria Salgado & P. Chaverri (1)*Bao et al. 2023
Coccinonectria L. Lombard & Crous (2)
Corallomycetella Henn. (4)
Corallonectria C. Herrera & P. Chaverri (1)
Corinectria C. González & P. Chaverri (3)
Cosmospora Rabenh. (ca 50)
Cosmosporella S.K. Huang, R. Jeewon & K.D. Hyde (2)
Curvicladiella Decock & Crous (2)
Cyanochyta Höhn. (1)
Cyanonectria Samuels & Chaverri (2)
Cyanophomella Höhn. (1)
Cylindrocladiella Boesew. (ca 45)
Cylindrodendrum Bonord. (4)
Cylindromonium Crous (6)*Note 128
Dacryoma Samuels (2)
Dactylobotrys S.Q. He & S.R. Wang (1)
Dactylonectria L. Lombard & Crous (ca 15)
Dematiocladium Allegr., Aramb., Cazau & Crous (2)
Fusarium Link (ca 400)*Note 171, Fp93
Fusicolla Bonord. (ca 20)
Geejayessia Schroers, Gräfenhan & Seifert (7)
Gliocephalotrichum J.J. Ellis & Hesselt. (ca 15)
Gliocladiopsis S.B. Saksena (ca 20)
Globonectria Etayo (1)*Flakus et al. 2019
Ilyonectria P. Chaverri & C. Salgado (ca 30)
Longinectria O. Savary, M. Coton, E. Coton & J.L. Jany (2)*Note 610
Luteonectria Sand.-Den., L. Lombard, Schroers & Rossman (2)*Note 599
Macroconia (Wollenw.) Gräfenhan, Seifert & Schroers (9)
Macronectria Salgado & P. Chaverri (5)*Bao et al. 2023, Fp317
Mariannaea G. Arnaud ex Samson (ca 20)
Microcera Desm. (6)

Murinectria M. Niranjan & V.V. Sarma (4)
Nalanthamala Subram. (6)
Nectria (Fr.) Fr. (= *Tubercularia* Tode) (ca 300)*Coel
Neocalonectria Crous (1)
Neocosmospora E.F. Sm. (ca 15)
Neonectria Wollenw. (= *Cylindrocarpon* Wollenw.; = *Heliscus* Sacc.) (ca 25)
Nothofusarium Crous, Sand.-Den. & L. Lombard (1)*Note 600
Ophionectria Sacc. (ca 10)
Pandanaceomyces Tibpromma & K.D. Hyde (1)*Fp99
Paracremonium L. Lombard & Crous (ca 10)
Payosphaeria W.F. Leong (1)
Penicillifer Emden (ca 10)
Persiciospora P.F. Cannon & D. Hawksw. (4)
Pleiocarpon L. Lombard & D. Aiello (4)
Pleogibberella Sacc. (3)
Pleurocolla Petr. (1)
Pseudoachroiostachys Tibpromma & K.D. Hyde (1)
Pseudocosmospora C. Herrera & P. Chaverri (ca 15)
Pseudofusicolla D. Triest (1)Fp284
Pseudonectria Seaver (ca 15)
Rectifusarium L. Lombard, Crous & W. Gams (2)
Rugonectria P. Chaverri & Samuels (5)
Sarcopodium Ehrenb. (ca 20)
Scolecofusarium L. Lombard, Sand.-Den. & Crous (1)*Note 601
Setofusarium (Nirenberg & Samuels) Crous & Sand.-Den. (1)*Note 675
Stylonectria Höhn. (8)
Thelonectria P. Chaverri & C.G. Salgado (ca 50)
Thyronectria Sacc. (= *Neothyronectria* Crous & Thangavel; = *Sulcatistroma* A.W. Ramaley) (ca 40)*Note 495, Coel, Bao et al. 2023, Periera et al. 2023
Tumenectria Salgado & Rossman (1)*Bao et al. 2023, Fp327
Varicosporella Lechat & J. Fourn. (1)
Varicosporellopsis Lechat & J. Fourn. (2)*Fp308
Vesicladiella Crous & M.J. Wingf. (1)
Volutella Fr. (ca 30)
Xenoacremonium Lombard & Crous (3)
Xenocylindrocladium Decock, Hennebert & Crous (3)
Xenogliocladiopsis Crous & W.B. Kendr. (2)
Xenoleptographium Marinc., T.A. Duong, Z.W. de Beer & M.J. Wingf. (1)
Xenonectriella Weese (ca 20)

Neoacremoniaceae L.W. Hou, L. Cai & Crous*Note 1493, Hou et al. 2023
Neoacremonium L.W. Hou, L. Cai & Crous*Hou et al. 2023

Niessliaceae Kirschst.
Atronectria Etayo (2)
Catenomargarita F.A. Custório & O.L. Pereira (1)*Note 1077
Circinoniesslia Samuels & M.E. Barr (1)
Cryptoniesslia Scheuer (1)
Eucasphaeria Crous (3)
Malmeomyces Starb. (1)
Melchioria Penz. & Sacc. (6)
Miyakeomyces Hara (1)

Myrmaeciella Lindau (2)
Myrtacremonium Crous (1)
Neoeucasphaeria Crous (1)
Niesslia Auersw. (= *Hyaloseta* A.W. Ramaley) (ca 100)*Note 338
Nothoeucasphaeria Crous (1)*Note1448, Crous et al. 2023b
Paraniesslia K.M. Tsui, K.D. Hyde & Hodgkiss (2)
Pseudohyaloseta Tibpromma & K.D. Hyde (1)
Pseudorhynchia Höhn. (2)
Rosasphaeria Jaklitsch & Voglmayr (1)
Taiwanascus Sivan & H.S. Chang (2)
Trichosphaerella E. Bommer, M. Rousseau & Sacc. (= *Neorehmia* Höhn.; = *Oplothecium* Syd.) (7)
Valetoniella Höhn. (3)
Valetoniellopsis Samuels & M.E. Barr (1)

Nothoacremoniaceae L.W. Hou, L. Cai & Crous*Hou et al. 2023*Note 1490
Nothoacremonium L.W. Hou, L. Cai & Crous*Note1479

Ophiocordycipitaceae G.H. Sung, J.M. Sung, Hywel-Jones & Spatafora
Drechmeria W. Gams & H.-B. Jansson (12)
Hantamomyces Crous (1)*Note 196
Harposporium Lohde (ca 35)
Hirsutella Pat. (ca 100)
Hymenostilbe Petch (ca 10)
Ophiocordyceps Petch (= *Desmidiospora* Thaxt. Note 4) (ca 250)*
Paraisaria Samson & B.L. Brady (ca 15)
Purpureocillium Luangsa-ard, Hywel-Jones, Houbraken & Samson (6)
Tolypocladium W. Gams (= *Chaunopycnis* W. Gams; = *Elaphocordyceps* G.H. Sung & Spatafora (ca 45)*Note 777
Torrubiellomyces J.P.M. Araújo & C. de Bekker (1)*Note 970

Polycephalomycetaceae Y.P. Xiao, Y.B. Wang, T.C. Wen, H. Yu & K.D. Hyde*Note 1488, Xiao et al. 2023
Perennicordyceps Matočec & I. Kušan (4)*Xiao et al. 2023
Pleurocordyceps Y.J. Yao, Y.H. Wang, S. Ban, W.J. Wang, Yi Li, Ke Wang & P.M. Kirk (15)*Note 969, Xiao et al. 2023
Polycephalomyces Kobayasi (ca 10)*Fp100, Xiao et al. 2023

Pseudodiploosporaceae Jing Z. Sun, X.Z. Liu & H.W. Liu (= *Zelopaecilomyces* Jing Z. Sun, X.Z. Liu & H.W. Liu)*Note 879, 1432, Yu et al. 2024
Pseudodiploospora Jing Z. Sun, X.Z. Liu & H.W. Liu (4)*Note 880

Pseudoniessliaceae L.W. Hou, L. Cai & Crous*Note 1237
Pseudoniesslia L.W. Hou, L. Cai & Crous (1)*Note 1237

Sarocladiaceae L. Lombard
Chlamydocillium Zare & W. Gams (9)*Fp296, Hou et al. 2023
Parasarocladium Summerb., J.A. Scott, Guarro & Crous (9)
Polyphialocladium L.W. Hou, L. Cai & Crous (1)*Hou et al. 2023
Sarocladium W. Gams & D. Hawksw. (ca 30)

Sedecimiellaceae M. Li, M. Raza & L. Cai*Li et al. 2023a
Sedecimiella K.L. Pang, Alias & E.B.G. Jones (5)

Heteroacremonium M. Li, M. Raza & L. Cai (2)*Li et al. 2023a

Stachybotryaceae L. Lombard & Crous
Achroiostachys L. Lombard & Crous (6)*Fp289
Albifimbria L. Lombard & Crous (5)*Fp291
Albosynnema E.F. Morris (2)
Alfaria Crous, Montaño-Mata & García-Jim. (ca 15)
Alfariacladiella Crous & R.K. Schumach. (1)
Brevistachys L. Lombard & Crous (5)*Fp294
Capitofimbria L. Lombard & Crous (1)*Fp309
Cymostachys L. Lombard & Crous (5)*Fp310
Didymostilbe Henn. (ca 10)
Digitiseta Gordillo & Decock (4)
Dimorphiseta L. Lombard & Crous (3)*Fp311
Globobotrys L. Lombard & Crous (1)*Fp312
Grandibotrys L. Lombard & Crous (3)*Fp313
Gregatothecium L. Lombard & Crous (1)*Fp314
Hyalinostachys C.G. Lin & K.D. Hyde (1)
Inaequalispora L. Lombard & Crous (3)*Fp315
Kastanostachys L. Lombard & Crous (1)*Fp316
Koorchalomella Chona, Munjal & J.N. Kapoor (2)
Melanopsamma Niessl (ca 40)
Memnoniella Höhn. (ca 15)
Myrothecium Tode (ca 35)
Myxospora L. Lombard & Crous (6)*Fp318
Neomyrothecium L. Lombard & Crous (1)*Fp319
Paracymostachys Crous (1)*Note 587
Paramyrothecium L. Lombard & Crous (ca 20)*Fp320
Parasarcopodium Melnik, S.J. Lee & Crous (3)
Parvothecium L. Lombard & Crous (2)*Fp321
Peethambara Subram. & Bhat (1)
Pottera Y.P. Tan & Bishop-Hurley (1)*Tan & Shivas 2023a
Pseudoornatispora Tibpromma & K.D. Hyde (1)
Septomyrothecium Matsush. (4)
Sirastachys L. Lombard & Crous (9)*Fp322
Smaragdiniseta L. Lombard & Crous (1)*Fp323
Stachybotrys Corda (ca 100)
Striatibotrys L. Lombard & Crous (9)*Fp324
Striaticonidium L. Lombard & Crous (5)*Fp325
Tangerinosporium L. Lombard & Crous (1)*Fp326
Virgatospora Finley (2)
Xenomyrothecium L. Lombard & Crous (1)*Fp328
Xepicula Nag Raj (4)
Xepiculopsis Nag Raj (2)

Stromatonectriaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde*Note 1487
Stromatonectria Jaklitsch & H. Voglmayr (1)

Tilachlidiaceae Lombard & Crous
Psychronectria J. Pawłowska, Istel, Wrzosek, D. Hawksw. (1)
Tilachlidium Preuss (ca 15)
Uvarisporella J. Yang, Jian K. Liu & K.D. Hyde (1)*Note 1349

Valsonectriaceae L.W. Hou, L. Cai & Crous*Hou et al. 2023
Valsonectria Speg. (15)

Xenoacrodontiaceae Crous*Note 618
Xenoacrodontium Crous (1)*Notes 618, 619

Xanthonectriaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde*Note 1483
Bullanockia Crous (1)
Xanthonectria Lechat, J. Fourn. & P.-A. Moreau (1)

Hypocreales genera *incertae sedis*\
Berkelella (Sacc.) Sacc. (2)
Cephalosporiopsis Peyronel (7)
Chondronectria Etayo, Flakus & Kukwa (1)
Chlorocillium W. Gams & Zare (1)*Note 622*Fp297
Cylindronectria Etayo (1)
Endoantria Greiff & Döbbeler (1)*Greiff & Döbbeler 2024b
Floraea Y.P. Tan, Vitelli & Steinrucken (1)*Tan & Steinrucken 2024
Gynonectria Döbbeler (1)
Haptospora G.L. Barron (3)
Husseyia Y.P. Tan, Bishop-Hurley, R.G. Shivas & Marney (2)*Tan & Shivas 2023b
Illosporiopsis D. Hawksw. (1)
Illosporium Mart. (ca 15)
Leptobarya Etayo (2)
Lichenopenicillus Etayo (1)
Metadothella Henn. (1)
Munkia Speg. (4)
Neomunkia Petr. (1)
Neoniesslia Crous & Osieck (1)*Crous et al. 2024b
Paracosmospora Crous & Boers (1)*Note 878
Peloronectria Möller (3)
Pseudomeliola Speg. (10)
Rodentomyces Doveri, Pecchia, Sarrocco & Vannacci (1)*Fp286
Roselliniella Vain. (ca 20)
Saksenamyces A.N. Rai & P.N. Singh (1)
Ticonectria Döbbeler (3)
Tilakidium Vaidya, C.D. Naik & Rathod (1)
Trichonectria Kirschst. (ca 20)

Microascales Luttr. ex Benny & Kimbr.
Ceratocystidaceae Locq. ex Réblová, W. Gams & Seifert
Ambrosiella Brader ex Arx & Hennebert (ca 10)
Berkeleyomyces W.J. Nel, Z.W. de Beer, T.A. Duong & M.J. Wingf. (2)
Bretziella Z.W. de Beer, Marinc., T.A. Duong & M.J. Wingf. (1)
Ceratocystis Ellis & Halst. (ca 100)
Chalaropsis Peyronel (3)
Davidsoniella Z.W. de Beer, T.A. Duong & M.J. Wingf. (4)
Endoconidiophora Münch (9)
Huntiella Z.W. de Beer, T.A. Duong & M.J. Wingf. (ca 30)
Meredithiella McNew, C. Mayers & T.C. Harr. (3)
Phialophoropsis L.R. Batra emend. T.C. Harr. (6)

Thielaviopsis Went (8)
Toshionella C. Mayers & T.C. Harr. (3)*Mayers et al. 2020
Wolfgangiella C. Mayers & T.C. Harr. (2)*Mayers et al. 2020

Chadefaudiellaceae Faurel & Schotter ex Benny & Kimbr.
Chadefaudiella Faurel & Schotter (2)
Faurelina Locq.-Lin. (4)

Cornuvesicaceae D.F. Bao, K.D. Hyde & Z.L. Luo*Note 1496, Bao et al. 2023
Cornuvesica C.D. Viljoen, M.J. Wingf. & K. Jacobs (4)

Gondwanamycetaceae Réblová, W. Gams & Seifert
Custingophora Stolk, Hennebert & Klopotek (5)
Knoxdaviesia M.J. Wingf., P.S. van Wyk & Marasas. (= *Gondwanamyces* G.J. Marais & M.J. Wingf.) (9)

Graphiaceae De Beer
Graphium Corda (ca 50)

Halosphaeriaceae E. Müll & Arx ex Kohlm.
Alisea J. Dupont & E.B.G. Jones (1)
Amphitrite S. Tibell (1)
Aniptodera Shearer & Miller (19)
Aniptosporopsis K.L. Pang, C.L. Lu, W.T. Ju & E.B.G. Jones (1)
Anisostagma K.R.L. Petersen & Jørg. Koch (1)
Antennospora Meyers (2)
Appendichordella R.G. Johnson, E.B.G. Jones & S.T. Moss (1)
Arenariomyces Höhnk (5)
Ascoglobospora Abdel-Wahab (1)*Liu et al. 2024c
Ascosacculus J. Campb., J.L. Anderson & Shearer (4)
Ajigaurospora E. Azevedo, P. Correia & M.F. Caeiro (1)*Note 1210
Bathyascus Kohlm. (5)
Carbosphaerella I. Schmidt (2)
Ceriosporopsis Linder (8)
Chadefaudia Feldm.-Maz. (6)
Cirrenalia Meyers & R.T. Moore (ca 15)*Note 108
Clavatospora Sv. Nilsson ex Marvanová & Sv. Nilsson*(3) Note 1556
Corallicola Volkm.-Kohlm. & Kohlm. (1)
Corollospora Werderm. (= *Sigmoidea* J.L. Crane) (29)
Corollosporella E. Azevedo, P. Correia & M.F. Caeiro (2)*Note 1326
Corollosporopsis M.F. Caeiro, P. Correia & E. Azevedo (1)*Note 1327
Cucullosporella K.D. Hyde & E.B.G. Jones (1)
Cucurbitinus L.L. Liu & Z.Y. Liu (2)
Ebullia K.L. Pang (1)
Fluviatispora K.D. Hyde (3)
Garethelia E. Azevedo, P. Correia & M.F. Caeiro (1)*Note 1218
Gesasha Abdel-Wahab & Nagah. (3)
Haiyanga K.L. Pang & E.B.G. Jones (1)
Haligena Kohlm. (1)
Halosarpheia Kohlm. & E. Kohlm. (8)
Halosphaeria Linder (4)
Halosphaeriopsis T.W. Johnson (1)

Havispora K.L. Pang & Vrijmoed (1)*Fp4
Honshuriella P. Correia, E. Azevedo & M.F. Caeiro (1)*Note 1220
Iwilsoniella E.B.G. Jones (1)
Keraliethelia P. Correia, E. Azevedo & M.F. Caeiro (1)*Note 1221
Kitesporella Jheng & K.L. Pang (1)
Kochiella Sakay., K.L. Pang & E.B.G. Jones (1)
Lautisporopsis E.B.G. Jones, Yusoff & S.T. Moss (1)
Lignincola Höhnk (4)
Limacospora Jørg. Koch & E.B.G. Jones (1)
Luttrellia Shearer (4)
Magnisphaera J. Campb., J.L. Anderson & Shearer (2)
Marinospora A.R. Caval. (2)
Moana Kohlm. & Volkm.-Kohlm. (1)
Morakotiella Sakay. (1)
Nais Kohlm. (2)
Nakagariella P. Correia, E. Azevedo & M.F. Caeiro (1)*Note 1223
Natantispora J. Campb., J.L. Anderson & Shearer (3)
Nereiospora E.B.G. Jones, R.G. Johnson & S.T. Moss. (1)
Nimbospora J. Koch (2)
Nohea Kohlm. & Volkm.-Kohlm. (3)
Oceanitis Kohlm. (5)
Ocostaspora E.B.G. Jones, R.G. Johnson & S.T. Moss (1)
Okeanomyces K.L. Pang & E.B.G. Jones (3)
Ondiniella E.B.G. Jones, R.G. Johnson & S.T. Moss (1)
Ophiodeira Kohlm. & Volkm.-Kohlm. (1)
Panorbis J. Campb., J.L. Anderson & Shearer (1)
Paraaniptodera K.L. Pang, C.L. Lu, W.T. Ju & E.B.G. Jones (1)
Paracorollospora E. Azevedo, P. Correia & M.F. Caeiro (3)*Note 1352
Phaeonectriella R.A. Eaton & E.B.G. Jones (3)
Pileomyces K.L. Pang & Jheng (1)
Praelongicaulis E.B.G. Jones, Abdel-Wahab & K.L. Pang (1)
Pseudolignincola Chatmala & E.B.G. Jones (1)
Remispora Linder (8)
Qarounispora Nourel-Din, Abdel-Aziz & Abdel-Wahab (1)*Note 899
Saagaromyces K.L. Pang & E.B.G. Jones (4)
Sablicola E B.G. Jones, K.L. Pang & Vrijmoed (1)
Safagamyces Bakhit & Abdel-Wahab (1)*Note 900
Shirahamella E. Azevedo, P. Correia & M.F. Caeiro (1)*Note 1319
Thalassogena Kohlm. & Volkm.-Kohlm. (1)
Thalespora Chatmala & E.B.G. Jones (1)
Tinhaudeus K.L. Pang, S.Y. Guo & E.B.G. Jones (1)
Tirispora E.B.G. Jones & Vrijmoed (2)
Tokurathelia M.F. Caeiro, E. Azevedo & P. Correia (1)*Note 1231
Toriella Sakay., K.L. Pang & E.B.G. Jones (1)
Trichomaris Hibbits, G.C. Hughes & Sparks (1)
Tunicatispora K.D. Hyde (1)

Microascaceae Luttr. ex Malloch
Acaulium Sopp (7)
Brachyconidiellopsis Decock, R.F. Castañeda & Adhikari (1)
Canariomyces Arx (6)
Cephalotrichum Link (ca 40)

Dactyliodendromyces Barnés-Guirado, Cano & Stschigel (1)*Barnés-Guirado et al. 2024
Doratomyces Corda (3)
Echinobotryum Corda (2)
Enterocarpus Locq.-Lin. (2)
Fairmania Sacc. (1)
Gamsia M. Morelet (5)
Kernia Nieuwl. (ca 15)
Lomentospora Hennebert & B.G. Desai (1)
Lophotrichus R.K. Benj. (8)
Microascus Zukal (ca 50)
Parascedosporium Gilgado, Gené, Cano & Guarro (3)
Parawardomyces Barnés-Guirado, Stchigel & Cano (2)*Barnés-Guirado et al. 2024
Petriella Curzi (8)
Pseudallescheria Negroni & I. Fisch. (8)
Pseudoscopulariopsis Sand.-Den., Gené & Guarro (3)
Pseudowardomyces Barnés-Guirado, Stchigel & Cano (2)*Barnés-Guirado et al. 2024
Rhinocladium Sacc. & Marchal (ca 10)
Scedosporium Sacc. ex Castell. & Chalm. (ca 15)
Scopulariopsis Bainier (ca 75)
Trailia G.K. Sutherl. (1)
Wardomyces F.T. Brooks & Hansf. (ca 10)
Wardomycopsis Udagawa & Furuya (8)
Yunnania H.Z. Kong (= *Fuscoannellis* Sand.-Den., Jagielski, Jin Yu & Gené) (3)*Fp276

Synnematotriadelphiaceae Mapook & K.D. Hyde*Note 1486
Synnematotriadelphia Chuaseehar., Somrith., Nuankaew & Boonyuen (2)*Note 500

Triadelphiaceae Y.Z. Lu, J.K. Liu, Z.L. Luo & K.D. Hyde
Triadelphia Shearer & J.L. Crane (ca 20)

Microascales genera *incertae sedis*
Bisporostilbella Brandsb. & E.F. Morris (1)
Cephalotrichiella Crous (1)
Gabarnaudia Samson & W. Gams (2)
Inodoromyces C. Mayers & T.C. Harr. (1)
Nautosphaeria E.B.G. Jones (1)*Bao et al. 2023
Parasporendocladia W.P. Wu & Y.Z. Diao (1)*Note 898
Tubakiella Sakay., K.L. Pang & E.B.G. Jones (1)*Bao et al. 2023

Torpedosporales E.B.G. Jones, Abdel-Wahab & K.L. Pang
Etheirophoraceae Rungjind., Somrith. & Suetrong
Etheirophora Kohlm. & Volkm.-Kohlm. (3)
Swampomyces Kohlm. & Volkm. (2)

Juncigenaceae E.B.G. Jones, Abdel-Wahab & K.L. Pang
Elbamycella A. Poli, E. Bovio, V. Prigione & G.C. Varese (1)
Fulvocentrum E.B.G. Jones & Abdel-Wahab (3)
Juncigena Kohlm., Volkm.-Kohlm. & O.E. Erikss. (2)
Khaleijomyces Abdel-Wahab (2)
Marinokulati E.B.G. Jones & K.L. Pang (1)
Moheitospora Abdel-Wahab, Abdel-Aziz & Nagah. (2)*Fp103

Torpedosporaceae E.B.G. Jones & K.L. Pang
Torpedospora Meyers (3)

Hypocreomycetidae family *incertae sedis*
Campylosporaceae D.F. Bao, K.D. Hyde & Z.L. Luo*Note 1498, Bao et al. 2023
Campylospora Ranzoni (5)

Hypocreomycetidae genus *incertae sedis*
Dendroclathra Voglmayr & G. Delgado (2)
Gohteikhimyces J.H. Ou, S.Y. Hsieh & C.H. Kuo (2)*Ou et al. 2024
Rousseaua Y.P. Tan & Marney (1)*Tan & Shivas 2023c

Subclass *Lulworthiomycetidae* Dayar., E.B.G. Jones & K.D. Hyde
Koralionastetales Kohlm., Volkm.-Kohlm., J. Campb. & Inderb.
Koralionastetaceae Kohlm. & Volkm.-Kohlm.
Koralionastes Kohlm. & Volkm.-Kohlm. (5)
Pontogeneia Kohlm. (8)

Lulworthiales Kohlm., Spatafora & Volkm.-Kohlm.
Lulworthiaceae Kohlm., Spatafora & Volkm.-Kohlm.
Cumulospora I. Schmidt (2)
Halazoon Abdel-Aziz, Abdel-Wahab & Nagah. (2)
Halophilomyces Xiao Wang, L. Pecoraro & H.B. Liu, **nom inval.** (1)*Wang et al. 2024c
Haloguignardia A. Cribb & J. Cribb (6)
Hydea K.L. Pang & E.B.G Jones (1)
Kohlmeyeriella E.B.G. Jones, R.G. Johnson & S.T. Moss (2)
Lindra I.M. Wilson (5)
Lulwoana Kohlm., Volkm.-Kohlm., J. Campb., Spatafora & Gräfenhan (= *Zalerion* R.T. Moore & Meyers) (6)
Lulwoidea Kohlm., Volkm.-Kohlm., J. Campb., Spatafora & Gräfenhan (1)
Lulworthia G.K. Sutherl. (ca 20)
Matsusporium E.B.G. Jones & K.L. Pang (1)
Moleospora Abdel-Wahab, Abdel-Aziz & Nagahama (1)
Moromyces Abdel-Wahab, K.L. Pang, Nagahama, Abdel-Aziz & E.B.G. Jones (1)
Orbimyces Linder (1)
Paralulworthia A. Poli, E. Bovio, L. Ranieri, G.C. Varese & V. Prigione (6)*Note 37
Rambellisea Pasqual. & Braconcini (1)*Braconcini et al. 2024
Rostrupiella Jørg. Koch, K.L. Pang & E.B.G. Jones. (1)
Sammeyersia S.Y. Guo, E.B.G. Jones & K.L. Pang (1)

Lulworthiales genera *incertae sedis*
Hiogispora Abdel-Wahab & Nagahama (1)
Paramoleospora M. Li & L. Cai (1)

Subclass *Pisorisporiomycetidae* Bundhun, Maharachch. & K.D. Hyde
Pisorisporiales Réblová & J. Fourn.
Pisorisporiaceae Réblová & J. Fourn.
Achroceratosphaeria Réblová, Fournier, K.D. Hyde & V.M. Ranghoo (2)
Pisorisporium Réblová & J. Fourn. (2)

Pisorisporiales genus *incertae sedis*
Brocchiosphaera K. Yamag., Chuaseehar. & Nakagiri (3)*Note 81

Subclass ***Savoryellomycetidae*** Hongsanan, K.D. Hyde & Maharachch.
Conioscyphales Réblová & Seifert
Conioscyphaceae Réblová & Seifert
Conioscypha Höhn. (ca 20)*Fp95

Fuscosporellales J. Yang, J. Bhat & K.D. Hyde
Fuscosporellaceae J. Yang, J. Bhat & K.D. Hyde
Bactrodesmiastrum Hol.-Jech. (5)
Fuscosporella J. Yang, J. Bhat & K.D. Hyde (5)*Fp277
Mucispora J. Yang, J. Bhat & K.D. Hyde (6)*Fp278
Parafuscosporella J. Yang, J. Bhat & K.D. Hyde (8)*Fp281
Plagiascoma Réblová & J. Fourn. (1)
Pseudoascotaiwania J. Yang, J. Bhat & K.D. Hyde (1)*Fp283

Pleurotheciales Réblová & Seifert
Pleurotheciaceae Réblová & Seifert
Adelosphaeria Réblová (1)
Anapleurothecium Hern.-Restr., R.F. Castañeda & Gené (3)*Hernández-Restrepo et al. 2017
Coleodictyospora Charles (3)
Dematipyriforma L. Yan Sun, Hai Y. Li, Xiang Sun & L.D. Guo (5)
Helicoascotaiwania Dayar., Maharachch. & K.D. Hyde (3)
Melanotrigonum Réblová (1)
Monotosporella S. Hughes (4)
Neomonodictys Y.Z. Lu, C.G. Lin & K.D. Hyde (2)
Phaeoisaria Höhn. (ca 25)
Phragmocephala E.W. Mason & S. Hughes (9)
Pleurotheciella Réblová, Seifert & J. Fourn (ca 15)
Pleurothecium Höhn. (ca 10)
Pseudosaprodesmium X.G. Tian, K.D. Hyde & Tibpromma (1)*Tian et al. 2024c
Saprodesmium W. Dong & Doilom (1)*Note 570
Sterigmatobotrys Oudem. (6)

Savoryellales Boonyuen, Suetrong, Sivichai, K.L. Pang & E.B.G. Jones
Savoryellaceae Jaklitsch & Réblová
Ascotaiwania Sivan. & H.S. Chang (= *Neoascotaiwania* Hern.-Restr., R.F. Castañeda & Guarro *fide* Dayarathne et al. 2019) (ca 10)
Aquabispora J. Yang, E.B.G. Jones & K.D. Hyde (3)*Note 1208
Bactrodesmium Cooke (47)
Canalisporium Nawawi & Kuthub. (= *Ascothailandia* Sri-indr., Boonyuen, Sivichai & E.B.G. Jones) (ca 20)
Dematiosporium Z.L. Luo, K.D. Hyde & H.Y. Su (2)*FoF05455
Kaseifertia Réblová, Hern.-Restr. & J. Fourn. (1)*Note 233
Rhexoacrodictys W.A. Baker & Morgan-Jones (5)
Savoryella E.B.G. Jones & R.A. Eaton (ca 15)

Savoryellomycetidae genus *incertae sedis*
Obliquifusoideum W. Dong, Doilom & K.D. Hyde (1)*Note 594

Subclass ***Sordariomycetidae*** O.E. Erikss. & Winka (= *Meliolomycetidae* P.M. Kirk & K.D. Hyde)
Boliniales P.F. Cannon
Boliniaceae Rick

Apiocamarops Samuels & J.D. Rogers (4)
Apiorhynchostoma Petr. (4)
Camaropella Lar.N. Vassiljeva (5)
Camarops P. Karst. (= *Bolinia* (Nitschke) Sacc.) (ca 20)
Cornipulvina Huhndorf, A.N. Mill., F.A. Fernández & Lodge (1)
Endoxyla Fuckel (9)
Mollicamarops Lar.N. Vassiljeva (1)
Neohypodiscus J.D. Rogers, Y.M. Ju & Læssøe (3)
Pseudovalsaria Spooner (3)

Cephalothecales Maharachch. & K.D. Hyde FoF06900
Cephalothecaceae Höhn.
Albertiniella Kirschst. (2)
Cephalotheca Fuckel (ca 15)
Cryptendoxyla Malloch & Cain (2)
Phialemonium W. Gams & McGinnis (10)
Scaptona Moura, Barbosa & R.F.R. Melo (1)*Moura et al. 2024
Victoriomyces Maggi, Davolos & Persiani(1)

Chaetosphaeriales Huhndorf, A.N. Mill. & F.A. Fernández
Chaetosphaeriaceae Réblová, M.E. Barr & Samuels
Achrochaeta Réblová & Hern.-Restr. (1)*Notes 11, 562, Fp112
Aciculadictyochaeta W.P. Wu & Y.Z. Diao (2)*Note 806
Acropleurophialis Y.F. Hu, X.G. Zhang, R.F. Castañeda & Jian Ma (1)*Hu et al. 2022
Adautomilanezia Gusmão, S.S. Silva, Fiúza, L.A. Costa & T.A.B. Santos (1)*Fp290
Anacacumisporium Y.R. Ma & X.G. Zhang (1)
Anacraspedodidymum C.R. Silva, R.F. Castañeda & Gusmão (3)*Silva et al. 2014, Wu & Diao 2022
Arcuatospora Réblová & Hern.-Restr. (2)
Ascochalara Réblová (1)*Fp212
Brachydictyochaeta W.P. Wu & Y.Z. Diao (1)*Note 854
Brunneodinemasporium Crous & R.F. Castañeda (2)*Fp71, Coel
Cacumisporium Preuss (9)
Calceisporiella W.P. Wu & Y.Z. Diao (1)*Note 856
Caliciastrum Réblová (1)*Note 1401
Caligospora Réblová (2)*Note 1213
Calvolachnella Marinc., T.A. Duong & M.J. Wingf. (1)*Fp295
Capillisphaeria Réblová (1)*Note 1228
Catenularia Grove (ca 15)
Chaetosphaeria Tul. & C. Tul. (ca 100)
Chalarodes McKenzie (3)
Chalarosphaeria W.P. Wu & Y.Z. Diao (1)*Note 1205
Chloridium Link (ca 30)
Codinaea Maire (ca 25)
Codinaeella Réblová & Hern.-Restr. (17)
Conicomyces R.C. Sinclair, Eicker & Morgan-Jones (4)*Coel
Conicosphaeria J.F. Zhang & K.D. Hyde (1)*Zhang et al. 2023c
Craspedodidymum Hol.-Jech. (14)
Cryptophiale Piroz. (ca 20)
Cryptophialoidea Kuthub. & Nawawi (5)
Curvichaeta W.P. Wu & Y.Z. Diao (1)*Note 855
Dendrophoma Sacc. (ca 50)

Dictyochaeta Speg. (ca 50)
Dictyochaetopsis Aramb. & Cabello (ca 10)
Dinemasporium Lév. (ca 45)
Ejnerjensenia W.P. Wu & Y.Z. Diao (2)*Note 981
Ericiosphaeria Réblová & Hern.-Restr. (1)*Fp211
Eucalyptostroma Crous & M.J. Wingf. (2)
Eucalyptostromiella W.P. Wu & Y.Z. Diao (1)*Note 980
Exserticlava S. Hughes (8)
Falholtia W.P. Wu & Y.Z. Diao (1)*Note 979
Flectospora Réblová & Hern.-Restr. (1)*Note 829
Fusichloridium W.P. Wu & Y.Z. Diao (1)*Note 978
Fuscocatenula Réblová & A.N. Mill. (3)*Note 1443
Geniculoseta Réblová (1)*Note 1306
Gongromerizella W.P. Wu & Y.Z. Diao (4)*Note 1107
Hemicorynespora M.B. Ellis (ca 15)
Hoehneliella Bres. & Sacc. (2)
Infundibulomyces Plaingam, Somrith. & E.B.G. Jones (2)
Kionochaeta P.M. Kirk & B. Sutton (ca 15)
Kionochaetiella W.P. Wu & Y.Z. Diao (1)*Note 977
Kylindrochaeta W.P. Wu & Y.Z. Diao (1)*Note 976
Linkosia A. Hern. Gut. & B. Sutton (11)
Lomaantha Subram. (= *Anasporidesmiella* K. Zhang, R.F. Castañeda, Heredia & Jian Ma; = *Lecythothecium* Réblová & Winka; = *Pyrigemmula* D. Magyar & R. Shoemaker) (10)*Note 25, Fp210, Delgado et al. 2024, Zhang et al. 2020
Lunatochaeta W.P. Wu & Y.Z. Diao (1)*Note 975
Menispora Pers. (ca 15)
Menisporopsis S. Hughes (ca 10)
Minimidochium B. Sutton (8)
Miyoshiella Kawam. (3)
Monosporoschisma W.P. Wu & Y.Z. Diao (1)*Note 1408
Morrisiella Saikia & A.K. Sarbhoy (3)
Multiguttulispora C.G. Lin & J.K. Liu (4)*Mayers et al. 2020
Nawawia Marvanová (7)
Neocirrenalia J. Yang & K.D. Hyde (1)*Note 1314
Neopseudolachnella A. Hashim. & Kaz. Tanaka (3)
Neotainosphaeria W.P. Wu & Y.Z. Diao (1)*Note 1436, 1457
Nimesporella Réblová & Hern.-Restr. (9)*Note 593
Oxenbollia W.P. Wu & Y.Z. Diao (1)*Note 883
Paliphora Sivan. & B. Sutton (7)
Papillospora Réblová (1)*Note 1353
Parabahusutrabeeja W.P. Wu & Y.Z. Diao (1)*Note 1438
Paraceratocladiella W.P. Wu & Y.Z. Diao (2)*Note 1449
Paracodinaea W.P. Wu & Y.Z. Diao (1)*Note 884
Paracryptophiale Kuthub. & Nawawi (2)
Paradinemasporium Crous & Osieck (1)*Note 591
Paragaeumannomyces Matsush. (24)
Paragongromeriza Zhi Yuan Zhang & Y.F. Han (1)*Zhang et al. 2024c
Penzigomyces Subram. (= *Aunstrupia* W.P. Wu & Y.Z. Diao, **nom. inval.**) (12)*Note 805, Wu & Diao 2022
Phaeodischloridium W.P. Wu & Y.Z. Diao (1)*Note 868
Phaeonawawia Goh (1)*Notes 508, 870
Phaeostalagmus W. Gams (7)*Wu & Diao 2022

Phialoarthrobotryum Matsush. (2)
Phialogeniculata Matsush. (4)
Phialolunulospora Z.F. Yu & R.F. Castañeda (1)*Zheng et al. 2020
Phialosporostilbe Mercado & J. Mena (7)
Phialoturbella Réblová & Hern.-Restr. (5)*Note 688
Polynema Lév. (ca 10)
Pseudodinemasporium A. Hashim. & Kaz. Tanaka (1)
Pseudolachnea Ranoj. (6)*Coel
Pseudolachnella Teng (ca 15)
Pseudophialocephala M.S. Calabon, E.B.G. Jones & K.D. Hyde (6)*Note 866
Pseudostriatosphaeria X.G. Tian, K.D. Hyde & Tibpromma (1)*Tian et al. 2024b
Pseudothozetella W.P. Wu & Y.Z. Diao (1)*Note 820
Rattania Prabhug. & Bhat (2)
Riisgaardia W.P. Wu & Y.Z. Diao*Note 1435
Spicatispora Réblová (2)*Note 1425, Réblová & Nekvindová 2023
Sporendocladia G. Arnaud ex Nag Raj & W.B. Kendr. (7)*Wu & Diao 2022
Sporoschisma Berk. & Broome (ca 20)
Stanjehughesia Subram. (= *Umbrinosphaeria* Réblová) (ca 20)*Wu & Diao 2022
Stephembruneria R.F. Castañeda (2)
Stilbochaeta Réblová & Hern.-Restr. (8)*Note 586
Striatosphaeria Samuels & E. Müll. (2)
Tainosphaeria F.A. Fernández & Huhndorf (ca 10)
Tainosphaeriella Réblová & Hern.-Restr. (2)*Note 589
Thozetella Kuntze (ca 25)
Verhulstia Hern.-Rest. (4)
Xyladelphia Réblová, A.N. Mill. & Hern.-Restr. (7)*Note 590
Zanclospora S. Hughes & W.B. Kendr. (ca 20)
Zanclosporiella W.P. Wu & Y.Z. Diao*Note 1452

Helminthosphaeriaceae Samuels, Cand. & Magni.
Echinosphaeria A.N. Mill. & Huhndorf (14)
Helminthosphaeria Fuckel (20)
Hilberina Huhndorf & A.N. Mill. (ca 20)
Kramasamuha Subram. & Vittal (1)*Hernández-Restrepo et al. 2020
Ruzenia O. Hilber (1)
Selenosporella G. Arnaud ex MacGarvie, **nom. inval.** (ca 10)*Réblová et al. 2021a

Leptosporellaceae Konta & K.D. Hyde
Leptosporella Penz. & Sacc. (ca 10)

Linocarpaceae Konta & K.D. Hyde
Claviformispora X.L. Xu & C.L. Yang (1)
Linocarpon Syd. & P. Syd. (ca 45)
Neolinocarpon K.D. Hyde (ca 15)

Neoleptosporellaceae J.F. Zhang, Y.Y. Chen & Jian K. Liu*Note 1505, Zhang et al. 2023c
Neoleptosporella Phukhams. & K.D. Hyde (2)

Pseudocapsulosporaceae S.N. Zhang, E.B.G. Jones & K.D. Hyde*Zhang et al. 2024a
Pseudocapsulospora S.N. Zhang, E.B.G. Jones & K.D. Hyde (2)*Zhang et al. 2024a

Chaetosphaeriales genera *incertae sedis*

Caudatispora J. Fröhl. & K.D. Hyde (2)
Erythromada Huhndorf, A.N. Mill., F.A. Fernández & Lodge (1)
Lasiosphaeriella Sivan. (6)
Neonawawia J. Yang, K.D. Hyde & J.K. Liu (1)
Rimaconus Huhndorf, F.A. Fernández, Joanne E. Taylor & K.D. Hyde (3)

Coniochaetales Huhndorf, A.N. Mill. & F.A. Fernández (= *Cordanales* M. Hern.-Rest. & Crous)
Coniochaetaceae Malloch & Cain
Barrina A.W. Ramaley (1)
Coniochaeta (Sacc.) Cooke (ca 100)

Cordanaceae Nann.
Cordana Preuss (ca 25)

Coniochaetales genera *incertae sedis*
Cannonia Joanne E. Taylor & K.D. Hyde
Pseudogliomastix W. Gams (1)

Meliolales Gäum. ex D. Hawksw. & O.E. Erikss.
Armatellaceae Hosag.
Armatella Theiss. & Syd. (ca 20)

Meliolaceae G.W. Martin ex Hansf.
Amazonia Theiss. (ca 50)
Asteridiella McAlpine (= *Appendiculella* Höhn.) (ca 300)
Cryptomeliola S. Hughes & Piroz. (3)
Endomeliola S. Hughes & Piroz. (1)
Irenopsis F. Stevens (ca 150)
Meliola Fr. (ca 1700)
Setameliola D.R. Reynolds (ca 15)

Phyllachorales M.E. Barr
Neopolystigmataceae Dianese & Guterres*Note 793
Neopolystigma Dianese, Guterres, M.D.M. Santos & R.W. Barreto (2)*Note 793

Phaeochoraceae K.D. Hyde, P.F. Cannon & M.E. Barr
Cocoicola K.D. Hyde (5)
Phaeochora Höhn. (4)
Phaeochoropsis K.D. Hyde & P.F. Cannon (4)
Serenomyces Petr. (4)

Phyllachoraceae Theiss. & Syd.
Ascovaginospora Fallah, Shearer & W.D. Chen (1)
Brobdingnagia K.D. Hyde & P.F. Cannon (4)
Camarotella Theiss. & Syd. (9)
Coccodiella Hara (ca 20)*Fp249
Cyclodomus Höhn. (5)
Deshpandiella Kamat & Ullasa (1)
Diachora Jul. Müll. (4)
Diatractium Syd. & P. Syd. (4)
Erikssonia Penz. & Sacc. (5)
Fremitomyces P.F. Cannon & H.C. Evans (2)

Geminispora Pat. (2)
Gibellina Pass. (2)
Imazekia Tak. Kobay. & Y. Kawabe (1)
Isothea Fr. (4)
Lichenochora Hafellner (ca 50)
Lindauella Rehm (1)
Linochora Höhn. (ca 25)
Lohwagia Petr. (3)
Maculatifrondes K.D. Hyde (1)
Malthomyces K.D. Hyde & P.F. Cannon (2)
Muelleromyces Kamat & Anahosur (1)
Neoflageoletia J. Reid & C. Booth (1)
Neophyllachora Dayar. & K.D. Hyde (5)
Ophiodothella (Henn.) Höhn. (ca 30)
Ophiodothis Sacc. (8)
Orphnodactylis Malloch & A. Mallik (2)
Oxodeora K.D. Hyde & P.F. Cannon (1)
Parberya C.A. Pearce & K.D. Hyde (2)
Petrakiella Syd. (1)
Phycomelaina Kohlm. (1)
Phyllachora Nitschke ex Fuckel (ca 1500)
Phylleutypa Petr. (3)
Phyllocrea Höhn. (3)
Pseudothiella Petr. (1)
Pseudothiopsella Petr. (1)
Pterosporidium W.H. Ho & K.D. Hyde (2)
Rehmiodothis Theiss. & Syd. (8)
Retroa P.F. Cannon (2)
Rhodosticta Woron. (3)
Rikatlia P.F. Cannon (1)
Schizochora Syd. & P. Syd. (3)
Sphaerodothella C.A. Pearce & K.D. Hyde (1)
Sphaerodothis (Sacc. & P. Syd.) Shear (ca 20)
Stigmatula (Sacc.) Syd. & P. Syd. (9)
Stigmochora Theiss. & Syd. (0)
Stromaster Höhn. (1)
Tamsiniella S.W. Wong, K.D. Hyde, W.H. Ho & S.J. Stanley (1)
Telimenella Petr. (3)
Telimenochora Sivan. (1)
Trabutia Sacc. & Roum. (ca 30)
Tribulatia Joanne E. Taylor, K.D. Hyde & E.B.G. Jones (1)
Uropolystigma Maubl. (1)
Vitreostroma P.F. Cannon (3)
Zimmermanniella Henn. (1)

Telimenaceae Mardones, T. Trampe & M. Piepenbr.
Telimena Racib. (ca 45)

Phyllachorales genera *incertae sedis*
Marinosphaera K.D. Hyde (1)
Neoxylomyces M.S. Calabon, Boonmee, E.B.G. Jones & K.D. Hyde (1)*Note 337

Pinibarreniales J. Luo & N. Zhang*****Luo et al. 2024
Pinibarreniaceae J. Luo & N. Zhang*****Luo et al. 2024
Pinibarrenia J. Luo & N. Zhang*****Luo et al. 2024

Planisphaeriales J.F. Zhang, Jian K. Liu & K.D. Hyde*Note 1508, Zhang et al, 2023c
Planisphaeriaceae J.F. Zhang, Jian K. Liu & K.D. Hyde*Note 1507, Zhang et al, 2023c
Planisphaeria J.F. Zhang, Jian K. Liu & K.D. Hyde (2)*Note 1506, Zhang et al, 2023c

Pseudodactylariales Crous
Pseudodactylariaceae Crous
Pseudodactylaria Crous (10)

Tracyllalales Crous*Luo et al. 2024
Tracyllaceae Crous
Neotracylla Crous (1)*Note 333
Tracylla (Sacc.) Tassi (3)*Coel

Vermiculariopsiellales Hern.-Restr., J. Mena, Gené & Crous*Luo et al. 2024
Vermiculariopsiellaceae Hern.-Restr, J. Mena, Gené & Crous
Chloridiopsiella Réblová (1)*Note 1092
Chloridiopsis Réblová (2)*Note 1402
Tubulicolla Réblová & Hern.-Restr. (3)*Notes 522, 851
Stephanophorella Réblová & Hern.-Restr. (1)*Note 485
Vermiculariopsiella Bender (ca 25)
Vermiculariopsis Torrend (8)*Hernández-Restrepo et al. 2022

Sordariales Chadef. ex D. Hawksw. & O.E. Erikss.
Bombardiaceae S.K. Huang, Maharachch. & K.D. Hyde*Note 73
Apodospora Cain & J.H. Mirza (6)
Bombardia (Fr.) P. Karst. (ca 15)
Bombardioidea C. Moreau ex N. Lundq. (5)
Fimetariella N. Lundq. (9)
Ramophialophora M. Calduch, Stchigel, Gené & Guarro (5)

Chaetomiaceae G. Winter
Achaetomium J.N. Rai, Tewari & Mukerji (ca 15)
Acrophialophora Edward (ca 20)
Allobotryotrichum M. Raza & L. Cai (1)
Allocanariomyces Mehrabi, Asgari & Zare (2)*Notes 18, 563
Amesia X. Wei Wang, Samson & Crous (5)
Arcopilus X. Wei Wang, Samson & Crous (9)
Arxotrichum A. Nováková & M. Kolařik (2)
Batnamyces Noumeur (1)*Note 63
Botryotrichum Sacc. & Marchal (ca 15)
Brachychaeta X. Wei Wang & Houbraken (1)
Carteria X. Wei Wang & Houbraken (1)
Chaetomium Kunze (ca 200)
Chrysanthotrichum X. Wei Wang & Houbraken (4)
Chrysocorona X. Wei Wang & Houbraken (1)
Collariella X. Wei Wang, Samson & Crous (ca 10)
Condenascus X. Wei Wang & Houbraken (1)
Corynascella Arx & Hodges (3)

Crassicarpon Y. Marín, Stchigel, Guarro & Cano, **nom. inval.** (3)
Dichotomopilus X. Wei Wang, Samson & Crous (ca 15)
Floropilus X. Wei Wang & Houbraken (1)
Guanomyces M.C. Gonzáles, Hanlin & Ulloa (1)
Humicola Traaen (ca 75)
Hyalosphaerella X. Wei Wang & Houbraken (1)
Madurella Brumpt (15)
Melanocarpus Arx (5)
Microthielavia X. Wei Wang & Houbraken (1)
Myceliophthora Costantin (5)
Mycothermus D.O. Natvig, J.W. Taylor, A. Tsang, M.I. Hutch. & A.J. Powell ex X. Wei Wang, Houbraken & D.O. Natvig (2)*Wang et al. 2019a
Ovatospora X. Wei Wang, Samson & Crous (6)
Parachaetomium Mehrabi, Asgari & Zare (3)
Parathielavia X. Wei Wang & Houbraken (3)
Parahumicola T.O. Condé, Y.L.G. Dutra & O.L. Pereira (1)*Note 1373
Parvabulbium K.S. Landry & A.N. Mill. (1)
Pseudocanariomyces Cañete-Gibas, Wiederh., C. Sanders, K. Ryan & N. Sosa (1)*Note 674
Parvomelanocarpus X.Wei Wang & Houbraken (2)*Note 753
Pseudohumicola X.Wei Wang, P.J. Han, F.Y. Bai & Houbraken (7)*Note 690
Pseudothielavia X. Wei Wang & Houbraken (4)
Remersonia Samson & Seifert (2)
Retroconis de Hoog & Bat. Vegte (1)
Staphylotrichum J.A. Mey. & Nicot (9)
Stellatospora Tad. Ito & Nakagiri (1)
Stolonocarpus X. Wei Wang & Houbraken (1)
Subramaniula Arx (9)
Tengochaeta X. Wei Wang & Houbraken (1)*Note 1104
Thermocarpiscus X.Wei Wang & Houbraken (1)*Note 695
Thermochaetoides X. Wei Wang & Houbraken (1)*Note 1010
Thermothelomyces Y. Marín, Stchigel, Guarro & Cano (4)
Thermothielavioides X. Wei Wang & Houbraken (1)
Thielavia Zopf (ca 25)
Trichocladium Harz (ca 40)
Xanthiomyces X.Wei Wang & Houbraken (1)*Note 698

Diplogelasinosporaceae Y. Marin & Stchigel*Notes 44, 138
Diplogelasinospora Cain (4)

Lasiosphaeriaceae Nannf.
Anopodium Lundq. (2)
Bellojisia Réblová (1)*Fp43
Corylomyces Stchigel, M. Calduch & Guarro (1)
Lasiosphaeria Ces. & De Not. (ca 50)
Mammaria Ces. ex Rabenh. (2)
Sordariochalara W.P. Wu & Y.Z. Diao (1)*Note 1388
Thaxteria Sacc. (4)
Xizangia F. Liu, S. Song & L. Cai (1)*Phurbu et al. 2024
Zopfiella G. Winter (ca 15)

Lasiosphaeridaceae S.K. Huang, Maharachch. & K.D. Hyde*Note 1445
Lasiosphaeris Clem. (4)

Naviculisporaceae Y. Marin & Stchigel*Note 44
Areotheca Y. Marín & Stchigel (2)*Note 44
Naviculispora Stchigel, Y. Marín, Cano & Guarro (1)*Note 44
Pseudorhypophila Y. Marín & Stchigel (3)
Rhypophila Y. Marín, A.N. Mill. & Guarro (4)*Note 44

Podosporaceae X. Wei Wang & Houbraken
Cladorrhinum Sacc. & Marchal (14)
Podospora Ces. (ca 100)

Schizotheciaceae Y. Marin & Stchigel (= *Neoschizotheciaceae* S.K. Huang & K.D. Hyde*Note 692, Note 1447)*Note 913
Apodus Malloch & Cain (2)
Cercophora Fuckel (ca 50)
Echria (N. Lundq.) Kruys, Huhndorf & A.N. Mill. (2)
Immersiella A.N. Mill. & Huhndorf (3)
Jugulospora N. Lundq. (5)
Lundqvistomyces Y. Marin & Stchigel (2)*Note 44
Morinagamyces Y. Marín & Stchigel (1)*Note 588
Neomorinagamyces M. Li & L. Cai (1)*Li et al. 2023a
Pseudoechria Y. Marín & Stchigel (4)*Note 44
Pseudoschizothecium Y. Marín, A.N. Mill. & Stchigel (1)*Note 44
Rinaldiella Deanna A. Sutton, Y. Marín, Guarro & E.H. Thomps (1)
Schizochlamydosporiella Guerra-Mateo, Gené & Cano-Lira (1)*Guerra-Mateo et al. 2024
Schizothecium Corda (= *Apiosordaria* Arx & W. Gams; = *Neoschizothecium* S.K. Huang & K.D. Hyde; = *Triangularia* Boedijn*Note 511) (ca 20)*Notes 692, 914
Zygopleurage Boedijn (3)

Sordariaceae G. Winter
Boothiella Lodhi & Mirza (1)*Note 75
Guilliermondia Boud. (1)
Neurospora Shear & B.O. Dodge (= *Gelasinospora* Dowding) (ca 50)
Pseudoneurospora Dania García, Stchigel & Guarro (2)
Sordaria Ces. & De Not. (ca 50)

Strattoniaceae S.K. Huang, Maharachch. & K.D. Hyde*Note 1437
Strattonia Cif. (9)

Zygospermellaceae S.K. Huang, Maharachch. & K.D. Hyde*Note 543
Episternus Górz & Boroń (1)
Zygospermella Cain (2)

Sordariales genera *incertae sedis*
Abyssomyces Kohlm. (1)
Acanthotheciella Höhn. (3)
Arnium Nitschke ex G. Winter (ca 25)*Note 46
Ascolacicola Ranghoo & K.D. Hyde (1)
Biconiosporella Schaumann (1)*Note 69
Bombardiella Höhn. (1)
Camptosphaeria Fuckel (4)*Note 95
Coronatomyces Dania García, Stchigel & Guarro (1)

Cuspidatispora Shearer & Bartolata (1)
Diffractella Guarro, P.F. Cannon & Aa (1)*Note 135
Emblemospora Jeng & J.C. Krug (2)*Note 150
Eosphaeria Höhn. (1)*Note 156
Globosphaeria D. Hawksw. (1)
Isia D. Hawksw & Manohar (2)
Lockerbia K.D. Hyde (2)
Lunulospora Ingold (2)
Onygenopsis Henn. (1)
Periamphispora J.C. Krug (1)
Phaeosporis Clem. (2)
Reconditella Matzer & Hafellner (1)
Rhexodenticula W.A. Baker & Morgan-Jones (5)
Rhexosporium Udagawa & Furuya (1)
Rosselliniomyces Matzer & Hafellner (2
Rosselliniopsis Matzer & Hafellner (7)
Stromatographium Höhn. (= *Fluviostroma* Samuels & E. Müll.) (2)
Synaptospora Cain (4)*Note 498
Tripterosporella Subram. & Lodha (2)*Note 518
Utriascus Réblová (1)
Ypsilonia Lév. (3)

Sordariomycetidae families *incertae sedis*
Batistiaceae Samuels & K.F. Rodrigues
Batistia Cif. (1)

Hagnosaceae D. Magyar & Z. Merényi, **nom. inval.***Note 993
Hagnosa D. Magyar & Z. Merényi, **nom. inval.** (1)

Sordariomycetidae genera *incertae sedis*
Arecacicola Joanne E. Taylor, J. Fröhl. & K.D. Hyde (1)
Chaetosphaerides Matsush. (1)
Cryptophyllachora L. Kiss, Kovács & R.G. Shivas (2)
Hanliniomyces Raja & Shearer (1)*Fp53
Hydromelitis A. Ferrer, A.N. Mill., Sarmiento & Shearer (1)
Merugia Rogerson & Samuels (1)
Mycomedusiospora G.C. Carroll & Munk (1)
Myxocephala G. Weber, Spaaij & Oberw. (1)
Neodictyosporium Tennakoon, C.H. Kuo & K.D. Hyde (1)*Note 573
Nigromammilla K.D. Hyde & J. Fröhl. (1)
Paracapsulospora S. Konta & K.D. Hyde (1)*Fp280
Phaeotrichosphaeria Sivan. (4)
Phragmodiscus Hansf. (2)
Pseudobotrytis Krzemien. & Badura (2)

Subclass ***Xylariomycetidae*** O.E. Erikss & Winka
Amphisphaeriales D. Hawksw. & O.E. Erikss.
Amphisphaeriaceae G. Winter
Amphisphaeria Ces. & De Not. (= *Lepteutypa* Petr.) (ca 100)
Labridella Brenckle (= *Griphosphaerioma* Höhn., *fide* Rossman et al. 2016) (2)

Appendicosporaceae Samarak. & K.D. Hyde*Note 755

Appendicospora K.D. Hyde (2)*Note 755
Neoamphisphaeria Samarak. & K.D. Hyde (1)*Note 865, Fp13

Apiosporaceae K.D. Hyde, J. Fröhl., Joanne E. Taylor & M.E. Barr
Apiospora Sacc. (ca 100)
Arthrinium Kunze (ca 30)
Nigrospora Zimm. (ca 35)

Beltraniaceae Nann.
Anabeltraniomyces R.F. Castañeda, Mardones, P.M. Kirk & Gusmão (1)*Castañeda et al. 2024
Beltrania Penz. (ca 20)
Beltraniella Subram. (ca 30)*Fp98
Beltraniopsis Bat. & J.L. Bezerra (ca 10)
Hemibeltrania Piroz. (8)
Parabeltrania Rambelli ex R.F. Castañeda, Gusmão & P.M. Kirk (1)*Castañeda-Ruíz et al. 2024
Parapleurotheciopsis P.M. Kirk (5)
Porobeltraniella Gusmão (2)
Pseudobeltrania Henn. (ca 10)
Pseudosubramaniomyces Crous (2)
Subsessila C.G. Lin & K.D. Hyde (1)

Castanediellaceae Hern.-Restr., Guarro & Crous
Castanediella Hern.-Restr., Crous & M.J. Wingf. (ca 20)

Clypeophysalosporaceae Giraldo & Crous
Bagadiella Cheew. & Crous (5)
Clypeophysalospora H.J. Swart (2)
Neophysalospora Crous & M.J. Wingf. (1)*Fp234
Paraphysalospora Crous (1)*Crous et al. 2021d
Plectosphaera Theiss. (ca 30)

Hyponectriaceae Petr.
Apiothyrium Petr. (2)
Arecomyces K.D. Hyde (ca 10)
Arwidssonia B. Erikss. (2)
Cesatiella Sacc. (3)
Chamaeascus L. Holm, K. Holm & M.E. Barr (1)
Discosphaerina Höhn. (ca 20)
Exarmidium P. Karst. (ca 15)
Frondicola K.D. Hyde (1)*Fp233
Hyponectria Sacc. (ca 30)
Lichenoverruculina Etayo (1)*Fp223
Micronectria Speg. (5)
Papilionovela Aptroot (1)
Pellucida Dulym., Sivan., P.F. Cannon & Peerally (1)*Fp225
Phragmitensis M.K.M. Wong, Poon & K.D. Hyde (2)
Physalospora Niessl (ca 100)
Rachidicola K.D. Hyde & J. Fröhl. (1)
Xenothecium Höhn. (1)

Iodosphaeriaceae O. Hilber
Iodosphaeria Samuels, E. Müll. & Petrini (ca 15)

Melogrammataceae G. Winter
Melogramma Fr. (ca 15)

Oxydothidaceae Konta & K.D. Hyde
Oxydothis Penz. & Sacc. (ca 80)*Fp108

Phlogicylindriaceae Senan. & K.D. Hyde
Ciferriascosea Senan., Bhat, Camporesi & K.D. Hyde (2)
Idriellomyces Crous (1)
Phlogicylindrium Crous, Summerb. & Summerell (7)
Polyscytalum Riess (ca 20)*Crous et al. 2020c

Pseudomassariaceae Senan. & K.D. Hyde
Leiosphaerella Höhn. (ca 15)
Pseudapiospora Petr. (3)
Pseudomassaria Jacz. (ca 25)
Pseudomassariella Petr. (1)

Pseudosporidesmiaceae Crous
Pseudosporidesmium K.D. Hyde & McKenzie (2)*Fp285

Pseudotruncatellaceae Crous
Pseudotruncatella R.H. Perera, Camporesi, Maharachch. & K.D. Hyde (3)*Fp1

Sporocadaceae Corda
Allelochaeta Petr. (ca 40)
Annellolacinia B. Sutton (2)
Bartalinia Tassi (ca 20)
Broomella Sacc. (ca 15)
Cavernicola P. Razaghi, F. Liu & L. Cai (1)*Razaghi et al. 2024
Ciliochorella Syd. (7)
Diploceras (Sacc.) Died (2)
Disaeta Bonar (1)
Discosia Lib. (ca 50)
Distononappendiculata F. Liu, L. Cai & Crous (3)
Diversimediispora F. Liu, L. Cai & Crous (1)*Fp218
Doliomyces Steyaert (3)
Heterotruncatella F. Liu, L. Cai & Crous (ca 15)
Hyalotiella Papendorf (6)
Hymenopleella Munk (= *Dyrithiopsis* L. Cai, Jeewon & K.D. Hyde; = *Neotruncatella* Hyang B. Lee & T.T.T. Nguyen; = *Trochilispora* V.P. Abreu, A.W.C. Rosado & O.L. Pereira*Note 520) (8)
Immersidiscosia Kaz. Tanaka, Okane & Hosoya (1)*Fp235
Millesimomyces Crous & M.J. Wingf. (1)
Monochaetia (Sacc.) Allesch. (ca 45)
Morinia Berl. & Bres. (= *Zetiasplozna* Nag Raj) (6)
Neopestalotiopsis Maharachch., K.D. Hyde & Crous (ca 75)
Nonappendiculata F. Liu, L. Cai & Crous (1)
Nothoseiridium Crous (1)*Fp222
Parabartalinia F. Liu, L. Cai & Crous (1)*Fp224
Pestalotiopsis Steyaert (= *Pestalopezia* Seaver (ca 300)*Watanabe et al. 2018)

Pseudopestalotiopsis Maharachch., K.D. Hyde & Crous (ca 20)
Pseudosarcostroma F. Liu, L. Cai & Crous (1)
Robillarda Sacc. (ca 25)
Sarcostroma Cooke (20)
Seimatosporium Corda (ca 50)
Seiridium Nees (ca 45)
Sporocadus Corda (ca 15)
Strickeria Körb. (ca 30)
Synnemapestaloides T. Handa & Y. Harada (4)
Truncatella Steyaert (ca 15)
Xenoseimatosporium F. Liu, L. Cai & Crous (1)

Vialaeaceae P.F. Cannon
Vialaea Sacc. (4)

Amphisphaeriales genera *incertae sedis*
Chitonospora E. Bommer, M. Rousseau & Sacc. (1)
Neoarthrinium Ning Jiang (4)*Notes 682, 728

Delonicicolales R.H. Perera, Maharachch. & K.D. Hyde
Delonicicolaceae R.H. Perera, Maharachch. & K.D. Hyde
Delonicicola R.H. Perera, Maharachch. & K.D. Hyde (1)
Furfurella Voglmayr & Jaklitsch (3)

Leptosilliaceae Voglmayr & Jaklitsch
Leptosillia Höhn. (ca 10)

Xylariales Nannf.
Anungitiomycetaceae Crous
Anungitiomyces Crous (1)
Nothoramichloridium Crous (1)
Strelitziomyces Crous (1)

Barrmaeliaceae Voglmayr & Jaklitsch (= *Induratiaceae* Samarak., Thongbai, K.D. Hyde & M. Stadler)*Note 1561
Barrmaelia Rappaz. (9)*Note 1561
Entosordaria (Sacc.) Höhn. (6)
Induratia Samuels, E. Müll. & Petrini (1)*Note 1561

Cainiaceae J.C. Krug
Amphibambusa D.Q. Dai & K.D. Hyde (2)
Arecophila K.D. Hyde (= *Alishanica* Karun., C.H. Kuo & K.D. Hyde) (ca 15)*Li et al. 2022b
Atrotorquata Kohlm. & Volkm.-Kohlm. (2)
Cainia Arx & E. Müll. (6)
Endocalyx Berk. & Broome (ca 10)
Longiappendispora Mapook & K.D. Hyde (1)
Paramphibambusa L.S. Han & D.Q. Dai (1)*Han et al. 2024
Seynesia Sacc. (ca 25)

Clypeosphaeriaceae G. Winter
Aquasphaeria K.D. Hyde (1)
Apioclypea K.D. Hyde (7)

Brunneiapiospora K.D. Hyde, J. Fröhl. & Joanne E. Taylor (9)
Clypeosphaeria Fuckel (ca 35)
Crassoascus Checa, Barrasa & A.T. Martínez (3)
Ommatomyces Kohlm., Volkm.-Kohlm. & O.E. Erikss (3)
Palmaria K.D. Hyde, J. Fröhl. & Joanne E. Taylor (1)

Coniocessiaceae Asgari & Zare
Circinotrichum Nees (16)*Hernández-Restrepo et al. 2022
Coniocessia Dania García, Stchigel, D. Hawksw. & Guarro (5)
Paraxylaria Wanas., E.B.G. Jones, Gafforov & K.D. Hyde (2)
Pirozynskiomyces Hern.-Restr. & Crous (2)*Note 983, Fp120
Pseudoconiocessia L. Lu & Tibpromma (1)*Lu et al. 2024a

Diatrypaceae Nitschke
Alloeutypa Hai X. Ma, Z.E. Yang & Yu Li (2)*Note 1399
Allocryptovalsa Senwanna, Phook. & K.D. Hyde (8)
Allodiatrype Konta & K.D. Hyde (5)*Notes 19, Fp182
Anthostoma Nitschke (ca 30)
Cryptosphaeria Ces. & De Not. (ca 20)
Cryptovalsa Ces. & De Not. ex Fuckel (ca 25)
Diatrypasimilis J. Zhou & Kohlm. (1)*Fp274
Diatrype Fr.
Diatrypella (Ces. & De Not.) De Not. (= *Allodiatrypella* H.Y. Zhu & X.L. Fan, **nom. inval.**) (ca 100)*Note 735
Echinomyces Rappaz (2)
Endoxylina Romell (ca 15)
Eutypa Tul. & C. Tul. (ca 50)
Eutypella (Nitschke) Sacc. (ca 100)
Halocryptosphaeria Dayarathne, Devadatha, V.V. Sarma & K.D. Hyde (1)*Note 585
Halocryptovalsa Dayar. & K.D. Hyde (2)
Halodiatrype Dayar. & K.D. Hyde (3)*Fp102
Leptoperidia Rappaz (4)
Libertella Desm. (ca 30)
Mangifericola E.F. Yang & Tibpromma (1)*Note 790
Melanostictus Samarak. & K.D. Hyde (3)*Note 850
Monosporascus Pollack & Uecker (9)
Neoeutypella M. Raza, Q.J. Shang, Phookamsak & L. Cai (1)
Paraeutypella L.S. Dissan., J.C. Kang, Wijayaw. & K.D. Hyde (4)
Pedumispora K.D. Hyde & E.B.G. Jones (1)
Peroneutypa Berl. (ca 30)
Pseudodiatrype S.H. Long & Q.R. Li (1)*Note 616
Pseudoeutypa S.N. Zhang & E.B.G. Jones (1)*Zhang et al. 2024a
Quaternaria Tul. & C. Tul. (ca 10)*Coel
Rhizophila K.D. Hyde & E.B.G. Jones (1)*Devadatha et al. 2023
Stromatolinea K. Habib & Q.R. Li (6)*Habib et al. 2024
Vasilyeva S.H. Long, Wijayaw. & Q.R. Li*Note 1429

Fasciatisporaceae S.N. Zhang, K.D. Hyde & J.K. Liu
Fasciatispora K.D. Hyde (11)

Graphostromataceae M.E. Barr, J.D. Rogers & Y.M. Ju
Biscogniauxia Kuntze (ca 50)

Camillea Fr. (ca 40)
Graphostroma Piroz. (2)
Obolarina Pouzar (2)
Vivantia J.D. Rogers, Y.M. Ju & Cand. (1)

Gyrotrichaceae Hern.-Restr. & Crous*Note 1091, 1442
Gyrothrix (Corda) Corda (ca 25)*Note 1091
Neogyrothrix Hern.-Restr. & Crous (1)*Note 974
Pseudoceratocladium Hern.-Restr. & Crous (1)*Note 823
Pseudocircinotrichum Hern.-Restr. & Crous (1)*Note 824
Xenoanthostomella Mapook & K.D. Hyde (1)*Note 1091

Hansfordiaceae Crous
Hansfordia S. Hughes (13)

Hypoxylaceae DC.
Annulohypoxylon Y.M. Ju, J.D. Rogers & H.M. Hsieh (ca 60)
Anthocanalis Daranag., Camporesi & K.D. Hyde (1)
Chlorostroma A.N. Mill., Lar.N. Vassiljeva & J.D. Rogers (3)
Daldinia Ces. & De Not. (56)
Durotheca Læssøe, Srikit., Luangsa-ard & M. Stadler (7)
Entonaema Möller (6)
Hypomontagnella Sir, L. Wendt & C. Lamb. (6)*Note 1103
Hypoxylon Bull. (ca 200)
Jackrogersella L. Wendt, Kuhnert & M. Stadler (6)
Parahypoxylon Cedeño-Sanchez, Charria-Girón & M. Stadler (2)*Note 1358
Phylacia Lév. (13)
Pyrenomyxa Morgan (3)
Pyrenopolyporus Lloyd (10)
Rhopalostroma D. Hawksw. (11)
Rostrohypoxylon J. Fourn. & M. Stadler (1)*Fp37
Ruwenzoria J. Fourn., M. Stadler, Læssøe & Decock (1)
Thamnomyces Ehrenb. (9)
Theissenia Maubl. (2)
Thuemenella Penz. & Sacc. (3)

Lopadostomataceae Daranag. & K.D. Hyde
Calceomyces Udagawa & S. Ueda (1)*Wendt et al. 2018
Creosphaeria Theiss. (2)
Jumillera J.D. Rogers, Y.M. Ju & F. San Martín (8)
Lopadostoma (Nitschke) Traverso (24)
Whalleya J.D. Rogers, Y.M. Ju & F. San Martín (2)

Microdochiaceae Hern.-Restr., Crous & J.Z. Groenew.
Peglionia Goid. (1)*Hernández-Restrepo et al. 2022
Idriella P.E. Nelson & S. Wilh. (23)
Macroidriella Z.X. Zhang, J.W. Xia & X.G. Zhang (1)*Zhao et al. 2024g
Microdochium Syd. (= *Monographella* Petr.) (ca 40)
Selenodriella R.F. Castañeda & W.B. Kendr (6)
Xenoidriella Crous (1)*Note 1360

Nothodactylariaceae Crous

Nothodactylaria Crous (1)

Pallidoperidiaceae R. Sugita & Kaz. Tanaka*Sugita et al. 2024
Amphigermslita R. Sugita & Kaz. Tanaka (3)*Sugita et al. 2024
Crassipseudostroma R. Sugita & Kaz. Tanaka (1)*Sugita et al. 2024
Minuticlypeus R. Sugita & Kaz. Tanaka (1)*Sugita et al. 2024
Nigropunctata Samarak. & K.D. Hyde (7)*Sugita et al. 2024
Pallidoperidium R. Sugita & Kaz. Tanaka (2)*Sugita et al. 2024

Polystigmataceae Höhn. ex Nannf.*Coel
Polystigma DC. (ca 20)*Coel

Requienellaceae Boise
Acrocordiella O.E. Erikss. (4)
Lacrymospora Aptroot (1)
Parapyrenis Aptroot (8)
Requienella Fabre (3)

Spirodecosporaceae R. Sugita & Kaz. Tanaka*Sugita et al. 2022
Spirodecospora B.S. Lu, K.D. Hyde & W.H. Ho (2)

Vamsapriyaceae Y.R. Sun, Yong Wang bis & K.D. Hyde*Note 1439
Diabolocovidia Crous (1)*Note 132
Didymobotryum Sacc. (6)
Paravamsapriya Samarak. & K.D. Hyde (1)*Note 902
Podosporium Schwein. (ca 30)
Tretophragmia Subram. & Natarajan (2)
Vamsapriya Gawas & Bhat (12)

Xyladictyochaetaceae Crous & Hern.-Restr
Brachiampulla Réblová & Hern.-Restr. (1)*Note 77, Fp183
Xyladictyochaeta Hern.-Restr., R.F. Castañeda & Gené (2)

Xylariaceae Tul. & C. Tul.
Abieticola Hyang B. Lee (1)*Fp270
Albicollum Voglmayr, J. Fourn., Tello & Jaklitsch (7)*Note 804
Amphirosellinia Y.M. Ju, J.D. Rogers, H.M. Hsieh & Lar.N. Vassiljeva (6)
Anthostomelloides Tibpromma & K.D. Hyde (5)
Astrocystis Berk. & Broome (ca 25)
Brunneiperidium Daranag., Camporesi & K.D. Hyde (2)
Camporesia W.J. Li & K.D. Hyde (1)*Fp273
Collodiscula I. Hino & Katum. (7)
Coniolariella Dania García, Stchigel & Guarro (5)
Digitodochium Tubaki & Kubono (4)
Engleromyces Henn. (2)*Note 154
Entalbostroma J.D. Rogers & P.R. Johnst. (1)
Entoleuca Syd. (3)
Emarcea Duong, Jeewon & K.D. Hyde (3)*FoF03033
Halorosellinia Whalley, E.B.G. Jones, K.D. Hyde & Læssøe (5)
Helicogermslita Lodha & D. Hawksw. (7)
Heteroxylaria Hai X. Ma, A.H. Zhu & Y. Li (6)*Zhu et al. 2024a
Hypocopra (Fr) J. Kickx f. (ca 30)

Hypocreodendron Henn. (1)
Kretzschmaria Fr. (ca 35)
Kretzschmariella Viégas (2)
Leprieuria Læssøe, J.D. Rogers & Whalley (2)
Leptomassaria Petr. (4)
Linosporopsis Voglmayr & Beenken (4)
Linteromyces Crous (1)
Lunatiannulus Daranag., Camporesi & K.D. Hyde (1)
Nemania Gray (= *Euepixylon* Füisting) (ca 70)*Voglmayr et al. 2022
Neoxylaria Konta & K.D. Hyde (3)
Muscodor Worapong, Strobel & W.M. Hess (25)
Oligostoma Voglmayr, J. Fourn. & Jaklitsch (1)*Note 822
Podosordaria Ellis & Holw. (ca 35)
Poronia Willd. (9)
Rosellinia De Not. (ca 200)
Sarcoxylon Cooke (6)
Spiririma Voglmayr, J. Fourn., Tello & Jaklitsch (1)*Note 973
Squamotubera Henn. (1)
Stellatus J.F. Zhang & K.D. Hyde (1)*Zhang et al. 2023c
Stilbohypoxylon Henn. (ca 20)
Virgaria Nees (3)
Wawelia Namysł. (6)*Bortnikov et al. 2023a
Xylaria Hill ex Schrank (ca 300)
Xylotumulus J.D. Rogers, Y.M. Ju & Hemmes (1)

Zygosporiaceae J.F. Li, Phookamsak & K.D. Hyde
Ascotricha Berk. (27)*Samarakoon et al. 2022
Flosculomyces B. Sutton (2)*Delgado 2022
Vesiculozygosporium Crous (1)*Note 534, Samarakoon et al. 2022
Zygosporium Mont. (ca 20)

Xylariales genera *incertae sedis*
Adomia S. Schatz (1)
Alloanthostomella Daranag., Camporesi & K.D. Hyde (1)*Fp271
Anthostomella Sacc. (ca 100)*Note 802
Anungitea B. Sutton (ca 20)
Ascotrichella Valldos. & Guarro (1)
Basifimbria Subram. & Lodha (3)
Basiseptospora Jaklitsch & Voglmayr (1)*Fp293
Bicellulospora W.L. Li, R.R. Liang & Jian K. Liu (1)*Li et al. 2024d
Biporispora J.D. Rogers, Y.M. Ju & Cand. (1)
Castellaniomyces Senan., Camporesi & K.D. Hyde (1)
Catenuliconidia N.G. Liu & K.D. Hyde (1)*Note 103
Chaenocarpus Rebent. (4)
Cryptostroma P.H. Greg. & S. Waller (1)
Cyanopulvis J. Fröhl. & K.D. Hyde (1)
Diamantinia A.N. Mill., Læssøe & Huhndorf (1)*Fp227
Gigantospora B.S. Lu & K.D. Hyde (1)
Guayaquilia R.F. Castañeda, Magdana, D. Sosa & Hern.-Restr. (1)*Fp226
Guestia G.J.D. Sm. & K.D. Hyde (1)
Hadrotrichum Fuckel (15)
Haploanthostomella Konta & K.D. Hyde (1)

Idriellopsis Hern.-Restr. & Crous (1)
Kirstenboschia Quaedvl., Verkley & Crous (1)
Lanceispora Nakagiri, Okane, Tad. Ito & Katum. (2)
Lasiobertia Sivan. (2)
Magnostiolata Samarak. & K.D. Hyde (1)*Note 1097
Natonodosa Heredia, R.F. Castañeda & D.W. Li (1)*Heredia et al. 2020
Neoanthostomella D.Q. Dai & K.D. Hyde (4)*Fp279
Neobarrmaelia Crous (2)*Crous et. al. 2022b
Neoidriella Hern.-Restr. & Crous (1)
Neoleptodontidium Crous & Jurjević (2)*Note 1361
Neotrichosphaeria Crous & Carnegie (1)
Nipicola K.D. Hyde (4)
Occultitheca J.D. Rogers & Y.M. Ju (2)
Ophiorosellinia J.D. Rogers, A. Hidalgo, F.A. Fernández & Huhndorf (1)
Palmicola K.D. Hyde (4)
Pandanicola K.D. Hyde (2)
Paraidriella Hern.-Restr. & Crous (1)
Paramphisphaeria F.A. Fernández, J.D. Rogers, Y.M. Ju, Huhndorf & L. Umaña (1)
Paucithecium Lloyd (1)
Pidoplitchkoviella Kiril. (1)
Polyancora Voglmayr & Yule (1)
Poroleprieuria M.C. González, Hanlin, Ulloa & Elv. Aguirre (1)
Pseudoanthostomella Daranag., Camporesi & K.D. Hyde (5)*Fp282
Pseudophloeospora Crous & R.G. Shivas (4)
Pulmosphaeria Joanne E. Taylor, K.D. Hyde & E.B.G. Jones (1)
Pyriformiascoma Daranag., Camporesi & K.D. Hyde (1)
Roselymyces Fiúza, C.R. Silva, R.F. Castañeda & Gusmão (1)*Fp26
Sabalicola K.D. Hyde (1)
Sporidesmina Subram. & Bhat (1)
Striatodecospora D.Q. Zhou, K.D. Hyde & B.S. Lu (1)
Stromatoneurospora S.C. Jong & E.E. Davis (2)
Subanthostomella S.N. Zhang, K.D. Hyde & Jian K. Liu (1)*Zhang et al. 2024a
Surculiseries Okane, Nakagiri & Tad. Ito (1)
Synnemadiella Crous & M.J. Wingf. (1)
Tristratiperidium Daranag., Camporesi & K.D. Hyde (1)
Xylocrea Möller (1)
Yuea O.E. Erikss. (1)

Xylariomycetidae families *incertae sedis*
Myelospermataceae K.D. Hyde & S.W. Wong
Myelosperma Syd. & P. Syd. (5)

Sordariomycetes orders *incertae sedis*
Amplistromatales M.J. D'souza, Maharachch. & K.D. Hyde
Amplistromataceae Huhndorf, A.N. Mill., Greif & Samuels
Acidothrix Hujslová & M. Kolařík (1)
Amplistroma Huhndorf, A.N. Mill., Greif & Samuels (9)
Neoacrodontium Crous & Decock (2)*Note 1431
Wallrothiella Sacc. (ca 20)

Catabotryales K.D. Hyde & Senan.*Note 102
Catabotryaceae Petr. ex M.E. Barr

Catabotrys Theiss. & Syd. (= *Pseudonectriella* Petr.) (3)

Spathulosporales Kohlm.
Hispidicarpomycetaceae Nakagiri
Hispidicarpomyces Nakagiri (1)

Spathulosporaceae Kohlm.
Retrostium Nakagiri & Tad Ito (1)
Spathulospora A.R. Caval. & T.W. Johnson (5)

Xenodactylariales D.F. Bao, K.D. Hyde & Z.L. Luo*Note 1482, Bao et al. 2023
Xenodactylariaceae Crous
Xenodactylaria Crous (1)

Sordariomycetes families *incertae sedis*
Lautosporaceae Kohlm., Volkm.-Kohlm. & O.E. Erikss
Lautospora K. D. Hyde & E.B.G. Jones (2)

Obryzaceae Körb.
Obryzum Wallr. (3)

Pseudostanjehughesiaceae K.D. Hyde & Hongsanan*Note 1009
Pseudostanjehughesia J. Yang & K.D. Hyde (2)

Sordariomycetes genera *incertae sedis*
Acerbiella Sacc. (4)
Acrospermoides Miller & G.E. Thomps. (2)
Ameromassaria Hara (1)
Amphisphaerellula Gucevič (2)
Amphisphaerina Höhn. (3)
Amphorulopsis Petr. (1)
Amylis Speg. (1)
Anisomycopsis I. Hino & Katum. (1)
Antennopsis R. Heim (1)
Anthostomaria (Sacc.) Theiss. & Syd. (1)
Anthostomellina L.A. Kantsch. (2)
Apodothina Petr. (1)
Apogaeumannomyces Matsush. (1)
Aquadulciospora Fallah & Shearer (1)
Areolospora S.C. Jong & E.E. Davis (2)
Arthropsis Sigler, M.T. Dunn & J.W. Carmich. (2)
Aropsiclus Kohlm. & Volkm.-Kohlm. (1)
Ascorhiza Lecht.-Trinka (1)
Ascoyunnania L. Cai & K.D. Hyde (1)
Atrogeniculata J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Aulospora Speg. (1)
Azbukinia Lar.N. Vassiljeva (1)
Bactrosphaeria Penz. & Sacc. (1)
Basidiobotrys Höhn. (1)
Biciliopsis Diederich (2)
Bombardiastrum Pat. (1)
Botryosporium Corda (ca 10)

Brenesiella Syd. (1)
Byrsomyces Cavalc. (1)
Byssotheciella Petr. (2)
Caleutypa Petr. (1)
Caproniella Berl. (1)
Catharinaea Y.P. Tan, Vitelli & Steinrucken (1)*Tan & Steinrucken 2024
Chaetoamphisphaeria Hara (1)
Charonectria Sacc. (3)
Ciliofusospora Bat. & J.L. Bezerra (1)
Clypeoceriospora Sousa da Câmara (1)
Clypeosphaerulina Sousa da Câmara (1)
Conidiotheca Réblová & L. Moster (1)*Note 114
Cryptoascus Petri (2)
Cryptomycella Höhn. (2)
Cryptomycina Höhn. (2)
Cryptosphaerella Sacc. (ca 10)*Note 124
Cucurbitopsis Bat. & Cif. (1)
Curvatispora V.V. Sarma & K.D. Hyde (1)
Dasysphaeria Speg. (1)
Delpinoella Sacc. (1)
Diacrochordon Petr. (1)
Duradens Samuels & Rogerson (1)
Esfandiariomyces Ershad (1)
Fantasmomyces Dong Hyeon Lee, Marinc., Z.W. de Beer & M.J. Wingf. (1)
Farrowia D. Hawksw. (4)
Fassia Dennis (1)
Fiorinimazzantia Y.P. Tan, Bishop-Hurley & Marney (2)*Tan & Shivas 2023b
Flammispora Pinruan, Sakay., K.D. Hyde & E.B.G. Jones (2)
Frondisphaeria K.D. Hyde (2)
Hapsidascus Kohlm. & Volkm.-Kohlm. (1)
Heliastrum Petr. (1)
Hyaloderma Speg. (1)
Hyalotiopsis Punith. (2)
Hydronectria Kirschst. (1)
Immersisphaeria Jaklitsch (1)
Iraniella Petr. (1)
Konenia Hara (2)
Kravtzevia Schwartzman (1)
Kurssanovia Kravtzev (1)
Lecythiomyces Doweld (1)
Leptosacca Syd. (1)
Leptosphaerella Speg. (5)
Mangrovispora K.D. Hyde & Nageire (2)
Marisolaris Jørg. Koch & E.B.G. Jones (1)
Microcyclephaeria Bat. (1)
Mirannulata Huhndorf, F.A. Fernández, A.N. Mill. & Lodge (2)
Natantiella Réblová (1)
Naumovela Kravtzev (2)
Neocryptospora Petr. (1)
Neolamya Theiss. & Syd. (3)
Neothyridaria Petr. (1)
Nitschkiopsis Nannf. & R. Sant. (1)*Note 339

Ophiomassaria Jacz. (2)
Ophiomeliola Starbäck (3)
Paoayensis Cabanela, Jeewon & K.D. Hyde (2)
Paradiplococcium Hern.-Restr., J. Mena & Gené (1)
Paramicrodochium Hern.-Restr. & Crous (1)
Pararhexoacrodictys Cantillo & Gusmão (4)
Pareutypella Y.M. Ju & J.D. Rogers (2)
Phragmeriella Hansf. (1)
Phyllocelis Syd. (2)
Pleocryptospora J. Reid & C. Booth (1)
Pleosphaeria Speg. (ca 20)
Pleurophragmium Costantin (ca 20)
Protocucurbitaria Naumov (1)
Pulvinaria Bon. (2)
Pumilus Viala & Marsais (1)
Rehmiomycella E. Müll. (1)
Rhamphosphaeria Kirschst. (1)
Rhopographella (Henn.) Sacc. & Trotter (2)
Rhynchosphaeria (Sacc.) Berl. (5)
Rivulicola K.D. Hyde (3)
Romellina Petr. (1)
Saccardoella Speg. (ca 15)
Sartorya Vuill. (8)
Scharifia Petr. (1)
Scoliocarpon Nyl. (1)
Scotiosphaeria Sivan. (1)
Servazziella J. Reid & C. Booth (1)
Sporoctomorpha J.V. Almeida & Sousa da Câmara (1)
Stearophora L. Mangin & Viala (1)
Steganopycnis Syd. & P. Syd. (1)
Stegophorella Petr. (1)
Stellosetifera Matsush. (1)
Stereosphaeria Kirschst. (1)
Stomatogenella Petr. (1)
Sungaiicola Fryar & K.D. Hyde (1)
Synsphaeria Bon. (2)
Teracosphaeria Réblová & Seifert (1)
Thelidiella Fink (1)
Thyridella (Sacc.) Sacc. (3)
Thyrotheca Kirschst. (1)
Trichospermella Speg. (2)
Trichosphaeropsis Bat. & Nasc. (1)
Urosporella G.F. Atk. (5)
Urupe Viégas (1)
Vleugelia J. Reid & C. Booth (1)
Xenodium Syd. (1)

Class *Xylobotryomycetes* Voglmayr & Jaklitsch
Xylobotryales Voglmayr & Jaklitsch
Cirrosporiaceae Voglmayr & Jaklitsch
Cirrosporium S. Hughes (1)

Xylobotryaceae Voglmayr & Jaklitsch
Xylobotryum Pat. (5)

Pezizomycotina orders *incertae sedis*
Thelocarpales Lücking & Lumbsch
Thelocarpaceae Zukal
Carneothele Fryday, T. Sprib. & M. Svenss. (1)*Note 101
Melanophloea P. James & Vězda (1)
Sarcosagium A. Massal. (2)
Thelocarpon Nyl (52)

Vezdaeales Lumbsch & Lücking
Vezdaeaceae Poelt & Vězda ex J.C. David & D. Hawksw.
Vezdaea Tsch.-Woess & Poelt (14)

Pezizomycotina family *incertae sedis*
Harpidiaceae Vězda ex Hafellner
Euopsis Nyl. (2)
Harpidium Körb. (4)

Pezizomycotina genera *incertae sedis*
Andomyces Chuaseehar., Sri-indr. & Somrith. (1)*Note 996
Angatia Syd. (5)
Apicheirospora Jing W. Liu, X.G. Zhang, R.F. Castañeda & Jian Ma (1)*Liu et al. 2022b
Barbarosporina Ķirulis, **nom. inval.** (1)
Biatoridium J. Lahm ex Körb. (3)
Cyanoporina Groenh. (1)
Neoechinodiscus Molinari & R. Sierra (= *Echinodiscus* Etayo & Diederich) (2)*Note 605
Milospium D. Hawksw. (4)
Oevstedalia Ertz & Diederich (1)
Porosynnema Jing W. Liu, X.G. Zhang, R.F. Castañeda & Jian Ma*Liu et al. 2022c
Psammina Sacc. & M. Rousseau ex E. Bommer & M. Rousseau (10)
Pygmaeosphaera Etayo & Diederich (3)
Radiciseta Sawada & Katsuki (1)
Solanella Vaňha (1)
Wadeana Coppins & P. James (2)

Subphylum *SACCHAROMYCOTINA* O.E. Erikss. & Winka
Class *Alloascoideomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Groenewald et al. 2023, Note 1472
Alloascoideales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1462, Groenewald et al. 2023
Alloascoideaceae Kurtzman & Robnett
Alloascoidea Kurtzman & Robnett (2)

Class *Dipodascomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Groenewald et al. 2023, Note 1473
Dipodascales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1463, Groenewald et al. 2023
Dipodascaceae Engl. & E. Gilg
Geotrichum Link (= *Dipodascus* Lagerh.; *Galactomyces* Redhead & Malloch (59)*Zhu et al. 2024b
Magnusiomyces Zender (= *Saprochaete* Coker & Shanor ex D.T.S. Wagner & Dawes) (10)*Zhu et al. 2024b
Middelhovenomyces Kurtzman & Robnett (2)*Groenewald et al. 2023

Trichomonascaceae Kurtzman & Robnett
Blastobotrys Klopotek (ca 25)*Groenewald et al. 2023
Crinitomyces Sakpuntoon, G. Peter, M. Groenew., Daluchy, Limtong & Srisuk (3)*Note 760, Groenewald et al. 2023
Deakozyma Kurtzman & Robnett (**nom. inval.**) (2)*Groenewald et al. 2023
Diddensiella Péter, Dlauchy & Kurtzman (1)
Groenewaldozyma Kurtzman (3)
Limtongella Sakpunt., Angchuan., Boontham., Khunnamw, Boonmak., Srisuk & Limtong*Groenewald et al. 2023
Spencermartinsiella Péter, Dlauchy, Tornai-Lehoczki, M. Suzuki & Kurtzman (4)
Starmerella Rosa & Lachance (ca 40)
Sugiyamaella Kurtzman & Robnett (27)
Trichomonascus H.S. Jackson emend. Kurtzman & Robnett (7)*Groenewald et al. 2023
Wickerhamiella Van der Walt (42)
Zygoascus M.T. Sm. (8)

Dipodascales genus *incertae sedis*
Nadsonia Syd. (4)*Groenewald et al. 2023
Yarrowia Van der Walt & Arx (10)*Groenewald et al. 2023
Tardiomyces Spruijtenburg, Meis & T. de Groot (**nom. inval.**) (3)*Spruijtenburg et al. 2024

Class *Lipomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Groenewald et al. 2023, Note 1474
Lipomycetales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1464, Groenewald et al. 2023
Lipomycetaceae E.K. Novák & Zsolt*Groenewald et al. 2023
Babjevia Van der Walt & M.T. Sm. (3)*Note 59
Dipodascopsis L.R. Batra & Millner (2)
Kockiozyma Jindam., Yukphan & Y. Yamada (1)
Limtongia Jindam., Am-in, Yukphan & Y. Yamada (1)
Lipomyces Lodder & Kreger (32)
Myxozyma Van der Walt, Weijman & von Arx (12)*Groenewald et al. 2023

Class *Pichiomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Note 1475, Groenewald et al. 2023
Alaninales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1465, Groenewald et al. 2023
Pachysolenaceae M. Groenew., Hittinger, Opulente & A. Rokas*Note 1458, 1529, Groenewald et al. 2023
Nakazawaea Y. Yamada, K. Maeda & Mikata (15)*Groenewald et al. 2023
Pachysolen Boidin & Adzet (**nom. inval.**) (1)
Peterozyma Kurtzman & Robnett (2)

Pichiales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1466, Groenewald et al. 2023
Pichiaceae Zender*Note 1460, Groenewald et al. 2023
Allodekkera Jutakanoke (1)*Groenewald et al. 2023
Ambrosiozyma Van der Walt (ca 10)*Groenewald et al. 2023
Brettanomyces Kufferath & van Laer (2)
Dekkera Van der Walt (5)
Citeromyces Santa Maria (5)*Groenewald et al. 2023
Komagataella Y. Yamada, Matsuda, Maeda & Mikata (7)
Kregervanrija Kurtzman (3)
Kuraishia Y. Yamada, Maeda & Mikata (9)

Martiniozyma Kurtzman (2)
Ogataea Y. Yamada, K. Maeda & Mikata (49)
Pichia E.C. Hansen (61)
Saturnispora Z.W. Liu & Kurtzman (22)

Serinales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1467, Groenewald et al. 2023
Cephaloascaceae L.R. Batra*Groenewald et al. 2023
Cephaloascus Hanawa (2)

Debaryomycetaceae Kurtzman & M. Suzuki*Groenewald et al. 2023
Aciculoconidium D.S. King & S.C. Jong (1)*Groenewald et al. 2023
Candida Berkhout (250)*Groenewald et al. 2023
Danielozyma Kurtzman & Robnett (2)*Groenewald et al. 2023
Debaryomyces Lodder & Kreger-van Rij (27)
Diutina Khunnamw., Lertwatt., Jindam., Limtong & Lachance (9)*Groenewald et al. 2023
Hemisphaericaspora F.L. Hui, Y.C. Ren, Liang Chen, Ying Li, Lin Zhang & Q.H. Niu, **nom. inval.** (1)*Groenewald et al. 2023
Hyphopichia von Arx & van der Walt (ca 10)*Groenewald et al. 2023
Kodamaea Y. Yamada, T. Suzuki, Matsuda & Mikata (29)*Groenewald et al. 2023
Kurtzmaniella M.A. Lachance & W.T. Starmer (5)
Limtongozyma Boontham, Angchuan, Boonmak & Srisuk (2)*Notes 250, 839
Lodderomyces Van der Walt (2)
Metahyphopichia Sipiczki & Pfliegler (1)*Groenewald et al. 2023
Meyerozyma Kurtzman & M. Suzuki (8)*Fp55
Millerozyma Kurtzman & M. Suzuki (5)*Fp44
Nematodospora Gouliam., R.A. Dimitrov, M.T. Sm., M. Groenew. & Boekhout (2)*Groenewald et al. 2023
Priceomyces Kurtzman & M. Suzuki (8)*Fp45
Scheffersomyces Kurtzman & M. Suzuki (25)*Fp46
Schwanniomyces Klöcker emend. M. Suzuki & Kurtzman (9)
Spathaspora N.H. Nguyen, S.O. Suh & M. Blackwell (22)
Suhomyces M. Blackwell & Kurtzman (28)
Teunomyces Kurtzman & M. Blackwell (13)*Groenewald et al. 2023
Wickerhamia Soneda (1)*Groenewald et al. 2023
Yamadazyma Billon-Grand (24)

Metschnikowiaceae T. Kamienski
Australozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (8)*Liu et al. 2024b
Candidozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (13)*Liu et al. 2024b
Clavispora Rodr. Mir. (8)*Groenewald et al. 2023
Danielia Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b
Gabaldonia Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (1)*Liu et al. 2024b
Gaillardinia Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b
Helenozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (3)*Liu et al. 2024b
Hermanozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b
Isabelozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (5)*Liu et al. 2024b
Metschnikowia T. Kamienski (65)*Groenewald et al. 2023
Osmozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b
Soucietia Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b
Sungouiella Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (17)*Liu et al. 2024b
Tanozyma Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (1)*Liu et al. 2024b
Wilhelminamyces Q.M. Wang, Yurkov, Boekhout & F.Y. Bai (2)*Liu et al. 2024b

Serinales genus *incertae sedis*
Babjeviella Kurtzman & M. Suzuki (1)*Fp54

Class ***Saccharomycetes*** O.E. Erikss. & Winka
Ascoideales J.H. Schaffner*Groenewald et al. 2023
Ascoideaceae J. Schröter*Groenewald et al. 2023
Ascoidea Bref. (5)

Saccharomycopsidaceae Arx & Van der Walt*Groenewald et al. 2023
Saccharomycopsis Schiønning (ca 15)

Phaffomycetales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1468, Groenewald et al. 2023
Phaffomycetaceae Y. Yamada, H. Kawas., Nagats., Mikata & Tats. Seki
Barnettozyma Kurtzman, Robnett & Basehoar-Powers (13)*Groenewald et al. 2023
Cyberlindnera Minter (36)*Groenewald et al. 2023
Phaffomyces Y. Yamada (4)
Starmera Y. Yamada, Higashi, Ando & Mikata (9)*Groenewald et al. 2023

Wickerhamomycetaceae Kurtzman, Robnett & Bas.-Powers*Groenewald et al. 2023
Wickerhamomyces Kurtzman, Robnett & Basehoar-Powers (39)

Saccharomycetales Kudryavtsev*Groenewald et al. 2023
Saccharomycetaceae G. Winter*Groenewald et al. 2023
Arxiozyma Van der Walt & Yarrow (4)*Liu et al. 2024a
Ashbya Guillierm. (2)*Groenewald et al. 2023
Cylindricascospora Q.M. Wang, Yurkov & Boekhout (1)*Liu et al. 2024a
Cyniclomyces Van der Walt & D.B. Scott (1)
Eremothecium Borzi emend. Kurtzman (5)
Grigorovia Gouliamova & Dimitrov (6)*Note 188
Hagleromyces Sousa, Morais, Lachance & Rosa (1)
Henningerozyma Q.M. Wang, Yurkov & Boekhout (1)*Liu et al. 2024a
Huiozyma Q.M. Wang, Yurkov & Boekhout (2)*Liu et al. 2024a
Jamesozyma Q.M. Wang, Yurkov & Boekhout (8)*Liu et al. 2024a
Kazachstania Zubcova (28)*Liu et al. 2024a
Kluyveromyces Van der Walt (10)
Lachancea Kurtzman (9)
Maudiozyma Q.M. Wang, Yurkov & Boekhout (13)*Liu et al. 2024a
Monosporozyma Q.M. Wang, Yurkov & Boekhout (8)*Liu et al. 2024a
Nakaseomyces Kurtzman (2)*Liu et al. 2024a
Naumovozyma Kurtzman (2)
Oligophagozyma Q.M. Wang, Yurkov & Boekhout (1)*Liu et al. 2024a
Saccharomyces Meyen (13)
Savitreea Sakpuntoon, Angchuan, Boonmak, Khunnamw., N. Jacques, Grondin, Casareg. & Srisuk (1)*Note 465, Fp114
Stenotrophomyces D. Heidler von Heilborn, J. Reinmüller, A. Yurkov, P. Stehle, R. Möller, A. Lipski
Sungouiozyma Q.M. Wang, Yurkov & Boekhout (2)*Liu et al. 2024a
Tetrapisispora Ueda-Nishimura & K. Mikata emend. Kurtzman (6)*Liu et al. 2024a
Torulaspora Lindner (10)
Vanderwaltozyma Kurtzman (7)

Yueomyces Q.M. Wang, L. Wang, M. Groenewald & T. Boekhout (1)
Zygosaccharomyces B.T.P. Barker (ca 70)*Groenewald et al. 2023
Zygotorulaspora Kurtzman (8)

Saccharomycetales genera *incertae sedis*
Coccidiascus Chatton (1)
Conidiascus Holterm. (1)
Endomyces Reess (5)
Macrorhabdus Tomaszewski, Logan, Snowden, Kurtzman & Phalen. (1)
Phialoascus Redhead & Malloch (1)

Saccharomycodales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1469, Groenewald et al. 2023
Saccharomycodaceae Kudryavtsev*Groenewald et al. 2023
Hanseniaspora Zikes (ca 15)
Saccharomycodes E.C. Hansen (1)

Class *Sporopachydermiomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Groenewald et al. 2023, Note 1476
Sporopachydermiales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1470, Groenewald et al. 2023
Sporopachydermiaceae M. Groenew., Hittinger, Opulente & A. Rokas*Note 1461, Groenewald et al. 2023
Sporopachydermia Rodr. Mir. (3)

Class *Trigonopsidomycetes* M. Groenew., Hittinger, Opulente & A. Rokas*Note 1477, Groenewald et al. 2023
Trigonopsidales M. Groenew., Hittinger, Opulente & A. Rokas*Note 1471, Groenewald et al. 2023
Trigonopsidaceae M.A. Lachance & C.P. Kurtzman
Botryozyma Shann & M.T. Sm. emend. Lachance & Kurtzman (3)
Ascobotryozyma J. Kerrigan, M.T. Sm. & J.D. Rogers (2)
Tortispora Lachance & Kurtzman (8)
Trigonopsis Schachner emend. Kurtzman & Robnett (4)

Subphylum *TAPHRINOMYCOTINA* O.E. Erikss. & Winka
Class *Archaeorhizomycetes* Rosling & T.Y. James
Archaeorhizomycetales Rosling & T.Y. James
Archaeorhizomycetaceae Rosling & T.Y. James
Archaeorhizomyces Rosling & T.Y. James (2)

Class *Neolectomycetes* O.E. Erikss. & Winka
Neolectales Landvik, O.E. Erikss., Gargas & P. Gust.
Neolectaceae Redhead
Neolecta Speg. (4)*Disco

Class *Novakomycetes* Dlauchy, Péter & Čadež*Note 346
Novakomycetales Dlauchy, Péter & Čadež*Note 347
Novakomycetaceae Dlauchy, Péter & Čadež*Note 348
Novakomyces Dlauchy, Péter & Čadež (1)*Note 349

Class *Pneumocystomycetes* O.E. Erikss. & Winka
Pneumocystidales O.E. Erikss.

Pneumocystidaceae O.E. Erikss.
Pneumocystis P. Delanoë & Delanoë (8)

Class ***Schizosaccharomycetes*** O.E. Erikss. & Winka
Schizosaccharomycetales O.E. Erikss.
Schizosaccharomycetaceae Beij. ex Klöcker
Schizosaccharomyces Lindner (5)

Class ***Taphrinomycetes*** O.E. Erikss. & Winka
Taphrinales Gäum. & C.W. Dodge
Protomycetaceae Gray
Buerenia M.S. Reddy & C.L. Kramer (3)
Protomyces Unger (ca 30)
Protomycopsis Magnus (6)
Taphridium Lagerh. & Juel ex Juel (2)
Volkartia Maire (1)

Taphrinaceae Gäum.
Taphrina Fr. (ca 110)

Taphrinales genera *incertae sedis*
Savitreella Nutaratat, Boontham & Khunnamw (1)*Note 736

Taphrinomycotina genus *incertae sedis*
Saitoella Goto, Sugiy., Hamam. & Komag. (2)*Čadež et al. 2021

Ascomycota families *incertae sedis*
Ajaysinghia Y. Joshi (1)*Note 1558, Joshi 2022

Aphanopsidaceae Printzen & Rambold
Aphanopsis Nyl. ex Syd. (2)
Steinia Körb. (3)

Diporothecaceae R.K. Mibey & D. Hawksw.
Diporotheca C.C. Gordon & C.G. Shaw (4)

Eoterfeziaceae G.F. Atk.
Acanthogymnomyces Udagawa & Uchiyama (1)
Eoterfezia G.F. Atk. (2)

Mucomassariaceae Petr. & Cif.
Mucomassaria Petr. (1)

Saccardiaceae Höhn.
Ascolectus Samuels & Rogerson (1)
Cyanodiscus E. Müll. & M.L. Farr (2)
Henningsiella Rehm (3)
Pseudodiscus Arx & E. Müll. (1)
Saccardia Cooke (3)

Seuratiaceae Vuill. ex M.E. Barr
Seuratia Pat. (3)

Seuratiopsis Woron. (1)

Strangosporaceae S. Stenroos, Miądl. & Lutzoni
Kullhemia P. Karst. (2)
Strangospora Körb. (7)

Ascomycota genera *incertae sedis*
Abropelta B. Sutton (1)
Acarellina Bat. & H. Maia (1)
Acaroconium Kocourk. & D. Hawksw. (2)
Acarocybe Syd. (3)
Acarocybella M.B. Ellis (1)
Acarocybellina Subram. (1)
Acarocybiopsis J. Mena, A. Hern.-Gut. & Mercado (1)
Acaropeltis Petr. (1)
Achoropeltis Syd. (1)
Acleistia Bayl. Ell. (1)
Acontium Morgan (4)
Acrodictyella W.A. Baker & Partr. (1)
Acrodictyopsis P.M. Kirk (1)
Acrodontiella U. Braun & Scheuer (1)
Acrophragmis Kiffer & Reisinger (4)
Acrostaurus Deighton & Piroz. (1)
Actinotexis Arx (2)
Actinothecium Ces. (10)
Actinothyrium Kunze (14)
Acuminavicula R.F. Castañeda, Gusmão, Cantillo & G.G. Barreto (1)*Barreto et al. 2024a
Acumispora Matsush. (5)
Agaricodochium X.J. Liu (1)
Agarwalomyces R.K. Verma & Kamal (1)
Agrabeeja Subram. (1)
Agyriella Sacc. (2)
Agyriellopsis Höhn. (2)
Ahmadia Syd. (1)
Ajrekarella Kamat & Kalani (3)
Alatosessilispora K. Ando & Tubaki (1)
Alciphila Harmaja (1)
Alcornia J.S. Monteiro, S.M. Leão, Gusmão, P.M. Kirk & R.F. Castañeda (1)
Algonquinia R.F. Castañeda & W.B. Kendr. (1)
Allophoron Nádv. (1)
Allothyriella Bat., Cif. & Nascim. (3)
Allothyrina Bat. & J.L. Bezerra (1)
Allothyriopsis Bat., Cif. & H. Maia (1)
Alpakesa Subram. & K. Ramakr. (4)
Alpakesiopsis Abbas, B. Sutton, Ghaffar & A. Abbas (1)
Alveariospora Meir. Silva, R.F. Castañeda, O.L. Pereira & R.W. Barreto (1)*Fp115
Alveophoma Alcalde (1)
Alysidiopsis B. Sutton (5)
Amallospora Penz. (1)
Amblyosporium Fresen. (4)
Ameroconium U. Braun & Zhurb. (1)
Amerodiscosiella M.L. Farr (1)

Amerodiscosiellina Bat. & Cavalc. (1)
Amerosporiopsis Petr. (2)*Note 3
Amerosympodula Matsush. (1)
Amoenodochium Peláez & R.F. Castañeda (1)
Amoenomyces R.F. Castañeda, Saikawa & Hennebert (1)
Amphichaetella Höhn. (1)
Amphophialis R.F. Castañeda, W.B. Kendr. & Guarro (1)
Amphoropycnium Bat. (2)
Ampullicephala R.F. Castañeda, Minter & M. Stadler (1)
Ampulliferina B. Sutton (2)
Amylogalla Suija, Motiej. & Kantvilas (1)
Anabahusakala Carmo, J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Anacoronospora J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Anaexserticlava Santa Izabel, R.F. Castañeda & Gusmão (1)
Anaphysmene Bubák (2)*Note 3
Anarhyma M.H. Pei & Z.W. Yuan (1)
Anaselenosporella Heredia, R.F. Castañeda & R.M. Arias (2)
Anaseptoidium R.F. Castañeda, Heredia & R.M. Arias (1)*Fp168
Anaverticicladus P.O. Costa, Malosso & R.F. Castañeda (1)
Ancoraspora Mig. Rodr. (1)
Ancorasporella J. Mena, Mercado & Heredia (1)
Annellosympodia McTaggart, R.G. Shivas & U. Braun (1)*Note 30
Angiopomopsis Höhn. (1)
Angulimaya Subram. & Lodha (1)
Angulospora Sv. Nilsson (1)
Anisogenispora S.M. Leão, Gusmão & R.F. Castañeda (1)
Anisospadicoides R.F. Castañeda, M. Qiao & Z.F. Yu (2)
Annellodentimyces Matsush. (1)
Annellodochium Deighton (1)
Annellophorella Subram. (5)
Annellospermosporella P.R. Johnst. (1)
Antennatula Fr. ex F. Strauss (2)
Anthracoderma Speg. (3)*Note 3
Antimanoa Syd. (1)
Antromyces Fresen. (4)
Anulohypha Cif. (1)
Anungitopsis R.F. Castañeda & W.B. Kendr. (7)
Aoria Cif. (1)*Note 3
Aphanofalx B. Sutton (2)*Note 3
Apiocarpella Syd. & P. Syd. (5)*Note 3
Apiotypa Petr. (1)
Apogloeum Petr. (1)
Aporellula B. Sutton (1)
Aposporella Thaxt. (1)
Apostrasseria Nag Raj (1)
Arachnophora Hennebert (11)
Arachnospora R.F. Castañeda, Minter & Camino (1)
Arborillus Munt.-Cvetk. & Gómez-Bolea (1)
Arborispora K. Ando (4)
Arcuadendron Sigler & J.W. Carmich. (2)
Ardhachandra Subram. & Sudha (3)
Argentinomyces Peña & Arambarri (1)

Argopericonia B. Sutton & Pascoe (2)
Aristastoma Tehon (6)
Arthrobotryum Ces. (25)
Arthromoniliphora S.S. Silva, Gusmão & R.F. Castañeda (1)
Arthrosporium Sacc. (6)
Arthrotaeniolella L.B. Conç., M.F.O. Marques, J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Arthrowallemia R.F. Castañeda, Dania García & Guarro (2)
Articulophora C.J.K. Wang & B. Sutton (1)
Artocarpomyces Subram. (1)*Note 47
Ascochytopsis Henn. (5)
Ascochytulina Petr. (3)
Ascofascicula Matsush. (1)
Ascomauritiana V.M. Ranghoo & K.D. Hyde (1)
Ascosubramania Rajendran (1)
Ashtaangam Subram. (1)
Aspilaima Bat. & H. Maia (1)
Astelechia Cif. (2)
Asterinothyriella Bat. & Cif. (1)
Asterinothyrium Bat., Cif. & H. Maia (1)
Asteroconium Syd. & P. Syd. (2)
Asteromidium Speg. (3)*Note 50
Asteromyces F. Moreau & V. Moreau (1)
Asterophoma D. Hawksw. (1)
Asteroscutula Petr. (1)
Asterostomopora Bat. & H. Maia (1)
Asterostomopsis Bat., Cif. & H. Maia (1)
Asterostomula Theiss. (13)
Asterostomulina Bat., J.L. Bezerra & H. Maia (1)
Astomella Thirum. (2)
Astronatelia Bat. & H. Maia (1)
Atractilina Dearn. & Barthol. (7)
Atractobolus Tode (1)
Atrosetaphiale Matsush. (1)
Atrosynnema J.W. Xia, X.G. Zhang & Z. Li (1)
Aurosphaeria Sun J. Lee, Strobel, Eisenman, Geary, P.N. Vargas & S.A. Strobel (1)
Avesicladiella W.P. Wu, B. Sutton & Gange (2)
Avettaea Petr. & Syd. (3)
Baliomyces Zhurb. & Diederich (1)*Zhurbenko & Diederich 2024
Bacillopeltis Bat. (1)
Bactridium Kunze (24)
Bactrodesmiella M.B. Ellis (3)
Baculospora Zukal (11)
Badarisama Kunwar, J.B. Manandhar & J.B. Sinclair (1)
Bahuchashaka Subram. (1)
Bahugada K.A. Reddy & Vasant Rao (2)
Bahukalasa Subram. & Chandrash. (1)
Balaniopsis P.M. Kirk (4)
Balanium Wallr. (1)
Barnettella D. Rao & P. Rag. Rao (3)
Basauxia Subram. (1)
Batistina Peres (1)
Batistospora J.L. Bezerra & M.M.P. Herrera (1)

Beauveriphora Matsush. (1)
Beccopycnidium F. Stevens (1)
Beejadwaya Subram. (1)
Belemnospora P.M. Kirk (4)
Bellulicauda B. Sutton (2)
Beltramono Rashmi Dubey, A.K. Pandey bis & Manohar. (1)
Beltraniomyces Manohar., D.K. Agarwal & Rao (3)
Beniowskia Racib. (1)
Benjpalia Subram. & Bhat (1)
Berggrenia Cooke (2)
Bhadradriella Nagaraju, Kunwar & Manohar. (1)
Bhadradriomyces Sureshk., Manohar. & Kunwar (1)
Bharatheeya D'Souza & Bhat (3)
Bhatia W.A. Baker & Morgan-Jones (2)
Bibanasiella R.F. Castañeda & W.B. Kendr. (1)
Bicoloromyces Heuchert, U. Braun & D. Hawksw. (1)
Biflagellosporella Matsush. (1)
Biflua Jørgen Koch & E.B.G. Jones (1)
Biligiriella S. Sengupta & Rashmi Dubey (1)*Note 756
Bimeris Petr. (2)
Bioconiosporium Bat. & J.L. Bezerra (2)
Biophomopsis Petr. (2)
Bisbyopeltis Bat. & A.F. Vital (1)
Bisseomyces R.F. Castañeda (1)
Blastocatena Subram. & Bhat (2)
Blastodictys M.B. Ellis (1)
Blastofusarioides Matsush. (1)
Blastoheterospora J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Blastophorella Boedijn (1)
Blastophragma Subram. (4)
Blastophragmia Jian Ma, L.G. Ma, X.G. Zhang & R.F. Castañeda (1)*Note 70
Blennoria Moug. & Fr. (11)
Blennoriopsis Petr. (1)
Bleptosporium Steyaert (1)
Blodgettia Harv. (7)
Botryoderma Papendorf & H.P. Upadhyay (4)
Botryodiplodina Dias & Sousa da Câmara (1)
Botryomonilia Goos & Piroz. (1)
Brachycephala J.S. Monteiro, Gusmão & R.F. Castañeda (1)
Brachydesmiella G. Arnaud ex S. Hughes (8)
Brachysporiellina Subram. & Bhat (2)
Brachysporiopsis Yanna, W.H. Ho & K.D. Hyde (1)
Braunomyces V.A. Melnik & Crous (1)
Brefeldiopycnis Petr. & Cif. (1)
Brencklea Petrak (1)
Brevicatenospora R.F. Castañeda, Minter & Saikawa (1)
Briosia Cavara (3)
Brycekendrickia Nag Raj (1)
Brykendrickia Rajn. K. Verma, Prasher, Rajeshk., Sushma, A.K. Gautam & R.F. Castañeda (1)*Note 82
Bryophytomyces Cif. (1)
Bulbilopycnis Matsush. (1)

Bulbocatenospora R.F. Castañeda & Iturr. (1)
Bullaserpens Bat., J.L. Bezerra & Cavalc. (1)
Caeruleoconidia Zhurb. & Pino-Bodas (= *Caeruleoconidia* Zhurb. & Diederich 2015 **nom. inval.**) (2)
Calcarispora Marvanová & Marvan (1)
Calceispora Matsush. (2)
Callistospora Petr. (1)
Calocline Syd. (1)
Calongeomyces D. Hawksw. & Etayo (1)
Camaropycnis E.K. Cash (1)
Camarosporellum Tassi (3)
Camarosporiopsis Abbas, B. Sutton & Ghaffar (1)
Camposporidium Nawawi & Kuthub. (3)
Camptomeris Syd. (10)*Note 94
Candelabrum Beverw. (1)
Candelosynnema K.D. Hyde & Seifert (1)
Capitorostrum Bat. (2)
Capnocheirides J.L. Crane & S. Hughes (1)
Capsicispora J.Y. Wang, Yu M. Cai & X.G. Zhang (1)
Capsicumyces Gamundí, Aramb. & Giaiotti (1)
Carnegieispora Etayo & F. Berger (1)
Carnia Bat. (1)
Carrismyces R.F. Castañeda & Heredia (1)
Casaresia Gonz. Frag. (1)
Castanedaea W.A. Baker & Partr. (1)
Catenocuneiphora Matsush. (1)
Catenophora Luttr. (3)
Catenophoropsis Nag Raj & W.B. Kendr. (1)
Catenosubulispora Matsush. (1)
Catenosynnema Kodsueb, K.D. Hyde & W.H. Ho (1)
Catenulaster Bat. & C.A.A. Costa (2)
Catinopeltis Bat. & C.A.A. Costa (1)
Cecidiomyces U. Braun & Zhurb. (1)
Ceeveesubramaniomyces J. Pratibha, K.D. Hyde & Bhat (1)
Ceratocladium Corda (5)
Ceratophorum Sacc. (7)
Ceratopycnis Höhn. (4)
Ceratosporella Höhn. (13)
Ceratosporium Schwein. (14)
Cercosperma G. Arnaud ex B. Sutton & Hodges (3)*Note 105
Ceuthodiplospora Died. (1)
Ceuthosira Petr. (1)
Ceuthosporella Petr. & Syd. (1)
Chaetendophragmia Matsush. (5)
Chaetoblastophorum Morgan-Jones (1)
Chaetocytostroma Petr. (1)
Chaetodiplis Clem. (1)
Chaetodiplodina Speg. (2)
Chaetopeltaster Katum. (1)
Chaetoplaca Syd. & P. Syd. (1)
Chaetopsis Grev. (8)
Chaetopyrena Pass. (14)

Chaetoseptoria Tehon. (3)
Chalarodendron C.J.K. Wang & B. Sutton (1)
Characonidia Bat. & Cavalc. (1)
Charomyces Seifert (2)
Chasakopama Manohar., Bagyan., N.K. Rao & Kunwar (1)
Cheilaria Lib. (1)
Cheiroidea W.A. Baker & Morgan-Jones (1)
Cheiromycella Höhn. (6)
Cheiromyceopsis Mercado & J. Mena (1)
Cheiromyces Berk. & M.A. Curtis (11)
Cheiropolyschema Matsush. (2)
Chiastospora Riess (1)
Chithramia Nag Raj (1)
Chlamydopsis Hol.-Jech. & R.F. Castañeda (1)
Choanatiara DiCosmo (2)
Choreospora Constant. & R. Sant. (1)
Chrysachne Cif. (1)
Chrysalidopsis Steyaert (1)
Chryseidea Onofri (1)
Ciferria Gonz. Frag. (1)
Ciferrina Petr. (1)
Ciferriopeltis Bat. & H. Maia (1)
Ciferrioxyphium Bat. & H. Maia (3)
Ciliochora Höhn. (3)
Ciliophora Petr. (2)
Ciliophorella Petr. (2)
Ciliosporella Petr. (3)*Coel
Circinoconiopsis A. Hern.-Gut. (1)
Circinoconis Boedijn (1)
Cissococcomyces Brain (1)
Civisubramaniania Vittal & Dorai (2)
Cladoconidium Bandoni & Tubaki (1)
Cladoniicola Diederich, van den Boom & Aptroot (2)
Cladosphaera Dumort. (1)
Cladosporiopsis S.C. Ren & X.G. Zhang (1)
Clasteropycnis Bat. & Cavalc. (1)
Clathroconium Samson & H.C. Evans (2)
Clauzadeomyces Diederich (1)
Clavariana Nawawi (1)
Cleistocystis Sousa da Câmara (1)
Cleistonium Speer (1)
Cleistophoma Petr. & Syd. (3)
Clypeochorella Petr. (2)
Clypeolum Speg. (3)
Clypeopatella Petr. (2)
Clypeophialophora Bat. & Peres (1)
Clypeopycnis Petr. (3)
Clypeoseptoria F. Stevens & P.A. Young (3)
Clypeostagonospora Punith. (1)
Coccogloeum Petr. (1)
Codonmyces Calat. & Etayo (2)
Colemaniella Agnihothr. (2)

Coleoseptoria Petr. (1)
Colispora Marvanová (3)
Colletoconis de Hoog & Aa (1)
Colletosporium Link (1)
Collostroma Petr. (1)
Columnodomus Petr. (1)
Columnothyrium Bubák (1)
Comatospora Piroz. & Shoemaker (1)
Comocephalum Syd. (1)
Complexipes C. Walker (2)
Condylospora Nawawi (4)
Coniambigua Etayo & Diederich (1)
Conioscyphopsis Goh & K.D. Hyde (1)
Coniothyrina Syd. (2)
Conjunctospora Udagawa & Uchiy. (1)
Conostoma Bat. & J.L. Bezerra (1)
Conostroma Moesz (3)
Consetiella Hol.-Jech. & Mercado (1)
Copromyces N. Lundq. (1)*Note 117
Coremiella Bubák & K. Krieg. (3)
Cornucopiella Höhn. (2)
Cornutostilbe Seifert (1)
Coronospora M.B. Ellis (4)
Coronosporidium R.F. Castañeda, Quevedo & Sosa (1)
Corynecercospora V.K. Pal, M. Akhtar, N. Ahmad, Kamal & D.K. Agarwal (1)
Coryneliella Har. & P. Karst. (1)
Corynesporella Munjal & H.S. Gill (ca 10)
Corynesporina Subram. (1)
Corynesporopsis P.M. Kirk (17)
Costanetoa Bat. & J.L. Bezerra (1)
Crandallia Ellis & Sacc. (4)
Craneomyces Morgan-Jones, R.C. Sinclair & Eicker (1)
Craspedodidymella F.R. Barbosa, R.F. Castañeda & Gusmão (1)
Creodiplodina Petr. (1)
Creonecte Petr. (1)
Creoseptoria Petr. (1)
Creothyriella Bat. & C.A.A. Costa (1)
Cribropeltis Tehon (1)
Crinigera I. Schmidt (1)
Crousobrauniella Sh. Kumar, Raghv. Singh, D.P. Singh & Kamal (1)
Crustodiplodina Punith. (1)
Cryptoceuthospora Petr. (1)
Cryptocoryneopsis B. Sutton (1)
Cryptosporium Kunze (ca 20)
Cryptumbellata Udagawa & Uchiy. (1)
Ctenosporium R. Kirschner (1)
Cubasina R.F. Castañeda (2)
Culicidospora R.H. Petersen (2)
Culicinomyces Couch, Romney & B. Rao (2)
Curucispora Matsush. (3)
Curvulariopsis M.B. Ellis (1)
Cyanopatella Petr. (1)

Cyanopyrenia Harada (1)
Cyclomarsonina Petr. (1)
Cylindrogloeum Petr. (1)
Cylindromyces Manohar., D.K. Agarwal & N.K. Rao (1)*
Cylindrothyrium Maire (1)
Cylindroxyphium Bat. & Cif. (1)
Cyrtidium Vain (3)
Cyrtidula Minks (ca 5)
Cyrtopsis Vain. (1)
Cystodium Fée (1)
Cystotricha Berk. & Broome (3)
Cytodiscula Petr. (1)
Cytogloeum Petr. (1)
Cytonaema Höhn. (3)
Cytoplacosphaeria Petr. (2)
Cytosphaera Died. (2)
Cytosporella Sacc. (ca 15)
Cyttariella Palm (1)
Dactylifera Alcorn (1)
Dactylosporium Harz (3)
Dasysticta Speg. (1)
Davisiella Petr. (3)
Deichmannia Alstrup & D. Hawksw. (1)
Delortia Pat. & Gaillard (2)
Dendrodomus Bubák (1)
Dendrographiella Agnihothr. (1)
Dendrographium Massee (6)
Dendrospora Ingold (10)
Dendrosporium Plakidas & Edgerton ex J.L. Crane (2)
Dendryphiosphaera Lunghini & Rambelli (4)
Dennisographium Rifai (2)
Dentocircinomyces R.F. Castañeda & W.B. Kendr. (1)
Descalsia A. Roldán & Honrubia (1)
Desertella Mouch. (2)
Dexhowardia J.J. Taylor (1)
Diaboliumbilicus I. Hino & Katum. (2)
Diademospora B.E. Söderstr. & Bååth (1)
Diarimella B. Sutton (1)
Dichelostroma Bat. & Peres (1)
Dicholobodigitus G.P. White & Illman (1)
Dichotomophthoropsis M.B. Ellis (2)
Dichotophora Whitton, K.D. Hyde & McKenzie (2)
Dictyoaquaphila J.S. Monteiro, L.B. Conç., M.F.O. Marques, Gusmão & R.F. Castañeda (2)
Dictyoceratosporella Y.R. Ma & X.G. Zhang (3)
Dictyophrynella Bat. & Cavalc. (1)
Dictyopolyschema M.B. Ellis (1)
Dictyorostrella U. Braun (1)
Dictyospiropes M.B. Ellis (1)
Dictyotrichocladium Fiuza, Gusmão & R.F. Castañeda (1)
Didymochaetina Bat. & J.L. Bezerra (1)
Didymopsis Sacc. & Marchal (4)
Diedickea Syd. & P. Syd. (4)

Digicatenosporium S.M. Leão, Gusmão & R.F. Castañeda (1)
Digitopodium U. Braun, Heuchert & K. Schub. (4)
Digitoramispora R.F. Castañeda & W.B. Kendr. (4)
Dimastigosporium Faurel & Schotter (2)
Diplocladiella G. Arnaud ex M.B. Ellis (8)
Diplodinis Clem. (2)
Diplodinula Tassi (ca 50)
Diploplenodomus Died. (2)
Diplosporonema Höhn. (1)
Diplozythiella Died. (1)
Dipyrgis Clem. (1)
Discogloeum Petr. (4)
Discomycetoidea Matsush. (1)
Discosiellina Subram. & K.R.C. Reddy (1)
Discosporina Höhn. (3)
Discotheciella Syd. & P. Syd. (1)
Discozythia Petr. (1)
Dissitimurus E.G. Simmons, McGinnis & Rinaldi (1)
Distobactrodesmium Z. Niu, K. Zhang & R.F. Castañeda (1)*Notes 141, 818
Distoceratosporella J.S. Monteiro, Gusmão & R.F. Castañeda (4)
Distophragmia R.F. Castañeda, S.M. Leão & Gusmão (1)
Ditangifibula G.C. Adams (1)
Domingoella Petr. & Cif. (4)
Dothideodiplodia Murashk. (1)
Dothioropsis Riedl (1)
Drepanospora Berk. & M.A. Curtis (1)
Drudeola Kuntze (1)
Drumopama Subram. (2)
Dryosphaera Jørg. Koch & E.B.G. Jones (2)
Dualomyces Matsush. (2)
Dwayabeeja Subram. (2)
Dwayaloma Subram. (1)
Dwayalomella Brisson, Piroz. & Pauzé (2)
Dwibahubeeja N. Srivast., A.K. Srivast. & Kamal (1)
Dwibeeja Subram. (1)
Dwiroopella Subram. & Muthumary (1)
Ebollia Minter & Caine (2)
Echinochondrium Samson & Aa (1)
Echinoconidiophorum Pereira-Carv. & Dianese (1)
Effetia Bartoli, Maggi & Persiani (1)*Note 146
Eiona Kohlm. (1)
Elachopeltella Bat. & Cavalc. (2)
Elattopycnis Bat. & Cavalc. (1)
Elegantimyces Goh, C.K.M. Tsui & K.D. Hyde (1)
Ellisembiopsis T.S. Santa Izabel & Gusmão (2)
Ellismarsporium R.F. Castañeda & X.G. Zhang (8)
Elotespora R.F. Castañeda & Heredia (3)
Embryonispora G.Z. Zhao (1)
Enantioptera Descals (2)
Endobotrya Berk. & M.A. Curtis (1)
Endobotryella Höhn. (1)
Endocolium Syd. (2)

Endoconospora Gjaerum (2)
Endocoryneum Petr. (3)
Endogenospora R.F. Castañeda, O. Morillo & Minter (1)
Endomelanconium Petr. (4)
Endophragmiella B. Sutton (ca 100)*Note 151, 1563
Endophragmiopsis M.B. Ellis (1)
Endoplacodium Petr. (1)
Endoramularia Petr. (1)
Endosporoideus W.H. Ho, Yanna, K.D. Hyde & Goh (1)
Endozythia Petr. (1)
Enerthidium Syd. (1)
Engelhardtiella A. Funk (1)
Enridescalsia R.F. Castañeda & Guarro (1)
Enthallopycnidium F. Stevens (2)
Entoderma Hanula, Andreadis & M. Blackw. (1)
Epaphroconidia Calat. & V. Atienza (1)
Ephelidium C.W. Dodge & E.D. Rudolph (1)
Epiclinium Fr. (2)
Epicoccospora Budathoki & S.K. Singh (1)
Episporogoniella U. Braun (1)
Epistigme Syd. (6)
Epithyrium (Sacc.) Trotter (4)
Eriocercospora Deighton (3)
Eriospora Berk. & Broome (1)
Erispora Pat. (1)
Evanidomus Caball. (1)
Everhartia Sacc. & Ellis (5)
Everniicola D. Hawksw. (1)
Eversia J.L. Crane & Schokn. (2)
Excipularia Sacc. (5)
Exophoma Weedon (1)
Exosporella Höhn. (1)
Exosporodiella Ganie, Azam & A.H. Wani (1)
Fairmaniella Petr. & Syd. (1)
Farriolla Norman (2)
Favostroma B. Sutton & E.M. Davison (1)
Feltgeniomyces Diederich (6)
Fenestroconidia Calat. & Etayo (1)
Fissuricella Pore, D'Amatao & Ajello (1)
Flabellocladia Nawawi (1)
Flabellospora Alas. (7)
Frigidispora K.D. Hyde & Goh (1)
Fujimyces Minter & Caine (1)
Fuligomyces Morgan-Jones & Kamal (3)
Fumagopsis Speg. (3)
Furcaspora Bonar (4)*Coel
Fusamen (Sacc.) P. Karst. (5)
Fuscophialis B. Sutton (4)
Fusticeps J. Webster & R.A. Davey (5)
Gaeumanniella Petr. (1)
Gallaicolichen Serux. & Lücking (1)
Gampsonema Nag Raj (1)

Gangliophora Subram. (1)
Garnaudia Borowska (3)
Gaubaea Petr. (3)
Gelatinocrinis Matsush. (1)
Gelatinopycnis Dyko & B. Sutton (1)
Geminoarcus K. Ando (4)
Gemmulina Descals & Marvanová (1)
Geohypha (Fr.) Hennebert (1)*Note 180
Gilmaniella G.L. Barron (8)
Glaphyriopsis B. Sutton & Pascoe (2)
Glioannellodochium Matsush. (1)
Glioblastocladium Matsush. (1)
Globoconidiopsis G.F. Sepúlveda, Pereira-Carv. & Dianese (1)
Globoconidium G.F. Sepúlveda, Pereira-Carv. & Dianese (1)
Gloeocoryneum Weindlm. (3)
Gloeodes Colby (1)
Gloeosporiella Cavara (2)
Gloiosphaera Höhn. (1
Glutinium Fr. (2)
Goidanichiella G.L. Barron ex W. Gams (3)
Gonatobotryum Sacc. (9)
Gonatophragmiopsis Gusmão, J.S. Monteiro & R.F. Castañeda (1)
Goosiella Morgan-Jones, Kamal & R.K. Verma (1)
Goosiomyces N.K. Rao & Manohar. (2)
Grallomyces F. Stevens (1)
Graphiothecium Fuckel (4)
Groveolopsis Boedijn (1)*Coel
Guarroa M. Calduch, Gené, Heredia & R.F. Castañeda (1)
Guedea Rambelli & Bartoli (4)
Guelichia Speg. (1)
Gymnoxyphium Cif., Bat. & I.J. Araújo (2)
Gyrophthorus Hafellner & Sancho (3)
Hadronema Syd. & P. Syd. (4)
Hadrosporium Syd. (2)
Halysiomyces E.G. Simmons (1)
Hansfordiopeltis Bat. & C.A.A. Costa (5)
Hansfordiopeltopsis M.L. Farr (1)
Hapalosphaeria Syd. (1)
Haplariopsis Oudem. (2)
Haplobasidion Erikss. (5)
Haplolepis Syd. (2)
Haptocara Drechsler (1)
Harmoniella V.N. Boriss. (2)
Harpographium Sacc. (8)
Harpostroma Höhn. (1)
Heimiodora Nicot (2)
Helensiella Minter, R.F. Castañeda & Heredia (1)
Helhonia B. Sutton (1)*Coel
Helicofilia Matsush. (2)
Helicogoosia Hol.-Jech. (1)
Helicominopsis Deighton (2)
Helicorhoidion S. Hughes (7)

Helicosingula P.S. van Wyk, Marasas, Baard & Knox-Dav. (1)
Helicothyrium I. Hino & Katum. (1)
Helicoubisia Lunghini & Rambelli (1)
Heliscella Marvanová (2)
Heliscina Marvanová (2)
Helminthosporiomyces G.F. Sepúlveda, Pereira-Carv. & Dianese (1)
Helochora Sherwood (1)
Hemicorynesporella Subram. (1)
Hemidothis Syd. & P. Syd. (5)
Hemisphaeropsis Petr. (1)
Hendersoniella Tassi (5)
Hendersonina E.J. Butler (1)
Hendersoniopsis Höhn. (1)
Hendersonula Speg. (ca 20)
Hendersonulina Petr. (ca 50)
Henfellra Halici, D. Hawksw., Z. Kocak. & M. Kocak (1)
Henicospora P.M. Kirk & B. Sutton (6)
Herposira Syd. (1)
Herreromyces R.F. Castañeda & W.B. Kendr. (1)
Heterocephalum Thaxt. (2)
Heterosporiopsis Petr. (1)
Heuflera Bail (1)
Hexacladium D.L. Olivier (1)
Himantia Pers. (2)
Hinoa Hara & I. Hino (2)
Hobsoniopsis D. Hawksw. (1)
Holubovaea Mercado (1)
Homalopeltis Bat. & Valle (1)
Hoornsmania Crous (1)
Hormiactis Preuss (4)
Hormiscioideus M. Blackw. & Kimbr. (1)
Hormocephalum Syd. (1)
Hormographis Guarro, Punsola & Arx (1)
Hughesinia J.C. Lindq. & Gamundí (3)
Hyalobelemnospora Matsush. (1)
Hyalocamposporium Révay & J. Gönczöl (2)
Hyalocephalotrichum Nagaraju, Kunwar, Sureshk. & Manohar. (1)
Hyalocladium Mustafa (1)
Hyalocylindrophora J.L. Crane & Dumont (2)
Hyalodermella Speg. (1)
Hyalodictyum Woron. (1)
Hyalohelicomina T. Yokoy. (1)
Hyalopleiochaeta R.F. Castañeda, Guarro & Cano (1)
Hyalopyrenia H. Harada (1)
Hyalosynnema Matsush. (1)
Hyalothyridium Tassi (2)
Hydrometrospora J. Gönczöl & Révay(1)
Hymenella Fr. (10)
Hymeniopeltis Bat. (3)
Hymenobactron (Sacc.) Höhn. (1)
Hymenobia Nyl. (1)
Hymenopsis Sacc. (10)

Hyphodiscosia Lodha & K.R.C. Reddy (5)
Hyphodiscosioides Matsush. (1)
Hyphopolynema Nag Raj (6)
Hyphostereum Pat. (1)
Hyphothyrium B. Sutton & Pascoe (1)
Hyphozyma de Hoog & M.T. Sm. (1)
Hypocline Syd. (1)*Coel
Hypodermina Höhn. (2)
Hypogloeum Petr. (1)
Hypotrachynicola Etayo (1)
Hysteridium P. Karst. (1)
Hysterodiscula Petr. (1)
Hysteropycnis Hilitzer (5)
Ialomitzia Gruia (1)
Idiocercus B. Sutton (2)
Igneocumulus A.W. Ramaley (1)
Imicles Shoemaker & Hambl. (2)
Impudentia Vujanović (1)
Inesiosporium R.F. Castañeda & W. Gams (2)
Inifatiella R.F. Castañeda (1)
Intercalarispora J.L. Crane & Schokn. (1)
Intralichen D. Hawksw. & M.S. Cole (4)
Ionophragmium Peres (1)
Irpicomyces Deighton (2)
Ischnostroma Syd. & P. Syd. (1)
Isthmoconidium Etayo & Fr. Berger (1)
Isthmolongispora Matsush. (9)
Isthmophragmospora Kuthub. & Nawawi (2)
Isthmotricladia Matsush. (3)
Ityorhoptrum P.M. Kirk (4)
Iyengarina Subram. (3)
Javonarxia Subram. (2)
Jayarambhatia J. Pratibha (1)
Jerainum Nawawi & Kuthub. (1)
Jubispora B. Sutton & H.J. Swart (1)
Junctospora Minter & Hol.-Jech. (1)
Kalamarospora G. Delgado (1)
Kalchbrenneriella Diederich & M.S. Christ. (1)
Kaleidosporium Van Warmelo & B. Sutton (1)
Kamatella Anahosur (3)
Kameshwaromyces Kamal, R.K. Verma & Morgan-Jones (2)
Katherinomyces Khodos. (1)*Fp300
Keissleriomyces D. Hawksw. (1)
Kendrickiella K. Jacobs & M.J. Wingf. (1)
Ketubakia Kamat, Varghese & V.G. Rao (1)
Kiliophora Kuthub. & Nawawi (5)
Kionocephala P.M. Kirk (1)
Kmetia Bres. & Sacc. (2)
Kmetiopsis Bat. & Peres (1)
Knemiothyrium Bat. & J.L. Bezerra (1)
Kodonospora K. Ando (1)
Kolletes Kohlm. & Volkm.-Kohlm. (1)

Kontospora A. Roldán, Honrubia & Marvanová (1)
Korunomyces Hodges & F.A. Ferreira (3)
Kostermansinda Rifai (4)
Kostermansindiopsis R.F. Castañeda (1)
Kramabeeja G.V. Rao & K.A. Reddy (1)
Kreiseliella Braun (1)
Kumanasamuha P. Rag. Rao & D. Rao (4)
Kutilakesa Subram. (2)
Kyphophora B. Sutton (1)
Lacellina Sacc. (6)
Lacellinopsis Subram. (6)
Laciniocladium Petri (1)
Lagenomyces Cavalc. & A.A. Silva (1)
Lambdasporium Matsush. (3)
Lambinonia Sérus. & Diederich (1)
Laocoön J.C. David (1)
Lappodochium Matsush. (1)
Lasiothyrium Syd. & P. Syd. (1)
Lasmeniella Petr. & Syd. (6)
Latericonis G.V. Rao, K.A. Reddy & de Hoog (1)
Lateriramulosa Matsush. (5)
Laterispora Uecker, W.A. Ayers & P.B. Adams (1)
Lawalreea Diederich (1)
Lecaniocola Brain (1)
Leeina Petr. (1)
Leightoniomyces D. Hawksw. & B. Sutton (2)
Lembuncula Cif. (1)
Lemkea Morgan-Jones & R.C. Sinclair (1)
Lepisticola W. Gams (1)
Leprieurinella Bat. & H. Maia (1)
Leptascospora Speg. (1)
Leptochlamys Died. (2)
Leptodermella Höhn. (1)
Leptophyllosticta I.E. Brezhnev (1)
Leptostromella (Sacc.) Sacc. (= *Sphaeriostromella* Bubák) (14)
Leptothyrella Sacc. (12)
Leptothyrium Kunze (ca 85)
Leucoconiella Bat., H. Maia & Peres (1)
Leucoconis Theiss. & Syd. (1)
Leucodochium Syd. & P. Syd. (1)
Leuliisinea Matsush. (2)
Lichenobactridium Diederich & Etayo (1)
Lichenohendersonia Calat. & Etayo (4)
Lichenopeziza Zukal (1)
Lichenophoma Keissl. (2)
Lichenopuccinia D. Hawksw. & Hafellner (1)
Lichenostella Calat. & Etayo (1)
Linochorella Syd. & P. Syd. (1)
Linodochium Höhn. (5)
Listeromyces Penz. & Sacc. (1)
Lithopythium Bornet & Flahault (1)
Lobatopedis P.M. Kirk (5)

Loliomyces Maire (1)
Lomachashaka Subram. (5)
Lonavalomyces Rashmi Dubey, **nom. inval.** (1)*Note 257
Ludwigomyces Kirschst. (1)
Luxuriomyces R.F. Castañeda (1)
Luzfridiella R.F. Castañeda & W.B. Kendr. (1)
Lylea Morgan-Jones (7)
Lysotheca Cif. (1)
Mackenziella Yanna & K.D. Hyde (1)
Macroallantina Speer (1)
Macrodiplodia Sacc. (3)
Macrotrichum Grev. (2)
Magmopsis Nyl. (2)
Mahabalella B. Sutton & S.D. Patil (4)
Manginella Bat. & H. Maia (2)
Mapletonia B. Sutton (1)
Margarinomyces Laxa (1 *fide* Kirk et al. 2008)
Martinellisia V.G. Rao & Varghese (1)
Massalongina Bubák (1)
Matsushimiella R.F. Castañeda & Heredia (2)
Matsushimomyces V.G. Rao & Varghese (2)
Medusamyces G.L. Barron & Szijarto (1)
Megalodochium Deighton (4)
Melanocephala S. Hughes (5)
Melanophoma Papendorf & J.W. du Toit (1)
Melophia Sacc. (5)
Menidochium R.F. Castañeda & W.B. Kendr. (1)
Mercadomyces J. Mena (1)
Merismella Syd. (6)
Mesocorynespora Jian Ma, X.G. Zhang & R.F. Castañeda (1)*Xu et al. 2020
Metadiplodia Syd. (ca 20)
Metazythia Petr. (1)
Metazythiopsis M. Morelet (1)
Microblastosporon Cif. (1)
Microclava F. Stevens (5)
Microdiscula Höhn. (2)
Microdothiorella C.A.A. Costa & Sousa da Câmara (1)
Microhendersonula Dias & Sousa da Câmara (1)
Micromastia Speg. (2)
Microperella Höhn. (1)
Micropustulomyces R.W. Barreto (1)
Microtyle Speg. (1)
Microxyphiella Speg. (10)
Microxyphiopsis Bat. (2)
Mindoa Petr. (3)
Minteriella Heredia, R.F. Castañeda & R.M. Arias (1)*Fp170
Minutophoma D. Hawksw. (1)
Mirandina G. Arnaud ex Matsush. (8)*FoF
Mirimyces Nag Raj (1)
Monochaetiella E. Castell. (1)
Monochaetinula Muthumary, Abbas & B. Sutton (6)
Monochaetopsis Pat. (1)

Monodia Breton & Faurel (2)
Monodidymaria U. Braun (5)
Monodisma Alcorn (1)
Monostichella Höhn. (10)
Moralesia Urries (1)
Morganjonesia R.F. Castañeda, K. Zhang & D.W. Li (2)
Muriformispora N.I. de Silva, S. Lumyong & K.D. Hyde (1)*Note 1410
Morrisographium M. Morelet (7)
Mucosetospora M. Morelet (1)
Muiogone Thaxt. (1)
Muirella R. Sprague (1)
Murogenella Goos & E.F. Morris (1)
Mycelephas R.F. Castañeda (2)
Mycocentrodochium K. Matsush. & Matsush. (1)
Mycoenterolobium Goos (5)
Mycohypallage B. Sutton (2)
Mycopara Bat. & J.L. Bezerra (1)
Mycospraguea U. Braun & Rogerson (1)
Mycosticta Höhn. (2)
Mycotodea Kirschst. (1)
Mycousteria M.L. Farr (2)
Myiocoprula Petr. (1)
Myriellina Höhn. (2)
Myrmecomyces Jouvenaz & Kimbr. (1)
Myrotheciastrum Abbas & B. Sutton (1)
Mystrosporiella Munjal & Kulshr. (4)
Myxoparaphysella Caball. (1)
Myxosporella Sacc. (4)
Myxosporidiella Negru (4)
Myxostomellina Syd. (1)
Myxothyriopsis Bat. & A.F. Vital (1)
Myxothyrium Bubák & Kabát (3)
Naemosphaera P. Karst. (16)
Naemosphaerella Höhn. (2)
Nagrajia R.F. Castañeda & W.B. Kendr. (1)
Nagrajomyces Mel'nik (1)
Nakatopsis Whitton, McKenzie & K.D. Hyde (2)
Nanoschema B. Sutton (1)
Naothyrsium Bat. (1)
Necraphidium Cif. (1)
Nematogonum Desm. (3)
Nematographium Goid. (5)
Nemozythiella Höhn. (1)
Neoalpakesa Punith. (1)
Neoarbuscula B. Sutton (1)
Neobarclaya Sacc. (1)
Neodiplodina Petr. (1)
Neofuckelia Zeller & Goodd. (1)
Neoheteroceras Nag Raj (2)
Neojohnstonia B. Sutton (2)
Neoligniella Naumov (1)
Neomarssoniella U. Braun (1)

Neopeltis Syd. (1)
Neopericonia Kamal, A.N. Rai & Morgan-Jones (1)
Neophoma Petr. & Syd. (5)
Neoplaconema B. Sutton (2)
Neopodoconis Rifai (2)
Neospegazzinia Petr. & Syd. (1)
Neosporidesmina R.F. Castañeda, Rajn.K. Verma, Prasher, Sushma, A.K. Gautam & Rajeshk. (1)*Note 673
Neottiospora Desm. (8)
Neozythia Petr. (2)
Neta Shearer & J.L. Crane (10)
Nidulispora Nawawi & Kuthub. (1)
Nigrolentilocus R.F. Castañeda & Heredia (5)
Nigromacula Etayo (1)
Nigropuncta D. Hawksw. (2)
Nosophloea Fr. (3)
Nothospora Peyronel (1)
Novozymia W.P. Wu (1)
Nummospora E. Müll. & Shoemaker (1)
Nusia Subram. (2)
Nyctalospora E.F. Morris (1)
Nypaella K.D. Hyde & B. Sutton (1)
Obeliospora Nawawi & Kuthub. (5)
Obstipipilus B. Sutton (1)
Octopodotus Kohlm. & Volkm.-Kohlm. (1)
Odontodictyospora Mercado (1)
Ojibwaya B. Sutton (1)
Omega B. Sutton & Minter (1)
Oncopodium Sacc. (10)
Oncospora Kalchbr. (4)
Oncosporella P. Karst. (1)
Oncostroma Bat. & Marasas (1)
Onychophora W. Gams, P.J. Fisher & J. Webster (1)
Oothyrium Syd. (1)
Ophiosira Petr. (1)
Orphanocoela Nag Raj (3)
Ostracoderma Fr. (8)
Ostracodermidium Mukerji (1)
Oswaldina Rangel (1)
Paathramaya Subram. (3)
Pachycladina Marvanová (3)
Palawaniopsis Bat., Cif. & Nascim. (1)
Papilionospora V.G. Rao & B. Sutton (1)
Pappimyces B. Sutton & Hodges (1)
Paraaoria R.K. Verma & Kamal (1)
Paraarthrocladium Matsush. (1)
Parablastocatena Y.D. Zhang & X.G. Zhang (1)*Fp171
Paraceratocladium R.F. Castañeda (6)
Parachionomyces Thaung (1)
Paracostantinella Subram. & Sudha (1)
Paracytospora Petr. (1)
Paradendryphiopsis M.B. Ellis (5)

Paradidymobotryum C.J.K. Wang & B. Sutton (1)
Paradiplodia Speg. ex Trotter (1)
Paradischloridium Bhat & B. Sutton (1)
Paradiscula Petr. (1)
Parafulvia Kamal, A.N. Rai & Morgan-Jones (1)
Paraharknessia Matsush. (1)
Parahyalotiopsis Nag Raj (2)
Paramassariothea Subram. & Muthumary (1)
Paramenisporopsis Matsush. (1)
Parapericonia M.B. Ellis (2)
Parapericoniella U. Braun, Heuchert & K. Schub. (1)
Paraphaeoisaria de Hoog & Morgan-Jones (1)
Parapithomyces Thaung (2)
Parapyricularia M.B. Ellis (4)
Pararobillarda Matsush. (1)
Parasphaeropsis Petr. (1)
Parastigmatellina Bat. & C.A.A. Costa (4)
Paratetraploa M.K.M. Wong & K.D. Hyde (1)
Parathozetella F.R. Barbosa, J.S. Monteiro, Fiuza, R.F. Castañeda & Gusmão (1)*Note 768
Paratomenticola M.B. Ellis (2)
Paratrichoconis Deighton & Piroz. (3)
Paraulocladium R.F. Castañeda (3)
Paspalomyces Linder (1)
Patriciomyces D. Hawksw. (1)
Pazschkeella Syd. & P. Syd.
Peethasthabeeja P. Rag. Rao (1)
Pellionella (Sacc.) Sacc. (4)
Peltasterinostroma Punith. (1)
Peltasteropsis Bat. & H. Maia (9)
Peltistroma Henn. (5)
Peltistromella Höhn. (1)
Peltosoma Syd. (1)
Peltostromellina Bat. & A.F. Vital (1)
Peltostromopsis Bat. & A.F. Vital (1)
Pentaster Koukol (1)
Perelegamyces R.F. Castañeda & W.B. Kendr. (1)
Perizomella Syd. (1)
Pestalozziella Sacc. & Ellis ex Sacc. (3)
Petrakiopsis Subram. & K.R.C. Reddy (1)
Phacostroma Petr. (1)
Phacostromella Petr. (1)
Phaeoblastophora Partr. & Morgan-Jones (2)
Phaeocandelabrum R.F. Castañeda, Gusmão, Guarro & Iturr. (4)
Phaeodactylium Agnihothr. (7)
Phaeodiscula Cub. (2)
Phaeodomus Höhn. (4)
Phaeohiratsukaea Udagawa & Iwatsu (1)
Phaeoidiomyces Dorn.-Silva & Dianese (2)
Phaeolabrella Speg. (1)
Phaeomonilia R.F. Castañeda, Heredia & R.M. Arias (5)
Phaeomonostichella Keissl. ex Petr. (1)
Phaeoschizotrichum C.R. Silva, Gusmão & R.F. Castañeda (1)

Phaeostilbelloides Armando, Z.M. Chaves & Dianese (1)
Phaeothyrium Petr. (1)
Phaeotrichoconis Subram. (7)
Phellostroma Syd. & P. Syd. (1)*Coel
Phialophaeoisaria Matsush. (1)
Phialostele Deighton (1)
Phialotubus R.Y. Roy & Leelav. (1)
Phloeosporina Höhn. (3)
Phomachora Petr. & Syd. (4)
Phomatosporella Tak. Kobay. & K. Sasaki (1)
Phomyces Clem. (1)
Phragmoconidium G.F. Sepúlveda, Pereira-Carv. & Dianese (1)
Phragmopeltis Henn. (5)
Phragmospathula Subram. & N.G. Nair (4)
Phragmospathulella J. Mena & Mercado (1)
Phthora d'Hérelle (1)
Phylloedium Fr. (1)
Phyllohendersonia Tassi (1)
Physalidiella Rulamort (3)
Physalidiopsis R.F. Castañeda & W.B. Kendr. (1)
Piggotia Berk. & Broome (9)
Pinatubo J.B. Manandhar & Mew (1)
Piperivora Siboe, P.M. Kirk & P.F. Cannon (1)
Piricaudilium Hol.-Jech. (2)
Piricaudiopsis J. Mena & Mercado (1)
Pirispora Faurel & Schotter (1)
Pirostomella Sacc. (2)
Pithosira Petr. (1)
Pittostroma Kowalski & T.N. Sieber (1)
Placella Syd. (1)
Placodiplodia Bubák (6)
Placonema (Sacc.) Petr. (1)*Coel
Placonemina Petr. (1)
Placosphaerina Maire (1)
Placothea Syd. (1)
Placothyrium Bubák (1)
Plectonaemella Höhn. (2)
Plectopeltis Syd. (1)
Plectophomopsis Petr. (1)
Plectopycnis Bat. & A.F. Vital (4)
Plectosira Petr. (1)
Plectronidiopsis Nag Raj (1)*Coel
Plectronidium Nag Raj (5)
Plenocatenulis Bat. & Cif. (2)
Plenophysa Syd. & P. Syd. (1)
Plenotrichopsis Bat. (1)
Plenotrichum Syd. (2)
Plenozythia Syd. & P. Syd. (2)
Pleocouturea G. Arnaud 1)
Plesiospora Drechsler (1)
Pleurodesmospora Samson, W. Gams & H.C. Evans (3)
Pleurodomus Petr. (1)

Pleuropedium Marvanová & S.H. Iqbal (3)
Pleurophomopsis Petr. (7)*Coel
Pleuroplaconema Petr. (1)
Pleuroplacosphaeria Syd. (1)
Pleurotheciopsis B. Sutton (7)
Pleurothyriella Petr. & Syd. (1)
Pocillopycnis Dyko & B. Sutton (1)
Podoplaconema Petr. (3)
Podosporiella Ellis & Everh. (3)
Podosporiopsis Jian Ma, X.G. Zhang & R.F. Castañeda (2)
Poikilosperma Bat. & J.L. Bezerra (1)
Polybulbophiale Goh & K.D. Hyde (1)
Polychaetella Speg. (3)
Polycladium Ingold (1)
Polydesmus Mont. (6)
Polyetron Bat. & Peres (1)
Polylobatispora Matsush. (4)
Polyrostrata T.P. Devi & N. Mathur (1)
Polystomellomyces Bat. (1)
Polystratorictus Matsush. (2)
Polytretophora Mercado (3)
Porocladium Descals (1)
Poroisariopsis M. Morelet (2)
Poropeltis Henn. (1)
Porophilomyces U. Braun (1)
Porosubramaniania Hol.-Jech. (2)
Porrectotheca Matsush. (1)
Potamomyces K.D. Hyde (10)
Proboscispora Punith. (1)*Coel
Protostegiomyces Bat. & A.F. Vital (2)
Protostroma Bat. (2)
Pseudoacrodictys W.A. Baker & Morgan-Jones (13)
Pseudoanguillospora S.H. Iqbal (3)
Pseudoaristastoma Suj. Singh (1)
Pseudoasperisporium U. Braun (3)
Pseudobasidiospora Dyko & B. Sutton (1)*Coel
Pseudocanalisporium R.F. Castañeda & W.B. Kendr. (1)
Pseudocenangium P. Karst. (2)
Pseudochuppia Kamal, A.N. Rai & Morgan-Jones (1)
Pseudoconium Petr. (1)
Pseudocytoplacosphaeria Punith. & Spooner (1)
Pseudocytospora Petr. (1)
Pseudodeightoniella S.K. Verma, Sanj. Yadav & Raghv. Singh (1)*Note 852
Pseudodichomera Höhn. (2)
Pseudodiplodia (P. Karst.) Sacc. (ca 45)
Pseudodiscula Laubert (2)
Pseudofuscophialis Sivan. & H.S. Chang (1)
Pseudogaster Höhn. (1)
Pseudographiella E.F. Morris (3)
Pseudohepatica P.M. Jørg. (2)
Pseudomicrodochium B. Sutton (ca 10)
Pseudoneottiospora Faurel & Schotter (3)*Coel

Pseudopatellina Höhn. (1)
Pseudopeltistroma Katum. (1)
Pseudoperitheca Elenkin (1)
Pseudopetrakia M.B. Ellis (2)
Pseudophloeosporella U. Braun (1)
Pseudophragmotrichum W.P. Wu, B. Sutton & Gange (1)
Pseudopolystigmina Murashk. (1)
Pseudoramularia Matsush. (1)
Pseudorhizopogon Kobayasi (1)
Pseudoschizothyra Punith. (1)
Pseudosigmoidea K. Ando & N. Nakam. (4)
Pseudostegia Bubák (1)*Coel
Pseudothyrium Höhn. (1)*Coel
Pseudotorula Subram. (3)
Pseudotracylla B. Sutton & Hodges (2)
Pseudozythia Höhn. (1)
Psilosphaeria Cooke (1)
Pteromycula P. Cannon (1)
Pterulopsis Wakef. & Hansf. (1)
Pterygosporopsis P.M. Kirk (2)
Pucciniospora Speg. (1)
Pulchromyces Hennebert (1)
Pullospora Faurel & Schotter (2)*Coel
Pulvinella A.W. Ramaley (1)
Punctillina Toro (1)
Pycmaeosphaera Etayo & Diederich (1)
Pycnidioarxiella Punith. & N.D. Sharma (1)
Pycnidiopeltis Bat. & C.A.A. Costa (1)
Pycnis Bref. (1)
Pycnodactylus Bat., A.A. Silva & Cavalc. (1)
Pycnodallia Kohlm. & Volkm.-Kohlm. (1)
Pycnoharknessia Matsush. (1)
Pycnomma Syd. (1)
Pycnomoreletia Rulamort (2)
Pycnoseynesia Kuntze (2)
Pycnothera N.D. Sharma & G.P. Agarwal (2)
Pycnothyriella Bat. (1)
Pycnothyrium Diederich (4)
Pyramidospora Sv. Nilsson (8)
Pyrgostroma Petr. (1)
Pyripnomyces Cavalc. (1)
Quadracaea Lunghini, Pinzari & Zucconi (3)
Quadricladium Nawawi & Kuthub. (1)
Quasidiscus B. Sutton (1)
Queenslandia Bat. & H. Maia (5)
Quezelia Faurel & Schotter (1)
Raciborskiomyces Siemaszko (2)
Radiatispora Matsush. (1)
Raizadenia S.L. Srivast. (1)
Ramakrishnanella Kamat & Ullasa ex Ullasa (1)
Rambellia R.F. Castañeda, D.W. Li & P.M. Kirk (1)
Ramicapitulum Whitton, K.D. Hyde & McKenzie (1)

Ramicephala Voglmayr & G. Delgado (1)
Ramichloridiopsis Marg. Silva & R.W. Barreto (1)
Ramiphialis F.R. Barbosa, Fiúza & R.F. Castañeda (1)*Barbosa et al. 2020
Ramoconidiifera B. Sutton, Carmarán & A.I. Romero (3)
Randlanea Zhurb., Diederich & U.Braun (1)
Redbia Deighton & Piroz. (5)
Refractohilum D. Hawksw. (6)
Repetoblastiella R.F. Castañeda, Minter & M. Stadler (1)
Rhabdoclema Syd. (2)
Rhabdostromella Höhn. (1)
Rhabdostromina Died. (2)
Rhexoampullifera P.M. Kirk (6)
Rhexoprolifer Matsush. (1)
Rhinotrichella G. Arnaud ex de Hoog (3)
Rhipidocephalum Trail (2)
Rhizosphaerina B. Sutton (1)
Rhodesia Grove (1)*Coel
Rhodesiopsis B. Sutton & R. Campb. (1)*Coel
Rhodothallus Bat. & Cif. (2)
Rhombostilbella Zimm. (2)
Rhynchodiplodia Briosi & Farneti (2)
Rhynchomyces Willk. (1)
Rhynchoseptoria Unamuno (1)
Rhynchosporina Arx (2)
Riclaretia Peyronel (1)
Rileya A. Funk (1)*Coel
Robakia Petr. (1)
Rogergoosiella A. Hern.-Gut. & J. Mena (1)
Roscoepoundia Kuntze (1)
Rosulomyces S. Marchand & Cabral (1)
Rota Bat., Cif. & Nascim. (1)
Ruggieria Cif. & Montemart. (1)
Saania Zhurb. (1)
Sadasivania Subram. (3)
Sanjuanomyces R.F. Castañeda & W.B. Kendr. (1)
Sarcoexcipula Etayo (1)
Sarcophoma Höhn. (3)*Coel
Sativumoides S.C. Ren, Jian Ma & X.G. Zhang (1)
Sawantomyces R. Dubey & Moonamb. (1)
Scaphidium Clem. (2)*Coel
Sceptrifera Deighton (1)
Schizothyra Bat. & C.A.A. Costa (2)
Schizothyrella Thüm. (3)
Schizothyropsis Bat. & A.F. Vital (1)
Schizotrichum McAlpine (3)
Schwarzmannia Pisareva (2)
Scirrhophoma Petr. (1)
Sclerographiopsis Deighton (1)
Sclerographium Berk. (4)
Scleromeris Syd. (1)
Sclerophoma Höhn. (ca 30)
Scleropycnis Syd. & P. Syd. (1)

Sclerozythia Petch (1)
Scolecobasidiella M.B. Ellis (2)
Scolecobeltrania Iturr., R.F. Castañeda & Rob. Fernández (1)
Scolecodochium K. Matsush. & Matsush. (1)
Scolecosporiella Petr. (6)
Scolecotheca Søchting & B. Sutton (1)
Scolecozythia Curzi (1)
Scoliotidium Bat. & Cavalc. (1)
Scopaphoma Dearn. & House (1)*Coel
Scopulariella Gjaerum (1)
Scothelius Bat., J.L. Bezerra & Cavalc. (1)
Scutisporus K. Ando & Tubaki (1)
Scutopeltis Bat. & H. Maia (2)
Scutopycnis Bat. (2)
Seimatosporiopsis B. Sutton, Ghaffer & Abbas (1)
Selenosira Petr. (1)
Selenosporopsis R.F. Castañeda & W.B. Kendr. (1)
Septocytella Syd. (1)
Septogloeum Sacc. (17)
Septomyxella (Höhn.) Höhn. (1)
Septosporiopsis W.A. Baker & Morgan-Jones (1)
Septosporium Corda (5)
Septotrullula Höhn. (1
Sessiliospora D. Hawksw. (1)
Setolibertella Punith. & Spooner (1)
Setophiale Matsush. (1)
Setosporella Mustafa & Abdul-Wahid (1)
Seychellomyces Matsush. (2)
Seynesiopsis Henn. (1)
Shawiella Hansf. (1)
Sheariella Petr. (1)
Sheathnema Dubey & Moonambeth (1)
Shivomyces Hosag. (2)
Siamia V. Robert, Decock & R.F. Castañeda (1)
Sigmatomyces Sacc. & P. Syd. (1)
Similitrichoconis R.F. Castañeda, M. Vera & D. Sosa (1)*Vera et al. 2020
Simmonsiella J.L. Crane & A.N. Mill. (1)*Fp306
Sirexcipula Bubák (2)
Sirocyphis Clem. (1)
Sirogloea Petr. (1)
Siroligniella Naumov (2)
Sirophoma Höhn. (5)*Coel
Siroplacodium Petr. (6)*Coel
Siropleura Petr. (1)
Siroscyphellina Petr. (3)
Sirosperma Syd. & P. Syd. (2)
Sirosphaera Syd. & P. Syd. (1)
Sirosporonaemella Naumov (1)
Sirothecium P. Karst. (4)
Sirothyriella Höhn. (1)
Sirothyrium Syd. & P. Syd. (2)
Sirozythia Höhn. (1)

Sirozythiella Höhn. (1)
Sitochora H.B.P. Upadhyay (1)
Soloacrospora W.B. Kendr. & R.F. Castañeda (2)
Solosympodiella Matsush. (8)
Soloterminospora Matsush. (1)
Spermatoloncha Speg. (1)
Spermochaetella Cif. (1)
Spermospora R. Sprague (12)
Spermosporella Deighton (4)
Sphaeridium Fresen. (4)
Sphaeriothyrium Bubák (2)*Coel
Sphaeromma H.B.P. Upadhyay (3)
Sphaeronaema Fr. (ca 25)
Sphaerophoma Petr. (1)
Sphaerulomyces Marvanová (1)
Spinulospora Deighton (1)
Spiralum J.L. Mulder (2)
Spiropes Cif. (ca 30)
Splanchospora Lar.N. Vassiljeva (1)
Spondylocladiella Linder (2)
Spondylocladiopsis M.B. Ellis (1)
Sporhaplus H.B.P. Upadhyay (1)
Sporidesmiopsis Subram. & Bhat (6)
Sporodochiolichen Aptroot & Sipman (4)
Sporoglena Sacc. (1)
Sporophiala P. Rag. Rao (3)
Sporotretophora Whitton, McKenzie & K.D. Hyde (1)
Stachybotryella Ellis & Barthol. (1)
Stachybotryna Tubaki & T. Yokoy. (6)
Stagonopatella Petr. (1)
Stagonopsis Sacc. (4)
Stagonosporina Tassi (1)
Stagonostromella Petr. & Syd. (3)
Staheliella Emden (2)
Stalagmochaetia Cif. & Bat. (1)
Stanhughesiella R.F. Castañeda & D.W. Li (1)
Stauronema (Sacc.) Syd., P. Syd. & E.J. Butler (5)
Stauronematopsis Abbas, B. Sutton & Ghaffar (1)
Staurophoma Höhn. (2)*Coel
Stegonsporiopsis Van Warmelo & B. Sutton (1)
Stellifraga Alstrup & Olech (1)
Stellomyces Morgan-Jones, R.C. Sinclair & Eicker (2)
Stellopeltis Bat. & A.F. Vital (3)
Stellospora Alcorn & B. Sutton (2)
Stellothyriella Bat. & Cif. (1)
Stenocephalopsis Chamuris & C.J.K. Wang (1)
Stenocladiella Marvanová & Descals (1)
Stenospora Deighton (1)
Stevensonula Petr. (1)
Stictopatella Höhn. (3)
Stigmatellina Bat. & H. Maia (1)
Stigmea Fr. (1)

Stigmella Lév. (5)
Stigmopeltis Syd. (3)
Stilbellula Boedijn (2)
Stilbodendron Syd. & P. Syd. (2)
Stilbophoma Petr. (2)*Coel
Strasseriopsis B. Sutton & Tak. Kobay. (1)*Coel
Stratiphoromyces Goh & K.D. Hyde (2)
Striosphaeropsis Verkley & Aa (1)
Stromatocrea W.B. Cooke (1)
Stromatoneolamya Zhurb. (1)*Note 694
Stromatopogon Zahlbr. (3)
Stromatopycnis A.F. Vital (1)
Stromatostysanus Höhn. (4)
Strongylothallus Bat. & Cif. (1,)
Stygiomyces Coppins & S.Y. Kondr. (1)
Stylaspergillus B. Sutton, Alcorn & P.J. Fisher (1)
Subhysteropycnis Wedin & Hafellner (1)
Subulispora Tubaki (11)
Suttoniella S. Ahmad (4)*Coel
Suttonina H.C. Evans (1)
Syamithabeeja Subram. & Natarajan (1)
Sylviacollaea Cif. (1)
Symphysos Bat. & Cavalc. (1)
Sympodiocladium Descals (1)
Sympodioclathra Voglmayr (1)
Sympodioplanus R.C. Sinclair & Boshoff (3)
Sympodiosynnema J.W. Xia & X.G. Zhang (1)*Fp307
Synchronoblastia Uecker & F.L. Caruso (1)
Syncladium Rabenh. (1)
Synnemacrodictys W.A. Baker & Morgan-Jones (1)
Synnemaseimatoides K. Matsush. & Matsush. (1)
Synostomina Petr. (1)
Syphosphaera Dumort. (1)
Systremmopsis Petr. (1)
Taeniolina M.B. Ellis (6)
Talekpea Lunghini & Rambelli (1)
Talpapellis Alstrup & M.S. Cole (5)
Tandonea M.D. Mehrotra (1)
Tarsodisporus Bat. & A.A. Silva (1)
Tectacervulus A.W. Ramaley (1)
Telioclipeum Viégas (1)
Temerariomyces B. Sutton (2)
Teratosperma Syd. & P. Syd. (10)
Teratospermopsis Jian Ma, X.G. Zhang & R.F. Castañeda (1)*Notes 504, 882
Termitaria Thaxt. (6)
Tetrabrachium Nawawi & Kuthub. (1)
Tetrabrunneospora Dyko (1)
Tetracoccosporium Szabó (5)
Tetranacriella Kohlm. & Volkm.-Kohlm. (1)
Tetranacrium H.J. Huds. & B. Sutton (3)*Coel
Tetraposporium S. Hughes (2)
Textotheca Matsush. (1)

Thaptospora B. Sutton & Pascoe (1)
Thirumalacharia Rathaiah (1)
Tholomyces Matsush. (1)
Thoracella Oudem. (1)*Coel
Thrinacospora Petr. (1)*Coel
Thyriostromella Bat. & C.A.A. Costa (2)
Thyrostromella Höhn. (6)
Thyrsidiella Höhn. ex Höhn. (1)
Thyrsidina Höhn. (1)*Coel
Tiarosporellivora Punith. (1)
Ticogloea G. Weber, Spaaij & W. Gams (2)
Ticosynnema R.F. Castañeda, Granados & Mardones (1)
Titaea Sacc. (15)
Titaeopsis B. Sutton & Deighton (1)
Titaeospora Bubák (3)
Tomenticola Deighton (1)
Tompetchia Subram. (1)
Toxosporiella B. Sutton (1)
Toxosporiopsis B. Sutton & Sellar (3)
Toxosporium Vuill. (2)
Trematophoma Petr. (2)*Coel
Tremellidium Petr. (1)
Tretendophragmia Subram. (1)
Tretocephala Subram. (1)
Tretoheliocephala Gusmão, J.S. Monteiro & R.F. Castañeda (2)
Tretolylea Cantillo, R.F. Castañeda & Gusmão (1)
Tretovularia Deighton (1)
Tribolospora D.A. Reid (1)*Coel
Trichobolbus Bat. (1)
Trichobotrys Penz. & Sacc. (3)
Trichoconis Clem. (= *Pseudotrichoconis* W.A. Baker & Morgan-Jones (ca 20)
Trichodiscula Vouaux (1)
Trichodochium Syd. (3)
Trichomatoclava G.F. Sepúlveda, Pereira-Carv. & Dianese (1)
Trichomatomyces Dorn.-Silva & Dianese (1)
Trichomatosphaera Pereira-Carv., G.F. Sepúlveda & Dianese (1)
Trichopeltulum Speg. (1)
Trichoseptoria Cavara (3)
Trichosporiella Kamyschko (4)*Note 760
Trichosporodochium Dorn.-Silva & Dianese (1)
Tricladiella K. Ando & Tubaki (1)
Tricladiopsis Descals (2)
Tricladiospora Nawawi & Kuthub. (2)
Tricornispora Bonar (1)
Trifurcospora K. Ando & Tubaki (2)
Trigonosporium Tassi (2)
Tripoconidium Subram. (1)
Triposporina Höhn. (2)
Triramulispora Matsush. (3)
Triscelosporium Nawawi & Kuthub. (1)
Trisulcosporium H.J. Huds. & B. Sutton (1)
Troposporium Harkn. (1)

Troposporopsis Whitton, McKenzie & K.D. Hyde (2)
Tuberculispora Deighton & Piroz. (1)
Tulipispora Révay & Gönczöl (1)*Note 523
Tunicago B. Sutton & Pollack (2)
Turturconchata J.L. Chen, T.L. Huang & Tzean (1)
Tympanosporium W. Gams (1)
Uberispora Piroz. & Hodges (4)
Ubrizsya Negru (1)
Ulocoryphus Michaelides, L. Hunter & W.B. Kendr. (1)
Uniseta Ciccar. (1)
Urohendersonia Speg. (5)
Urohendersoniella Petr. (1)
Uvarispora Goos & Piroz. (1)
Vagnia D. Hawksw. & Miądl. (1)
Vanakripa Bhat, W.B. Kendr. & Nag Raj (10)
Vanbeverwijkia Agnihothr. (1)
Vanderystiella Henn. (1)
Vanterpoolia A. Funk (1)
Varioseptispora L. Qiu, Jian Ma, R.F. Castañeda & X.G. Zhang (4)*Note 531
Vasudevella Chona, Munjal & Bajaj (3)
Velloziomyces Armando, Z.M. Chaves & Dianese (1)
Velutipila D. Hawksw. (1)
Ventrographium H.P. Upadhyay, Cavalc. & A.A. Silva (1
Venustocephala Matsush. (1)
Venustosynnema R.F. Castañeda & W.B. Kendr. (3)
Veracruzomyces Mercado, Guarro, Heredia & J. Mena (1)
Veramycella G. Delgado (1)
Veramyces Matsush. (1)
Verdipulvinus A.W. Ramaley (1)
Veronaella Subram. & K.R.C. Reddy (1)
Veronidia Negru (1)
Verrucariella S. Ahmad (1)
Verrucophragmia Crous, M.J. Wingf. & W.B. Kendr. (1)
Verticicladus Matsush. (3)
Vesiculohyphomyces Armando, Pereira-Carv. & Dianese (1)
Virgariella S. Hughes (11)
Viridiannula Etayo (1)
Vittalia Gaws & Bhat (1)
Vizellopsidites M.A. Khan, M. Bera & Bera (1)
Vouauxiella Petr. & Syd. (4)
Waihonghopes Yanna & K.D. Hyde (1)
Wardinella Bat. & Peres (1)
Websteromyces W.A. Baker & Partr. (2)
Weufia Bhat & B. Sutton (1)
Wolkia Ramsb. (1)
Xenidiocercus Nag Raj (3)*Coel
Xenochora Petr. (2)
Xenoheteroconium Bhat, W.B. Kendr. & Nag Raj (1)
Xenokylindria DiCosmo, S.M. Berch & W.B. Kendr. (2)
Xenomyxa Syd. (1)
Xenopeltis Syd. & P. Syd. (1)
Xenoplaca Petr. (1)

Xeroconium D. Hawksw. (1)
Xiphomyces Syd. & P. Syd. (2)
Xiuguozhangia K. Zhang, R.F. Castañeda, Jian Ma & L.G. Ma (5)
Xylochia B. Sutton (2)
Xyloglyphis Clem. (1)
Xylohypha (Fr.) E.W. Mason (9)
Xylohyphopsis W.A. Baker & Partr. (1)
Yalomyces Nag Raj (1)*Coel
Yatesula Syd. & P. Syd. (2)*FoF10350, Tian et al. 2021a
Yinmingella Goh, C.K.M. Tsui & K.D. Hyde (1)
Ypsilomyces D.A.C. Almeida & Gusmão (1)
Yuccamyces Gour, Dyko & B. Sutton (6)
Zakatoshia B. Sutton (2)
Zebrospora McKenzie (1)
Zelandiocoela Nag Raj (1)*Coel
Zelodactylaria A.C. Cruz, Gusmão & R.F. Castañeda (1)*Fp172
Zelofuscophialis R.F. Castañeda, Gusmão, M.G.A. Primo & G.G. Barreto (1)
Zelopelta B. Sutton & R.D. Gaur (1)
Zelotetraploa J.S. Monteiro, Gusmão & R.F. Castañeda
Zetesimomyces Nag Raj (1)
Zevadia J.C. David & D. Hawksw. (1)
Zilingia Petr. (1)
Zinzipegasa Nag Raj (1)
Zopheromyces B. Sutton & Hodges (1)
Zunura Nag Raj (1)*Coel
Zyxiphora B. Sutton (1)

Phylum ***BASIDIOBOLOMYCOTA*** Doweld
Class ***Basidiobolomycetes*** Doweld
Basidiobolales Jacz. & P.A. Jacz.
Basidiobolaceae Engl. & E. Gilg
Basidiobolus Eidam (10)
Schizangiella J. Dwyer, B. Burwell, Humber, C. Mcleod, M. Fleetwood & T. Johnson bis (1)

Phylum ***BASIDIOMYCOTA*** R.T. Moore
Subphylum ***Agaricomycotina*** Doweld (due to the large number of *Agaricales* we use suborders as in He at al. 2024).
Class ***Agaricomycetes*** Doweld
Agaricales Underw.
Suborder ***Agaricineae*** Fr.
Agaricaceae Chevall. (= *Coprinaceae* Overeem & Weese; = *Podaxaceae* Corda; = *Tulostomataceae* E. Fisch.)
Agaricus L. (ca 600)*Fp105
Asperosporus Karlsen-Ayala, Gazis & M.E. Sm. (1)*Note 652
Barcheria T. Lebel (1)*Fp48
Battarrea Pers. (2)
Battarreoides T. Herrera (1)
Calvatiopsis Hollós (1)
Chamaemyces Battarra ex Earle (6)
Chlamydopus Speg. (2)
Chlorolepiota Sathe & S.D. Deshp. (3)
Chlorophyllum Massee (ca 30)*Fp153

Clarkeinda Kuntze (6)*Fp269
Clavogaster Henn. (2)
Coniolepiota Vellinga (1)
Coprinus *Pers*. (ca 140)
Crucispora E. Horak (2)
Cystolepiota Singer (ca 45)
Dictyocephalos L.M. Underwood ex V.S. White (2)
Echinoderma (Locq. ex Bon) Bon (ca 15)*Fp151
Endolepiotula Singer (1)
Eriocybe Vellinga (1)
Gasterellopsis Routien (1)
Heinemannomyces Watling (1)
Hiatulopsis Singer & Grinling (2)
Holocotylon Lloyd (3)
Hymenagaricus Heinem. (ca 15)
Janauaria Singer (1)
Japonogaster Kobayasi (1)
Lepiota (Pers.) Gray (ca 550)
Leucoagaricus Locq. ex Singer (= *Coccobotrys* Boud. & Pat.) (ca 300)
Leucocoprinus Pat. (ca 90)
Macrolepiota Singer (ca 40)
Melanophyllum Velen. (4)
Metrodia Raithelh. (2)
Micropsalliota Höhn. (ca 70)
Montagnea Fr. (7)
Mycenastrum Desv. (3)
Neosecotium Singer & A.H. Sm. (2)
Phellorinia Berk. (3)*Fp205
Phyllogaster Pegler (1)
Podaxis Desv. (ca 30)*Fp214
Pseudoauricularia Kobayasi (1)
Pseudolepiota Z.W. Ge (1)
Pulverolepiota Bon (4)
Queletia Fr. (3)
Rugosospora Heinem. (2)
Schinzinia Fayod (1)
Schizostoma Ehrenb. ex Lév. (ca 30)
Singerina Sathe & S.D. Deshp. (1)
Smithiogaster J.E. Wright (1)
Smithiomyces Singer (6)
Termiticola E. Horak (1)
Tulostoma Pers. (ca 170)
Xanthagaricus (Heinem.) Little Flower, Hosag.& T.K. Abraham (ca 25)
Xerocoprinus Maire (1)

Bolbitiaceae Singer
Agrogaster D.A. Reid (1)
Bolbitius Fr. (ca 60)
Conobolbitina T. Bau & H. B. Song (8)*Song & Bau 2024
Conocybe Fayod (ca 250)*Fp196
Conocybula T. Bau & H.B. Song (3)*Song & Bau 2024
Cyttarophyllopsis R. Heim (1)

Descolea Singer (ca 25)
Galerella Earle (7)
Gymnoglossum Massee (12)
Pholiotina Fayod (CA 30)
Ptychella Roze & Boud. (1)
Rhodoarrhenia Singer (6)
Tubariella E. Horak & Hauskn. (1)
Tubariopsis R. Heim (1)
Tympanella E. Horak (1)
Wielandomyces Raithelh. (1)

Cortinariaceae R. Heim ex Pouzar*Notes 707, 710, 711, 712, 713, 726, 740
Aureonarius Niskanen & Liimat. (18)*Note 740
Austrocortinarius Niskanen & Liimat. (2)*Note 707
Calonarius Niskanen & Liimat. (ca 135)*Note 710
Cortinarius (Pers.) Gray (= *Locellina* Gillet) (ca 2500)*Notes 707, 710, 711, 712, 713, 726, 740
Cystinarius Niskanen & Liimat. (7)*Note 711
Hygronarius Niskanen & Liimat. (5)*Note 712
Mystinarius Niskanen & Liimat. (1)*Note 713
Protoglossum Massee (1)
Quadrispora Bougher & Castellano (1)
Stephanopus M.M. Moser & E. Horak (5)
Thaxterogaster Singer (ca 100)
Volvanarius Niskanen & Liimat. (8)*Note 726

Crassisporiaceae Vizzini, Consiglio & M. Marchetti
Crassisporium Matheny, P.-A. Moreau & Vizzini (3)
Romagnesiella Contu, Matheny, P.-A. Moreau, Vizzini & A. de Haan (3)

Crepidotaceae (S. Imai) Singer
Crepidotus (Fr.) Staude (ca 320)*Fp197
Episphaeria Donk (1)
Nanstelocephala Oberw. & R.H. Petersen (1)
Neopaxillus Singer (5)
Pellidiscus Donk (3)
Pleuroflammula Singer (CA20)
Simocybe P. Karst. (ca70)

Galeropsidaceae Singer 1962
Copelandia Bres., **nom. inval.** (3)
Panaeolopsis Singer (4)
Panaeolina Maire (4)
Panaeolus (Fr.) Quél. (= *Galeropsis* Velen.) (ca 80)
Staktophyllus Consiglio, M. Marchetti & Vizzini (1)

Hydnangiaceae Gäum. & C.W. Dodge
Hydnangium Wallr. (12)
Laccaria Berk. & Broome (ca 90)*Fp201
Maccagnia Mattir. (1)
Podohydnangium G.W. Beaton, Pegler & T.W.K. Young (1)

Hymenogastraceae Vittad. (= *Chromocyphellaceae* Knudsen)

Anamika K.A. Thomas, Peintner, M.M. Moser & Manim. (3)
Chromocyphella De Toni & Levi (= *Phaeosolenia* Speg.) (ca 10)
Flammula (Fr.) P. Kumm. (ca 15)
Galerina Earle (ca 300)
Gymnopilus P. Karst. (= *Pyrrhoglossum* Singer *fide* Rees et al. 2002) (ca 210)
Hebeloma (Fr.) P. Kumm. (ca 350)
Hymenogaster Vittad. (ca 75)
Naucoria (Fr.) P. Kumm. (ca 180)
Phaeocollybia R. Heim (ca 90)
Psathyloma Soop, J.A. Cooper & Dima (3)
Psilocybe (Fr.) P. Kumm. (ca 300)
Synnematomyces Kobayasi (1)

Inocybaceae Jülich
Auritella Matheny & Bougher (13)
Inocybe (Fr.) Fr. (ca 1000)
Inosperma (Kühner) Matheny & Esteve-Rav. (78)*Note 653
Mallocybe (Kuyper) Matheny, Vizzini & Esteve-Rav. (ca 60)*Note 654
Nothocybe Matheny & K.P.D. Latha (1)*Note 655
Pseudosperma Matheny & Esteve-Rav. (ca 100)*Note 669
Tubariomyces Esteve-Rav. & Matheny (4)

Lycoperdaceae Chevall.
Abstoma G. Cunn. (8)*Fp47
Acutocapillitium P. Ponce de León (3)
Apioperdon (Kreisel & D. Krüger) Vizzini (1)
Arachnion Schwein. (11)
Bovista Pers.
Bryoperdon Vizzini (ca 100)
Calbovista Morse ex M.T. Seidl (1)
Calvatia Fr. (ca 65)
Disciseda Czern. (ca 40)
Gastropila Homrich & J.E. Wright (3)
Lycoperdon Pers. (ca 190)
Lycoperdopsis Henn. (1)
Morganella Zeller (8)

Mythicomycetaceae Vizzini, Consiglio & M. Marchetti
Mythicomyces Redhead & A.H. Sm. (1)
Stagnicola Redhead & A.H. Sm. (1)

Nidulariaceae Dumort.*Note 1081
Crucibulum Tul. & C. Tul. (7)
Cyathus Haller (ca 100)*Note 1549
Mycocalia J.T. Palmer (5)
Nidula V.S. White (7)
Nidularia Fr. (ca 10)
Retiperidiolia Kraisit., Choeyklin, Boonprat. & M.E. Sm. (2)*Note 1061

Psathyrellaceae Vilgalys, Moncalvo & Redhead (= *Zerovaemycetaceae* Gorovij)
Britzelmayria D. Wächt. & A. Melzer (2)*Notes 80, 811
Candolleomyces D. Wächt. & A. Melzer (ca 25)*Notes 97, 815

Coprinellus P. Karst. (= *Ozonium* Link) (ca 65)
Coprinopsis P. Karst. (= *Rhacophyllus* Berk. & Broome, *Zerovaemyces* Gorovij) (ca 200)
Cystoagaricus Singer (9)
Gasteroagaricoides D.A. Reid (1)
Hausknechtia D. Wächt. & A. Melzer (2)*Note 812
Heteropsathyrella T. Bau & J.Q. Yan (1)*Note 814
Homophron (Britzelm.) Örstadius & E. Larss. (6)
Hormographiella Guarro & Gené (3)
Jugisporipsathyra J.Q. Yan, Y.G. Fan & S.N. Wang
Kauffmania Örstadius & E. Larss. (1)
Lacrymaria Pat. (17)
Macrometrula Donk & Singer (1)
Narcissea D. Wächt. & A. Melzer (3)*Note 293, 1534
Olotia D. Wächt. & A. Melzer (1)*Note 356, 1533
Parasola Redhead, Vilgalys & Hopple (ca 40)
Psathyrella (Fr.) Quél. (ca 650)
Punjabia D. Wächt. & A. Melzer (1)*Note 431, 1532
Tulosesus D. Wächt. & A. Melzer (ca 40)*Note 524, 1531
Typhrasa Örstadius & E. Larss. (4)

Squamanitaceae Jülich
Cystoderma Fayod (ca 40)
Cystodermella Harmaja (ca 20)
Dissoderma (A.H. Sm. & Singer) Singer (9)
Floccularia Pouzar (4)
Leucopholiota (Romagn.) O.K. Mill., T.J. Volk & Bessette (= *Amylolepiota* Harmaja) (2)
Phaeolepiota Maire ex Konrad & Maubl. (1)
Squamanita Imbach (= *Coolia* Huijsman) (14)

Strophariaceae Singer & A.H. Sm.
Agrocybe Fayod (ca 110)
Bogbodia Redhead (1)
Brauniella Rick ex Singer (1)
Deconica (W.G. Sm.) P. Karst. (ca 45)
Hemipholiota (Singer) Bon (2)
Hypholoma (Fr.) P. Kumm. (ca 45)
Kuehneromyces Singer & A.H. Sm. (ca 20)
Leratiomyces Bresinsky & Manfr. Binder ex Bridge, Spooner, Beever & D.C. Park (10)
Melanotus Pat. (ca 25)
Pholiota (Fr.) P. Kumm. (ca 350)
Protostropharia Redhead, Moncalvo & Vilgalys (8)
Pseudogymnopilus Raithelh. (1)
Pyrrhulomyces E.J. Tian & Matheny (3)*Note 632
Stropharia (Fr.) Quél. (ca 65)

Tubariaceae Vizzini
Cyclocybe Velen. (7)
Flammulaster Earle (ca 20)
Hemistropharia Jacobsson & E. Larss. (2)
Pachylepyrium Singer (2)
Phaeomarasmius Scherff. (ca 45)
Pleuromyces Dima, P.-A. Moreau & V. Papp (1)

Tubaria (W.G. Sm.) Gillet (ca 90)

Agaricineae genera *incertae sedis*
Cercopemyces T.J. Baroni, Kropp & V.S. Evenson (3)
Cereicium Locq. (1)
Fissolimbus E. Horak (1)
Meottomyces Vizzini (3)
Phaeopholiota Locq. & Sarwal (1)
Ripartitella Singer (5)
Squamaphlegma Locq. (1)
Verrucospora E. Horak (2)*Fp152
Volvigerum (E. Horak & M.M. Moser) R. Heim (1)
Weinzettlia Velen. (1)

Suborder *Clavariineae* Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen
Clavariaceae Chevall.
Camarophyllopsis Herink (ca 20)
Clavaria Vaill. ex L. (ca 180)
Clavicorona Doty (7)
Clavulinopsis Overeem (ca 70)
Hirticlavula J.H. Petersen & Læssøe (1)
Hodophilus R. Heim (ca 25)
Hyphodontiella Å. Strid (2)
Lamelloclavaria Birkebak & Adamčík (1)
Mucronella Fr. (ca 15)
Ramariopsis (Donk) Corner (ca 45)

Suborder *Hygrophorineae* Aime, Dentinger & Gaya
Cantharellulaceae (Lodge, Redhead, Norvell & Desjardin) Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Cantharellula Singer (10)
Pseudoarmillariella Singer (3)

Cuphophyllaceae (Z.M. He & Zhu L. Yang) Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Ampulloclitocybe Redhead, Lutzoni, Moncalvo & Vilgalys (2)*Note 927
Cantharocybe H.E. Bigelow & A.H. Sm. (4)*Note 927
Cuphophyllus (Donk) Bon (ca 30)*Note 927
Hygrophorocybe Vizzini & Contu (1)
Spodocybe Z.M. He & Zhu L. Yang (7)*Notes 721, 927

Hygrocybaceae (Padamsee & Lodge) Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Chromosera Redhead, Ammirati & Norvell (6)
Chrysomphalina Clémençon (3)
Gliophorus Herink (ca 15)
Gloioxanthomyces Lodge, Vizzini, Ercole & Boertm. (2)
Humidicutis (Singer) Singer (ca 20)
Hygrocybe (Fr.) P. Kumm. (= *Hygroaster* Singer) (ca 350)
Neohygrocybe Herink (5)
Porpolomopsis Bresinsky (2)
Sinohygrocybe C.Q. Wang, Ming Zhang & T.H. Li (1)

Hygrophoraceae Lotsy*Vizzini et al. 2024

Aeruginospora Höhn. (2)
Haasiella Kotl. & Pouzar (2)
Hygrocybula De la Peña-Lastra, A. Mateos & Plaza (1)*Crous et al. 2024b
Hygrophorus Fr. (ca 260)
Melanomphalia M.P. Christ. (ca 20)
Semiomphalina Redhead (1)

Lichenomphaliaceae (Lücking & Redhead) Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Arrhenia Fr. (ca 65)*Fp332
Cora Fr. (ca 100)
Corella Vain. (1)
Cyphellostereum D.A. Reid (10)
Dictyonema C. Agardh ex Kunth (ca 30)
Eonema Redhead, Lücking & Lawrey (1)
Lichenomphalia Redhead, Lutzoni, Moncalvo & Vilgalys (ca 15)

Hygrophorineae genus *incertae sedis*
Acantholichen P.M. Jørg. (6)

Suborder *Marasmiineae* Aime, Dentinger & Gaya
Campanellaceae J.S. Oliveira, Desjardin & Moncalvo*Oliveira et al. 2024b
Brunneocorticium Sheng H. Wu (2)
Campanella Henn. (ca 40)
Metacampanella R.H. Petersen (7)*Note 1570, Petersen & Hughes, 2024
Neocampanella Nakasone, Hibbett & Goranova (1)
Tetrapyrgos E. Horak (ca 25)

Cyphellaceae Lotsy
Asterocyphella W.B. Cooke (3)
Atheniella Redhead, Moncalvo, Vilgalys, Desjardin & B.A. Perry (10)
Baeospora Singer (13)
Campanophyllum Cifuentes & R.H. Petersen (1)
Catilla Pat. (ca 55)
Cheimonophyllum Singer (3)*Fp348
Chondrostereum Pouzar (4)
Cunninghammyces Stalpers (2)
Cyphella Fr. (ca 65)
Gloeocorticium Hjortstam & Ryvarden (1)
Gloeostereum S. Ito & S. Imai (1)
Granulobasidium Jülich (1)
Henningsomyces Kuntze (ca 10)
Incrustocalyptella Agerer (3)
Lignomphalia Antonín, Borovička, Holec & Kolařík (1)
Mycenella (J.E. Lange) Singer (ca 20)
Mycopan Redhead, Moncalvo & Vilgalys (1)
Phaeoporotheleum (W.B. Cooke) W.B. Cooke (2)
Phloeomana Redhead (7)
Pleurella E. Horak (2)
Seticyphella Agerer (3)
Setigeroclavula R.H. Petersen (1)
Sphaerobasidioscypha Agerer (1)
Thujacorticium Ginns (2)

Cystostereaceae Jülich
Cericium Hjortstam (1)
Crustomyces Jülich (3)
Cystidiodontia Hjortstam (2)
Cystostereum Pouzar (8)
Effusomyces Yue Li, Nakasone & S.H. He (1)*Note 972
Parvobasidium Jülich (2)
Parvodontia Hjortstam & Ryvarden (2)
Rigidotubus J. Song, Y.C. Dai & B.K. Cui (1)
Tenuimyces S.L. Liu & L.W. Zhou (1)*Liu et al. 2024c

Marasmiaceae Roze ex Kühner*Oliveira et al. 2024b
Chaetocalathus Singer (ca 20)
Crinipellis Pat. (ca 110)
Marasmius Fr. (= *Amyloflagellula* Singer; *Hymenogloea* Pat.) (ca 1000)*Oliveira et al. 2024b
Moniliophthora H.C. Evans, Stalpers, Samson & Benny (10)+
Paramarasmius Antonín & Kolařík (2)*Notes 857, 1045

Omphalotaceae Bresinsky
Anthracophyllum Ces. (12)
Collybiopsis (J. Schröt.) Earle (= *Marasmiellus* Murrill) (ca 60)
Connopus R.H. Petersen (1)
Gymnopanella Sand.-Leiva, J.V. McDonald & Thorn (1)
Gymnopus (Pers.) Gray (= *Caripia* Kuntze) (ca 375)
Hymenoporus Tkalčec, Mešić & Chun Y. Deng (1)
Lentinula Earle (9)
Ligymnopus J.J. Hu, B. Zhang & Y. Li, **nom. inval.** (8)*Hu et al. 2024
Levipedipilus J.J. Hu, B. Zhang & Yu Li, **non. inval.** (47)*Hu et al. 2024
Mycetinis Earle (16)*Fp346
Neomarasmius J.J. Hu, B. Zhang & Y. Li, **nom. inval.** (15)*Hu et al. 2024
Neonothopanus R.H. Petersen & Krisai (4)
Omphalotus Fayod (10)
Paragymnopus J.S. Oliveira (6)
Paramycetinis R.H. Petersen (2)*Note 374
Peckorumyces J.P. Li, J.S. Oliveira & Chang Tian Li (1)*Li et al. 2024a
Pseudomarasmius R.H. Petersen & K.W. Hughes (8)*Note 422
Pusillomyces J.S. Oliveira (4)
Rhodocollybia Singer (ca 35)
Vestipedipilus J.J. Hu, B. Zhang & Y. Li, **nom. inval.** (26)*Hu et al. 2024

Physalacriaceae Corner
Anastrophella E. Horak & Desjardin (3)
Armillaria (Fr.) Staude (= *Acurtis* Fr.; = *Rhizomorpha* Roth) (ca 75)
Cibaomyces Zhu L. Yang, Y.J. Hao & J. Qin (1)
Cryptomarasmius T.S. Jenkinson & Desjardin (15)
Cylindrobasidium Jülich (12)
Cyptotrama Singer (ca 20)
Dactylosporina (Clémençon) Dörfelt (6)
Deigloria Agerer (5)
Desarmillaria (Herink) R. A. Koch & Aime (3)
Epicnaphus Singer (2)

Flammulina P. Karst. (ca 15)
Gloiocephala Massee (ca 40)
Guyanagaster T.W. Henkel, M.E. Sm. & Aime (2)
Hymenopellis R.H. Petersen (ca 60)
Laccariopsis Vizzini (1)
Manuripia Singer (1)
Mucidula Pat. (2)
Mycaureola Maire & Chemin (1)
Mycotribulus Nag Raj & W.B. Kendr. (2)*Coel
Naiadolina Redhead, Labbé & Ginns (1)
Oudemansiella Speg. (= *Cribbea* A.H. Sm. & D.A. Reid) (ca 30)
Owingsia I. Saar, Voitk & Thorn (1)*Note 1396
Paraxerula R.H. Petersen (4)*Fp72
Physalacria Peck (ca 35)
Ponticulomyces R.H. Petersen (2)
Protoxerula R.H. Petersen (1)
Pseudohiatula (Singer) Singer (5)
Pseudotyphula Corner (2)
Rhizomarasmius R.H. Petersen (5)
Rhodotus Maire (2)
Strobilurus Singer (ca 15)
Xerula Maire (ca 10)

Porotheleaceae Murrill
Acanthocorticium Baltazar, Gorjón & Rajchenb. (1)
Calyptella Quél. (ca 30)
Chrysomycena Vizzini, Picillo, Perrone & Dovana (1)*Note 1029
Clavomphalia E. Horak (1)
Clitocybula (Singer) Singer ex Métrod (ca 20)
Delicatula Fayod (ca 45)
Gerronema Singer (ca 60)
Hydropodia Vizzini & Consiglio (2)*Notes 826, 1079
Hydropus Kühner ex Singer (ca 140)
Leucoinocybe Singer ex Antonín, Borovička, Holec & Kolařík (4)
Marasmiellomycena De la Peña-Lastra, Mateos, Kolařík, Ševčíková & Antonín (4)*Note 1559, Senanayake et al. 2023
Megacollybia Kotl. & Pouzar (9)
Porotheleum Fr. (6)
Pseudohydropus Vizzini & Consiglio (4)*Note 827
Pulverulina Matheny & K.W. Hughes (1)*Note 430
Trogia Fr. (ca 75)
Vanromburghia Holterm. (1)
Vizzinia Ševčíková & Kolařík (2)*Note 1560, Senanayake et al. 2023

Xeromphalinaceae Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Heimiomyces Singer (ca 7)
Xeromphalina Kühner & Maire (ca 35)

Marasmiineae genera *incertae sedis*
Aphyllotus Singer (1)
Cellypha Donk (ca 10)
Hispidocalyptella E. Horak & Desjardin (1)

Lactocollybia Singer (ca 20)
Lecanocybe Desjardin & E. Horak (1)
Neoclitocybe Singer (ca 25)
Pegleromyces Singer (1)
Phaeomycena R. Heim ex Singer & Digilio (4)
Physocystidium Singer (1)

Suborder *Phyllotopsidineae* Zhu L. Yang & G.S. Wang
Aphroditeolaceae Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Aphroditeola Redhead & Manfr. Binder (1)

Phyllotopsidaceae Locquin ex Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen*Note 399, Vizzini et al. 2024
Bulbillomyces Jülich (= *Aegerita* Pers.) (1)
Conoloma Zhu L. Yang & G.S. Wang (1)*Note 1403
Cyphelloporia Karasiński, L. Nagy, Szarkándi, Holec & Kolařík (1)*Karasiński et al. 2023
Macrotyphula R.H. Petersen (6)
Phyllotopsis E.-J. Gilbert & Donk ex Singer (5)
Pleurocybella Singer (6)
Rectipilus Agerer (ca 10)
Tricholomopsis Singer (ca 50)

Pterulaceae Corner*Vizzini et al. 2024
Allantula Corner (1)
Chaetotyphula Corner (7)
Coronicium J. Erikss. & Ryvarden (5)
Lepidomyces Jülich (1)
Merulicium J. Erikss. & Ryvarden (1)
Myrmecopterula Leal-Dutra, Dentinger & G.W. Griff. (3)*Note 629
Parapterulicium Corner (3)
Pterula Fr. (ca 65)
Pterulicium Corner (= *Deflexula* Corner) (ca 40)

Radulomycetaceae Leal-Dutra, Dentinger & G.W. Griff.*Vizzini et al. 2024
Aphanobasidium Jülich (18)
Globuliciopsis Hjortstam & Ryvarden (2)
Radulomyces M.P. Christ. (15)
Radulotubus Y.C. Dai, S.H. He & C.L. Zhao (1)

Sarcomyxaceae Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen*Note 464
Sarcomyxa P. Karst. (2)
Tectella Earle (3)

Stephanosporaceae Oberw. & E. Horak*Vizzini et al. 2024
Athelidium Oberw. (2)
Cristinia Parmasto (12)
Lindtneria Pilát (15)
Mayamontana Castellano, Trappe & Lodge (1)
Stephanospora Pat. (ca 20)

Suborder *Pleurotineae* Aime, Dentinger & Gaya
Cyphellopsidaceae Jülich (= *Niaceae* Jülich)

Akenomyces G. Arnaud ex D. Hornby (1)
Calathella D.A. Reid (8)
Dendrothele Höhn. & Litsch. (ca 60)
Digitatispora Doguet (2)
Eoscyphella Silva-Filho, Stevani & Menolli (1)*Note 1032
Flagelloscypha Donk (ca 35)
Halocyphina Kohlm. & E. Kohlm. (1)
Lachnella Fr. (ca 90)
Merismodes Earle (= *Cyphellopsis* Donk; = *Maireina* W.B. Cooke) (7)
Nia R.T. Moore & Meyers (4)
Peyronelina P.J. Fisher, J. Webster & D.F. Kane (1)
Phaeodepas D.A. Reid (2)
Pseudolasiobolus Agerer (1)
Woldmaria W.B. Cooke (1)

Fistulinaceae Lotsy*Vizzini et al. 2024
Fistulina Bull. (ca 10)
Porodisculus Murrill (1)
Pseudofistulina O. Fidalgo & M. Fidalgo (3)

Pleurotaceae Kühner
Agaricochaete Eichelb. (4)
Hohenbuehelia Schulzer (ca 125)
Lignomyces R.H. Petersen & Zmitr. (1)
Pleurotus (Fr.) P. Kumm. (ca 200)
Radulomycetopsis Dhingra, Priyanka & J. Kaur (1)

Resupinataceae Jülich*Vizzini et al. 2024
Resupinatus Nees ex Gray (ca 45)

Schizophyllaceae Quél.*Vizzini et al. 2024
Auriculariopsis Maire (2)
Schizophyllum Fr. (11)

Suborder *Pluteineae* Aime, Dentinger & Gaya
Amanitaceae E.-J. Gilbert*Vizzini et al. 2024
Amanita Pers. (=) (ca 750)
Catatrama Franco-Mol. (2)
Leucocortinarius (J.E. Lange) Singer (1)
Limacella Earle (ca 35)
Limacellopsis Zhu L. Yang, Q. Cai & Y.Y. Cui (2)
Saproamanita Redhead, Vizzini, Drehmel & Contu (24)
Zhuliangomyces Redhead (6)

Limnoperdaceae G.A. Escobar
Limnoperdon G.A. Escobar (1)

Melanoleucaceae Locq. ex Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Giacomia Vizzini & Contu (1)
Melanoleuca Pat. (ca 230)*Fp206

Pluteaceae Kotl. & Pouzar

Pluteus Fr. (ca 400)
Volvopluteus Vizzini, Contu & Justo (4)

Volvariellaceae Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Volvariella Speg. (ca 90)

Suborder ***Tricholomatineae*** Aime, Dentinger & Gaya
Biannulariaceae Jülich (= *Catathelasmataceae* Wasser)
Bonomyces Vizzini (6)
Catathelasma Lovejoy (6)*Fp347 (= *Biannularia* Beck)*Fp347
Cleistocybe Ammirati, A.D. Parker & Matheny (5)

Callistosporiaceae Vizzini, Consiglio, M. Marchetti & P. Alvarado
Anupama K.N.A. Raj, K.P.D. Latha & Manim. (1)*Note 1564
Callistosporium Singer (= *Pleurocollybia* Singer) (ca 20)
Guyanagarika Sánchez-García, T.W. Henkel & Aime (3)
Macrocybe Pegler & Lodge (8)
Pseudolaccaria Vizzini, Contu & Z.W. Ge (2)
Xerophorus (Bon) Vizzini, Consiglio & M. Marchetti (4)*Note 1073

Clitocybaceae Vizzini, Consiglio & M. Marchetti*He et al. 2024, Vizzini et al. 2024
Clitocybe (Fr.) Staude (3)
Collybia (Fr.) Staude (= *Leucocalocybe* X.D. Yu & Y.J. Yao) (ca 700)
Dendrocollybia R.H. Petersen & Redhead (= *Sclerostilbum* Povah; = *Tilachlidiopsis* Keissl.) (1)
Lepista (Fr.) W.G. Sm. (2)
Lepistella T.J. Baroni & Ovrebo (1)*Vizzini et al. 2024
Pseudolyophyllum Raithelh. (5)
Singerocybe Harmaja (6)

Entolomataceae Kotl. & Pouzar
Clitopilopsis Maire (3)
Clitopilus (Fr. ex Rabenh.) P. Kumm. (ca 200)
Entoloma P. Kumm. (= *Calliderma* (Romagn.) Largent*Note 93; *Clitopiloides* (Romagn.) Largent; = *Entocybe* T.J. Baroni, V. Hofst. & Largent; = *Fibropilus* (Noordel.) Largent) (ca 3000)
Lulesia Singer (= *Clitocella* Kluting, T.J. Baroni & Bergemann) (13)
Rhodocybe Maire (ca 40)
Rhodophana Kühner (13)

Fayodiaceae Jülich
Caulorhiza Lennox (3)
Conchomyces Overeem (2)
Fayodia Kühner (13)
Gamundia Raithelh. (ca 7)
Myxomphalia Hora (4)

Lyophyllaceae Jülich (= *Asproinocybaceae* T. Bau & G.F. Mou*Note 928)*Vizzini et al. 2024
Arthromyces T.J. Baroni & Lodge (2)
Asproinocybe R. Heim (8)
Asterophora Ditmar (= *Ugola* Adans.) (4)
Atractosporocybe P. Alvarado, G. Moreno & Vizzini (3)
Australocybe T.J. Baroni, N. Fechner & van de Peppel (1)*Note 986
Blastosporella T.J. Baroni & Franco-Mol. (1)

Calocybe Kühner ex Donk (ca 50)
Calocybella Vizzini, Consiglio & Setti (8)*Note 1566
Clitolyophyllum Sesli, Vizzini & Contu (2)
Fibulochlamys A.I. Romero & Cabral (2)
Gerhardtia Bon (ca 12)
Hypsizygus Singer (5)
Leucocybe Vizzini, P. Alvarado, G. Moreno & Consiglio (3)
Lyophyllopsis Sathe & J.T. Daniel (1)
Lyophyllum P. Karst. (ca 110)
Myochromella V. Hofst., Clémençon, Moncalvo & Redhead (2)
Nigrocarnea Sparre P. & Læssøe (1)*Notes 844, 1043
Omphaliaster Lamoure (7)
Ossicaulis Redhead & Ginns (3)
Phaeotephrocybe T.J. Baroni, T.W. Kuyper & van de Peppel (1)*Note 845
Praearthromyces T.J. Baroni, T.W. Kuyper & van de Peppel (2)*Note 846
Rhizocybe Vizzini, G. Moreno, P. Alvarado & Consiglio (5)
Rugosomyces Raithelh. (ca 3)
Sagaranella V. Hofst., Clémençon, Moncalvo & Redhead (4)
Sphagnurus Redhead & V. Hofst. (1)
Tephrocybe Donk (ca 30)
Tephrocybella Picillo, Vizzini & Contu (2)
Tephroderma Contu & Musumeci (1)
Termitomyces R. Heim (ca 50)
Termitosphaera Cif. (1)
Trichocybe Vizzini (1)*Fp41
Tricholomella Zerova ex Kalamees (1)
Tricholosporum Guzmán (ca 15)
Tricholyophyllum Qing Cai, G. Kost & Zhu L. Yang (1)*Notes 724, 514

Macrocystidiaceae Kühner*Vizzini et al. 2024
Macrocystidia Joss. (6)
Pseudoclitopilus Vizzini & Contu (2)

Omphalinaceae Vizzini, Consiglio & M. Marchetti
Infundibulicybe Harmaja (ca 20)
Omphalina Quél. (ca 100)

Paralepistaceae Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Notholepista Vizzini & Contu (1)
Paralepista Raithelh. 1981 (13)
Ripartites P. Karst. (8)

Pseudoclitocybaceae Vizzini, Consiglio, P.-A. Moreau & P. Alvarado*Vizzini et al. 2024
Aspropaxillus Kühner & Maire (6)
Clitopaxillus G. Moreno, Vizzini, Consiglio & P. Alvarado (2)*Fp106
Harmajaea Dima, P. Alvarado & Kekki (3)
Musumecia Vizzini & Contu (4)
Pogonoloma (Singer) Sánchez-García (2)
Pseudoclitocybe (Singer) Singer (ca 15)

Pseudoomphalinaceae Vizzini, Consiglio & P. Alvarado*Vizzini et al. 2024
Pseudoomphalina (Singer) Singer (ca 15)

Tricholomataceae R. Heim ex Pouzar
Albomagister Sánchez-García, Birkebak & Matheny (3)
Coreriella Sánchez-García (3)
Dennisiomyces Singer (6)
Dermoloma J.E. Lange ex Herink (ca 25)
Leucopaxillus Boursier (ca 35)
Porpoloma Singer (ca 12)
Pseudobaeospora Singer (ca 35)
Pseudoporpoloma Vizzini & Consiglio (1)
Pseudotricholoma (Singer) Sánchez-García & Matheny (3)
Tricholoma (Fr.) Staude (ca 400)

Tricholomatineae genus *incertae sedis**Vizzini et al. 2024
Hertzogia R. Wiest (1)*Note 1035
Paralepistopsis Vizzini (2)
Rimbachia Pat. (12)

Typhulineae Vizzini, Consiglio & P. Alvarad*Vizzini et al. 2024
Typhulaceae Jülich
Lutypha Khurana, K.S. Thind & Berthier (1)
Typhula (Pers.) Fr. (= *Tygervalleyomyces* Crous) (ca 80)

Agaricales families *incertae sedis*
Broomeiaceae Zeller
Broomeia Berk. (2)

Hemigasteraceae Gäum. & C.W. Dodge
Hemigaster Juel (1)

Mycenaceae Overeem see **Suborder** *Mycenineae* R.L. Zhao, Vizzini & M.Q. He*He et al. 2024
Cruentomycena R.H. Petersen, Kovalenko & O.V. Morozova (5)
Cynema Maas Geest. & E. Horak (1)
Favolaschia (Pat.) Pat. (ca 90)
Flabellimycena Redhead (1)
Hemimycena Singer (ca 75)
Mycena (Pers.) Roussel (= *Decapitatus* Redhead & Seifert) (ca 1300)*Note 923
Panellus P. Karst. (= *Scytinotus* P. Karst.) (ca 55)
Resinomycena Redhead & Singer (ca 10)
Roridomyces Rexer (ca 15)

Agaricales genera *incertae sedis*
Acinophora Raf. (1)
Actiniceps Berk. & Broome (7)
Albocoprinus Voto (1)*Notes 17, 558
Aleurocystis Lloyd ex G. Cunn. (= *Matula* Massee) (4)
Amparoina Singer (2)
Arthrosporella Singer (1)
Austroclitocybe Raithelh. (2)
Austroomphaliaster Garrido (2)
Callistodermatium Singer (1)
Cephaloscypha Agerer (1)

Cheilophlebium Opiz & Gintl (1)
Cymatella Pat. (1)
Cymatellopsis Parmasto (1)
Cyphellocalathus Agerer (1)
Glabrocyphella W.B. Cooke (12)
Gramincola Velen. (1)
Laterradea Raspail (1)
Lycogalopsis E. Fisch. (9)
Mesophelliopsis Bat. & A.F. Vital (1)
Metraria (Cooke) Cooke & Massee (2)
Metulocyphella Agerer (2)
Mycoalvimia Singer (1)
Mycospongia Velen. (1)
Nochascypha Agerer (6)
Palaeocephala Singer (1)
Peglerochaete Sarwal & Locq. (1)
Phlebonema R. Heim (1)
Phlebophyllum R. Heim (1)
Polygaster Fr. (1)
Pseudohygrophorus Velen. (1)
Secotium Kunze (ca 15)
Skepperiella Pilát (4)
Stanglomyces Raithelh. (1)
Stemastrum Raf. (1)
Stromatocyphella W.B. Cooke (2)

Amylocorticiales K.H. Larss., Manfr. Binder & Hibbett
Amylocorticiaceae Jülich
Agroathelia Redhead & Mullineux (3)*Note 1233
Amyloathelia Hjortstam & Ryvarden (3)
Amyloceraceomyces S.H. He (1)*Notes 24, 645
Amylocorticiellum Spirin & Zmitr. (7)
Amylocorticium Pouzar (12)
Amyloxenasma (Oberw.) Hjortstam & Ryvarden (6)
Anomoloma Niemelä & K.H. Larss. (6)
Anomoporia Pouzar (7)
Ceraceomyces Jülich (16)
Irpicodon Pouzar (1)
Plicatura Peck (3)
Plicaturopsis D.A. Reid (2)
Podoserpula D.A. Reid (4)
Serpulomyces (Zmitr.) Zmitr. (1)

Atheliales Jülich
Atheliaceae Jülich
Athelia Pers. (37)
Athelopsis Oberw. ex Parmasto (= *Pteridomyces* Jülich) (16)
Athelicium K.H. Larss. & Hjortstam (2)
Athelocystis Hjortstam & Ryvarden (1)
Butlerelfia Weresub & Illman (1)
Elaphocephala Pouzar (1)
Fibulomyces Jülich (4)*Note 164

Hypochnella J. Schröt. (2)
Hypochniciellum Hjortstam & Ryvarden (1)
Melzericium Hauerslev (3)
Mycostigma Jülich (1)
Taeniospora Marvanová (2)

Byssocorticiaceae Jülich
Byssocorticium Bondartsev & Singer (7)
Leptosporomyces Jülich (ca 15)

Lobuliciaceae Sulistyo, K.H. Larss. & M. Ryberg
Lobulicium K.H. Larss. & Hjortstam (1)

Pilodermataceae Jülich
Piloderma Jülich (13)
Tretomyces K.H. Larss., Kotir. & Saaren. (2)

Tylosporaceae Jülich
Amphinema P. Karst. (4)
Tylospora Donk (2)

Atheliales genus *incertae sedis*
Atheliella S.L. Liu & L.W. Zhou (1)*Liu et al. 2024c

Auriculariales J. Schröt.
Auriculariaceae Fr.
Alloexidiopsis L.W. Zhou & S.L. Liu (6)*Note 1020
Adustochaete Alvarenga & K.H. Larss. (3)*Note 657
Amphistereum Spirin & Malysheva (2)
Auricularia Bull. (ca 50)*Fp132
Eichleriella Bres. (ca 15)
Elmerina Bres. (11)
Exidia Fr. (ca 40)
Exidiopsis (Bref.) Möller (ca 30)
Fibulosebacea K. Wells & Raitv. (1)
Heterochaete Pat. (ca 40)
Heterocorticium S.H. He, T. Nie & Yue Li (2)*Note 1219
Heteroradulum Lloyd ex Spirin & Malysheva (7)
Protodaedalea Imazeki (1)
Pseudostypella McNabb (1)
Sclerotrema Spirin & Malysheva (1)
Tremellochaete Raitv. (8)

Hyaloriaceae Lindau
Hyaloria Möller (2)
Myxarium Wallr. (= *Helicomyxa* R. Kirschner & Chee J. Chen) (ca 20)

Oliveoniaceae P. Roberts
Oliveonia Donk (5)

Auriculariales genera *incertae sedis*
Atractobasidium G.W. Martin

Basidiodendron Rick (ca 40)
Bourdotia (Bres.) Bres. & Torrend (3)
Ceratosebacina P. Roberts (3)
Crystallodon Alvarenga (1)*Note 658
Dendrogloeon Spirin & Miettinen (1)
Ductifera Lloyd (ca 10)
Endoperplexa P. Roberts (6)
Gelacantha V. Malysheva & Spirin (1)
Grammatus H.S. Yuan & C. Decock (2)
Guepinia Fr. (4)
Hauerslevia P. Roberts (1)
Heterorepetobasidium Chee J. Chen & Oberw. (2)
Heteroscypha Oberw. & Agerer (2)
Hyalodon V. Malysheva & Spirin (3)
Hydrophana V. Malysheva & Spirin (1)
Metabourdotia L.S. Olive (1)
Metulochaete R.L.M. Alavarenga (1)*Note 666
Microsebacina P. Roberts (1)
Mycostilla Spirin & V. Malysheva (1)
Myxariellum Spirin & V. Malysheva (2)
Ofella Spirin & V. Malysheva (1)
Porpopycnis R. Kirschner (1)
Proterochaete Spirin & V. Malysheva (1)*Note 717
Protoacia Spirin & V. Malysheva (1)
Protodontia Höhn. (6)
Protograndinia Rick (1)
Protohydnum Möller (1)
Protomerulius Möller (= *Aporpium* Bondartsev & Singer) (15)
Protoradulum Rick (1)
Pseudohydnum P. Karst. (20)
Psilochaete V. Spirin & V. Malysheva (1)*Note 718
Renatobasidium Hauerslev (1)
Stypella Möller (7)
Stypellopsis Spirin & V. Malysheva (2)
Tremellacantha Jülich (1)

Boletales E.-J. Gilbert
Boletaceae Chevall.
Abtylopilus Yan C. Li & Zhu L. Yang (2)*Note 705
Acyanoboletus G. Wu & Zhu L. Yang (2)*Note 1019
Afroboletus Pegler & T.W.K. Young (9)
Afrocastellanoa M.E. Sm. & Orihara (1)
Alessioporus Gelardi, Vizzini & Simonini (2)
Amoenoboletus G. Wu, E. Horak & Zhu L. Yang (6)*Note 706
Amylotrama Bloomfield, Davoodian, Trappe & T. Lebel (2)*Note 1023
Anthracoporus Yan C. Li & Zhu L. Yang (4)*Note 1024
Aureoboletus Pouzar (55)
Austroboletus (Corner) Wolfe (= *Boletus* subgen. *Austroboletus* Corner) (40)
Baorangia G. Wu & Zhu L. Yang (7)*Note 1601
Binderoboletus T.W. Henkel & M.E. Sm. (1)
Boletellus Murrill (= *Boletogaster* Lohwag; = *Frostiella* Murrill; = *Strobilofungus* McGinty) (74)
Boletochaete Singer (5)

Boletus L. (= *Boletus* subgen. *Boletus* L.; = *Boletus* sect. *Boletus* L.; = *Boletus* sect. *Edules* Fr.; = *Ceriomyces* Murrill; = *Dictyopus* Quél.; = *Notholepiota* E. Horak; = *Oedipus* Bataille; = *Suillus* P. Micheli ex Adans.; = *Suillus* Haller ex Kuntze; *Suillus* P. Micheli; = *Tubiporus* P. Karst.) (ca 270)*Fp133
Borofutus Hosen & Zhu L. Yang (1)
Bothia Halling, T.J. Baroni & Manfr. Binder (2)
Brasilioporus A.C. Magnago, Alves-Silva & T.W Henkel (3)*Note 1015
Buchwaldoboletus Pilát (13)
Butyriboletus Arora & J.L. Frank (= *Butyriboletus* sect. *Butyriboletus* D. Arora & J.L. Frank; = *Boletus* sect. *Appendiculati* Estadès & Lannoy; = *Boletus* sect. *Appendiculati* Konrad & Maubl.) (33)
Cacaoporus Raspé & Vadthanarat (2)*Note 709
Caloboletus Vizzini (17)
Carolinigaster M.E. Sm. & S. Cruz (1)
Castellanea T.W. Henkel & M.E. Sm. (1)
Chalciporus Bataille (= *Chalciporus* subgen. *Rubinoboletus* (Pilát & Dermek) Klofac & Krisai; = *Rubinoboletus* Pilát & Dermek) (35)
Chamonixia Rolland (4)*Fp263
Chiua Y.C. Li & Zhu L. Yang (4)
Costatisporus T.W. Henkel & M.E. Sm. (1)
Crocinoboletus N.K. Zeng, Zhu L. Yang & G. Wu (3)
Cupreoboletus Simonini, Gelardi & Vizzini (1)
Cyanoboletus Gelardi, Vizzini & Simonini (13)
Durianella Desjardin, A.W. Wilson & Manfr. Binder (1)
Erythrophylloporus Ming Zhang & T.H. Li (6)
Exsudoporus Vizzini, Simonini & Gelardi (= *Butyriboletus* sect. *Exsudoporus* (Vizzini, Simonini & Gelardi) Yang Wang) (4)*Note 1541
Fistulinella Henn. (= *Gastrotylopilus* T.H. Li & Watling; = *Ixechinus* R. Heim; = *Ixechinus* R. Heim ex E. Horak) (27)
Garcileccinum Ayala-Vasquez & Pérez-Moreno, **nom. inval.** (3)*Note 1603
Gastroboletus Lohwag (13)
Gastroleccinum Thiers (1)
Guyanaporus T.W. Henkel & M.E. Sm. (1)
Gymnogaster J.W. Cribb (1)
Harrya Halling, Nuhn & Osmundson (6)
Heimioporus E. Horak (= *Heimiella* Boedijn) (19)
Heliogaster Orihara & K. Iwase (1)*Fp34
Hemiaustroboletus Ayala-Vásquez, García-Jiménez & Garibay-Orijel (2)*Note 745
Hemilanmaoa Yang Wang, Bo Zhang & Y. Li (1)*Note 1034
Hemileccinum Šutara (= *Corneroboletus* N.K. Zeng & Zhu L. Yang) (14)
Hongoboletus G. Wu & Zhu L. Yang (1)*Note 1036
Hortiboletus Simonini, Vizzini & Gelardi (16)
Hourangia Xue T. Zhu & Zhu L. Yang (6)
Hymenoboletus Y.C. Li & Zhu L. Yang (4)
Imleria Vizzini (8)
Imperator G. Koller, Assyov, Bellanger, Bertéa, Loizides, G. Marques, P.-A. Moreau, J.A. Muñoz, Oppicelli, Puddu & F. Richard (4)
Indoporus A. Parihar, K. Das, Hembrom & Vizzini (2)
Ionosporus Khmeln. (2)*Note 1546
Jimtrappea T.W. Henkel, M.E. Sm. & Aime (1)
Kaziboletus Hosen & Zhu L. Yang (1)*Note 569
Kgaria Halling, Fechner & Davoodian (3)*Note 1305

Kombocles Castellano, T.W. Henkel & Dentinger (1)
Lanmaoa G. Wu & Zhu L. Yang (12)*Note 1602
Leccinellum Bresinsky & Manfr. Binder (27)
Leccinum Gray (= *Krombholzia* P. Karst.; = *Krombholziella* Maire; = *Rossbeevera* T. Lebel, Orihara & N. Maek.; = *Trachypus* Bataille) (ca 145)
Longistriata Sulzbacher, Orihara, Grebenc, M.P. Martín & Baseia (1)*Note 627
Mackintoshia Pacioni & Sharp (1)
Mucilopilus Wolfe (= *Porphyrellus* sect. *Pseudotylopili* McNabb) (5)
Mycoamaranthus Castellano, Trappe & Malajczuk (3)
Neoboletus Gelardi, Simonini & Vizzini (20)
Neotropicomus A.C. Magnago, Alves-Silva & T.W Henkel (2)*Note 714
Nevesoporus A.C. Magnago & T.W. Henkel (2)*Note 1002
Nigroboletus Gelardi, Vizzini, E. Horak, T.H. Li & Ming Zhang (1)
Niveoboletus Yang Wang, G. Wu, B. Zhang & Yu Li (1)*Note 1543
Octaviania Vittad. (= *Octavianina* Kuntze) (58)
Parvixerocomus G. Wu & Zhu L. Yang (3)
Paxilloboletus Furneaux, De Kesel & F.K. Khan (2)*Note 1003
Paxillogaster E. Horak (1)
Phylloboletellus Singer (1)
Phyllobolites Singer (2)
Phylloporopsis Angelini, A. Farid, Gelardi, M.E. Sm., Costanzo & Vizzini (1)*Note 1545
Phylloporus Quél. (ca 95)
Porphyrellus E.-J. Gilbert (22)
Pseudoaustroboletus Y.C. Li & Zhu L. Yang (1)
Pseudoboletus Šutara (3)
Pulchroboletus Gelardi, Vizzini & Simonini (4)
Pulveroboletus Murrill (41)
Retiboletus Manfr. Binder & Bresinsky (17)
Rheubarbariboletus Vizzini, Simonini & Gelardi (2)
Rhodactina Pegler & T.W.K. Young (3)
Rostrupomyces Vadthanarat & Raspé, **nom. inval.** (1)*Note 1542
Royoungia Castellano, Trappe & Malajczuk (= *Australopilus* Halling & N.A. Fechner) (6)
Rubinosporus Vadthanarat, Raspé & Lumyong (1)*Note 720
Rubroboletus Kuan Zhao & Zhu L. Yang (16)
Rufoboletus N.K. Zeng & Zhi Q. Liang (= *Butyriboletus* sect. *Rhodocarnei* Yang Wang, G. Wu, B. Zhang & Y. Li) (1)*Liu et al. 2024c
Rugiboletus G. Wu & Zhu L. Yang (3)
Setogyroporus Heinem. & Rammeloo (1)
Singerocomus T.W. Henkel & M.E. Sm. (4)
Singeromyces M.M. Moser (1)
Solioccasus Trappe, Osmundson, Manfr. Binder, Castellano & Halling (1)
Spongiforma Desjardin, Manfr. Binder, Roekring & Flegel (2)
Spongispora G. Wu, S.M.L. Lee, E. Horak & Zhu L. Yang (1)
Strobilomyces Berk. (= *Eriocorys* Quél.) (62)
Suillellus Murrill (ca 20)
Sutorius Halling, Nuhn & N.A. Fechner (17)
Tengioboletus G. Wu & Zhu L. Yang (4)
Tropicoboletus Angelini, Gelardi & Vizzini (1)*Note 1069
Tubosaeta E. Horak (6)
Turmalinea Orihara & N. Maek. (4)
Tylocinum Y.C. Li & Zhu L. Yang (2)

Tylopilus P. Karst. (= *Leucogyroporus* Snell; = *Phaeoporus* Bataille; = *Rhodobolites* Beck; = *Rhodoporus* Quél.; = *Rhodoporus* Quél. ex Bataille) (ca 160)
Veloboletus Fechner & Halling (1)*Notes 725, 532
Veloporphyrellus L.D. Gómez & Singer (10)
Villoboletus L. Fan & N. Mao (1)*Note 1070
Wakefieldia Corner & Hawker (2)
Xanthoconium Singer (11)
Xerocomellus Šutara (29)
Xerocomus Quél. (= *Versipellis* Quél.; = *Xerocomopsis* Reichert) (ca 120)*Fp204
Zangia Y.C. Li & Zhu L. Yang (6)

Boletinellaceae P.M. Kirk, P.F. Cannon & J.C. David
Boletinellus Murrill (8)
Phlebopus (R. Heim) Singer (= *Boletus* subgen. *Phlebopus* R. Heim; = *Phaeogyroporus* Singer) (18)

Calostomataceae E. Fisch.
Calostoma Desv. (= *Gyropodium* E. Hitchc.; = *Husseia* Berk.; = *Mitremyces* Nees) (35)

Coniophoraceae Ulbr.
Chrysoconia McCabe & G.A. Escobar (1)
Coniophora DC. (= *Coniophorella* P. Karst.) (ca 50)
Coniophoropsis Hjortstam & Ryvarden (2)
Gyrodontium Pat. (= *Boninohydnum* S. Ito & S. Imai) (2)
Penttilamyces Zmitr., Kalinovskaya & Myasnikov (3)*Note 716
Sedecula Zeller (1)

Diplocystidiaceae Kreisel
Astraeus Morgan (= *Diploderma* Link) (12)
Diplocystis Berk. & M.A. Curtis (5)
Endogonopsis R. Heim (1)
Tremellogaster E. Fisch. (1)

Gasterellaceae Zeller
Gasterella Zeller & L.B. Walker (1)

Gomphidiaceae Maire ex Jülich
Chroogomphus (Singer) O.K. Mill. (= *Brauniellula* A.H. Sm. & Singer; = *Chroogomphus* sect. *Chroogomphus* (Singer) O.K. Mill.; = *Chroogomphus* sect. *Floccigomphus* (S. Imai) O.K. Mill.; = *Gomphidius* subgen. *Chroogomphus* Singer; = *Gomphidius* subgen. *Laricogomphus* Singer; = *Gomphidius* subgen. *Myxogomphus* Singer) (28)
Cystogomphus Singer (1)
Gomphidius Fr. (= *Agaricus* subgen. *Gomphus* Fr.; = *Gomphus* (Fr.) Weinm.; = *Leucogomphidius* Kotl. & Pouzar) (ca 20)*Fp147
Gomphogaster O.K. Mill. (1)

Gyroporaceae (Singer) Manfr. Binder & Bresinsky
Gyroporus Quél. (= *Coelopus* Bataille; = *Leucobolites* Beck; = *Leucoconius* Beck; = *Suillus* P. Karst.) (ca 50)

Hygrophoropsidaceae Kühner

Hygrophoropsis (J. Schröt.) Maire ex Martin-Sans (= *Cantharellus* subgen. *Hygrophoropsis* J. Schröt.) (19)
Leucogyrophana Pouzar (8)

Paxillaceae Lotsy
Alpova C.W. Dodge (ca 16)
Austrogaster Singer (2)
Gyrodon Opat. (*Anastomaria* Raf.; = *Campbellia* Cooke & Massee; = *Gilbertiella* R. Heim; = *Gilbertina* R. Heim; = *Pseudogyrodon* Heinem. & Rammeloo; = Rodwaya Syd. & P. Syd.; = *Uloporus* Quél.) (13)
Hoehnelogaster Lohwag (1)
Hydnomerulius Jarosch & Besl (1)
Meiorganum R. Heim (3)
Melanogaster Corda (= *Argylium* Wallr.; = *Bulliardia* Jungh.; = *Hyperrhiza* Bosc ex Spreng.; = *Uperhiza* Bosc) (36)*Fp345
Neoalpova Vizzini (3)
Paragyrodon (Singer) Singer (= *Gyrodon* subgen. *Paragyrodon* Singer) (1)
Paralpova Cabero & P. Alvarado (1)*Note 568
Paxillus Fr. (= *Parapaxillus* Singer; = *Paxillopsis* E.-J. Gilbert; = *Rhymovis* Pers. ex Rabenh.; = *Ruthea* Opat.) (ca 70)*Fp232

Protogastraceae Zeller
Protogaster Thaxt. (1)

Rhizopogonaceae Gäum. & C.W. Dodge
Fevansia Trappe & Castellano (1)
Rhizopogon Fr. (= *Anthracophlous* Mattir.; = *Hysteromyces* Vittad.; = *Splanchnomyces* Corda; = *Trappeindia* Castellano) (ca 225)
Rhopalogaster J.R. Johnst. (1)

Sclerodermataceae Corda
Chlorogaster Læssøe & Jalink (1)
Favillea Fr. (2)
Horakiella Castellano & Trappe (2)
Pisolithus Alb. & Schwein. (= *Durosaccum* Lloyd; = *Endacinus* Raf.; = *Eudacnus* Raf. ex Merr.; = *Eudacnus* Raf.; = *Lycoperdodes* Haller ex Kuntze; = *Pisocarpium* Link; = *Pisomyces* Fr.; = *Polypera* Pers.; = *Polysaccum* F. Desp. & DC.) (21)*Fp138
Scleroderma Pers. (= *Actigea* Raf.; *Actinodermium* Nees; = *Caloderma* Petri; = *Glyptoderma* R. Heim & Perr.-Bertr.; = *Goupilia* Mérat; = *Lycoperdastrum* P. Micheli; = *Mycastrum* Raf.; = *Neosaccardia* Mattir.; = *Nepotatus* Lloyd; = *Phlyctospora* Corda; = *Pirogaster* Henn.; = *Pompholyx* Corda; = *Sclerangium* Lév.; = *Stella* Massee; = *Sterrebekia* Link; = *Veligaster* Guzmán) (ca 115)*Fp70

Serpulaceae Jarosch & Bresinsky
Austropaxillus Bresinsky & Jarosch (9)
Gymnopaxillus E. Horak (4)
Meruliporia Murrill (= *Merulioporia* Bondartsev & Singer; = *Serpula* sect. *Meruliporia* (Murrill) Zmitr.) (2)*Note 1544
Serpula (Pers.) Gray (= *Merulius* sect. *Serpula* Pers.; = *Gyrophana* Pat.; = *Gyrophora* Pat.; = *Plicaturella* Murrill; = *Xylomyzon* Pers.; = *Xylophagus* Link) (16)*Fp144*Note 1540

Suillaceae Besl & Bresinsky

Psiloboletinus Singer (1)
Suillus Gray (= *Boletinus* Kalchbr.; = *Boletopsis* Henn.; = *Boletus* sect. *Viscipellis* Fr.; = *Cricunopus* P. Karst.; = *Euryporus* Quél.; = *Fuscoboletinus* Pomerl. & A.H. Sm.; = *Gastrosuillus* Thiers; = *Gymnopus* (Quél.) Quél. ex Moug. & Ferry; = *Ixocomus* Quél.; = *Mariaella* Šutara; = *Peplopus* (Quél.) Quél. ex Moug. & Ferry; = *Pinuzza* Gray; = *Rostkovites* P. Karst.; = *Solenia* Hill ex Kuntze; = *Viscipellis* (Fr.) Quél.; = *Viscipellis* subgen. *Gymnopus* Quél.; = *Viscipellis* subgen. *Peplopus* Quél.) (ca 120)*Fp145
Truncocolumella Zeller (= *Dodgea* Malençon) (2)

Tapinellaceae C. Hahn
Bondarcevomyces Parmasto (1)
Pseudomerulius Jülich (3)
Tapinella E.-J. Gilbert (= *Agaricus* trib. *Tapinia* Fr.; = *Sarcopaxillus* Zmitr., Malysheva & E.F. Malysheva; = *Serpula* sect. *Tapinella* (E.-J. Gilbert) Zmitr.; = *Tapinia* (Fr.) P. Karst.) (4)

Boletales genera *incertae sedis*
Corditubera Henn. (6)
Corneromyces Ginns (2)
Marthanella States & Fogel (1)
Phaeoradulum Pat. (1)

Cantharellales Gäum.
Aphelariaceae Corner
Aphelaria Corner (ca 20)
Phaeoaphelaria Corner (1)
Tumidapexus D.A. Crawford (1)

Botryobasidiaceae Jülich
Allescheriella Henn (4)
Botryobasidium Donk (= *Acladium* Link; = *Allescheriella* Henn.; = *Alysidium* Kunze; = *Haplotrichum* Link; = *Physospora* Fr.; = *Sporocephalium* Chevall.) (ca 100)*Fp149
Neoacladium P.N. Singh & S.K. Singh (1)*Note 297

Ceratobasidiaceae G.W. Martin [to be conserved with conserved type] (= *Cejpomycetaceae* Jülich)
Rhizoctonia DC. (= *Ceratobasidium* D.P. Rogers [with conserved type, to be proposed]; = *Thanatephorus* Donk; = *Uthatobasidium* Donk; = *Koleroga* Donk; = *Oncobasidium* P.H.B. Talbot & Keane; = *Cejpomyces* Svrček & Pouzar; = *Ypsilonidium* Donk; = *Aquathanatephorus* C.C. Tu & Kimbr.; = *Ceratorhiza* R.T. Moore; = *Tofispora* G. Langer) (ca 78)

Hydnaceae Chevall. (= *Cantharellaceae* J. Schröt.; = *Clavulinaceae* Donk; = *Sistotremataceae* Jülich)
Bergerella Diederich & Lawrey (1)*Notes 68, 807
Bryoclavula H. Masumoto & Y. Degawa (1, 1)*Notes 83, 808
Burgella Diederich & Lawrey (2)
Burgellopsis Diederich & Lawrey (1)
Burgoa Goid. (ca 10)
Cantharellus Adans.ex Fr. (ca 200)*Fp195
Clavulina J. Schröt. (ca 90)
Corallofungus Kobayasi (1)
Craterellus Pers. (ca 45)*Fp61
Gloeomucro R.H. Petersen (10)

Hydnum L. (ca 75)*Fp52
Ingoldiella D.E. Shaw (2)
Membranomyces Jülich (1)
Minimedusa Weresub & P.M. LeClair (3)
Multiclavula R.H. Petersen (ca 15)
Neoburgoa Diederich, E. Zimm. & Lawrey (1)
Osteomorpha G. Arnaud ex Watling & W.B. Kendr. (1)
Parmeliicida Diederich, F. Berger, Etayo & Lawrey (1)*Note 1046
Parastereopsis Corner (1)
Paullicorticium J. Erikss. (7)
Repetobasidiellum J. Erikss. & Hjortstam (1)
Rogersiomyces J.L. Crane & Schokn. (2)
Scotomyces Jülich (1)
Sistotrema Fr. (ca 65)
Sistotremella Hjortstam (3)

Tulasnellaceae Juel
Pseudotulasnella Lowy (1)
Tulasnella J. Schröt. (= *Hormomyces* Bonord.) (ca 80)
Stilbotulasnella Oberw. & Bandoni (1)

Cantharellales genera *incertae sedis*
Bulbilla Diederich, Flakus & Etayo (= *Adamflakia* Diederich & Lawrey) (1)
Ceratoporia Ryvarden & de Meijer (1)*Note 1526
Odontiochaete Rick (1)
Parahaplotrichum W.A. Baker & Partr. (1)
Pseudocraterellus Corner (11)
Radulochaete Rick (2)
Schildia Franchi & M. Marchetti (1)

Corticiales K.H. Larss.
Corticiaceae Herter
Basidiodesertica Maharachch., Wanas. & Al-Sadi (1)*Note 62, 1535
Capillosclerotium Prameela & Deeba (1)
Corticium Pers. (ca 75)
Disporotrichum Stalpers (1)
Erythricium J. Erikss. & Hjortstam (5)
Galzinia Bourdot (9)
Giulia Tassi (1)*Coel
Laetisaria Burds. (10)
Lawreymyces Lücking & Moncada (1)
Marchandiomyces Diederich & D. Hawksw. (= *Marchandiopsis* Ghob.-Nejh. & Hallenb. (4)*Fp68
Mycobernardia Ghobad-Nejhad (1)*Note 647
Necator Massee (1)
Tretopileus B.O. Dodge (1)
Waitea Warcup & P.H.B. Talbot (8)

Dendrominiaceae Ghobad-Nejhad
Dendrominia Ghobad-Nejhad & Duhem (4)

Punctulariaceae Donk
Dendrocorticiopsis Sheng H. Wu, C.L. Wei & S.H. He (1)*Note 1031

Dendrocorticium M.J. Larsen & Gilb. (ca 10)
Punctularia Pat. (3)
Punctulariopsis Ghobad-Nejhad (4)

Vuilleminiaceae Maire ex Lotsy
Australovuilleminia Ghobad-Nejhad & Hallenb. (1)
Cytidia Quél. (6)
Vuilleminia Maire (ca 10)

Corticiales genera *incertae sedis*
Ambivina Katz (1)
Amylobasidium Ginns (1)
Corticirama Pilát (2)
Hemmesomyces Gilb. & Nakasone (1)
Leptocorticium Hjortstam & Ryvarden (8)
Melzerodontia Hjortstam & Ryvarden (3)
Papyrodiscus D.A. Reid (1)
Ripexicium Hjortstam (1)

Geastrales K. Hosaka & Castellano
Geastraceae Corda
Geasteroides Long (= *Terrostella* (Long) Long) (1)
Geastrum Pers. (ca 120)
Myriostoma Desv. (5)
Phialastrum Sunhede (1)

Schenellaceae Nann.-Bremek. (= *Pyrenogastraceae* Jülich)
Schenella T. Macbr. (= *Pyrenogaster* Malençon & Riousset) (4)

Sphaerobolaceae J. Schröt.
Sphaerobolus Tode (= *Carpobolus* P. Micheli ex Willd; = *Nidulariopsis* Greis.) (6)*Fp139

Sclerogastraceae Locq. ex P. M. Kirk
Boninogaster Kobayasi (1)
Sclerogaster R. Hesse (ca 15)

Gloeophyllales Thorn
Gloeophyllaceae Jülich (= *Boreostereaceae* Jülich)
Boreostereum Parmasto (4)
Chaetodermella Rauschert (2)
Gloeophyllum P. Karst. (13)
Griseoporia Ginns (1)
Heliocybe Redhead & Ginns (2)
Hispidaedalea Y.C. Dai & S.H. He (1)
Neolentinus Redhead & Ginns (ca 10)
Osmoporus Singer (2)
Paratrichaptum Corner (1)*Chen et al. 2020
Veluticeps Cooke (ca 15)

Gloeophyllales genera *incertae sedis*
Campylomyces Nakasone (2)
Pileodon P. Roberts & Hjortstam (2)

Mycothele Jülich (1)
Stiptophyllum Ryvarden (1)

Gomphales Jülich
Clavariadelphaceae Corner
Beenakia D.A. Reid (7)
Clavariadelphus Donk (ca 30)

Gomphaceae Donk
Araeocoryne Corner (ca 31)
Ceratellopsis Konrad & Maubl. (18)
Delentaria Corner (1)
Destuntzia Fogel & Trappe (6)
Gautieria Vittad. (ca 30)
Gloeocantharellus Singer (ca 20)
Gomphus Pers. (12)
Luteudorsum Z.J. Peng, X.Y. Liu, & Z.D. Yu (1)*Note 1315
Phaeoclavulina Brinkmann (ca 50)
Protogautieria A.H. Sm. (2)
Pseudogomphus R. Heim (1)
Ramaria Fr. ex Bonord. (ca 300)*Fp73
Ramaricium J. Erikss. (4)
Terenodon Maas Geest. (1)
Turbinellus Earle (5)

Lentariaceae Jülich
Hydnocristella R.H. Petersen (3)
Kavinia Pilát (5)
Lentaria Corner (ca 25)
Gomphocantharellus L. Fan, Y.Y. Xu, Zhu L.Yang & S. P. Jian (1)*Note 825

Hymenochaetales Oberw.*Zhao et al. 2024a
Coltriciaceae Jülich*Zhao et al. 2024a
Coltricia Gray (= *Coltriciella* Murrill) (ca 50)

Hirschioporaceae Y.C. Dai, Yuan Yuan & Meng Zhou
Hirschioporus Donk (ca 12)
Nigrohirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou (ca 10)*Note 1309
Pallidohirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou (10)*Note 1093
Perennihirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou (6)*Note 1204

Hymenochaetaceae Donk
Arambarria Rajchenb. & Pildain (2)
Asterodon Pat. (2)
Aurificaria D.A. Reid (1)
Basidioradulum Nobles (2)
Clavariachaete Corner (2)
Coniferiporia L.W. Zhou & Y.C. Dai (3)
Cyanotrama Ghobad-Nejhad & Y.C. Dai (3)
Cylindrosporus L.W. Zhou (1)
Deviodontia (Parmasto) Hjortstam & Ryvarden (1)
Dichochaete Parmasto (1)

Eucalyptoporia B.K. Cui & Shun Liu (1)*Liu et al. 2023e
Fibricium J. Erikss. (7)
Flaviporellus Murrill (1)
Fomitiporella Murrill (11)
Fomitiporia Murrill (ca 60)
Fulvifomes Murrill (ca 30)
Fulvoderma L.W. Zhou & Y.C. Dai (2)
Fuscoporia Murrill (ca 50)
Hydnochaete Bres. (1)
Hydnoporia Murrill (15)
Hymenochaete Lév. (ca 175)
Hymenochaetopsis S.H. He & Jiao Yang (2)
Inocutis Fiasson & Niemelä (9)
Inonotopsis Parmasto (1)
Inonotus P. Karst. (ca 125)
Meganotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui*Note 746
Mensularia Lázaro Ibiza (3)
Neomensularia F. Wu, L.W. Zhou & Y.C. Dai (4)
Neophellinus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui (1)*Note 748
Nothonotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui (1)*Note 749
Nothophellinus Rajchenb. (1)
Ochrosporellus (Bondartseva & S. Herrera) Bondartseva & S. Herrera (11)
Onnia P. Karst. (9)
Pachynotus Y.C. Dai, F. Wu, L.W. Zhou & B.K. Cui (1)*Note 752
Perenninotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui (1)*Note 750
Phellinidium (Kotl.) Fiasson & Niemelä (6)
Phellinopsis Y.C. Dai (9)
Phellinotus Drechsler-Santos, Robledo & Rajchenb.
Phellinus Quél. (ca 150)
Phellopilus Niemelä, T. Wagner & M. Fisch. (1)
Phylloporia Murrill (ca 65)
Poriodontia Parmasto (1)
Porodaedalea Murrill (13)
Pseudoinonotus T. Wagner & M. Fisch. (5)
Pseudophylloporia Y.C. Dai, F. Wu, L.W. Zhou & B.K. Cui (1)*Note 751
Pyrrhoderma Imazeki (6)
Rajchenbergia Salvador-Montoya, Popoff & Drechsler-Santos (3)*Note 719
Rigidonotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui (2)*Note 1063
Sanghuangporus Sheng H. Wu, L.W. Zhou & Y.C. Dai (ca 15)
Sclerotus Xavier de Lima (1)*Note 603, 1537
Tropicoporus L.W. Zhou, Y.C. Dai & Sheng H. Wu (13)
Xanthoporia Murrill (2)

Neoantrodiellaceae Y.C. Dai, B.K. Cui, Jia J. Chen & H.S. Yuan*Zhou et al. 2023a, Wang et al. 2023b
Neoantrodiella Y.C. Dai, B.K. Cui, Jia J. Chen & H.S. Yuan (2)

Nigrofomitaceae Jülich*Zhou et al. 2023a, Wang et al. 2023b
Nigrofomes Murrill (= *Melanoporia* Murrill) (4)

Odonticiaceae L.W. Zhou & Xue W. Wang*Note 1509
Leifia Ginns

Odonticium Parmasto (10)

Peniophorellaceae L.W. Zhou, Xue W. Wang & S.L. Liu, **nom. inval.***Note 1510
Peniophorella P. Karst. (ca 30)

Repetobasidiaceae Jülich, **nom. inval.**
Repetobasidium J. Erikss. (13)

Resiniciaceae L.W. Zhou & Xue W. Wang*Note 1511
Resinicium Parmasto (ca 15)

Rickenellaceae Vizzini
Atheloderma Parmasto (2)
Rickenella Raithelh. (CA 10)

Rigidoporaceae Jülich (= *Oxyporaceae* Zmitr. & V. Malysheva)
Bridgeoporus T.J. Volk, Burds. & Ammirati (1)
Leucophellinus Bondartsev & Singer (2)
Rigidoporus Murrill (= *Botryodontia* (Hjortstam & Ryvarden) Hjortstam; = *Emmia* Zmitr., Spirin & Malysheva; = *Oxyporus* (Bourdot & Galzin) Donk) (ca 80)

Schizocorticiaceae L.W. Zhou & Xue W. Wang
Schizocorticium Sheng H. Wu (= *Skvortzoviella* Jia Yu, Xue W. Wang, S.L. Liu & L.W. Zhou (4)*Notes 549

Schizoporaceae Jülich (= *Chaetoporellaceae* Jülich; = *Hyphodontiaceae* Xue W. Wang & L.W. Zhou)*Note 1079, Zhao et al. 2024a
Alutaceodontia (Parmasto) Hjortstam & Ryvarden (1)
Echinoporia Ryvarden (= *Echinodia* Pat.) (3)
Fasciodontia Yurchenko & Riebesehl (3)*Notes 163, 703
Hyphodontia J. Erikss. (36)
Lyomyces P. Karst. (= *Rogersella* Liberta & A.J. Navas) (42)*Note 1551
Xylodon (Pers.) Gray (= *Lagarobasidium* Jülich; = *Odontiopsis* Hjortstam & Ryvarden; = *Schizopora* Velen.) (ca 125)*Note 1554

Sideraceae L.W. Zhou & Xue W. Wang*Note 1512
Sidera Miettinen & K.H. Larss. (14)

Skvortzoviaceae L.W. Zhou & Xue W. Wang*Note 1513
Skvortzovia Bononi & Hjortstam (8)

Trichaptaceae Y.C. Dai, Yuan Yuan & Meng Zhou*Note 1485
Trichaptum Murrill (ca 40)

Tubulicrinaceae Jülich
Tubulicrinis Donk (ca 40)

Umbellaceae Xue W. Wang & L.W. Zhou*Note 1515
Umbellus Xue W. Wang & L.W. Zhou (1)*Note 1385

Hymenochaetales genera *incertae sedis*
Alloclavaria Dentinger & D. J. McLaughlin (1)

Blasiphalia Redhead (1)
Bryopistillaria Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen (1)*Notes 85, 708
Caeruleomyces Stalpers (1)
Cantharellopsis Kuyper (1)
Contumyces Redhead, Moncalvo, Vilgalys & Lutzoni (3)
Cotylidia P. Karst. (13)
Egonia K.H. Larss. (3)*Viner et al. 2024
Ginnsia Sheng H. Wu & Hallenb. (1)
Globulicium Hjortstam (1)
Gyroflexus Raithelh. (= *Sphagnomphalia* Redhead, Moncalvo, Vilgalys & Lutzoni) (1)
Hastodontia (Parmasto) Hjortstam & Ryvarden (2)
Kurtia Karasiński (3)
Lawrynomyces Karasiński (2)
Litschauerella Oberw. (4)
Loreleia Redhead, Moncalvo, Vilgalys & Lutzoni (3)
Lyoathelia Hjortstam & Ryvarden (1)
Muscinupta Redhead, Lücking & Lawrey (3)
Podocarpioporus Y.C. Dai, Yuan Yuan & Meng Zhou. L. Zhao (2)*Note 1310
Pseudotrichaptum Y.C. Dai, Yuan Yuan & Meng Zhou (1)*Note 1368
Sphaerobasidium Oberw. (3)
Subulicium Hjortstam & Ryvarden (3)
Tsugacorticium Nakasone & Burds. (1)

Hysterangiales K. Hosaka & Castellano
Gallaceaceae Locq. ex P. M. Kirk
Austrogautieria E.L. Stewart & Trappe (7)
Gallacea Lloyd (6)
Hallingea Castellano (3)

Hysterangiaceae E. Fisch.
Aroramyces Castellano & Verbeken (5)
Hysterangium Vittad. (ca 65)
Statesia Castellano, T. Lebel, Davoodian & K. Hosaka (4)*Note 722

Mesophelliaceae Jülich
Andebbia Trappe, Castellano & Amar. (1)
Castoreum Cooke & Massee (2)
Chondrogaster Maire (2)
Gummiglobus Trappe, Castellano & Amar. (2)
Gummivena Trappe & Bougher (1)
Malajczukia Trappe & Castellano (8)
Mesophellia Berk. (18)
Nothocastoreum G.W. Beaton (1)

Phallogastraceae Castellano, T. Lebel, Davoodian & K. Hosaka (= *Phallogastraceae* Locq.)*Note 1080
Phallogaster Morgan (5)

Hysterangiales genera *incertae sedis*
Circulocolumella S. Ito & S. Imai (1)
Clathrogaster Petri (1)

Jaapiales Manfr. Binder, K.H. Larss. & Hibbett
Jaapiaceae Manfr. Binder, K.H. Larss. & Hibbett
Jaapia Bres. (2)

Lepidostromatales B.P. Hodk. & Lücking
Lepidostromataceae Ertz, Eb. Fisch., Killmann, Sérus. & Lawrey
Ertzia B.P. Hodk. & Lücking (1)
Lepidostroma Mägd. & S. Winkl. (5)
Sulzbacheromyces B.P. Hodk. & Lücking (8)

Phallales E. Fisch.
Clathraceae Chevall.
Abrachium Baseia & T.S. Cabral (1)
Aseroe Labill. (3)
Blumenavia Möller (6)
Clathrus P. Micheli ex L. (ca15)
Colus Cavalier & Séchier (7)
Ileodictyon Tul. & C. Tul. (3)
Hosakaea Mujic & M.E. Sm. (1)*Mujic et al. 2024
Laternea Turpin (7)
Ligiella J.A. Sáenz (1)
Pseudocolus Lloyd (4)

Claustulaceae G. Cunn.
Claustula K.M. Curtis (= *Phlebogaster* Fogel; = *Pseudogelopellis* K. Tao & B. Liu) (11)
Gelopellis Zeller (6)
Kjeldsenia W. Colgan, Castellano & Bougher (4)

Gastrosporiaceae Pilát
Gastrosporium Mattir. (3)

Lysuraceae Corda
Lysurus Fr. (26)

Phallaceae Corda
Aporophallus Möller (1)
Aserocybe Lév.
Echinophallus Henn. (1)*Fp236
Endophallus M. Zang & R.H. Petersen (1)
Itajahya Möller (4)
Mutinus Fr. (ca 25)
Phallus Junius ex L. (ca 50)
Staheliomyces E. Fisch. (1)
Staurophallus Mont. (1)
Stephanophallus MacOwan (1)
Xylophallus (Schltdl.) E. Fisch. (2)

Protophallaceae Zeller
Protubera Möller (= *Kobayasia* S. Imai & A. Kawam.; = *Protophallus* Murrill; = *Protuberella* S. Imai & A. Kawam.) (ca 15)

Trappeaceae P.M. Kirk

Phallobata G. Cunn. (1)
Pterosporomyces G. Guevara, Gómez-Reyes & Z.W. Ge (1)*Note 1058
Restingomyces Sulzbacher, Grebenc & Baseia (3)
Trappea Castellano (2)

Phallales genera *incertae sedis*
Calvarula Zeller (1)
Endoclathrus B. Liu, Yin H. Liu & Z.J. Gu (1)
Neolysurus O.K. Mill., Ovrebo & Burk (1)
Pseudoclathrus B. Liu & Y.S. Bau (4)
Saprogaster Fogel & States (1)
Vandasia Velen. (1)

Polyporales Gäum.
Adustoporiaceae Audet (= *Amyloporiaceae* Audet; = *Caloporaceae* Bondartseva; = *Lentoporiaceae* Audet; = *Rhodoniaceae* Audet)*Note 1441
Adustoporia Audet (1)
Amyloporia Singer (4)
Austroporia B.K. Cui & Shun Liu (1)*Note 809
Lentoporia Audet (1)
Resinoporia Audet (11)
Rhodonia Niemelä (5) (= *Caloporus* P. Karst.)

Auriporiaceae B.K. Cui, Shun Liu & Y.C. Dai*Note 1517
Auriporia Ryvarden (3)

Cerrenaceae Miettinen, Justo & Hibbett*Miettinen et al. 2023
Acanthodontia Miettinen & Spirin (1)*Miettinen et al. 2023
Cerrena Gray (11)
Irpiciporus Murrill (2)
Lividopora Miettinen (5)*Miettinen et al. 2023
Pseudolagarobasidium J.C. Jang & T. Chen (= *Hyphoradulum* Pouzar) (10)
Pseudospongipellis Y.C. Dai & Chao G. Wang (4)*Note 1057
Radulodon Ryvarden (7)

Climacocystaceae B.K. Cui, Shun Liu & Y.C. Dai*Note 1518
Climacocystis Kotl. & Pouzar (2)
Diplomitoporus Domański (ca 30)

Dacryobolaceae Jülich
Dacryobolus Fr. (8)

Fibroporiaceae Audet
Fibroporia Parmasto (9)
Pseudofibroporia Yuan Y. Chen, B.K. Cui & Y.C. Dai (1)

Fomitopsidaceae Jülich (= *Daedaleaceae* Jülich; = *Piptoporaceae* Jülich)
Amyloporiella A. David & Tortič (1)
Anthoporia Karasiński & Niemelä (1)
Antrodia P. Karst. (= *Cartilosoma* Kotl. & Pouzar) (ca 50)
Antrodiopsis Audet (1)
Brunneoporus Audet (= *Rhizoporia* Audet) (7)

Buglossoporus Kotl. & Pouzar (ca 10)
Daedalea Pers. (ca 35)
Daedalella B.K. Cui & Shun Liu (1)*Notes 875, 1030
Dentiporus Audet (1)
Flavidoporia Audet (3)
Fomitopsis P. Karst. (= *Piptoporus* P. Karst.) (ca 40)
Fragifomes B. K. Cui, M.L. Han & Y.C. Dai (1)
Neoantrodia Audet (13)
Neolentiporus Rajchenb. (1)
Niveoporofomes B.K. Cui, M.L. Han & Y.C. Dai (1)
Parmastomyces Kotl. & Pouzar
Pseudoantrodia B.K. Cui, Yuan Y. Chen & Shun Liu (1)*Note 863
Pseudofomitopsis B.K. Cui & Shun Liu (1)*Note 864
Ranadivia Zmitr. (4)
Rhodoantrodia B.K. Cui, Y.Y. Chen & Shun Liu (3)*Notes 895, 1062
Rhodofomes Kotl. & Pouzar (5)
Rhodofomitopsis B.K. Cui, M.L. Han & Y.C. Dai (7)
Rubellofomes B.K. Cui, M.L. Han & Y.C. Dai (2)
Subantrodia Audet (1)
Ungulidaedalea B.K. Cui, M.L. Han & Y.C. Dai (1)

Fragiliporiaceae Y.C. Dai, B.K. Cui & C.L. Zhao
Fragiliporia Y.C. Dai, B.K. Cui & C.L. Zhao (1)

Gelatoporiaceae Miettinen, Justo & Hibbett
Cinereomyces Jülich (3)
Gelatoporia Niemelä (1)
Obba Miettinen & Rajchenb. (3)
Sebipora Miettinen (1)

Gloeoporellaceae B.K. Cui, Shun Liu & Y.C. Dai*Note 1519
Gloeoporellus Zmitr. (1)

Grifolaceae Jülich
Aegis Gómez-Montoya, Rajchenb. & Robledo (2)
Grifola Gray (9)

Hyphodermataceae Jülich
Hyphoderma Fr. (116)*Note 1592

Hypochniciaceae J.H. Dong & C.L. Zhao*Dong et al. 2024
Hypochnicium J. Erikss. (ca 60)*Dong et al. 2024

Incrustoporiaceae Jülich
Incrustoporia Domanski (5)
Skeletocutis Kotl. & Pouzar (= *Piloporia* Niemelä) (ca 60)
Tyromyces P. Karst. (ca 140)

Irpicaceae Spirin & Zmitr.
Byssomerulius Parmasto (10)
Candelabrochaete Boidin (13)
Ceriporia Donk (ca 50)

Crystallicutis El-Gharabawy, Leal-Dutra & G.W. Griff. (3)*Notes 125, 638
Cytidiella Pouzar (3)
Flavodontia C.L. Zhao (1)*Note 639
Gloeoporus Mont. (ca 30)
Irpex Fr. (= *Efibula* Sheng H. Wu; = *Flavodon* Ryvarden; = *Hydnopolyporus* D.A. Reid (ca 75)
Leptoporus Quél. (12)
Meruliopsis Bondartsev (12)
Phanerochaetella C.C. Chen & Sheng H. Wu (7)*Note 641
Raduliporus Spirin & Zmitr. (1)
Resiniporus Zmitr. (2)
Trametopsis Tomšovský (3)

Ischnodermataceae Jülich
Ischnoderma P. Karst. (10)

Laetiporaceae Jülich
Berkcurtia Robledo & Campi (1)*Note 831
Kusaghiporia J. Hussein, S. Tibell & Tubuhwa (1)*Note 602
Laetiporus Murrill (18)
Macrohyporia I. Johans. & Ryvarden (2)
Wolfiporiella B.K. Cui & Shun Liu (3)*Note 1071
Wolfiporiopsis B.K. Cui & Shun Liu (1)*Note 1072

Laricifomitaceae Jülich
Gilbertsonia Parmasto (1)
Laricifomes Kotl. & Pouzar (2)
Ryvardenia Rajchenb. (2)

Meripilaceae Jülich
Meripilus P. Karst. (6)

Meruliaceae Rea (= *Climacodontaceae* Jülich; = *Phlebiaceae* Jülich)
Allophlebia C.R.S. de Lira, Gibertoni & K.H. Larss. (1)*Notes 988, 1021
Aurantiopileus Ginns, D.L. Lindner & T.J. Baroni (3)
Aurantiporus Murrill (4)
Ceriporiopsis Domański (=) (ca 50)*Note 1548
Ceriporiopsoides C.L. Zhao (2)*Note 1028
Climacodon P. Karst. (6)
Crustodontia Hjortstam & Ryvarden (4)
Geesterania Westphalen, Tomšovský & Rajchenb. (2)
Hermanssonia Zmitr. (1)
Hydnophanerochaete Sheng H. Wu & C.C. Chen (1)
Hydnophlebia Parmasto (10)
Lilaceophlebia (Parmasto) Spirin & Zmitr. (2)
Luteochaete C.C. Chen & Sheng H. Wu (1)*Note 571
Luteoporia F. Wu, Jia J. Chen & S. H. He (3)
Merulius Fr. (ca 10)*Wang et al. 2024d
Mycoacia Donk (16)
Mycoaciella J. Erikss. & Ryvarden (6)
Noblesia Nakasone (2)*Note 648
Odoria V. Papp & Dima (1)
Pappia Zmitr. (2)

Phlebia Fr. (ca 90)*Note 1552
Phlebicolorata C.L. Zhao (1)*Note 1050
Phlebiodontia Motato-Vásq. & Westphalen (3)*Note 784
Phlebiporia Jia J. Chen, B.K. Cui & Y.C. Dai (1)
Physisporinus P. Karst. (ca 10)*Wang et al. 2024d
Pouzaroporia Vampola (1)
Pseudonadsoniella T.O. Kondr. & S.Y. Kondr. (1)
Pseudophlebia C.L. Zhao (3)*Note 1056
Sarcodontia Schulzer (5)
Scopuloides (Massee) Höhn. & Litsch. (7)
Stereophlebia Zmitr. (1)

Neohypochniciaceae J.H. Dong & C.L. Zhao*Dong et al. 2024
Neohypochnicium N. Maek. & R. Sugaw. (30)*Note 1224, Dong et al. 2024

Panaceae Miettinen, Justo & Hibbett
Cymatoderma Jungh. (ca 15)
Panus Fr. (= *Endopandanicola* Tibpromma & K.D. Hyde) (ca 40)*Sousa-Guimarães et al. 2024

Phaeolaceae Jülich
Melanoporella Murrill (1)
Phaeolus (Pat.) Pat. (6)
Wolfiporia Ryvarden & Gilb. (= *Gemmularia* Raf.; *Pachyma* Fr.) (8)

Phanerochaetaceae Jülich (= *Hapalopilaceae* Jülich; = *Bjerkanderaceae* Jülich)
Alboefibula C.C. Chen & Sheng H. Wu (3)*Note 774
Bjerkandera P. Karst. (= *Geotrichopsis* Tzean & Estey) (ca 13)
Callosus C.L. Zhao (1)*Note 1027
Cremeoderma Sheng H. Wu & C.C. Chen (1)*Note 775
Cremeoefibula S.L. Liu, Shan Shen & L.W. Zhou (1)*Liu et al. 2024d
Crepatura C.L. Zhao (1)*Note 776
Donkia Pilát (1)
Donkiella J.H. Dong & C.L. Zhao (1)*Dong et al. 2024
Efibulella Zmitr. (1)
Gelatinofungus Sheng H. Wu, C.C. Chen & C.L. Wei (1)*Note 744
Geliporus Yuan Yuan, Jia J. Chen & S.H. He (1)
Hapalopilus P. Karst. (ca 15)
Hyphodermella J. Erikss. & Ryvarden (9)
Odontoefibula C.C. Chen & Sheng H. Wu (1)
Oxychaete Miettinen (1)
Phaeophlebiopsis D. Floudas & Hibbett (7)
Phanerina Miettinen (1)
Phanerochaete P. Karst. (ca 100)
Phlebiopsis Jülich (= *Australohydnum* Jülich) (ca 30)
Pirex Hjortstam & Ryvarden (1)
Porostereum Pilát (5)
Pseudohyphodermella Shan Shen, S.L. Liu & L.W. Zhou (1)*Note 1386
Quasiphlebia C.C. Chen & Sheng H. Wu (1)*Note 998
Rhizochaete Gresl., Nakasone & Rajchenb. (ca 20)
Riopa D.A. Reid (= *Sporotrichum* Link) (3)
Roseograndinia Hjortstam & Ryvarden (3)
Terana Adans. (1)

Piptoporellaceae B.K. Cui, Shun Liu & Y.C. Dai
Piptoporellus B.K. Cui, M.L. Han & Y.C. Dai (4)

Podoscyphaceae D.A. Reid
Abortiporus Murrill (4)
Podoscypha Pat. (ca 40)

Polyporaceae Fr. ex Corda (= *Coriolaceae* Singer; = *Cryptoporaceae* Jülich; = *Echinochaetaceae* Jülich; = *Fomitaceae* Jülich; = *Ganodermataceae* (Donk) Donk; = *Grammotheleaceae* Jülich; = *Haddowiaceae* Jülich; = *Microporaceae* Jülich; = *Pachykytosporaceae* Jülich; = *Perenniporiaceae* Jülich; = *Sparsitubaceae* Jülich; = *Lophariaceae* Boidin, Mugnier & Canales; = *Trametaceae* Boidin, Mugnier & Canales)
Abundisporus Ryvarden (8)*Fp39
Amauroderma Murrill (ca 70)
Amaurodermellus Costa-Rezende, Drechsler-Santos & Góes-Neto (1)*Note 21
Amylosporia B.K. Cui, C.L. Zhao & Y.C. Dai (1)*Note 635
Atroporus Ryvarden (3)
Aurantioporia B.K. Cui & Xing Ji (2)*Note 1234
Australoporus P.K. Buchanan & Ryvarden (1)
Bresadolia Speg. (5)
Cellulariella Zmitr. & Malysheva (2)
Cerarioporia F. Wu, L.W. Zhou & J. Si (1)
Cerioporus Quél. (ca 20)
Cinereomycetella Zmitr. (1)
Citrinoporia B.K. Cui & Xing Ji, **nom. inval.** (2)*Note 1229
Colospora Miettinen & Spirin (2)
Coriolopsis Murrill (ca 20)
Crassisporus B.K. Cui & Xing Ji (4)*Note 637
Cristataspora Robledo & Costa-Rezende (2)*Note 119
Cryptoporus (Peck) Shear (2)
Cyanoporus Y.C. Dai, W.L. Mao & Yuan Yuan (2)*Note 1207
Cystidioporia B.K. Cui & Xing Ji (1)*Note 1215
Daedaleopsis J. Schröt. (11)
Datronia Donk (4)
Datroniella B.K. Cui, Hai J. Li & Y.C. Dai (1)
Dendroporia B.K. Cui & Xing Ji (1)*Note 1344
Dentocorticium (Parmasto) M.J. Larsen & Gilb. (7)
Dextrinoporus H.S. Yuan (1)
Dichomitus D.A. Reid (ca 20)
Donkioporia Kotl. & Pouzar (2)
Donkioporiella L.W. Zhou (1)
Earliella Murrill (1)
Echinochaete D.A. Reid (5)
Epithele (Pat.) Pat. (= *Skeletohydnum* Jülich) (ca 25)
Epithelopsis Jülich (2)
Favolus Fr. (= *Royoporus* A.B. De) (ca 70)*Note 994
Flammeopellis Y.C. Dai, B.K. Cui & C.L. Zhao (1)
Fomes (Fr.) Fr. (ca 50)
Foraminispora Robledo, Costa-Rezende & Drechsler-Santos (5)
Funalia Pat. (= *Fomitella* Murrill) (11)*Targino de Oliveira et al. 2024
Furtadoa Costa-Rezende, Robledo & Drechsler-Santos, **nom. inval.** (3)*Costa-Rezende et al. 2017

Furtadomyces Leonardo-Silva, Cotrim & Xavier-Santos (= *Furtadoella* B.K. Cui & Y.F. Sun (3)*Notes 743, 832
Ganoderma P. Karst. (ca 200)
Globifomes Murrill (1)
Grammothele Berk. & M.A. Curtis (ca 25)
Grammothelopsis Jülich (7)
Haddowia Steyaert (2)
Haploporus Bondartsev & Singer (ca 20)
Hexagonia Fr. (ca 40)
Hirticrusta Matozaki, T. Hatt. & Sotome (2)*Note 677
Hornodermoporus Teixeira (1)
Humphreya Steyaert (3)
Jorgewrightia Gibertoni & C.R.S. Lira (11)*Note 567
Laccocephalum Mc Alpine & Tepper (5)
Leifiporia Y.C. Dai, F. Wu & C.L. Zhao (2)
Lentinus Fr. (ca 125)
Lenzites Fr. (ca 150)
Lignosus Lloyd ex Torrend (8)
Lopharia Kalchbr. & MacOwan (15)
Loweporus J.E. Wright (6)
Luteoperenniporia B.K. Cui & Xing Ji (4)*Note 1222
Macroporia B.K. Cui & Xing Ji (4)*Note 1414
Macrosporia B.K. Cui & Xing Ji (1)*Note 1345
Mariorajchenbergia Gibertoni & C.R.S. Lira (= *Megasporoporiella* B.K. Cui, Y.C. Dai & Hai J. Li) (8)*Note 566
Megasporia B.K. Cui, Y.C. Dai & Hai J. Li (7)
Megasporoporia Ryvarden & J.E. Wright (6)
Melanoderma B.K. Cui & Y.C. Dai (3)
Microporellus Murrill (ca 25)
Microporus P. Beauv. (14)
Minoporus B.K. Cui & Xing Ji (1)*Note 1346
Mollicarpus Ginns (1)
Murinicarpus B.K. Cui & Y.C. Dai (1)
Myriothele Nakasone (1)
Navisporus Ryvarden (13)
Neoganoderma B.K. Cui & Y.F. Sun (1)*Note 747
Neodatronia B.K. Cui, Hai J. Li & Y.C. Dai (2)
Neodictyopus Palacio, Robledo, Reck & Drechsler-Santos (3)
Neofavolus Sotome & T. Hatt. (9)
Neofomitella Y.C. Dai, Hai J. Li & Vlasák (5)
Neoporia B.K. Cui & Xing Ji (3)*Note 1446
Niveoporia B.K. Cui & Xing Ji (3)*Note 1366
Pachykytospora Kotl. & Pouzar (4)
Perenniporia Murrill (ca 120)*Note 1547
Perenniporiella Decock & Ryvarden (6)
Perenniporiopsis C.L. Zhao (1)
Phaeotrametes Lloyd ex J. E. Wright (1)
Picipes Zmitr. & Kovalenko (ca 30)
Pilatotrama Zmitr. (1)
Podofomes Pouzar (5)
Polyporopsis Audet (1)
Polyporus [P. Micheli ex Adans.] Fr. (ca 250)

Poriella C.L. Zhao (1)*Note 649
Porogramme (Pat.) Pat. (8)
Poronidulus Murrill (2)
Pseudofavolus Pat. (7)
Pseudomegasporoporia X.H. Ji & F. Wu (1)
Pseudogrammothele Y.C. Dai, W.L. Mao & Yuan Yuan (1)*Note 1317
Pseudopiptoporus Ryvarden (2)
Pyrofomes Kotl. & Pouzar (7)
Rhizoperenniporia B.K. Cui & Xing Ji (1)*Note 1387
Royoporus A.B. De (3)
Rubroporus Log.-Leite, Ryvarden & Groposo (2)
Sanguinoderma Y.F. Sun, D.H. Costa & B.K. Cui (10)*Note 699
Sinoganoderma B.K. Cui, J.H. Xing & Y.F. Sun (1)*Note 1066
Sparsitubus L.W. Hsu & J.D. Zhao (1)
Szczepkamyces Zmitr. (1)
Theleporus Fr. (10)
Tinctoporellus Ryvarden (4)
Tomophagus Murrill (= *Thermophymatospora* Udagawa, Awao & Abdullah) (2)
Trachydermella B.K. Cui & Y.F. Sun, **nom. inval.** (1)*Note 1000
Trametes Fr. (= *Coriolus* Quél.) (ca 100)
Tropicoporia B.K. Cui & Xing J (4)*Note 1389
Truncospora Pilát (15)
Truncatoporia B.K. Cui & Xing Ji (2)*Note 1390
Vanderbylia D.A. Reid (10)
Vanderbyliella B.K. Cui & Xing Ji (1)
Xanthoperenniporia B.K. Cui & Xing Ji (4)
Yuchengia B.K. Cui & K.T. Steffen (1)

Postiaceae B.K. Cui, Shun Liu & Y.C. Dai*Note 1453
Amaropostia B.K. Cui, L.L. Shen & Y.C. Dai (2)
Amylocystis Bondartsev & Singer ex Singer (2)
Aurantipostia B.K. Cui & Shun Liu (1)*Notes 843, 1025
Austropostia B.K. Cui & Shun Liu (6)*Note 810
Calcipostia B.K. Cui, L.L. Shen & Y.C. Dai (1)
Cyanosporus McGinty (ca 30)
Cystidiopostia B.K. Cui, L.L. Shen & Y.C. Dai (3)
Fuscopostia B.K. Cui, L.L. Shen & Y.C. Dai (4)
Jahnoporus Nuss (4)
Nothofagiporus B.K. Cui & Shun Liu (1)*Notes 982, 1044
Oligoporus Bref. (ca 15)
Osteina Donk (3)
Postia Fr. (= *Ptychogaster* Corda) (ca 35)
Resupinopostia B.K. Cui & Shun Liu 2023 (2)*Liu et al. 2023e
Spongiporus Murrill (6)
Tenuipostia B.K. Cui & Shun Liu (1)*Notes 896, 1067

Pycnoporellaceae Audet
Crustoderma Parmasto (19)
Pycnoporellus Murrill (2)

Sarcoporiaceae Audet
Sarcoporia P. Karst. (3)

Sparassidaceae Jülich
Sparassis Fr. (11)

Steccherinaceae Parmasto (= *Mycorrhaphiacaeae* Jülich)
Antella Miettinen (3)
Antrodiella Ryvarden & I. Johans. (ca 60)
Atraporiella Ryvarden (1)
Austeria Miettinen (1)
Butyrea Miettinen (2)
Cabalodontia Piątek (7)
Caudicicola Miettinen, M. Kulju & Kotir. (1)
Citripora Miettinen (2)
Elaphroporia Z.Q. Wu & C.L. Zhao (1)
Flabellophora G. Cunn. (ca 20)
Flaviporus Murrill (ca 10)
Frantisekia Spirin & Zmitr. (1)
Junghuhnia Corda (ca 30)
Lamelloporus Ryvarden (1)
Loweomyces (Kotl. & Pouzar) Jülich (6)
Metuloidea G. Cunn. (6)
Mycorrhaphium Maas Geest. (9)
Niemelaea Zmitr., Ezhov & Khimich (3)
Nigroporus Murrill (7)*Fp220
Rhomboidia C.L. Zhao (1)*Note 452
Steccherinum Gray (= *Etheirodon* Banker) (ca 70)
Trullella Zmitr. (7)
Xanthoporus Audet (2)*Fp64

Taiwanofungaceae B.K. Cui, Shun Liu & Y.C. Dai*Note 1520
Taiwanofungus Sheng H. Wu, Z.H. Yu, Y.C. Dai & C.H. Su (2)

Polyporales genera *incertae sedis*
Aegeritopsis Höhn. (1)
Amaurohydnum Jülich (1)
Amauromyces Jülich (1)
Amethicium Hjortstam (1)
Aquascypha D.A. Reid (1)
Australicium Hjortstam & Ryvarden (2)
Austrolentinus Ryvarden (1)
Bourdotiella Duhem & Schultheis (3)
Columnodontia Jülich (1)
Conohypha Jülich (3)
Coralloderma D.A. Reid (3)
Cordochaete Sanyal, Samita, Dhingra & Avn. P. Singh (1)
Cryptomphalina R. Heim (1)
Crystallocystidium (Rick) Rick (ca 20)
Cyanodontia Hjortstam (1)
Dendrophlebia Dhingra & Priyanka (1)
Diacanthodes Singer (= *Bornetina* L. Mangin & Viala) (6)
Erastia Niemelä & Kinnunen (3)
Erythromyces Hjortstam & Ryvarden (1)

Faerberia Pouzar (1)
Globosomyces Jülich (1)
Gyrophanopsis Jülich (2)
Henningsia Möller (5)
Hymenogramme Mont. & Berk. (1)
Hyphodontiastra Hjortstam (1)
Inflatostereum D.A. Reid (2)
Irpicochaete Rick (1)
Laetifomes T. Hatt. (1)
Meruliophana Duhem & Buyck (1)
Mycoleptodonoides Nikol. (6)
Mycorrhaphoides Hembrom, K. Das & Hallenb. (1)
Nigrohydnum Ryvarden (1)
Phanerodontia Hjortstam & Ryvarden (4)
Phaneroites Hjortstam & Ryvarden (1)
Physodontia Ryvarden & H. Solheim (3)
Repetobasidiopsis Dhingra & Avn. P. Singh (1)
Rickiopora Westphalen, Tomšovský & Rajchenb. (1)
Sparassiella Schwarzman (1)
Spathulina Pat. (1)
Spongipellis Pat. (7)
Stegiacantha Maas Geest. (1)
Uncobasidium Hjortstam & Ryvarden (2)

Russulales Kreisel ex P. M. Kirk, P. F. Cannon & J. C. David
Albatrellaceae Nuss
Albatrellopsis Teixeira (4)
Albatrellus Gray (22)*Fp143
Byssoporia M.J. Larsen & Zak (1)
Leucogaster R. Hesse (ca 25)
Leucophleps Harkn. (3)
Mycolevis A.H. Sm. (1)
Polyporoletus Snell (4)
Scutiger Paulet (4)

Auriscalpiaceae Maas Geest.
Amylonotus Ryvarden (4)
Artomyces Jülich (17)
Auriscalpium Gray (11)*Fp146
Dentipratulum Domański (3)
Lentinellus P. Karst. (ca 35)*Fp202
Stalpersia Parmasto (1)

Bondarzewiaceae Kotl. & Pouzar (= *Hybogasteraceae* Jülich)
Amylaria Corner (1)
Amylosporus Ryvarden (12)
Bondarzewia Singer (= *Hybogaster* Singer) (13)
Gloiodon P. Karst. (4)*Fp200
Heterobasidion Bref. (= *Spongioides* Lázaro Ibiza) (ca 20)*Note 1550
Laurilia Pouzar (1)
Lauriliella Nakasone & S.H. He (2)
Stecchericium D.A. Reid (6)

Wrightoporia Pouzar (ca 30)

Echinodontiaceae Donk (= *Amylostereaceae* Boidin, Mugnier & Canales)
Amylostereum Boidin (5)
Echinodontiellum S.H. He & Nakasone (1)
Echinodontium Ellis & Everh. (4)
Larssoniporia Y.C. Dai, Jia J. Chen & B.K. Cui (2)

Hericiaceae Donk
Dentipellicula Y.C. Dai & L.W. Zhou (4)
Dentipellis Donk (13)
Hericium Pers. (ca 15)
Laxitextum Lentz (3)
Pseudowrightoporia Y.C. Dai, Jia J. Chen & B.K. Cui (ca 10)
Wrightoporiopsis Y.C. Dai, Jia J. Chen & B.K. Cui (5)

Hybogasteraceae Jülich
Hybogaster Singer (1)

Peniophoraceae Lotsy (= *Lachnocladiaceae* D.A. Reid)
Amylofungus Sheng H. Wu (2)
Asterostroma Massee (ca 25)
Baltazaria Leal-Dutra, Dentinger & G.W. Griff. (4)
Dendrophora (Parmasto) Chamuris (1)
Dichostereum Pilát (ca 15)
Duportella Pat. (ca 15)
Entomocorticium H.S. Whitney, Bandoni & Oberw. (12)
Gloiothele Bres. (ca 15)
Lachnocladium Lév. (ca 40)
Metulodontia Parmasto (2)
Peniophora Cooke (ca 20)
Sceptrulum K.H. Larss. (1)
Scytinostroma Donk (*fide* Stalpers et al. 2021: = *Artocreas* Berk. & Broome; = *Licrostroma* P.A. Lemke; = *Michenera* Berk. & M.A. Curtis; = *Stereofomes* Rick) (ca 35)
Vararia P. Karst. (ca 70)*Note 1553
Vesiculomyces E. Hagstr. (1)

Russulaceae Lotsy
Boidinia Stalpers & Hjortstam (12)
Gloeopeniophorella Rick (= *Dextrinocystidium* Sheng H. Wu) (6)
Lactarius Pers. (ca 500)*Fp51
Lactifluus (Pers.) Roussel (ca 250)*Fp50
Multifurca Buyck & V. Hofst. (12)*Fp134
Pseudoxenasma K.H. Larss. & Hjortstam (1)
Russula Pers. (ca 1400)*Fp136

Stereaceae Pilát
Acanthobasidium Oberw. (7)
Acanthofungus Sheng H. Wu, Boidin & C.Y. Chien (2)*Fp63
Acanthophysellum Parmasto (5)
Acanthophysium (Pilát) G. Cunn. (4)
Aleurodiscus Rabenh. ex J. Schröt. (= *Aleurobotrys* Boidin) (100)

Aleuromyces Boidin & Gilles (1)
Amylohyphus Ryvarden (1)
Amylosporomyces S. S. Rattan (2)
Conferticium Hallenb. (4)
Gloeocystidiellum Donk (ca 30)
Gloeocystidiopsis Jülich (3)
Gloeomyces Sheng H. Wu (2)
Gloeosoma Bres. (3)
Matula Massee (9)
Megalocystidium Jülich (13)
Neoaleurodiscus Sheng H. Wu (2)*Fp57
Scotoderma Jülich (1)
Stereodiscus Rajchenb. & Pildain (5)*Note 656
Stereum Hill ex Pers. (ca 100)*Fp135
Xylobolus P. Karst. (ca 10)*Fp203

Terrestriporiaceae Y.C. Dai, B.K. Cui, F. Wu, Y. Yuan & Jia J. Chen*Notes 505, 506
Terrestriporia Y.C. Dai, B.K. Cui, F. Wu, Y. Yuan & Jia J. Chen (1)*Note 505

Xenasmataceae Oberw.
Xenasma Donk (11)
Xenosperma Oberw. (4)

Russulales genera *incertae sedis*
Aleurocystidiellum P.A. Lemke (4)
Dentipellopsis Y.C. Dai & L.W. Zhou (1)
Dichantharellus Corner (2)
Dichopleuropus D.A. Reid (1)
Gloeoasterostroma Rick (1)
Gloeodontia Boidin (9)
Gloeohypochnicium (Parmasto) Hjortstam (2)
Haloaleurodiscus N. Maek., Suhara & K. Kinjo (1)
Laeticutis Audet (1)*Fp76
Neoalbatrellus Audet (4)*Fp35
Perplexostereum Ryvarden & S. Tutka (1)
Polypus Audet (1)*Fp75
Scopulodontia Hjortstam (3)
Scytinostromella Parmasto (5)
Xeroceps Audet (2)*Fp62

Sebacinales M. Weiss, Selosse, Rexer, A. Urb. & Oberw.
Sebacinaceae K. Wells & Oberw.
Chaetospermum Sacc. (10)*Coel
Ditangium P. Karst. (4)
Efibulobasidium K. Wells (1)
Gardeniomyces Crous (1)*Crous et al. 2024b
Globulisebacina Oberw., Garnica & K. Riess (3)
Helvellosebacina Oberw., Garnica & K. Riess (3)
Paulisebacina Oberw., Garnica & K. Riess (1)
Sebacina Tul. & C. Tul. (ca 60)
Tremelloscypha D.A. Reid (4)

Serendipitaceae M. Weiss, Waller, A. Zuccaro & Selosse
Serendipita P. Roberts (ca 20)

Sistotremastrales L.W. Zhou & S.L. Liu*Note 1082
Sistotremastraceae L.W. Zhou & S.L. Liu*Note 1082
Sertulicium Spirin, Volobuev & K.H. Larss. (6)*Note 470, 1538
Sistotremastrum J. Erikss. (14)

Stereopsidales Sjökvist, E. Larss., B.E. Pfeil & K.H. Larss.
Stereopsidaceae Sjökvist, E. Larss., B.E. Pfeil & K.H. Larss.
Stereopsis D.A. Reid (= *Masseerina* Lloyd) (ca 15)

Stereopsidales genus *incertae sedis*
Clavulicium Boidin (8)
Nothocorticium Gresl. & Rajchenb. (1)

Thelephorales Corner ex Oberw.
Bankeraceae Donk (= *Boletopsidaceae* Bondartsev & Singer ex Jülich; = *Sarcodontaceae* Bondartsev & Singer ex Singer)
Boletopsis Fayod (ca 10)
Corneroporus T. Hatt. (1)
Hydnellum P. Karst. (= *Calodon* P. Karst; = *Phaeodon* J. Schröt.) (ca 90)*Fp344
Neosarcodon Xiao L. He, Di Wang & W.H. Peng (11)*Note 1539, Wang et al. 2024e
Phellodon P. Karst. (= *Bankera* Coker & Beers ex Pouzar) (40)
Sarcodon Quél. ex P. Karst. (ca 40)

Thelephoraceae Chevall. (= *Phylacteriaceae* Imazeki; = *Tomentellaceae* Warm.; = *Lenzitopsidaceae* Jülich)
Aldrigiella Rick (1)
Amaurodon J. Schröt (= *Hypochnopsis* P. Karst.; = *Lazulinospora* Burds. & M.J. Larsen; = *Tomentellago* Hjorstam & Ryvarden) (11)
Lenzitopsis Malençon & Bertault (2)
Odontia Pers. (= *Tomentellina* Höhn. & Litsch.) (4)
Polyozellus Murrill (= *Phyllocarbon* Lloyd; = *Pseudotomentella* Svrček) (27)
Skepperia Berk. (= *Friesula* Speg.) (5)
Thelephora Ehrh. ex Willd. (= *Acrotamnium* Nees; = *Caldesiella* Sacc.; = *Hypochnus* Fr.; = *Merisma* Pers.; = *Phylacteria* (Pers.) Pat.; = *Prillieuxia* Sacc. & P. Syd.; = *Scyphopilus* P. Karst.; = *Tomentella* Pers. ex Pat.; = *Tomentellastrum* Svrček) (ca 250)*Fp137, Kõljalg et al. 2024
Tomentellopsis Hjortstam (= *Byssocristella* M.P. Christ. & J.E.B. Larsen) (9)

Thelephorales genera *incertae sedis*
Bubacia Velen. (1)
Thelephorella P. Karst. (1)

Trechisporales K.H. Larss.*He et al. 2024
Hydnodontaceae Jülich*He et al. 2024
Allotrechispora L.W. Zhou & S.L. Liu (3)*Notes 987, 1022, He et al. 2024
Brevicellicium K. H. Larss. & Hjortstam (ca 10)
Dextrinocystis Gilb. & M. Blackw. (3)
Fibrodontia Parmasto (9)
Luellia K.H. Larss. & Hjortstam (3)

Porpomyces Jülich (2)
Subulicystidium Parmasto (ca 20)
Suillosporium Pouzar (4)
Trechispora P. Karst. (= *Dextrinodontia* Hjortstam & Ryvarden; = *Hydnodon* Banker; = *Scytinopogon* Singer) (ca 90)*Note 512
Tubulicium Oberw. (ca 10)

Trechisporales genera *incertae sedis*
Boidinella Nakasone (2)
Brevicellopsis Hjortstam & Ryvarden (1)

Tremellodendropsidales Vizzini
Tremellodendropsidaceae Jülich
Tremellodendropsis (Corner) D.A. Crawford (7)

Xenasmatellales L.W. Zhou & S.L. Liu
Xenasmatellaceae L.W. Zhou & S.L. Liu
Xenasmatella Oberw. (= *Phlebiella* P. Karst.) (ca 25)

Agaricomycetes genera *incertae sedis*
Aldridgea Massee (2)
Amnocutis K.H. Larss. (1)*Notes 22, 651
Arthrodochium R.F. Castañeda & W.B. Kendr. (1)
Arualis Katz (1)
Cenangiomyces Dyko & B. Sutton (1)
Ceraceopsis Hjortstam & Ryvarden (1)
Cilicia Fr. (1
Corticomyces A.I. Romero & S. E. López (1)
Cruciger R. Kirschner & Oberw. (1)
Dendrosporomyces Nawawi, J. Webster & R.A. Davey (2)
Ellula Nag Raj (1)*Coel
Fibulocoela Nag Raj (1)*Coel
Fibulotaeniella Marvanová & Bärl. (1)
Gloeosynnema Seifert & G. Okada (2)
Glomerulomyces A.I. Romero & S.E. López (1)
Glutinoagger Sivan. & Watling (1)
Hallenbergia Dhingra & Priyanka (1)
Heteroacanthella Oberw. (3)
Intextomyces J. Erikss. & Ryvarden (4)
Korupella Hjortstam & P. Roberts (1)
Minostroscyta Hjortstam & Ryvarden (1)
Mylittopsis Pat. (1)
Myriococcum Fr. (2)
Pagidospora Drechsler (1)
Phlyctibasidium Jülich (1)
Purpureocorticium S.H. Wu (1)*Fp122
Pycnovellomyces R.F. Castañeda (1)*Coel
Riessia Fresen. (5)
Riessiella Jülich (2)
Taiwanoporia T.T. Chang & W.N. Chou (2)
Titaeella G. Arnaud ex K. Ando & Tubaki (1)
Trechinothus E.C. Martini & Trichiès (1)

Trimitiella Dhingra (1)
Tubulicrinopsis Hjortstam & Kotir. (4)
Xerotus Fr. (17)

Class *Bartheletiomycetes* Thines
Bartheletiales Thines
Bartheletiaceae R. Bauer, Scheuer, M. Lutz & Grube
Bartheletia G. Arnaud ex Scheuer, R. Bauer, M. Lutz, Stabenth., Melnik & Grube (1)

Class *Dacrymycetes* Doweld
Dacrymycetales Henn. (= *Calocerales* Rea; = *Metatremellales* Lowy; = *Unilacrymales* Shirouzu, Tokum. & Oberw.)
Cerinomycetaceae Jülich
Cerinomyces G. W. Martin (ca 30)

Dacryonaemataceae J.C. Zamora & S. Ekman
Dacryonaema Nannf. (3)

Dacrymycetaceae J. Schröt. (= *Caloceraceae* Pat.)
Calocera (Fr.) Fr. (ca 25)
Cerinosterus R.T. Moore (1)
Dacryomitra Tul. & C. Tul. (11)
Dacrymyces Nees (ca 75)
Dacryomycetopsis Rick (ca 10)
Dacryopinax G.W. Martin (ca 20)
Dacryoscyphus R. Kirschner & Zhu L. Yang (3)
Dendrodacrys J.C. Zamora, A. Savchenko, Á. Gonz.-Cruz, Prieto-García, Olariaga & Ekman (11)*Note 741
Ditiola Fr. (10)
Femsjonia Fr. (6)
Guepiniopsis Pat. (10)
Heterotextus Lloyd (4)

Unilacrymales Shirouzu, Tokum. & Oberw.
Unilacrymaceae Shirouzu, Tokum. & Oberw.
Unilacryma Shirouzu, Tokum. & Oberw. (2)

Class *Tremellomycetes* Doweld
Chionasterales N.A.T. Irwin, C.S. Twynstra, V. Mathur & P.J. Keeling*Note 935
Chionasteraceae N.A.T. Irwin, C.S. Twynstra, V. Mathur & P.J. Keeling*Note 934
Chionaster Wille (2)

Cystofilobasidiales Fell, Roeijmans & Boekhout
Cystofilobasidiaceae K. Wells & Bandoni
Cystofilobasidium Oberw. & Bandoni (7)

Mrakiaceae X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout
Foliozyma Q.M. Wang (1)*Jiang et al. 2024
Itersonilia Derx (4)
Krasilnikovozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (3)
Mrakia Y. Yamada & Komag. (ca 15)
Phaffia M.W. Mill., Yoney. & Soneda (5)

Tausonia Babeva (3)
Udeniomyces Nakase & Takem. (6)
Vustinia Kachalkin, Turchetti & Yurkov (1)

Filobasidiales Jülich
Filobasidiaceae L.S. Olive
Filobasidium L.S. Olive (ca 10)
Goffeauzyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (6)
Heterocephalacria Berthier (ca 10)
Naganishia S. Goto (ca 20)
Syzygospora G.W. Martin (ca 10)
Zyzygomyces Diederich, Millanes & Wedin (8)*Note 1075

Piskurozymaceae X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout
Piskurozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (12)
Solicoccozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (9)

Holtermanniales Libkind, Wuczk., Turchetti & Boekhout
Holtermanniaceae Redhead
Holtermannia Sacc. & Traverso (7)
Holtermanniella Libkind, Wuczk., Turchetti & Boekhout (1)

Tremellales Fr.
Bulleraceae X. Zh. Liu, F.Y. Bai, M. Groenew. & Boekhout
Bullera Derx (9)
Fonsecazyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (1)
Genolevuria X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (5)
Pseudotremella X.Z. Liu, F.Y. Bai, A.M. Yurkov, M. Groenew. & Boekhout (3)

Bulleribasidiaceae X. Z. Liu, F.Y. Bai, M. Groenew. & Boekhout
Bulleribasidium J.P. Samp., M. Weiss & R. Bauer (16)
Derxomyces F.Y. Bai & Q.M. Wang (ca 35)
Dioszegia Zsolt (ca 30)
Hannaella F.Y. Bai & Q.M. Wang (7)
Nielozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout 2020 (= *Nielozyma* X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout 2015) (2)*Note 715
Vishniacozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (ca 20)

Carcinomycetaceae Oberw. & Bandoni
Carcinomyces Oberw. & Bandoni (3)

Cryptococcaceae Kütz. ex Castell. & Chalm.
Cryptococcus Vuill. (ca 40)
Kwoniella Statzell & Fell (ca 15)
Teunia Q.M. Wang & F.Y. Bai (ca 10)*Notes 723, 507

Cuniculitremaceae J.P. Samp., R. Kirschner & M. Weiss
Cuniculitrema J.P. Samp., R. Kirschner (1)
Fellomyces Y. Yamada & I. Banno (4)
Kockovaella Nakase, I. Banno & Y. Yamada (ca 20)
Sterigmatosporidium G. Kraep. & U. Schulze (1)

Naemateliaceae X. Z. Liu, F. Y. Bai, M. Groenew. & Boekhout
Dimennazyma X. Z. Liu, F. Y. Bai, M. Groenew. & Boekhout (1)
Naematelia Fr. (4)

Phaeotremellaceae A.M. Yurkov & Boekhout
Gelidatrema A.M. Yurkov, X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (2)
Phaeotremella Rea (ca 15)

Phragmoxenidiaceae Oberw. & R. Bauer
Phragmoxenidium Oberw. (1)

Rhynchogastremaceae Oberw. & B. Metzler
Papiliotrema J.P. Samp., M. Weiss & R. Bauer (ca 25)
Rhynchogastrema B. Metzler & Oberw. (7)

Sirobasidiaceae Lindau
Fibulobasidium Bandoni (3)
Sirobasidium Lagerh. & Pat. (8)

Tremellaceae Fr.
Mycocryptococcus Pollacci & Nann. (1)
Tremella Pers. (ca 170)

Trimorphomycetaceae X. Z. Liu, F.Y. Bai, M. Groenew. & Boekhout
Carlosrosaea A.M. Yurkov, X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (5)
Saitozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (7)
Sugitazyma A.M. Yurkov, X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout, **nom. inval.** (1)
Trimorphomyces Bandoni & Oberw. (= *Anastomyces* W.P. Wu, B. Sutton & Gange (3)

Tremellales genera *incertae sedis*
Biatoropsis Räsänen (5)
Dictyotremella Kobayasi (1)
Neotremella Lowy (1)
Sigmogloea Bandoni & J.C. Krug (1)
Sirotrema Bandoni (3)
Tremellina Bandoni (1)
Xenolachne D.P. Rogers (2)

Trichosporonales Boekhout & Fell
Tetragoniomycetaceae Oberw. & Bandoni
Bandonia A.M. Yurkov, X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (1)
Cryptotrichosporon Okoli & Boekhout (6)
Takashimella Q.M. Wang (4)
Tetragoniomyces Oberw. & Bandoni (1)

Trichosporonaceae Nann.
Apiotrichum Stautz (ca 30)
Cutaneotrichosporon X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (1)
Effuseotrichosporon A.M. Yurkov, X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (1)
Haglerozyma X.Z. Liu, F.Y. Bai, M. Groenew. & Boekhout (1)
Nothotrichosporon Crous, M. Groenew. & Jurjević.*Note 1478
Pascua Takashima, Manabe, Nishimura, Sriswasdi, Ohkuma, Iwasaki & Sugita (1)

Prillingera Takashima, Manabe, Nishimura, Sriswasdi, Ohkuma, Iwasaki & Sugita (1)
Trichosporon Behrend (= *Sarcinosporon* D.S. King & S.C. Jong) (ca 25)
Vanrija R. T. Moore (5)

Tremellomycetes genera *incertae sedis*
Heteromycophaga P. Roberts (2)
Phyllopta (Fr.) Fr. (1)

Class *Wallemiomycetes* Zalar, de Hoog & Schroers*Note1600
Geminibasidiales H.D.T. Nguyen, N.L. Nick. & Seifert
Geminibasidiaceae H.D.T. Nguyen, N.L. Nick. & Seifert
Basidioascus Matsush. (3)
Geminibasidium H.D.T. Nguyen, N.L. Nick. & Seifert (2)

Wallemiales Zalar, de Hoog & Schroers
Wallemiaceae R.T. Moore
Wallemia Johan-Olsen (8)

Wallemiomycetes genus *incertae sedis*
Chernovia A.M. Yurkov & Begerow (1)

Subphylum *Pucciniomycotina* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Class *Agaricostilbomycetes* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Agaricostilbales Oberw. & R. Bauer
Agaricostilbaceae Oberw. & R. Bauer
Agaricostilbum J.E. Wright (1)
Pseudobensingtonia F.Y. Bai, Q.M. Wang, M. Groenewald & Boekhout (3)
Sterigmatomyces Fell (6)

Chionosphaeraceae Oberw. & Bandoni
Ballistosporomyces Nakase, G. Okada & Sugiy. (3)
Boekhoutia Q.M. Wang & F.Y. Bai (1)*Note 71
Chionosphaera D.E. Cox (4)
Cystobasidiopsis R. Bauer, B. Metzler, Begerow & Oberw. (2)
Kurtzmanomyces Y. Yamada, Itoh, H. Kawas., I. Banno & Nakase (4)
Stilbum Tode (ca 15)

Jianyuniaceae Q.M. Wang & F.Y. Bai*Note 227
Jianyunia Q. M. Wang, F. Y. Bai, M. Groenew. & Boekhout (1)
Pseudosterigmatospora Q.M. Wang & F.Y. Bai (1)*Note 426
Sterigmatospora Q.M. Wang & F.Y. Bai (1)*Note 486

Kondoaceae R. Bauer, Begerow, J. P. Samp., M. Weiss & Oberw.
Bensingtonia Ingold (7)
Kondoa Y. Yamada, Nakagawa & I. Banno (ca 20)

Ruineniaceae Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Ruinenia Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (8)

Crittendeniaceae Millanes, Diederich & Wedin*Note 901
Crittendenia Diederich, Millanes, M. Westb., Etayo, J.C. Zamora & Wedin (18)*Notes 120, 901

Agaricostilbales genus *incertae sedis*
Mycogloea L. S. Olive (7)

Class *Atractiellomycetes* R. Bauer, Begerow, J. P. Samp., M. Weiss & Oberw.
Atractiellales Oberw. & Bandoni
Atractogloeaceae Oberw. & R. Bauer
Atractogloea Oberw. & Bandoni (1)

Hoehnelomycetaceae Jülich
Atractiella Sacc. (= *Hoehnelomyces* Weese) (7)
Basidiopycnis Oberw., R. Kirschner, R. Bauer, Begerow & Arenal (1)
Proceropycnis M. Villarreal, Arenal, V. Rubio, Begerow, R. Bauer, R. Kirschner & Oberw. (2)

Mycogelidiaceae W.Y. Zhuang
Mycogelidium W.Y. Zhuang (1)

Phleogenaceae Gäum.
Atractidochium Oono, Urbina & Aime (1)
Bourdotigloea Aime (9)
Helicogloea Pat. (ca 30)
Hobsonia Berk. ex Massee (3)
Phleogena Link (3)
Saccosoma Spirin (7)

Class *Classiculomycetes* R. Bauer, Begerow, J. P. Samp., M. Weiss & Oberw.
Classiculales R. Bauer, Begerow, Oberw. & Marvanová
Classiculaceae R. Bauer, Begerow, Oberw. & Marvanová
Classicula R. Bauer, Begerow, Oberw. & Marvanová (= *Naiadella* Marvanová & Bandoni) (2)
Jaculispora H. J. Huds. & Ingold (1)

Class *Cryptomycocolacomycetes* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Cryptomycocolacales Oberw. & R. Bauer
Cryptomycocolacaceae Oberw. & R. Bauer
Colacosiphon R. Kirschner, R. Bauer & Oberw. (1)
Cryptomycocolax Oberw. & R. Bauer (1)

Class *Cystobasidiomycetes* R. Bauer, Begerow, J. P. Samp., M. Weiss & Oberw.
Buckleyzymales R.L. Zhao & K.D. Hyde
Buckleyzymaceae Q. M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Buckleyzyma Q. M. Wang, F.Y. Ba, M. Groenew. & Boekhout (5)

Cystobasidiales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Cystobasidiaceae Gäum.
Cystobasidium (Lagerh.) Neuhoff (ca 20)
Halobasidium Z. Guo, Y.R. Wang, Q.C. Hou, W.C. Li, H. J. Zhao, Z. H. Sun & Z.D. Zhang (1)
Occultifur Oberw. (9)

Cystobasidiales genera *incertae sedis*
Robertozyma Q.M. Wang & F.Y. Bai (1)*Note 455
Begerowomyces Q.M. Wang & F.Y. Bai (1)*Note 64

Erythrobasidiales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw. (= *Cyphobasidiales* T. Sprib. & H. Mayrhofer)
Erythrobasidiaceae Denchev
Bannoa Hamam. (8)
Erythrobasidium Hamam, Sugiy. & Komag. (6)

Erythrobasidiales genera *incertae sedis*
Cyphobasidium Millanes, Diederich & Wedin (2)
Cyrenella Goch. (1)
Hasegawazyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (1)

Naohideales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Naohideaceae Denchev
Naohidea Oberw. (1)

Sakaguchiales R.L. Zhao & K. D. Hyde
Sakaguchiaceae Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Sakaguchia Y. Yamada, K. Maeda & Mikata (6)

Cystobasidiomycetes families *incertae sedis*
Microsporomycetaceae Q.M. Wang, F. Y. Bai, M. Groenew. & Boekhout
Microsporomyces Q.M. Wang, F. Y. Bai, M. Groenew. & Boekhout (= *Lichenozyma* Černajová & Škaloud) (8)

Symmetrosporaceae Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Symmetrospora Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (13)

Cystobasidiomycetes genus *incertae sedis*
Queiroziella C.R. Félix, J.D.P. Bezerra, R.P. Neves & Landell (1)

Class *Microbotryomycetes* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Heitmaniales Q.M. Wang & F.Y. Bai*Note 203
Heitmaniaceae Q.M. Wang & F.Y. Bai*Note 202
Heitmania X.Z. Liu, F.Y. Bai, M. Groenew. & T. Boekhout (5)

Heterogastridiales Oberw. & R. Bauer
Heterogastridiaceae Oberw. & R. Bauer
Hyalopycnis Höhn. (= *Heterogastridium* Oberw. & R. Bauer) (1)
Krieglsteinera Pouzar (1)
Pycnopulvinus Toome & Aime (1)

Kriegeriales Toome & Aime
Camptobasidiaceae R.T. Moore
Camptobasidium Marvanová & Suberkr. (3)
Crucella Marvanová & Suberkr. (1)
Cryolevonia A. Pontes, Ruethi, B. Frey & J.P. Samp. (2)*Note 122
Glaciozyma Turchetti, Connell, Thomas-Hall & Boekhout (4)*Note 1033
Psychromyces L. Perini & Zalar (1)*Notes 428, 1094

Kriegeriaceae Toome & Aime
Kriegeria Bres. (3)
Kriegeriopsis Etayo, Diederich, Millanes & Wedin (1)*Note 1038

Meredithblackwellia Toome & Aime (1)
Phenoliferia Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (4)
Yamadamyces Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (2)*Note 1074

Leucosporidiales Sampaio, M. Weiss & Bauer
Leucosporidiaceae Sampaio, M. Weiss & Bauer
Leucosporidium Fell, Statzell, I.L. Hunter & Phaff (11)

Microbotryales R. Bauer & Oberw.
Microbotryaceae R.T. Moore
Bauerago Vánky (5)
Kalmanago T. Denchev, Denchev, Kemler & Begerow (4)*Note 232
Microbotryum Lév. (ca 100)
Sphacelotheca de Bary (6)
Zundeliomyces Vánky (1)

Ustilentylomataceae R. Bauer & Oberw.
Aurantiosporium M. Piepenbr., Vánky & Oberw. (5)
Bauerozyma Q.M. Wang (1)*Jiang et al. 2024
Fulvisporium Vánky (1)
Microbotryozyma S.O. Suh, D.A. Maslov, Molestina & J.J. Zhou (2)
Ustilentyloma Savile (5)

Rosettozymales Q.M. Wang & F.Y. Bai*Note 460
Rosettozymaceae Q.M. Wang & F.Y. Bai*Note 459
Rosettozyma Q.M. Wang & F.Y. Bai (3)*Note 458

Sporidiobolales Doweld
Sporidiobolaceae R.T. Moore
Rhodosporidiobolus Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (14)
Rhodotorula F.C. Harrison (ca 20)
Sporobolomyces Kluyver & C.B. Niel (= *Sporidiobolus* Nyland) (ca 30)

Microbotryomycetes families *incertae sedis*
Chrysozymaceae Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Bannozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (2)
Chrysozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (ca 10)
Fellozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (1)
Hamamotoa Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (4)

Colacogloeaceae Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Colacogloea Oberw. & Bandoni (ca 20)

Mycogloiocolacaceae Schoutteten & Yurkov*Note 1494, Schoutteten et al. 2023
Mycogloiocolax Schoutteten & Rödel (1)*Note 1418, Schoutteten et al. 2023

Microbotryomycetes genera *incertae sedis*
Atractocolax R. Kirschner, R. Bauer & Oberw. (1)
Baiomyces Q.M. Wang (1)*Jiang et al. 2024
Curvibasidium Samp. & Golubev (4)
Fengyania Q.M. Wang (1)*Jiang et al. 2024
Libkindia Mašínová, A. Pontes, J.P. Samp. & Baldrian (1)

Litoriozyma Q.M. Wang (1)*Jiang et al. 2024
Nakaseozyma Q.M. Wang (2)*Jiang et al. 2024
Oberwinklerozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (5)
Pseudohyphozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (5)
Pseudoleucosporidium V. de Garcia, M.A. Coelho, T. Maia, L.H. Rosa, A.B.M. Vaz, C.A. Rosa, J.P. Samp., P. Gonç., M.R. Van Broock & Libkind (1)
Sampaiozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (2)
Slooffia Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (6)
Spencerozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (3)
Trigonosporomyces Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (1)
Udeniozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (1)
Vonarxula Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (1)
Yunzhangia Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (2)
Yurkovia Mašínová, A. Pontes, J.P. Samp. & Baldrian (3)

Class *Mixiomycetes* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Mixiales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Mixiaceae C.L. Kramer
Mixia C.L. Kramer (1)

Class *Pucciniomycetes* R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Helicobasidiales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Helicobasidiaceae P.M. Kirk
Helicobasidium Pat. (= *Thanatophytum* Nees; = *Tuberculina* Tode ex Sacc.) (ca 30)

Pachnocybales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Pachnocybaceae Oberw. & R. Bauer
Pachnocybe Berk. (4)

Platygloeales R.T. Moore
Eocronartiaceae Jülich
Eocronartium G.F. Atk. (1)
Herpobasidium Lind (4)
Jola Möller (4)
Platycarpa Couch (2)
Ptechetelium Oberw. & Bandoni (1)

Platygloeaceae Racib.
Achroomyces Bonord. (43)
Glomerogloea Doweld (1)
Glomopsis D.M. Hend. (2)
Insolibasidium Oberw. & Bandoni (1)
Platygloea J. Schröt. (ca 15)

Pucciniales Clem. & Shear
Araucariomycetaceae Aime & McTaggart*Note 41, Aime & McTaggart 2021
Araucariomyces Aime & McTaggart (2)*Note 40, Aime & McTaggart 2021

Coleosporiaceae Dietel (= *Cronartiaceae* Dietel)*Aime & McTaggart 2021
Aculeastrum M. Scholler, U. Braun & Bubner (2)*Note 800
Ceropsora B.K. Bakshi & Suj. Singh (2)
Chrysomyxa Unger (ca 40)*Aime & McTaggart 2021

Coleosporium Lév. (ca 125)*Aime & McTaggart 2021
Cronartium Fr. (= *Endocronartium* Y. Hirats. (ca 35)*Aime & McTaggart 2021
Diaphanopellis P.E. Crane (1)*Aime & McTaggart 2021
Gallowaya Arthur (2)
Rossmanomyces Aime & McTaggart (3)*Note 1065, Aime & McTaggart 2021

Crossopsoraceae Aime & McTaggart*Note 121, Aime & McTaggart 2021
Angiopsora Mains (8)*Note 121, Aime & McTaggart 2021
Catenulopsora Mundk. (2)*Note 121, Aime & McTaggart 2021
Crossopsora Syd. & P. Syd. (16)*Note 121, Aime & McTaggart 2021
Geeringia Y.P. Tan & R.G. Shivas (3)*Tan & Shivas 2024
Kweilingia Teng (= *Dasturella* Mundk. & Khesw.) (3)*Note 121, Aime & McTaggart 2021
Neoolivea Aime & McTaggart (1)*Note 121, Aime & McTaggart 2021
Stomatisora J.M. Yen*Note 121, Aime & McTaggart 2021

Endoraeciaceae P. Zhao & L. Cai*Note 920
Endoraecium Hodges & D.E. Gardner (22)

Gymnosporangiaceae P. Zhao & L. Cai*Aime & McTaggart 2021
Gymnosporangium R. Hedw. ex DC. (= *Roestelia* Rebent) (ca 75)*Aime & McTaggart 2021
Gymnotelium Syd.*Aime & McTaggart 2021
Peridiopsora Kamat & Sathe (2)*Aime & McTaggart 2021

Hyalopsoraceae P. Zhao & L. Cai*Note 1088
Coleopuccinia Pat. (2)*Note 1088
Hyalopsora Magnus (22)*Note 1088
Melampsoridium Kleb. (10)*Note 1088

Melampsoraceae Dietel*Aime & McTaggart 2021
Ceropsora B.K. Bakshi & Suj. Singh (2)*Aime & McTaggart 2021
Melampsora Castagne (ca 115)*Aime & McTaggart 2021

Milesinaceae Aime & McTaggart*Note 281, Aime & McTaggart 2021
Milesia F.B. White (ca 15)*Aime & McTaggart 2021
Milesina Magnus (ca 65)*Aime & McTaggart 2021
Naohidemyces S. Sato, Katsuya & Y. Hirats. (2)*Aime & McTaggart 2021
Uredinopsis Magnus (30)*Aime & McTaggart 2021

Neophysopellaceae P. Zhao & L. Cai*Note 921
Neophysopella Jing X. Ji & Kakish. (16)*Note 121, Aime & McTaggart 2021

Nothopucciniastraceae P. Zhao & L. Cai*Note 1090
Nothopucciniastrum P. Zhao & L. Cai (10)*Note 819

Nyssopsoraceae Sanjay & Raghv. Singh*Note 1489
Nyssopsora Arthur (19)

Ochropsoraceae Aime & McTaggart*Note 354, Aime & McTaggart 2021
Aplopsora Mains (6)*Aime & McTaggart 2021
Ceraceopsora Kakish., T. Sato & S. Sato (1)*Aime & McTaggart 2021
Ochropsora Dietel (4)*Aime & McTaggart 2021

Phakopsoraceae Cummins & Hirats. f.*Aime & McTaggart 2021
Aeciure Buriticá & J.F. Hennen (1)
Arthuria H.S. Jacks. (6)*Aime & McTaggart 2021
Bubakia Authur (2)*Aime & McTaggart 2021
Cerotelium Arthur (ca 30)*Aime & McTaggart 2021
Cerradopsora Ebinghaus & Dianese (2)*Note 1194
Dicheirinia Arthur (14)*Aime & McTaggart 2021
Macabuna Buriticá & J.F. Hennen (7)
Masseeella Dietel (6)*Aime & McTaggart 2021
Monosporidium Barclay (3)*Aime & McTaggart 2021
Nothoravenelia Dietel (3)*Aime & McTaggart 2021
Phakopsora Dietel (ca 110)*Aime & McTaggart 2021
Phragmidiella Henn. (8)*Aime & McTaggart 2021
Pucciniostele Tranzschel & K.L. Kom. (4)*Aime & McTaggart 2021
Scalarispora Buriticá & J.F. Hennen (1)*Aime & McTaggart 2021
Uredopeltis Henn. (7)*Aime & McTaggart 2021

Phragmidiaceae Corda*Aime & McTaggart 2021
Arthuriomyces Cummins & Y. Hirats. (2)
Campanulospora Salazar-Yepes, Pardo-Card. & Buriticá (1)
Gerwasia Racib. (ca 20)*Aime & McTaggart 2021
Gymnoconia Lagerh. (4)*Aime & McTaggart 2021
Hamaspora Körn. (15)*Aime & McTaggart 2021
Joerstadia Gjaerum & Cummins (4)*Aime & McTaggart 2021
Kuehneola Magnus (ca 20)*Aime & McTaggart 2021
Morispora Salazar-Yepes, Pardo-Card. & Buriticá (1)
Phragmidium Link (= *Aregma* Fr.,; = *Physonema* Lév.) (ca 100)*Aime & McTaggart 2021
Scutelliformis Salazar-Yepes, Pardo-Card. & Buriticá (1)
Trachyspora Fuckel (6)*Aime & McTaggart 2021
Triphragmium Link (7)*Aime & McTaggart 2021
Xenodochus Schltdl. (2)*Aime & McTaggart 2021

Pileolariaceae Cummins & Y. Hirats.*Aime & McTaggart 2021
Pileolaria Castagne (ca 20)*Aime & McTaggart 2021

Pucciniaceae Chevall. (= *Pucciniosiraceae* Cummins & Y. Hirats.; = *Endophyllaceae* Dietel)*Aime & McTaggart 2021
Alveolaria Lagerh. (2)
Baeodromus Arthur (6)*Aime & McTaggart 2021
Ceratocoma Buriticá & J.F. Hennen (1)*Aime & McTaggart 2021
Cerradoa J.F. Hennen & Y. Ono (1)*Aime & McTaggart 2021
Chardoniella F. Kern (4)*Aime & McTaggart 2021
Chrysella Syd. (1)*Aime & McTaggart 2021
Chrysocelis Lagerh. & Dietel (5)*Aime & McTaggart 2021
Chrysocyclus Syd. (3)*Aime & McTaggart 2021
Chrysopsora Lagerh. (1)*Aime & McTaggart 2021
Cionothrix Arthur (6)*Aime & McTaggart 2021
Cleptomyces Arthur (1)*Aime & McTaggart 2021
Coleopucciniella Hara ex Hirats. (2)
Corbulopsora Cummins (3)*Aime & McTaggart 2021
Cumminsiella Arthur (8)*Aime & McTaggart 2021
Desmella Syd. & P. Syd. (5)*Aime & McTaggart 2021

Didymopsora Dietel (6)*Aime & McTaggart 2021
Dietelia Henn. (12)*Aime & McTaggart 2021
Dipyxis Cummins & J.W. Baxter (2)*Aime & McTaggart 2021
Edythea H.S. Jacks. (4)*Aime & McTaggart 2021
Endophylloides Whetzel & Olive (2)*Aime & McTaggart 2021
Endophyllum Lév. (ca 40)*Aime & McTaggart 2021
Gambleola Massee (1)
Hapalophragmium Syd. & P. Syd. (18)*Aime & McTaggart 2021
Kernella Thirum. (1)*Aime & McTaggart 2021
Leptopuccinia (G. Winter) Rostr. (1)*Aime & McTaggart 2021
Macruropyxis Azbukina (2)*Aime & McTaggart 2021
Miyagia Miyabe ex Syd. & P. Syd. (3)*Aime & McTaggart 2021
Novopuccinia Y.M. Liang & Yun Liu (1)*Note 733
Polioma Arthur (6)*Aime & McTaggart 2021
Pseudocerradoa M. Ebinghaus & Dianese (2)*Note 821
Puccinia Pers. (ca 3000)*Aime & McTaggart 2021
Pucciniosira Lagerh. (15)*Aime & McTaggart 2021
Ramakrishnania Ramachar & Bhagyan. (1)
Sphenospora Dietel (5)*Aime & McTaggart 2021
Stereostratum Magnus (1)*Aime & McTaggart 2021
Trichopsora Lagerh. (1)*Aime & McTaggart 2021
Uromyces (Link) Unger (ca 1000)*Aime & McTaggart 2021
Xenostele Syd. & P. Syd. (5)*Aime & McTaggart 2021

Pucciniastraceae Gäum. ex Leppik*Aime & McTaggart 2021
Calyptospora J.G. Kühn (1)*Aime & McTaggart 2021
Melampsorella J. Schröt. (= *Peridermium* (Link) J.C. Schmidt & Kunze) (3)*Aime & McTaggart 2021
Pucciniastrum G.H. Otth (ca 50)*Aime & McTaggart 2021

Raveneliaceae Leppik*Aime & McTaggart 2021 (= *Chaconiaceae* Cummins & Y. Hirats.*Aime & McTaggart 2021; = *Uropyxidaceae* Cummins & Y. Hirats.)*Aime & McTaggart 2021
Allotelium Syd. (1)
Anthomyces Dietel (3)*Aime & McTaggart 2021
Anthomycetella Syd. & P. Syd. (1)*Aime & McTaggart 2021
Apra J.F. Hennen & F.O. Freire (1)*Aime & McTaggart 2021
Atelocauda Arthur & Cummins (4)*Aime & McTaggart 2021
Bibulocystis J. Walker, Beilharz, Pascoe & Priest (3)*Aime & McTaggart 2021
Cephalotelium Syd. (5)*Aime & McTaggart 2021
Chaconia Juel (12)*Aime & McTaggart 2021
Crossopsorella E.S.C. Souza, Aime, Galvão-Elias & Dianese (1)*Aime & McTaggart 2021
Cumminsina Petr. (1)
Cystomyces Syd. (2)*Aime & McTaggart 2021
Diabole Arthur (1)*Aime & McTaggart 2021
Diabolidium Berndt (1)
Didymopsorella Thirum. (2)
Diorchidiella J.C. Lindq. (1)*Aime & McTaggart 2021
Diorchidium Kalchbr. (ca 20)*Aime & McTaggart 2021
Esalque J.F. Hennen, Figueiredo & A.A. Carvalho (1)*Aime & McTaggart 2021
Goplana Racib. (12)
Hennenia Buriticá (1)*Aime & McTaggart 2021
Kernkampella Rajendren (8)*Aime & McTaggart 2021

Lipocystis Cummins (2)*Aime & McTaggart 2021
Maravalia Arthur (ca 40)*Aime & McTaggart 2021
Mimema H.S. Jacks. (1)*Aime & McTaggart 2021
Newinia Thaung (3)*Aime & McTaggart 2021
Olivea Arthur (7)*Aime & McTaggart 2021
Phragmopyxis Dietel (4)*Aime & McTaggart 2021
Porotenus Viégas (7)*Aime & McTaggart 2021a
Prospodium Arthur (= *Canasta* A.A. Carvalho & J.F. Hennen*Fp31) (ca 85)*Aime & McTaggart 2021
Ravenelia Berk. (ca 250)*Aime & McTaggart 2021
Raveneliopsis Ebinghaus & Dianese (2)*Note 1434, Ebinghaus et al. 2023
Sorataea Syd. (8)*Aime & McTaggart 2021
Spumula Mains (7)*Aime & McTaggart 2021
Tegillum Mains (9)*Aime & McTaggart 2021
Telomapea G.F. Laundon (1)
Triphragmiopsis Naumov (3)
Uropyxis J. Schröt. (ca 15)*Aime & McTaggart 2021
Ypsilospora Cummins (3)*Aime & McTaggart 2021

Rogerpetersoniaceae Aime & McTaggart*Aime & McTaggart 2021
Rogerpetersonia Aime & McTaggart (1)*Note 1064, Aime & McTaggart 2021

Skierkaceae Aime & McTaggart*Aime & McTaggart 2021
Skierka Racib. (= *Didymopsorella* Thirum.) (14)*Aime & McTaggart 2021

Sphaerophragmiaceae Cummins & Y. Hirats.
Austropuccinia Beenken (1)*Aime & McTaggart 2021
Dasyspora Berk. & M.A. Curtis (11)*Aime & McTaggart 2021
Puccorchidium Beenken (2)*Aime & McTaggart 2021
Sphaerophragmium Magnus (ca 25)*Aime & McTaggart 2021
Sphenorchidium Beenken (2)*Aime & McTaggart 2021

Thekopsoraceae P. Zhao & L. Cai*Note 1089
Thekopsora Magnus (= *Quasipucciniastrum* X.H. Qi, P. Zhao & L. Cai) (11)*Aime & McTaggart 2021

Tranzscheliaceae Aime & McTaggart*Note 510, Aime & McTaggart 2021
Leucotelium Tranzschel (3)*Aime & McTaggart 2021
Tranzschelia Arthur (ca 20)*Aime & McTaggart 2021

Uncolaceae Buriticá
Calidion Syd. & P. Syd. (4)
Uncol Buriticá & P.A. Rodr. (1)
Telomapea G.F. Laundon (1)

Uromycladiaceae P. Zhao & L. Cai*Note 922
Uromycladium McAlpine (ca 30)

Zaghouaniaceae P. Syd. & Syd. (= *Mikronegeriaceae* Cummins & Y. Hirats.)*Aime & McTaggart 2021
Achrotelium Syd. (5)*Aime & McTaggart 2021

Blastospora Dietel (= *Pelastoma* M. Salazar, A.A. Carvalho & J.F. Hennen) (7)*Aime & McTaggart 2021
Botryorhiza Whetzel & Olive (1)*Aime & McTaggart 2021
Botryosorus Jing X. Ji, Okane & Kakish (1)*Note 1363
Desmosorus Ritschel, Oberw. & Berndt (1)*Aime & McTaggart 2021
Elateraecium Thirum., F. Kern & B.V. Patil (= *Hiratsukamyces* Thirum., F. Kern & B.V. Patil) (3)*Aime & McTaggart 2021
Hemileia Berk. & Broome
Mikronegeria Dietel (ca 50)*Aime & McTaggart 2021
Zaghouania Pat. (= *Cystopsora* E.J. Butler) (3)*Aime & McTaggart 2021

Pucciniales genera *incertae sedis*
Aecidiconium Vuill. (1)
Aecidiolum Unger (4)
Aecidium Pers. (ca 800)
Allodus Arthur (1)*Aime & McTaggart 2021
Caeoma Link (ca 40)
Caetea Salazar-Yepes & A.A. Carvalho (1)
Canasta A.A. Carvalho & J.F. Hennen (3)
Desmellopsis J.M. Yen (1)
Flaminia Sacc. & P. Syd. (1)
Intrapes J.F. Hennen & Figueiredo (1)
Kimuramyces Dianese, L.T.P. Santos, R.B. Medeiros & Furlan. (1)
Mehtamyces Mundk. & Thirum. (1)
Neopuccinia A. Martins (1)*Note 1041, Aime & McTaggart 2021
Peridermium (Link) J.C. Schmidt & Kunze (ca 50)
Phragmotelium Syd. (5)
Poliomopsis A.W. Ramaley (1)
Schroeteriaster Magnus (3)
Uraecium Arthur (10)
Uredo Pers. (ca 800)

Septobasidiales Couch ex Donk
Septobasidiaceae Racib.
Aphelariopsis Jülich (2)
Auriculoscypha D.A. Reid & Manim. (1)*Note 1565
Coccidiodictyon Oberw. (1)
Johncouchia S. Hughes & Cavalc. (1)
Septobasidium Pat. (ca 225)
Uredinella Couch (2)

Class *Spiculogloeomycetes* Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout
Spiculogloeales R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.
Spiculogloeaceae Denchev
Meniscomyces Q.M. Wang & F.Y. Bai (1)*Note 277
Phyllozyma Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout (9)
Spiculogloea P. Roberts (5)

Class *Tritirachiomycetes* Aime & Schell
Tritirachiales Aime & Schell
Tritirachiaceae Aime & Schell
Tritirachium Limber (ca 15)

Paratritirachium Beguin, Pyck & Detandt (2)

Pucciniomycotina genera *incertae sedis*
Kryptastrina Oberw (1)
Paraphelaria Corner (2)
Zygogloea P. Roberts (1)

Subphylum *Ustilaginomycotina* Doweld
Class *Exobasidiomycetes* Begerow, M. Stoll & R. Bauer
Ceraceosorales Begerow, M. Stoll & R. Bauer
Ceraceosoraceae Denchev & R.T. Moore
Ceraceosorus B.K. Bakshi (3)

Doassansiales R. Bauer & Oberw.
Doassansiaceae R.T. Moore ex P.M. Kirk, P.F. Cannon & J.C. David
Burrillia Setch. (8)
Doassansia Cornu (ca 20)
Doassinga Vánky, R. Bauer & Begerow (1)
Entylomaster Vánky & R.G. Shivas (2)
Heterodoassansia Vánky (9)
Nannfeldtiomyces Vánky (2)
Narasimhania Thirum. & Pavgi (1)
Pseudodermatosorus Vánky (2)
Pseudodoassansia (Setch.) Vánky (2)
Pseudotracya Vánky (1)
Tracya Syd. & P. Syd. (2)

Melaniellaceae R. Bauer, Vánky, Begerow & Oberw.
Melaniella R. Bauer, Vánky, Begerow & Oberw. (2)

Rhamphosporaceae R. Bauer & Oberw.
Rhamphospora D.D. Cunn. (1)

Entylomatales R. Bauer & Oberw.
Entylomataceae R. Bauer & Oberw.
Entyloma de Bary (ca 250)
Tilletiopsis Derx (2)

Exobasidiales Henn.
Brachybasidiaceae Gäum.
Brachybasidium Gäum. (1)
Dicellomyces L.S. Olive (3)
Eidernor Y.P. Tan & Bishop-Hurley (1)*Note 1522
Kordyana Racib. (9)
Lelum Racib. (1)
Marantokordyana M. Piepenbr., Maike Hartmann, T.A. Hofm. & M. Lutz (2)*Note 1039
Meira Boekhout, Scorzetti, Gerson & Sztejnb. ex Denchev & T. Denchev (10)*Note 1040
Proliferobasidium J.L. Cunn. (1)
Yunzhangomyces Q.M. Wang, E. Tanaka, M. Groenew. & Begerow (5)*Note 738

Cryptobasidiaceae Malençon ex Donk
Botryoconis Syd. & P.Syd. (= *Cryptobasidium* Lendn.) (2)

Clinoconidium Pat. (8)
Coniodictyum Har. & Pat. (2)
Drepanoconis J. Schröt. & Henn. (4)
Phacellula Syd. (1)

Exobasidiaceae J. Schröt.
Austrobasidium Palfner (1)
Exobasidium Woronin (= *Arcticomyces* Savile) (ca 50)
Muribasidiospora Kamat & Rajendren (4)

Graphiolaceae Clem. & Shear
Graphiola Poit. (12)
Stylina Syd. & P. Syd. (1)

Laurobasidiaceae Pinruan, Sommai, Suetrong, Somrith. & E.B.G. Jones
Laurobasidium Jülich (4) (= *Acaromyces* Boekhout, Scorzetti, Gerson & Sztejnb. ex Denchev & T. Denchev)*Note 985, Somrithpol et al. 2018

Franziozymales Q.M. Wang, Begerow & M. Groenew.*Note 924
Franziozymaceae Q.M. Wang, Begerow & M. Groenew.*Note 925
Franziozyma Q.M. Wang, Begerow & M. Groenew. (1)*Note 626

Georgefischeriales R. Bauer, Begerow & Oberw.
Eballistraceae R. Bauer, Begerow, A. Nagler & Oberw.
Eballistra R. Bauer, Begerow, A. Nagler & Oberw. (4)

Georgefischeriaceae R. Bauer, Begerow & Oberw.
Georgefischeria Thirum. & Naras. (4)
Jamesdicksonia Thirum., Pavgi & Payak (ca 20)

Gjaerumiaceae R. Bauer, M. Lutz & Oberw.
Gjaerumia R. Bauer, M. Lutz & Oberw. (5)

Tilletiariaceae R.T. Moore
Phragmotaenium R. Bauer, Begerow, A. Nagler & Oberw. (3)
Tilletiaria Bandoni & B.N. Johri (1)
Tolyposporella G.F. Atk. (6)

Vankyiozymaceae Q.M. Wang*Note 1484
Vankyiozyma Q.M. Wang (1)*Jiang et al. 2024

Exobasidiales genera *incertae sedis*
Guomyces Q.M. Wang, E. Tanaka, M. Groenew. & Begerow., **nom. inval.** (1)*Note 730

Golubeviales Q.M. Wang, Begerow, F.Y. Bai & Boekhout*Note 1307
Golubeviaceae Q.M. Wang, F.Y. Bai, Begerow & Boekhout*Note 1304
Golubevia Q.M. Wang, F.Y. Bai, Begerow & Boekhout (3)*Note 1303

Microstromatales R. Bauer & Oberw.
Microstromataceae Jülich
Microstroma Niessl (ca 20)

Quambalariaceae Z.W. de Beer, Begerow & R. Bauer
Quambalaria J.A. Simpson (9)

Volvocisporiaceae Begerow, R. Bauer & Oberw.
Volvocisporium Begerow, R. Bauer & Oberw. (2)

Microstromatales genera *incertae sedis*
Baueromyces Q.M. Wang, Begerow & M. Groenew. (1)*Note 729
Jaminaea Sipiczki & Kajdacsi ex T. Kij. & Aime (4)
Parajaminaea T. Kij. & Aime (2)
Pseudomicrostroma T. Kij. & Aime (3)
Sympodiomycopsis Sugiy., Tokuoka & Komag. (3)

Robbauerales Boekhout, Begerow, Q.M. Wang & F.Y. Bai
Robbaueraceae Boekhout, Begerow, Q.M. Wang & F.Y. Bai
Robbauera Boekhout, Begerow, Q.M. Wang & F.Y. Bai (1)

Tilletiales Kreisel ex R. Bauer & Oberw.
Erratomycetaceae Denchev & T. Denchev
Erratomyces M. Piepenbr. & R. Bauer (5)

Tilletiaceae J. Schröt.
Conidiosporomyces Vánky (3)
Ingoldiomyces Vánky (1)
Neovossia Körn. (4)
Oberwinkleria Vánky & R. Bauer (1)
Salmacisia D.R. Huff & A. Chandra (1)*Fp60
Tilletia Tul. & C. Tul. (ca 225)

Class ***Malasseziomycetes*** Denchev & T. Denchev
Malasseziales R.T. Moore
Malasseziaceae Denchev & R.T. Moore
Malassezia Baillon (ca 20)

Class ***Moniliellomycetes*** Q.M. Wang, F.Y. Bai & Boekhout
Moniliellales Q.M. Wang, F.Y. Bai & Boekhout
Moniliellaceae Q.M. Wang, F.Y. Bai & Boekhout
Moniliella Stolk & Dakin (= *Trichosporonoides* Haskins & J.F.T. Spencer (39)

Class ***Peribolosporomycetes*** Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow*Note 1355
Peribolosporales Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow*Note 1356
Peribolosporaceae Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow*Note 1357
Peribolospora Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow (2)*Note 1048

Class ***Ustilaginomycetes*** R. Bauer, Oberw. & Vánky
Quasiramulariales R. Kirschner, M. Kolařík & M. Piepenbr.
Quasiramulariaceae R. Kirschner, M. Kolařík & M. Piepenbr.*Note 1454
Quasiramularia I-Chin Wei & R. Kirschner (1)*Note 1060

Uleiellales Garnica, K. Riess, M. Schön, H. Butin, M. Lutz, Oberw. & R. Bauer
Uleiellaceae Vánky
Uleiella J. Schröt. (2)

Urocystidales R. Bauer & Oberw.
Doassansiopsidaceae Begerow, R. Bauer & Oberw.
Doassansiopsis (Setch.) Dietel (ca 16)

Fereydouniaceae S. Nasr, Soudi, H.D.T. Nguyen, M. Lutz & Piątek
Fereydounia S. Nasr, M.R. Soudi, H.D.T. Nguyen, M. Lutz & Piątek (1)

Floromycetaceae S. Nasr, Soudi, H.D.T. Nguyen, M. Lutz & Piątek
Antherospora R. Bauer, M. Lutz, Begerow, Piątek & Vánky (12)
Floromyces Vánky, M. Lutz & R. Bauer (1)

Glomosporiaceae Cif.
Thecaphora Fingerh. (ca 70)

Mycosyringaceae R. Bauer & Oberw.
Mycosyrinx Beck (3)

Urocystidaceae Begerow, R. Bauer & Oberw.
Flamingomyces R. Bauer, M. Lutz, Piątek, Vánky & Oberw. (1)
Melanoxa M. Lutz, Vánky & R. Bauer (2)
Melanustilospora Denchev (2)
Mundkurella Thirum. (6)
Urocystis Rabenh. ex Fuckel (ca 175)
Ustacystis Zundel (2)
Vankya Ershad (3)

Ustilaginales G. Winter
Anthracoideaceae Denchev
Anthracoidea Bref. (ca 125)
Cintractia Cornu (ca 25)
Dermatosorus Sawada ex L. Ling (7)
Farysia Racib. (ca 30)
Farysporium Vánky (1)
Heterotolyposporium Vánky (2)
Kuntzeomyces Henn. Ex Sacc. & P. Syd. (2)
Leucocintractia M. Piepenbr., Begerow & Oberw. (6)
Moreaua Liou & H.C. Cheng (ca 40)
Orphanomyces Savile (3)
Pilocintractia Vánky (2)
Planetella Savile (1)
Portalia V. González, Vánky & Platas (1)
Schizonella J. Schröt. (8)
Stegocintractia M. Piepenbr., Begerow & Oberw. (6)
Testicularia Klotzsch (3)
Tolyposporium Woronin ex J. Schröt. (ca 10)
Trichocintractia M. Piepenbr. (1)
Ustanciosporium Vánky (ca 25)

Clintamraceae Vánky
Clintamra Cordas & Durán (1)

Geminaginaceae Vánky
Geminago Vánky & R. Bauer (1)

Melanotaeniaceae Begerow, R. Bauer & Oberw.
Exoteliospora R. Bauer, Oberw. & Vánky (1)
Melanotaenium de Bary (ca 20)
Yelsemia J. Walker (4)

Pericladiaceae Vánky
Pericladium Pass. (3)

Ustilaginaceae Tul. & C. Tul.*Note 526, 1595
Ahmadiago Vánky (1)
Aizoago Vánky (2)
Anomalomyces Vánky, M. Lutz & R.G. Shivas (2)
Anthracocystis Bref. (ca 125)
Bambusiomyces Vánky (1)
Centrolepidosporium R.G. Shivas & Vánky (1)
Dirkmeia F.Y. Bai, Q.M. Wang, Begerow & Boekhout (1)
Eriocaulago Vánky (2)
Eriosporium Vánky (2)
Franzpetrakia Thirum. & Pavgi (3)
Kalmanozyma Q.M. Wang, F.Y. Bai, Begerow & Boekhout (1)
Langdonia McTaggart & R.G. Shivas (ca 10)
Macalpinomyces Langdon & Full. (ca 50)
Melanopsichium Beck (3)
Moesziomyces Vánky (= *Eriomoeszia* Vánky) (8)
Parvulago R. Bauer, M. Lutz, Piątek, Vánky & Oberw. (1)
Pattersoniomyces Piątek, M. Lutz & C.A. Rosa (1)
Pseudozyma Bandoni (15)
Shivasia Vánky, M. Lutz & Piątek (1)
Sporisorium Ehrenb. ex Link (ca 225)
Stollia McTaggart & R.G. Shivas (5)
Tranzscheliella Lavrov (ca 25)
Triodiomyces McTaggart & R.G. Shivas (5)
Ustilago (Pers.) Roussel (ca 250)
Yunchangia L. Guo & B. Xu (1)

Websdaneaceae Vánky
Restiosporium Vánky (21)
Websdanea Vánky (1)

Violaceomycetales Albu, Toome & Aime
Violaceomycetaceae Albu, Toome & Aime
Violaceomyces Albu, Toome & Aime (1)

Ustilaginomycetes genera *incertae sedis*
Capitulocladosporium L.Y. Sun, X. Sun & L.D. Guo (1)
Eriocortex Vánky & R.G. Shivas (1)

Ustilaginomycotina order *incertae sedis*
Cintractiellales McTaggart & R.G. Shivas

Cintractiellaceae Vánky
Cintractiella Boedijn (4)

Basidiomycota genera *incertae sedis*
Anguillomyces Marvanová & Bärl. (1)
Arcispora Marvanová & Bärl. (1)
Arrasia Bernicchia, Gorjón & Nakasone (1)
Celatogloea P. Roberts (1)
Cystogloea P. Roberts (1)
Lycoperdites Poinar (1)
Microstella K. Ando & Tubaki (1)
Mycetophagites Poinar & Buckley (1)
Neotyphula Wakef. (1)
Radulodontia Hjortstam & Ryvarden (1)
Restilago Vánky (1)
Ustilagosporites V.D. Kapgate ex R.K. Saxena, V.D. Kapgate & P.M. Kirk (1)*Note 1318

Phylum *BLASTOCLADIOMYCOTA* T.Y. James*Fp89
Class *Blastocladiomycetes* Doweld
Blastocladiales H.E. Petersen
Blastocladiaceae H.E. Petersen
Allomyces E.J. Butler (ca 10)
Blastocladia Reinsch (ca 30)
Blastocladiopsis Sparrow (2)

Catenariaceae Couch
Catenophlyctis Karling (2)
Nematoceromyces Doweld (3)

Paraphysodermataceae Doweld
Paraphysoderma Boussiba, Zarka & T.Y. James (1)

Sorochytriaceae Dewel
Sorochytrium Dewel (1)

Blastocladiales genus *incertae sedis*
Endoblastidium Codreanu (2)

Callimastigales Doweld
Callimastigaceae Fonseca
Callimastix Weissenb. (1)

Catenomycetales Doweld
Catenomycetaceae Doweld
Catenomyces A.M. Hanson (2)

Coelomomycetaceae Couch
Coelomomyces Keilin (ca 60)
Coelomycidium Debais. (1)

Blastocladiomycota genus *incertae sedis*
Microallomyces R. Emers. & J.A. Robertson (1)

Retesporangicus Strullu-Derrien (1)

Class *Physodermatomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Physodermatales Caval.-Sm.
Physodermataceae Sparrow
Physoderma Wallr. (ca 75)

Phylum *CALCARISPORIELLOMYCOTA* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Subphylum *Calcarisporiellomycotina* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Class *Calcarisporiellomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Calcarisporiellales Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Calcarisporiellaceae Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Calcarisporiella de Hoog (1)
Echinochlamydosporium X.Z. Jiang, H.Y. Yu, M.C. Xiang, X.Y. Liu & Xing Z. Liu (1)

Phylum *CHYTRIDIOMYCOTA* Doweld
Class *Caulochytriomycetes* Doweld
Caulochytriales Doweld
Caulochytriaceae Subram.
Caulochytrium Voos & L.S. Olive (2)

Class *Chytridiomycetes* Caval.-Sm.
Chytridiales Cohn
Asterophlyctaceae Doweld
Asterophlyctis H.E. Petersen (2)
Wheelerophlyctis Letcher & M.J. Powell (2)

Chytridiaceae Nowak. (= *Phlyctochytriaceae* Doweld)*Jesus et al. 2021
Chytridium A. Braun (ca 90)
Dendrochytridium Letcher, Longcore & M.J. Powell (1)
Dinochytrium Lesham, Letcher & M.J. Powell (1)
Irineochytrium Letcher, Longcore & M.J. Powell (1)
Phlyctochytrium J. Schröt. (ca 50)*Jesus et al. 2021
Polyphlyctis Karling (3)
Zopfochytrium M.J. Powell, Longcore, Letcher (1)

Chytriomycetaceae Letcher (= *Phlyctorhizaceae* Doweld)*Vélez et al. 2011, Jesus et al. 2021
Avachytrium Vélez & Letcher (1)
Chytriomyces Karling (ca 40)
Entophlyctis A. Fisch. (ca 20)
Fayochytriomyces W.J. Davis, Letcher, Longcore & M.J. Powell (1)
Obelidium Nowak. (3)
Odontochytrium Vélez & Letcher (1)
Pendulichytrium K. Seto & Degawa (1)
Phlyctorhiza A.M. Hanson (1)*Jesus et al. 2021
Physocladia Sparrow (1)

Podochytrium Pfitzer (7)
Rhizidium A. Braun (34)*Jesus et al. 2021
Rhizoclosmatium H.E. Petersen (8)
Rhopalophlyctis Karling (1)*Davis et al. 2019
Rodmanochytrium M.J. Powell & Letcher (2)*Jesus et al. 2021
Siphonaria H.E. Petersen (4)

Pseudorhizidiaceae Doweld
Delfinachytrium Vélez & Letcher (1)*Velez et al. 2013
Pseudorhizidium M.J. Powell, Letcher & Longcore (1)

Scherffeliomycetaceae Doweld
Scherffeliomyces Sparrow (1)

Nephridiophagales Doweld
Nephridiophagaceae R. Radek, Letcher, Wijayaw., P.M. Kirk & K.D. Hyde
Coleospora Gibbs (1)
Malpighivinco Radek & Strassert (1)*Note 1393
Nephridiophaga Ivanić (15)
Nephridiochytrium Radek & Strassert (1)*Note 1392
Oryctospora Purrini & Weiser (1)
Peltomyces Léger (1)

Polyphagales Doweld
Polyphagaceae F. Maekawa
Polyphagus Nowak. (12)
Volvorax Doweld (= *Endocoenobium* Ingold, **nom. inval.**) (1)*Van der Wyngaert et al. 2018

Saccopodiales Doweld
Saccopodiaceae Jacz. & P.A. Jacz.
Saccopodium Sorokīn (1)

Zygophlyctidales K. Seto*Seto et al. 2020
Zygophlyctidaceae K. Seto*Seto et al. 2020
Zygophlyctis Doweld (3)*Seto et al. 2020

Zygorhizidiales K. Seto
Zygorhizidiaceae Doweld
Zygorhizidium Löwenthal (7)*Seto et al. 2020

Chytridiomycetes families *incertae sedis*
Amoebochytriaceae Doweld
Amoebochytrium Zopf (1)

Sparrowiaceae Doweld
Sparrowia Willoughby (2)

Sphaeromonadaceae Doweld
Sphaeromonas E. Liebet. (3)

Tetrachytriaceae Doweld
Zygochytrium Sorokīn (1)*Sparrow 1960, Karling 1977

Tetrachytrium Sorokīn (1)

Thalassochytriaceae Doweld
Thalassochytrium Nyvall, M. Pedersén & Longcore (1)

Chytridiomycetes genera *incertae sedis*
Aphanistis Sorokīn (2)
Bertramia Mesnil & Caullery (2)
Blyttiomyces A.F. Bartsch (11)
Canteria Karling (1)
Dangeardia Schröd. (6)
Dangeardiana Valkanov ex A. Batko (2)
Dictyomorpha Mullins (2)
Gamolpidium Vlădescu (2)
Ichthyochytrium Plehn (1)
Loborhiza A.M. Hanson (1)
Macrochytrium Minden (1)
Megachytrium Sparrow (1)
Mitochytridium P.A. Dang. (2)
Mucophilus Plehn (1)
Nowakowskia Borzí (1)
Olpidiaster Pascher (3)
Perolpidium Doweld (2)
Physorhizophidium Scherff. (1)
Plasmophagus De Wild. (3)
Pseudopileum Canter (1)
Rhizidiocystis Sideris (1)
Rhizosiphon Scherff. (3)
Riethophlyctis Doweld (1)
Saccomyces Serbinow (2)
Sagittospora Lubinsky (1)
Scherffeliomycopsis Geitler (1)
Schizolpidium Doweld (1)
Septolpidium Sparrow (1)
Septosperma Whiffen ex R.L. Seym. (4)
Solutoparies Whiffen ex W.H. Blackw. & M.J. Powell (1)
Sorokinocystis Doweld (1)
Sporophlyctidium Sparrow (2)
Sporophlyctis Serbinow (1)
Trematophlyctis Pat. (1)
Truittella Karling (1)

Class ***Cladochytriomycetes*** Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Cladochytriales Mozl.-Standr.
Cladochytriaceae J. Schröt.
Cladochytrium Nowak. (ca 20)
Karlingiella Jerônimo, Jesus & Pires-Zottarelli (1)*Jerônimo et al. 2022

Endochytriaceae Sparrow ex D.J.S. Barr
Endochytrium Sparrow (7)

Nowakowskiellaceae Sparrow ex Mozl.-Standr.
Nowakowskiella J. Schröt. (ca 16)

Septochytriaceae Mozl.-Standr. (= *Catenochytridiaceae*)
Allochytridium D.J.S. Barr & Desauln (3)*Jerônimo et al. 2024
Catenochytridium Berdan (6)*Jerônimo et al. 2022
Cylindrochytridium Karling (2)*Jerônimo et al. 2022
Dogmamyces G.H. Jerônimo, C.L.A. Pires-Zottar., T.Y. James & Longcore (1)*Jerônimo et al. 2024
Nephrochytrium Karling (4)*Jerônimo et al. 2022
Phytochytrium Longcore & Jerônimo (1)*Note 689
Septochytrium Berdan (5)
Sparrowiella Longcore & Jerônimo (1)*Note 693

Cladochytriales genera *incertae sedis*
Diplophlyctis J. Schröt. (12)
Thomasiella G.H. Jerônimo (= *Thomasia* G.H. Jerônimo) (1)*Note 1562, 1591

Class *Lobulomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Lobulomycetales D.R. Simmons
Lobulomycetaceae D.R. Simmons (= *Alogomycetaceae* Doweld)
Algochytrops Doweld (1)
Alogomyces D.R. Simmons & Letcher (1)
Clydaea D.R. Simmons (1)
Cyclopsomyces K. Seto & Degawa (1)
Lobulomyces D.R. Simmons (2)
Maunachytrium D.R. Simmons (1)

Class *Mesochytriomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Gromochytriales Karpov & Aleoshin
Gromochytriaceae Karpov & Aleoshin
Apiochytrium Karpov & D. Moreira (1)
Gromochytrium Karpov & Aleoshin (1)

Mesochytriales Doweld
Mesochytriaceae Doweld
Mesochytrium B.V. Gromov, Mamkaeva & Pljusch (1)

Class *Polychytriomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Polychytriales Longcore & D.R. Simmons
Polychytriaceae Doweld (= *Arkayaceae* Doweld)
Arkaya Longcore & D.R. Simmons (2)
Karlingiomyces Sparrow (6)
Lacustromyces Longcore (1)
Neokarlingia Longcore & D.R. Simmons (1)
Polychytrium Ajello (1)

Class *Rhizophydiomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov

Rhizophydiales Letcher
Alphamycetaceae Letcher
Alphamyces Letcher (2)
Betamyces Letcher (1)
Gammamyces Letcher (1)

Aquamycetaceae Letcher
Aquamyces Letcher (1)

Angulomycetaceae Letcher
Angulomyces Letcher (3)

Batrachochytriaceae Doweld
Batrachochytrium Longcore, Pessier & D.K. Nichols (2)

Collimycetaceae K. Seto & Degawa
Collimyces K. Seto & Degawa (1)

Coralloidiomycetaceae Doweld
Coralloidiomyces Letcher (1)

Dinomycetaceae Karpov & Guillou
Dinomyces Karpov & Guillou (2)
Paradinomyces Reñé & Karpov (2)

Ericiomycetaceae Karpov & Reñé*Notes 159, 936
Ericiomyces Karpov & Reñé (1)*Note 159

Globomycetaceae Letcher
Globomyces Letcher (1)
Urceomyces Letcher (1)

Gorgonomycetaceae Letcher
Gorgonomyces Letcher (5)

Halomycetaceae Letcher & M.J. Powell
Halomyces Letcher & M.J. Powell (1)
Paludomyces Letcher & M.J. Powell (1)
Paranamyces Letcher & M.J. Powell (1)
Ulkenomyces Letcher & M.J. Powell (1)

Kappamycetaceae Letcher
Kappamyces Letcher & M.J. Powell (2)

Operculomycetaceae Doweld
Operculomyces M.J. Powell, Letcher & Longcore (1)

Pateramycetaceae Letcher
Pateramyces Letcher (2)

Protrudomycetaceae Letcher
Protrudomyces Letcher (1)

Rhizophydiaceae Letcher
Rhizophydium Schenk ex Rabenh. (ca 150)

Staurastromycetaceae S. Van den Wyngaert, K. Seto & K. Rojas
Staurastromyces Van den Wyngaert, K. Seto & K. Rojas (1)

Terramycetaceae Letcher
Boothiomyces Letcher (1)
Terramyces Letcher (4)

Uebelmesseromycetaceae M.J. Powell & Letcher
Uebelmesseromyces M.J. Powell & Letcher (1)

Rhizophydiales genera *incertae sedis*
Homolaphlyctis Longcore, Letcher & T.Y. James (1)
Polyrhizophydium Longcore & D.R. Simmons (1)*Note 858

Class *Rhizophlyctidomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov

Rhizophlyctidales Letcher
Arizonaphlyctidaceae Letcher
Arizonaphlyctis Letcher (1)

Borealophlyctidaceae Letcher
Borealophlyctis Letcher (2)

Rhizophlyctidaceae H.E. Petersen
Rhizophlyctis A. Fisch. (ca 25)

Sonoraphlyctidaceae Letcher
Sonoraphlyctis Letcher (1)

Class *Spizellomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Spizellomycetales D.J.S. Barr
Powellomycetaceae D.R. Simmons
Fimicolochytrium D.R. Simmons & Longcore (2)
Geranomyces D.R. Simmons (4)
Powellomyces Longcore (1)
Thoreauomyces D.R. Simmons & Longcore (1)

Spizellomycetaceae D.J.S. Barr
Barromyces M.J. Powell & Letcher (1)*Fp13
Brevicalcar Letcher & M.J. Powell (1)
Bulbosomyces Letcher & Longcore (1)
Gaertneriomyces D.J.S. Barr (4)
Gallinipes Letcher & M.J. Powell (3)
Kochiomyces D.J.S. Barr (1)
Spizellomyces D.J.S. Barr (7)
Triparticalcar D.J.S. Barr (1)

Class *Synchytriomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Synchytriales Doweld
Synchytriaceae J. Schröt.
Carpenterophlyctis Doweld (2)
Endodesmidium Canter (1)
Johnkarlingia Pavgi & S.L. Singh (1)
Micromyces P.A. Dang. (19)
Micromycopsis Scherff. (8)
Synchytrium de Bary & Woronin (ca 200)

Chytridiomycota family *incertae sedis*
Quaeritorhizaceae Longcore, D.R. Simmons & T.Y. James*Note 440
Quaeritorhiza Longcore, D.R. Simmons & T.Y. James (1)*Note 439

Phylum *ENTOMOPHTHOROMYCOTA* Humber
Subphylum *Entomophthoromycotina* Humber
Class *Entomophthoromycetes* Humber
Entomophthorales G. Winter
Ancylistaceae J. Schröt
Ancylistes Pfitzer (4)
Macrobiotophthora Reukauf (1)

Batkoaceae Gryganskyi, A.E. Hajek & Stajich*Gryganskyi et al. 2022
Batkoa Humber (10)

Capillidiaceae Y. Nie, Stajich & K.T. Hodge*Note 1101, Gryganskyi et al. 2022
Capillidium B. Huang & Y. Nie (7)*Note 100

Completoriaceae Humber
Completoria Lohde ()

Conidiobolaceae B. Huang, Stajich & K.T. Hodge*Note 1100, Gryganskyi et al. 2022
Azygosporus B. Huang & Y. Nie (2)*Note 676
Conidiobolus Bref. (ca 30)*Gryganskyi et al. 2022
Microconidiobolus B. Huang & Y. Nie (3)*Note 572

Entomophthoraceae Nowak.
Entomophaga A. Batko (ca 20)
Entomophthora Fresen. (ca 50)
Erynia (Nowak. ex A. Batko) Remaud. & Hennebert (ca 25)
Eryniopsis Humber (4)
Furia (A. Batko) Humber (ca 15)
Massospora Peck (ca 15)
Orthomyces Steinkr., Humber & J.B. Oliv. (1)
Strongwellsea A. Batko & J. Weiser (8)
Tarichium Cohn *sensu stricto* (ca 25)
Zoophthora A. Batko (ca 40)

Meristacraceae Humber
Meristacrum Drechsler (= *Tabanomyces* Couch, R.J. Andrejeva, Laird & Nolan) (2)

Neoconidiobolaceae X.Y. Liu, Stajich & K.T. Hodge*Note 1005
Neoconidiobolus B. Huang & Y. Nie (13)*Note 100

Class ***Neozygitomycetes*** Humber
Neozygitales Humber
Neozygitaceae Ben Ze'ev, R.G. Kenneth & Uziel
Apterivorax S. Keller (2)
Neozygites Witlaczil (= *Thaxterosporium* Ben Ze’ev & R.G. Kenneth) (ca 20)

Phylum ***ENTORRHIZOMYCOTA*** R. Bauer, Garnica, Oberw., Riess, Weiß & Begerow*Note 1596
Class ***Entorrhizomycetes*** Begerow, M. Stoll & R. Bauer
Entorrhizales R. Bauer & Oberw.
Entorrhizaceae R. Bauer & Oberw.
Entorrhiza C.A. Weber (11)*Riess et al. 2019
Juncorrhiza K. Riess & Piątek (6)*Riess et al. 2019

Talbotiomycetales K. Riess, R. Bauer, R. Kellner, Kemler, Piątek, Vánky & Begerow
Talbotiomycetaceae K. Riess, R. Bauer, R. Kellner, Kemler, Piątek, Vánky & Begerow
Talbotiomyces Vánky, R. Bauer & Begerow (1)

Phylum ***GLOMEROMYCOTA*** C. Walker & A. Schüssler
Class ***Archaeosporomycetes*** Sieverd., G.A. Silva, B.T. Goto & Oehl
Archaeosporales C. Walker & A. Schüssler
Ambisporaceae C. Walker, Vestberg & A. Schüssler (= *Appendicisporaceae* C. Walker, Vestberg & A. Schüssler)
Ambispora C. Walker, Vestberg & A. Schüssler (= *Appendicispora* Spain, Oehl & Sieverding) (11)

Archaeosporaceae J.B. Morton & D. Redecker
Archaeospora J.B. Morton & D. Redecker (= *Intraspora* Oehl & Sieverd.) (7)*Note 223
Palaeospora Oehl, Palenz., Sánchez-Castro & G.A. Silva) (1)*Note 363

Geosiphonaceae Engl. & E. Gilg
Geosiphon F. Wettst. (1)

Polonosporaceae Błaszk., Niezgoda, B.T. Goto, Magurno*Notes 407, 971
Polonospora Błaszk., Niezgoda, B.T. Goto, Magurno (1)*Notes 406, 872, 1076

Class ***Glomeromycetes*** Caval.-Sm. emend. Oehl, G.A. Silva, B.T. Goto & Sieverd.
Diversisporales C. Walker & A. Schüssler emend. Oehl, G.A. Silva & Sieverd.
Acaulosporaceae J.B. Morton & Benny
Acaulospora Gerd. & Trappe (= *Kuklospora* Oehl & Sieverd.) (59)

Diversisporaceae C. Walker & A. Schüessler
Corymbiglomus Błaszk. & Chwat (3)
Desertispora Błaszk., Kozłowska, Ryszka, Al-Yahya’ei & Symanczik (1)
Diversispora C. Walker & A. Schüssler (= *Otospora* Oehl, Palenz. & N. Ferrol; = *Tricispora* Oehl, Sieverd., G.A. Silva & Palenz.) (29)*Note 360, 516, 1604
Redeckera C. Walker & A. Schüssler (6)
Sieverdingia Błaszk., Niezgoda & B.T. Goto (1)

Pacisporaceae C. Walker, Błaszk., A. Schüssler & Schwarzott

Pacispora Sieverd. & Oehl (6)

Sacculosporaceae Oehl, Sieverd., G.A. Silva, B.T. Goto, Sánchez-Castro & Palenz.
Sacculospora Oehl, Sieverd., G.A. Silva, B.T. Goto, I.C. Sánchez & Palenz. (2)

Entrophosporales Błaszk., Sánchez-García, B.T. Goto & Magurno*Note 1405
Entrophosporaceae Oehl & Sieverd.
Entrophospora R.N. Ames & R.W. Schneid. (= *Albahypha* Oehl, G.A. Silva, B.T. Goto & Sieverd.; = *Claroideoglomus* C. Walker & A. Schüssler) (15)*Note 155

Gigasporales S.P. Gautam & U.S. Patel (= *Gigasporales* Sieverd., G.A. Silva, B.T. Goto & Oehl)
Dentiscutataceae F.A. Souza, Oehl & Sieverd.
Dentiscutata Sieverd., F.A. Souza & Oehl (= *Quatunica* F.A. Souza, Sieverd. & Oehl) (11)*Note 441
Fuscutata Oehl, F.A. Souza & Sieverd. (4)*Note 174

Gigasporaceae J.B. Morton & Benny
Gigaspora Gerd. & Trappe (10)

Intraornatosporaceae B.T. Goto & Oehl
Intraornatospora B.T. Goto, Oehl & G.A. Silva (1)
Paradentiscutata B.T. Goto, Oehl & G.A. Silva (2)

Racocetraceae Oehl, Sieverd. & F.A. Souza
Cetraspora Oehl, F. A. Souza & Sieverd. (8)
Racocetra Oehl, F.A. Souza & Sieverd. (14)

Scutellosporaceae Sieverd., F.A. Souza & Oehl
Bulbospora Oehl & G.A. Silva (1)
Orbispora Oehl, G.A. Silva & D.K. Silva (2)
Scutellospora C. Walker & F.E. Sanders (14)

Glomerales J.B. Morton & Benny emend. Oehl, G.A. Silva, B.T. Goto & Sieverd.
Glomeraceae Piroz. & Dalpé emend. Oehl, G.A. Silva & Sieverd.
Blaszkowskia G.A. Silva & Oehl (1)*Note 1372
Complexispora Błaszk., B.T. Goto, Niezgoda & Magurno (2)*Note 1313
Dominikia Błaszk., Chwat & Kovács (14)
Epigeocarpum Błaszk., B.T. Goto, Jobim, Niezgoda & Marguno (2)*Note 157
Funneliglomus Corazon-Guivin, G.A. Silva & Oehl (1)
Funneliformis C. Walker & A. Schüssler emend. Oehl, G.A. Silva & Sieverd. (13)
Glomus Tul. & C. Tul. emend. Oehl, G.A. Silva & Sieverd. (57)
Halonatospora Błaszk., Niezgoda, B.T. Goto & Kozłowska (1)
Kamienskia Błaszk., Chwat & Kovács (1)
Microdominikia Oehl, Corazon-Guivin & G.A. Silva (1)
Microkamienskia Corazon-Guivin, G.A. Silva & Oehl (3)
Nanoglomus Corazon-Guivin, G.A. Silva & Oehl (1)
Oehlia Błaszk., Kozłowska, Niezgoda, B.T. Goto & Dalpé (1)
Orientoglomus G.A. Silva, Oehl & Corazon-Guivin (1)
Parvocarpum Magurno (1)*Note 1605
Rhizoglomus Sieverd., G.A. Silva & Oehl (22)
Sclerocystis Berk. & Broome (2)
Sclerocarpum B.T. Goto, Błaszk., Niezgoda, Kozłowska & Jobim (1)

Septoglomus Sieverd., G.A. Silva & Oehl (14)
Silvaspora Błaszk., Niezgoda, B.T. Goto, Crossay & Magurno (1)
Viscospora Sieverd., G.A. Silva & Oehl (2)*Note 1606

Class *Paraglomeromycetes* Oehl, G.A. Silva, B.T. Goto & Sieverd.
Paraglomerales C. Walker & A. Schüssler
Paraglomeraceae J.B. Morton & D. Redecker
Paraglomus J.B. Morton & D. Redecker (11)
Innospora Błaszk., Kovács, Chwat & Kozłowska (1)

Pervetustaceae Błaszk., Chwat, Kozłowska, Symanczik & Al-Yahya'ei
Pervetustus Błaszk., Chwat, Kozłowska, Symanczik & Al-Yahya'ei (1)

Phylum *KICKXELLOMYCOTA* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Subphylum *KICKXELLOMYCOTINA*
Class *Asellariomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Asellariales Manier ex Manier & Lichtw.
Asellariaceae Manier ex Manier & Lichtw.
Asellaria R.A. Poiss. (9)

Asellariales genus *incertae sedis*
Baltomyces Cafaro (1)

Class *Barbatosporomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Barbatosporales Doweld
Barbatosporaceae Doweld
Barbatospora M.M. White, Siri & Lichtw. (1)

Class *Dimargaritomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Dimargaritales R.K. Benj.
Dimargaritaceae R.K. Benj.
Dimargaris Tiegh. (7)
Dispira Tiegh. (4)
Tieghemiomyces R.K. Benj. (2)

Dimargaritales genus *incertae sedis*
Spinalia Vuill. (1)

Class *Harpellomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Harpellales Lichtw. & Manier
Harpellaceae L. Léger & Duboscq ex P.M. Kirk & P.F. Cannon
Carouxella Manier, Rioux & Whisler (2)
Harpella L. Léger & Duboscq (7)
Harpellomyces Lichtw. & S.T. Moss (4)
Klastostachys Lichtw., M.C. Williams & M.M. White (1)
Stachylina L. Léger & M. Gauthier (ca 40)
Stachylinoides Lichtw. & López-Lastra (1)

Legeriomycetaceae Pouzar
Austrosmittium Lichtw. & M.C. Williams (6)
Bactromyces William & Strongman (1)
Baetimyces L.G. Valle & Santam. (1)
Bojamyces Longcore (3)
Capniomyces S.W. Peterson & Lichtw. (3)
Caudomyces Lichtw., Kobayasi & Indoh (3)
Coleopteromyces Ferrington, Lichtw. & López-Lastra (1)
Dacryodiomyces Lichtw. (1)
Ejectosporus S.W. Peterson, Lichtw. & M.C. Williams (3)
Ephemerellomyces M.M. White & Lichtw. (2)
Furculomyces Lichtw. & M.C. Williams (3)
Gauthieromyces Lichtw. (4)
Genistelloides S.W. Peterson, Lichtw. & B.W. Horn (5)
Genistellospora Lichtw. (6)
Glotzia M. Gauthier ex Manier & Lichtw. (ca 10)
Graminella L. Léger & M. Gauthier ex Manier (3)
Laculus William & Strongman (1)
Lancisporomyces Santam. (6)
Legerioides M.M. White (1)
Legeriomyces Pouzar (ca 10)
Legeriosimilis M.C. Williams, Lichtw., M.M. White & J.K. Misra (8)
Pennella Manier (8)
Plecopteromyces Lichtw., Ferrington & López-Lastra (3)
Pseudoharpella Ferrington, M.M. White & Lichtw. (1)
Pteromaktron Whisler (2)
Simuliomyces Lichtw. (1)
Sinotrichium Juan Wang (1)*Fp32
Smittium *R*.A. Poiss. (ca 100)
Spartiella Tuzet & Manier ex Manier (3)
Stipella L. Léger & M. Gauthier (2)
Stypomyces Doweld (2)
Tectimyces L.G. Valle & Santam. (3)
Trichozygospora Lichtw. (1)
Trifoliellum Strongman & M.M. White (1)
Zancudomyces Yan Wang, Tretter, Lichtw. & M.M. White (1)
Zygopolaris S.T. Moss, Lichtw. & Manier (2)
Zygopolaropsis Hirok. Sato & Degawa (1)

Harpellales genus *incertae sedis*
Trissocladomyces Doweld (1)

Class *Kickxellomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Kickxellales Kreisel ex R.K. Benj.
Kickxellaceae Linder
Coemansia Tiegh. & G. Le Monn. (ca 25)
Dipsacomyces R.K. Benj. (1)
Kickxella Coem. (1)
Linderina Raper & Fennell (2)
Martensella Coem. (1)

Martensiomyces J.A. Mey. (1)
Mycoemilia Kurihara, Degawa & Tokum. (1)
Myconymphaea Kurihara, Degawa & Tokum. (1)
Pinnaticoemansia Kurihara & Degawa (1)
Spiromyces R.K. Benj. (2)
Unguispora T. Ri & Degawa (1)*Note 834

Kickxellales genera *incertae sedis*
Spirodactylon R.K. Benj. (1)

Orphellales L.G. Valle, M.M. White, Strongman & Lichtw.*White et al. 2018
Orphellaceae Doweld*White et al. 2018
Orphella L. Léger & M. Gauthier (ca 50)

Kickxellomycetes genera *incertae sedis*
Spiromyces R.K. Benj. (2)

Class ***Ramicandelaberomycetes*** Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Ramicandelaberales Doweld
Ramicandelaberaceae Doweld
Ramicandelaber Y. Ogawa, S. Hayashi, Degawa & Yaguchi (4)

Kickxellomycotina genera *incertae sedis*
Aenigmatospora R.F. Castañeda, Saikawa, Guarro & M. Calduch (1)
Ballocephala Drechsler (3)
Zygnemomyces K. Miura (2)

Phylum ***MONOBLEPHAROMYCOTA*** Doweld
Class ***Hyaloraphidiomycetes*** Doweld
Hyaloraphidiales Doweld
Hyaloraphidiaceae Doweld
Hyaloraphidium Korshikov (1)

Class ***Monoblepharidomycetes*** J.H. Schaffn.
Monoblepharidales Sparrow
Gonapodyaceae H.E. Petersen ex P.M. Kirk, P.F. Cannon & J.C. David
Gonapodya A. Fisch. (5)
Monoblepharella Sparrow (5)

Harpochytriaceae Wille
Harpochytrium Lagerh. (12)

Monoblepharidaceae A. Fisch.
Monoblepharis Cornu (ca 13)

Oedogoniomycetaceae D.J.S. Barr
Oedogoniomyces Kobayasi & M. Ôkubo (1)

Telasphaerulaceae Longcore & T.Y. James
Telasphaerula Longcore & T.Y. James (1)

Phylum *MORTIERELLOMYCOTA* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Subphylum *Mortierellomycotina* Kerst. Hoffm., K. Voigt & P.M. Kirk
Class *Mortierellomycetes* Doweld
Mortierellales Caval.-Sm.
Mortierellaceae A. Fisch.
Actinomortierella Chalab. (8)*MycoCosm
Aquamortierella Embree & Indoh (1)
Benniella Vandepol & Bonito (1)*Note 67
Bonitomyces Crous (1)*Note 1400, Crous et al. 2023b
Dissophora Thaxt. (4)
Entomortierella Vandepol & Bonito (9)
Gamsiella (R.K. Benj.) Benny & M. Blackw. (1)
Gryganskiella Vandepol & Bonito (2)*Note 189
Linnemannia Vandepol & Bonito (ca 20)*Note 253
Lobosporangium M. Blackw. & Benny (1)
Lunasporangiospora Vandepol & Bonito (2)*Note 264
Modicella Kanouse (3)
Mortierella Coem. (ca 100)
Necromortierella Vandepol & Bonito (1)*Note 296
Podila Stajich, Vandepol & Bonito (9)*Note 404
Tyroliella Telagathoti, Probst & Peintner (4)*Note 905

Phylum *MUCOROMYCOTA* Doweld
Subphylum *Mucoromycotina* Benny
Class *Endogonomycetes* Doweld
Endogonales Jacz. & P.A. Jacz.
Densosporaceae Desirò, M.E. Sm., Bidartondo, Trappe & Bonito
Densospora McGee (4)

Endogonaceae Paol.
Bifguratus Torr.-Cruz & Porras-Alfaro (1)*Note 1523, Zhao et al. 2023b
Endogone Link (ca 30)
Jimgerdemannia Trappe, Desirò, M.E. Sm., Bonito & Bidartondo (3)
Peridiospora C.G. Wu & Suh J. Lin (2)
Sclerogone Warcup (1)
Vinositunica Koh. Yamam., Degawa & A. Yamada (2)*Note 535

Class *Mucoromycetes* Doweld
Mucorales Dumort.
Backusellaceae K. Voigt & P.M. Kirk
Backusella Hesselt. & J.J. Ellis (37)

Circinellaceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu*Note 1523, Zhao et al. 2023b
Circinella Tiegh. & G. Le Monn. (11)
Fennellomyces Benny & R.K. Benj. (4)
Phascolomyces Boedijn ex Benny & R.K. Benj. (1)
Thamnostylum Arx & H.P. Upadhyay (4)
Zychaea Benny & R.K. Benj. (1)

Cunninghamellaceae Naumov ex R.K. Benj.

Absidia Tiegh. (70)
Chlamydoabsidia Hesselt. & J.J. Ellis (1)
Cunninghamella Matr. (26)
Gongronella Ribaldi (19)
Halteromyces Shipton & Schipper (1)
Hesseltinella H.P. Upadhyay (1)

Lentamycetaceae K. Voigt & P.M. Kirk
Lentamyces Kerst. Hoffm. & K. Voigt (= *Siepmannia* Nirenberg & Kwaśna) (4)*Fp5

Lichtheimiaceae Kerst. Hoffm., Walther & K. Voigt
Dichotomocladium Benny & R.K. Benj. (5)
Lichtheimia Vuill. (7)

Mucoraceae Dumort.
Actinomucor Schostak. (1)
Ambomucor R.Y. Zheng & X.Y. Liu (3)
Benjaminiella Arx (3)
Blakeslea Thaxt. (2)
Chaetocladium Fresen. (2)
Choanephora Curr. (2)
Cokeromyces Shanor (1)
Dicranophora J. Schröt. (1)
Ellisomyces Benny & R.K. Benj. (1)
Gilbertella Hesselt. (1)
Helicostylum Corda (2)
Hyphomucor Schipper & Lunn (1)
Isomucor J.I. Souza, Pires-Zottar. & Harakava (1)
Kirkiana L.S. Loh, Kuthub. & Nawawi (1)
Kirkomyces Benny (1)
Mooraboolomyces C.P. Hull, Urquhart & Idnurm (1)*Hull et al. 2024
Mucor Fresen. (ca 110)
Mycotypha Fenner (3)
Nawawiella L.S. Loh & Kuthub. (1)
Parasitella Bainier (2)
Pilaira Tiegh. (7)
Pirella Bainier (2)
Poitrasia P.M. Kirk (1)
Rhizopodopsis Boedijn (1)
Thamnidium Link (1)
Tortumyces L.S. Loh (2)

Mycocladaceae Kerst. Hoffm.
Mycocladus Beauverie (1)

Phycomycetaceae Arx
Phycomyces Kunze (3)
Spinellus Tiegh. (5)

Pilobolaceae Corda
Pilobolus Tode (8)
Utharomyces Boedijn ex P.M. Kirk & Benny (1)

Protomycocladaceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu*Note 1525, Zhao et al. 2023b
Protomycocladus Schipper & Samson (1)

Radiomycetaceae Hesselt. & J.J. Ellis
Radiomyces Embree (3)

Rhizomucoraceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu*Note 1524, Zhao et al. 2023b
Rhizomucor Lucet & Costantin (6)

Rhizopodaceae K. Voigt & P.M. Kirk
Rhizopus Ehrenb. (12)

Saksenaeaceae Hesselt. & J.J. Ellis
Apophysomyces P.C. Misra (7)
Saksenaea S.B. Saksena (8)

Syncephalastraceae Naumov ex R.K. Benj.
Neofennellomyces Hyang B. Lee & T.T.T. Nguyen (1)*Nguyen et al. 2024
Syncephalastrum J. Schröt. (12)

Syzygitaceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu*Zhao et al. 2023b
Sporodiniella Boedijn (1)
Syzygites Ehrenb. (1)

Thermomucoraceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu
Thermomucor Subrahm., B.S. Mehrotra & Thirum. (1)*Zhao et al. 2023b

Class *Umbelopsidomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Umbelopsidales Spatafora & Stajich
Pygmaeomycetaceae E. Walsh & N. Zhang*Note 435
Pygmaeomyces E. Walsh & N. Zhang (2)*Note 434

Umbelopsidaceae W. Gams & W. Mey.
Umbelopsis Amos & H.L. Barnett (31)

Mucoromycotina genera *incertae sedis*
Mucorodium K.W. Zaleski (1)
Palaeoendogone Strullu-Derr., Kenrick, Pressel, Duckett, J.P. Rioult & Strullu (1)
Planticonsortium C. Walker & D. Redecker (1)*Fp24

Mucoromycota genus *incertae sedis*
Nothadelphia Degawa & W. Gams

Phylum *NEOCALLIMASTIGOMYCOTA* M.J. Powell
Class *Neocallimastigomycetes* M.J. Powell
Neocallimastigales J.L. Li, I.B. Heath & L. Packer
Anaeromycetaceae Doweld*Hanafy et al. 2023
Anaeromyces Breton, Bernalier, Dusser, Fonty, B. Gaillard & J. Guillot (5)

Capellomyces Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, 513 G.W. Griff, Elshahed, & N.H. Youssef (2)*Note 837
Liebetanzomyces Joshi, G.W. Griff. & Dagar (1)
Oontomyces Dagar (1)

Caecomycetaceae R.A. Hanafy, Yan Wang, Stajich, C.J. Pratt, N.H. Youssef & Elshahed*Hanafy et al. 2023
Caecomyces J.J. Gold (5)
Cyllamyces Ozkose, B.J. Thomas, D.R. Davies, G.W. Griff. & Theodorou (1)

Neocallimastigaceae I.B. Heath (= *Piromonadaceae* Doweld)*Hanafy et al. 2023
Aestipascuomyces Stabel, R. Hanafy, Schweitzer, Greif, Aliyu, Flad, D. Young, Lebuhn, Elshahed, Ochsenreither & N.H. Youssef (1)*Notes 13, 560
Feramyces Radwa Hanafy, Mostafa Elshahed & Noha Youssef (1)
Ghazallomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 14, 1013
Joblinomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 14, 871
Neocallimastix Vávra & Joyon ex I.B. Heath (6)
Orpinomyces D.J.S. Barr, H. Kudo, Jakober & K.J. Cheng (2)
Paucimyces R.A. Hanafy, N.H. Youssef & Elshahed (1)*Note 687
Pecoramyces Hanafy, N.H. Youssef, G.W. Griff. & Elshahed (1)
Tahromyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 14, 501, 873

Piromycetaceae R.A. Hanafy, Yan Wang, Stajich, C.J. Pratt, N.H. Youssef & Elshahed*Hanafy et al. 2023
Piromyces J.J. Gold, I.B. Heath & Bauchop (= *Piromonas* E. Liebet.) (9)

Neocallimastigales genera *incertae sedis*
Agriosomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 14, 559, 836
Aklioshbomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 16, 557, 835
Astrotestudinimyces C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed(1)*Note 1232, Hanafy et al. 2023
Khoyollomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef (1)*Notes 14, 838
Buwchfawromyces T.M. Callaghan & G.W. Griff. (1)
Testudinimyces C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed*Hanafy et al. 2023, Note 1427

Phylum *OLPIDIOMYCOTA* Doweld
Class *Olpidiomycetes* Doweld
Olpidiales Caval.-Sm.
Olpidiaceae J. Schröt.
Chytridhaema Moniez (1)
Cibdelia Juel (1)
Leiolpidium Doweld (5)
Olpidium (A. Braun) J. Schröt. (ca 40)

Phylum *ROZELLOMYCOTA* Doweld
Class *Rudimicrosporia* Sprague

Metchnikovellida Vivier
Amphiacanthidae Larsson
Amphiacantha Caullery & Mesnil (3)

Metchnikovellidae Caullery & Mesnil emend. Larsson
Amphiamblys Caullery & Mesnil (7)
Caulleryetta Dogiel (8)
Desportesia Issi & Voronin (1)
Metchnikovella Caullery & Mesnil (8)

Class *Microsporidia* Corliss & Levine (= *Terresporidia* Vossbrinck & Debrunner-Vossbrinck)*Note 1574
Amblyosporida Tokarev & Issi
Amblyosporidae Weiser emend. Tokarev & Issi
Aedispora Kilochitskii (1)
Amblyospora Hazard & Oldacre (90)
Andreanna Simakova, Vossbrinck & Andreadis (1)
Becnelia Tonka & Weiser (1)
Crepidulospora Simakova, Pankova & Issi (1)
Cristulospora Khodzhaeva & Issi (3)
Culicospora Weiser (2)
Culicosporella Weiser (1)
Dimeiospora Simakova, Pankova & Issi (1)
Edhazardia Becnel, V. Sprague & Fukuda (1)
Hyalinocysta Hazard & Oldacre (1)
Intrapredatorus Chen, Kuo & Wu (1)
Novothelohania Andreadis, Simakova, Vossbrinck, Shepard & Yurchenko (1)
Parastempellia Khodzhaeva (2)
Parathelohania Codreanu (25)
Trichoctosporea Larsson (1)
Tricornia Pell & Canning (1)

Caudosporidae Weiser emend. Tokarev & Issi
Binucleospora Bronnvall & Larsson (1)
Caudosporina (Weiser) Tokarev & Issi (1)
Flabelliforma Canning, Killick-Kendrick & Killick-Kendrick (4)
Myrmecomorba Plowes, Becnel, LeBrun, Oi, Valles, Jones & Gilbert (1)
Neoflabelliforma Morris & Freeman (2)*Fp33
Octosporea Flu (18)
Polydispyrenia Canning & Hazard (2)
Ringueletium Garcia (1)
Scipionospora Bylén & Larsson (1)
Weiseria Doby & Saguez (3)

Gurleyidae Sprague emend. Tokarev & Issi
Agglomerata Larsson & Yan (6)
Binucleata Refardt, Decaestecker, Johnson & Vávra (1)
Conglomerata Vavra, Fiala, Krylova, Petrusek & Hylis (1)
Episeptum Larsson (6)
Gurleya Doflein (10)
Lanatospora Voronin (4)
Larssonia Vidtmann & Sokolova (2)

Marssoniella Lemmermann (1)
Norlevinea Vávra (1)
Paraepiseptum Hyliš, Oborník, Nebesářová & Vávra (4)
Pseudoberwaldia Vavra, Fiala, Krylova, Petrusek & Hylis (1)
Senoma Simakova, Pankova, Tokarev & Issi (1)
Zelenkaia Hyliš, Oborník, Nebesářová & Vávra (1)

Amblyosporida genera *incertae sedis*
Alfvenia Larsson (4)
Hazardia Weiser (2)
Multilamina Becnel, Scheffrahn, Vossbrinck & Bahder (1)
Takaokaspora Andreadis, Takaoka, Otsuka & Vossbrinck (1)
Trichotuzetia Vávra, Larsson & Baker (1)

Neopereziida Tokarev & Issi
Berwaldiidae Simakova, Tokarev & Issi
Berwaldia Larsson (4)
Fibrillanosema G.M. Johanna, S. Galbreath, J.E. Sm., R.S. Terry, J.J. Becnel & A.M. Dunn (1)

Neopereziidae Voronin emend. Issi, Tokarev, Seliverstova & Voronin
Bacillidium Janda (5)
Bryonosema Canning, Refardt, Vossbrinck, Okamura & Curry (2)
Knowlespora Bojko (1)*Note 1015
Neoperezia Issi & Voronin (2)
Pseudonosema Canning, Refardt, Vossbrinck, Okamura & Curry (1)
Schroedera Morris & Adams (2)
Trichonosema Canning, Refardt, Vossbrinck, Okamura & Curry (2)

Tubulinosematidae Franzen, Fischer, Schröder, Schölmerich & Schneuwly emend. Tokarev & Issi
Anncaliia Issi, Krylova & Nikolaeva (6)
Kneallhazia Sokolova & Fuxa (2)
Tubulinosema Franzen, Fischer, Schröder, Schölmerich & Schneuwly (5)

Neopereziida genera *incertae sedis*
Janacekia Larsson (1)
Systenostrema Hazard & Oldacre (5)

Ovavesiculida Tokarev & Issi
Ovavesiculidae Sprague, Becnel & Hazard emend. Tokarev & Issi
Antonospora Fries, Paxton, Tengo, Slemenda, da Silva & Pieniazek (2)
Ovavesicula Andreadis & Hanula (1)
Paranosema Sokolova, Dolgikh, Morzhina, Nassonova, Issi, Terry, Ironside & Smith (4)

Ovavesiculida genus *incertae sedis*
Nematocida Troemel, Félix, Whiteman, Barrière & Ausubel (1)

Glugeida Gurley emend. Tokarev & Issi
Facilisporidae Jones, Prosperi-Porta & Kim
Facilispora Jones, Prosperi-Porta & Kim (1)

Glugeidae Gurley emend. Tokarev & Issi
Alloglugea Paperna & Lainson (1)

Amazonspora Azevedo & Matos (1)
Cambaraspora Bojko, Behringer, Moler, Stratton & Reisinger (1)
Cyberloma D.W. Minter (1)*Notes 127, 545
Glugea Thélohan (41)
Ichthyosporidium Caullery & Mesnil (5)
Johenrea Lange, Becnel, Razafindratiana, Przybyszewski & Razafindrafara (1)
Loma Morrison & Sprague (12)
Parapleistophora Issi, Kadyrova, Pushkar, Khodzhaeva & Krylova (1)
Pseudoloma Matthews, Brown, Larison, Bishop-Stewart, Rogers & Kent (6)

Myosporidae Stentiford, Bateman, Small, Moss, Shields, Reece & Tuck
Myospora Stentiford, Bateman, Small, Moss, Shields, Reece & Tuck (1)

Pereziidae Loubes, Maurand, Comps & Campillo emend. Tokarev & Issi
Ameson Sprague (2)
Nadelspora Olson, Tiekotter & Reno (1)
Perezia Léger & Duboscq (12)
Pernicivesicula Bylén & Larsson (1)

Pleistophoridae Doflein emend. Tokarev & Issi
Dasyatispora Diamant, Goren, Yokeş, Galil, Klopman, Huchon, Szitenberg & Karhan (1)*Fp11
Fusasporis J. Lovy, R.P.E. Yanong, J.M. Stilwell, T.B. Waltzek, J.P. Shelley, D.B. Pouder, J.C. Wolf & A.C. Camus (1)*Note 1012, Fp118
Heterosporis Schubert (4)
Myosporidium Baquero, Rubio, Moura, Pieniazek & Jordana (1)
Ovipleistophora Pekkarinen, Lom & Nilsen (2)
Pleistophora Gurley (10)
Trachipleistophora Hollister, Canning, Weidner, Field, Kench & Marriott (4)
Vavraia Weiser (10)

Spragueidae Weissenberg emend. Tokarev & Issi
Apotaspora Sokolova & Overstreet (1)
Inodosporus Overstreet & Weidner (2)
Kabatana Lom, Dyková & Tonguthai (5)
Microgemma Ralphs & Matthews (6)
Potaspora Casal, Matos, Teles-Grilo & Azevedo (3)
Pseudokabatana Liu, Stentiford, Voronin, Sato, Li & Zhang (1)
Spraguea Weissenberg (1)
Tetramicra Matthews & Matthews (1)

Thelohaniidae Hazard & Oldacre emend. Tokarev & Issi
Bohuslavia Larsson (1)
Chapmanium Hazard & Oldacre (4)
Coccospora Wallr. (2)
Cucumispora Ovcharenko, Bacela, Wilkinson, Ironside, Rigaud & Wattier (2)
Hyperspora Stentiford, Ramilo, Abollo, Kerr, Bateman, Feist, Bass & Villalba (1)
Napamichum Larsson (3)
Nudispora Larsson (1)
Octotetraspora Issi, Kadyrova, Pushkar, Khodzhaeva & Krylova (1)
Ormieresia Vivarès, Bouix & Manier (1)
Orthothelohania Codreanu & Codreanu-Balcescu (1)
Paradoxium Stentiford, Ross, Kerr, Bass & Bateman (1)

Pegmatheca Hazard & Oldacre (2)
Resiomeria Larsson (1)
Spherospora Garcia (1)
Thelohania Henneguy (50)

Unikaryonidae Sprague emend. Tokarev & Issi
Canningia Weiser, Wegensteiner & Žižka (2)
Dictyocoela Terry, Smith, Sharpe, Rigaud, Littlewood, Ironside, Rollinson, Bouchon, MacNeil, Dick & Dunn (8)
Larssoniella Weiser & David (2)
Unikaryon Canning, Lai & Lie (1)

Glugeida genus *incertae sedis*
Triwangia Wang, Nai, Chih Wang, Solter, Hsu, Wang & Lo (1)

Nosematida Labbe emend. Tokarev & Issi
Encephalitozoonidae Voronin
Encephalitozoon Levaditi, Nicolau & Schoen (12)
Mockfordia Sokolova, Sokolov & C.E. Carlton (1)

Enterocytozoonidae Cali & Owen emend. Tokarev & Issi
Desmozoon Freeman & Sommerville (3)
Enterocytozoon Desportes, Le Charpentier, Galian, Bernard, Cochand-Priollet, Lavergne, Ravisse & Modigliani (2)
Enterospora Stentiford, Bateman, Longshaw & Feist (2)
Hepatospora Stentiford, Bateman, Dubuffet, Chambers & Stone (1)
Nucleospora Hedrick, Groff & Baxa (3)
Obruspora Diamant, Rothman, Goren, Galil, Yokes, Szitenberg & Huchon (1)*Fp81

Hepatosporidae
Pseudohepatospora J. Bojko, D.C. Behringer, K.S. Bateman, G.D. Stentiford & K.F. Clark (1)*Notes 799, 874

Heterovesiculidae Lange, Macvean, Henry & Streett
Heterovesicula Lange, Macvean, Henry & Streett (1)

Mrazekiidae Léger & Hesse emend. Tokarev & Issi
Agmasoma Hazard & Oldacre (3)
Anostracospora Rode, Landes, Lievens, Flaven, Segard, Jabbour-Zahab, Michalakis, Agnew, Vivarés & Lenormand (1)
Euplotespora Fokin, Di Giuseppe, Erra & Dini (1)
Globosporidium Yakovleva, Nassonova, Lebedeva, Lanzoni, Petroni, Potekhin & Sabaneyeva (1)
Helmichia Larsson (5)
Hrabyeia Lom & Dyková (1)
Jirovecia Weiser (8)
Mrazekia Léger & Hesse (17)
Rectispora Larsson (1)

Nosematidae Tokarev, Huang, Solter, Malysh, Becnel & Vossbrinck
Nosema Nägeli (20)
Vairimorpha Pilley (15)

Ordosporidae Larsson, Ebert & Vávra
Ordospora Larsson, Ebert & Vávra (2)

Nosematidae genera *incertae sedis*
Alternosema Lipa, Tokarev & Issi (1)
Anisofilariata Tokarev, Voronin, Seliverstova, Dolgikh, Pavlova, Ignatieva & Issi (1)*Fp8
Crispospora Tokarev, Voronin, Seliverstova, Pavlova & Issi (1)*Fp10
Cystosporogenes Canning, Barker, Nicholas & Page (4)
Endoreticulatus Brooks, Becnel & Kennedy (5)
Enterocytospora Rode, Landes, Lievens, Flaven, Segard, Jabbour-Zahab, Michalakis, Agnew, Vivarés & Lenormand (1)
Enteropsectra Zhang, Sachse, Prevost, Luallen, Troemel & Felix (2)
Globulispora Vavra, Hylis, Fiala & Nebesarova (1)
Glugoides Larsson, Ebert, Vávra & Voronin (1)
Liebermannia Sokolova, Lange & Fuxa (3)
Orthosomella Canning, Wigley & Barker (2)
Pancytospora Zhang, Sachse, Prevost, Luallen, Troemel & Felix (2)
Parahepatospora Bojko, Clark, Bass, Dunn, Stewart-Clark, Stebbing & Stentiford (1)
Percutemincola Nishikori, Setiamarga, Tanji, Kuroda, Shiraishi & Okashi-Kobayashi (1)
Sporanauta Ardila-Garcia & Fast (1)
Vittaforma Silveira & Canning (1)

Microsporidia families *incertae sedis*
Abelsporidae Azevedo
Abelspora Azevedo (1)

Areosporiidae Stentiford, Bateman, Feist, Oyarzún, Uribe, Palacios & Stone
Areospora Stentiford, Bateman, Feist, Oyarzún, Uribe, Palacios & Stone (1)

Burenellidae Jouvenaz & Hazard
Burenella Jouvenaz & Hazard (1)
Pilosporella Hazard & Oldacre (2)
Tabanispora Bykova, Sokolova & Issi (2)

Cougourdellidae Poisson
Cougourdella Hesse (7)

Cylindrosporidae Issi & Voronin
Cylindrospora Issi & Voronin (2)

Duboscqiidae R. Sprague
Duboscqia Pérez (11)
Mitoplistophora Codreanu (1)
Pulicispora Vedmed, Krylova & Issi (1)
Tardivesicula Larsson & Bylén (1)
Trichoduboscqia Léger (1)

Golbergiidae Issi
Golbergia Weiser (1)
Krishtalia Kilochitskii (1)
Simuliospora Khodzhaeva, Krylova & Issi (2)

Microfilidae Sprague, Becnel & Hazard
Microfilum Faye, Toguebaye & Bouix (1)

Neonosemoidiidae Faye, Toguebaye & Bouix
Neonosemoides Faye & Toguebaye (4)

Pleistosporidiidae Codreanu-Balcescu & Codreanu
Pleistosporidium Codreanu-Balcescu & Codreanu (1)

Pseudopleistophoridae Sprague
Pseudopleistophora Sprague (1)
Steinhausia Sprague, Ormières & Manier (4)

Striatosporidae Issi & Voronin
Striatospora Issi & Voronin (1)

Telomyxidae Léger & Hesse
Telomyxa Léger & Hesse (4)

Toxoglugeidae Larsson
Toxoglugea Léger & Hesse (15)
Toxospora Voronin (2)

Tuzetiidae Sprague, Tuzet & Maurand
Nelliemelba Larsson (1)
Pankovaia Simakova, Tokarev & Issi (1)
Paratuzetia Poddubnaya, Tokarev & Issi (1)
Tuzetia Maurand, Fize, Vernick & Michel (7)

Microsporidia genera *incertae sedis*
Auraspora Weiser & Purrini (1)
Baculea Loubès & Akbarieh (1)
Burkea Sprague (2)
Chytridioides Tregouboff (1)
Ciliatosporidium Foissner & Foissner (1)
Cryptosporina Hazard & Oldacre (1)
Evlachovaia Voronin (1)
Geusia Rühl & Korn (1)
Gurleyides Voronin (1)
Hamiltosporidium Haag, Larsson, Refardt & Ebert (2)
Hirsutosporos Batson (1)
Holobispora Voronin (1)
Issia Weiser (3)
Kinorhynchospora Adrianov & Rybakov (1)
Mariona Stempell (1)
Merocinta Pell & Canning (1)
Microsporidium Balbiani (120)*Note 1599
Myxocystis Mrazek (1)
Nematocenator Sapir, Dillman, Connon, Grupe, Ingels, Mundo-Ocampo, Levin, Bladwin, Orphan & Sternberg (1)*Fp80
Nosemoides Vinckier (5)
Pyrotheca Hesse (4)

Sheriffia Larsson (1)
Spiroglugea Léger & Hesse (1)
Stempellia Léger & Hesse (19)
Wittmannia Czaker (1)

Rozellomycota orders *incertae sedis*
Chytridiopsida Weiser
Buxtehudiidae Larsson
Jiroveciana Larsson (1)
Buxtehudea Larsson (1)

Chytridiopsidae Sprague, Ormières & Manier
Acarispora Radek and Alberti (1)
Chytridiopsis Schneider (11)
Intexta Larsson, Steiner & Bjørnson (1)
Nolleria Beard, Butler & Becnel (1)

Hesseidae Ormières & Sprague
Hessea Ormières & Sprague (1)

Rozellomycota family *incertae sedis*
Astathelohaniidae Stratton, Reisinger, Behringer, Bojko*Stratton et al. 2022
Astathelohania C.E. Stratton, L.S. Reisinger, D.C. Behringer & J. Bojko (1)*Stratton et al. 2022

Rozellomycota genera *incertae sedis*
Nucleophaga Dangeard (2)
Mitosporidium Haag, James, Pombert, Larsson, Schaer, Refardt & Ebert (2)
Morellospora D. Corsaro, J. Walochnik, D. Venditti, B. Hauröder & R. Michel (1)*Note 547, Fp142
Paramicrosporidium Corsaro, Walochnik, Venditti, Steinmann, Müller & Michel (1)
Rozella Cornu (20)

Phylum *SANCHYTRIOMYCOTA* Galindo, López-García, Torruella, Karpov & Moreira*Note 938, Fp82
Class *Sanchytriomycetes* Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Sanchytriales Tedersoo, Sanchez-Ramirez, Kõljalg, Bahram, M. Döring, Schigel, T.W. May, M. Ryberg & Abarenkov
Sanchytriaceae Karpov & Aleoshin
Amoeboradix Karpov, López-García, Mamkaeva & Moreira (1)
Sanchytrium Karpov & Aleoshin (1)

Phylum *ZOOPAGOMYCOTA* Gryganskyi, M.E. Sm., Spatafora & Stajich
Class *Zoopagomycetes* Doweld
Subphylum *Zoopagomycotina* Benny
Zoopagales Bessey ex R.K. Benj.
Cochlonemataceae Dudd.
Amoebophilus P.A. Dang. (6)
Aplectosoma Drechsler (1)
Bdellospora Drechsler (1)
Cochlonema Drechsler (ca 20)
Endocochlus Drechsler (4)

Euryancale Drechsler (5)

Helicocephalidaceae Boedijn
Brachymyces G.L. Barron (1)
Helicocephalum Thaxt. (6)
Rhopalomyces Corda (ca 10)
Verrucocephalum Degawa (1)

Piptocephalidaceae J. Schröt.
Kuzuhaea R.K. Benj. (1)
Piptocephalis de Bary (ca 25)
Syncephalis Tiegh. & G. Le Monn. (ca 50)

Sigmoideomycetaceae Benny, R.K. Benj. & P.M. Kirk
Reticulocephalis Benny, R.K. Benj. & P.M. Kirk (2)
Sigmoideomyces Thaxt. (1)
Sphondylocephalum Stalpers (1)
Thamnocephalis Blakeslee (3)

Zoopagaceae Drechsler
Acaulopage Drechsler (ca 25)
Cystopage Drechsler (9)
Lecophagus M.W. Dick (8)
Stylopage Drechsler (ca 15)
Tentaculophagus Doweld (1)
Zoopage Drechsler (ca 10)
Zoophagus Sommerst. (4)

Zoopagales genus *incertae sedis*
Massartia De Wild. (1)

Zoopagomycotina genus *incertae sedis*
Basidiolum Cienk. (1)

OUTLINE OF FOSSIL FUNGI

The legitimate fossil fungal genera known so far are listed below (with the number of species in each genus in brackets). Here we list fossil fungal sporophores, mycelia and other fungal remains.

ASCOMYCOTA
Asterinales
Palaeoasterina S. Mitra, Bera & M. Banerjee (1)

Botryosphaeriales
Guignardiacarpites Debi Mukh. (1)

Capnodiales
Mycosphaerellascoidetes Debi Mukh. (1)

Diaporthales
Spataporthe Bronson, Klymiuk, Stockey & Tomescu (1)

Dothideales
Cucurbitariaceites R.K. Kar, R.Y. Singh & S.C.D. Sah (2)*Fp167
Leptosphaerites Richon (2)
Palaeoleptosphaeria Barlinge & Paradkar (1)
Perisporiacites Félix (4)

Erysiphales
Erysiphites Pampal. (1)
Erysiphacites V.D. Kapgate ex R.K. Saxena, V.D. Kapgate & P.K. Kirk (1)*Note 1217
Palaeosclerotium G.W. Rothwell (1)
Perisporites Pampal. (2)
Protoerysiphe N. Sharma, R.K. Kar, A. Agarwal & R. Kar (1)

Eurotiales
Coleocarpon Stubblef., T.N. Taylor, C.E. Miller & G.T. Cole (1)
Cryptocolax R.A. Scott (2)
Memnonillasporonites Debi Mukh. (1)
Mycocarpon S.A. Hutch. (7)
Roannaisia T.N. Taylor, Galtier & Axsmith (1)
Sporocarpon Will. (13)
Traquairia Carruth. ex Scott (4)

Helotiales
Lithouncinula N. Sharma, R.K. Kar, A. Agarwal & R. Kar (1)

Hypocreales
Clavicipitaceae
Allocordyceps Poinar (1)*Note 644

Hypocreales genera *incertae sedis*
Palaeoclaviceps Poinar, S.C. Alderman & J. Wunderl. (1)
Paleoophiocordyceps G.H. Sung, Poinar & Spatafora (1)

Hysteriales
Hysterites Unger (16)

Meliolales
Meliolinites Selkirk (4)*Fp179
Meliostroma R. Kar, Mand. & R.K. Kar (1)

Microthyriales
Appendicisporonites R.K. Saxena & S. Khare (1)*Fp155
Asterinites Doub. & D. Pons ex Kalgutkar & Janson. (1)
Asterothyrites Cookson (16)
Brefeldiellites Dilcher (2, 1)
Caldesites Puri (1)*Note 92
Callimothallus Dilcher (11)*Fp159
Cribrites R.T. Lange (1)
Dictyotopileos Dilcher (1)
Euthythyrites Cookson (4)
Haplopeltis Theiss. (1)
Kalviwadithyrites M.R. Rao (1)*Fp177

Koshalia S. Sarkar & V. Prasad (1)*Fp178
Mariusia D. Pons & Boureau (1)
Melanosporites Pampal. (1)
Microthyriacites Cookson (19)
Microthyrites Pampal. (1)
Molinaea Doub. & D. Pons (1)
Palmellathyrites Locq., D. Pons & Sal.-Cheb. (1)
Parmathyrites K.P. Jain & R.C. Gupta (5)*Fp189
Pelicothallos Dilcher (1)
Phragmothyrites W.N. Edwards (24)*Fp180
Plochmopeltinites Cookson (3)
Polyhyphaethyrites R. Srivast. & R.K. Kar (1)*Fp181
Ratnagiriathyrites R.K. Saxena & N.K. Misra (1)*Fp262
Spinosporonites R.K. Saxena & S. Khare (1)
Stomiopeltites Alvin & M.D. Muir (3)
Trichopeltinites Cookson (5)
Trichothyrites Rosend. (13)
Ussurithyrites Krassilov (1)

Muyocopronales Mapook, Boonmee & K.D. Hyde*FoF01886
Muyocopronaceae K.D. Hyde*FoF08090
Muyocopromyces G. Worobiec (1)*Note 288, Doth, FoF11965

Patellariales
Rhytidhysteriumites Debi Mukh. (1)

Pezizales
Ascodesmisites Trivedi, Chaturv. & C.L. Verma (1)
Paleomorchella Poinar (1)
Pezizites Göpp. & Berendt (4)

Phyllachorales
Paleoserenomyces Currah, Stockey & B.A. LePage (1)

Pleosporales
Cryptodidymosphaerites Currah, Stockey & B.A. LePage (1)
Dematosporites V.D. Kapgate & Wanjari ex R.K. Saxena, V.D. Kapgate & P.M. Kirk (1)*Note 1216
Dictyosporiuminites Debi Mukh. (1)
Pleosporomyces G. Worobiec (1)*Worobiec et al. 2022
Pleosporites Y. Suzuki (1)

Sphaeriales
Diploneurospora K.P. Jain & R.C. Gupta (1)*Fp190
Palaeosordaria Sahni & H.S. Rao (1)
Petrosphaeria Stopes & H. Fujii (1)

Xylariales
Chaethomites Pampal. (1)*FoF12431
Sphaerites Unger (48)

Dothideomycetes genera *incertae sedis*

Bleximothyrium Le Renard, Upchurch, Stockey & Berbee (1, 1)*Note 636
Protographum Le Renard, Upchurch, Stockey & Berbee (1, 1)*Note 412, Doth

Ascomycota family *incertae sedis*
Daohugouthallaceae X.L. Wei, D. Ren & J.C. Wei*Note 926
Daohugouthallus X. Wang, M. Krings & T.N. Taylor (1)

Ascomycota genera *incertae sedis*
Adendorfia G. Worobiec, F.H. Neumann & E. Worobiec (1)
Alleppeysporonites Ramanujam & K.P. Rao (1)
Appianoporites S.Y. SM., Currah & Stockey (1)
Archephoma Kyoto Watan., H. Nishida & Tak. Kobay (1)
Asteromites Poinar (1)
Cashhickia T.N. Taylor, M. Krings, Galtier & Dotzler (1)
Casparyotorula Rikkinen, A.R. Schmidt & Kettunen (1)
Cephalothecoidomyces G. Worobiec, Neumann & E. Worobiec (1)
Ceratohirudispora R. Kar, Mand. & R.K. Kar (2)*Fp160
Cervichlamydospora R. Kar, Mand. & R.K. Kar (1)*Fp161
Chlorolichenomycites Honegger, D. Edwards & Axe (1)
Disparidicellites Kalgutkar & Janson. (fossil)*Note 139
Entropezites Poinar & R. Buckley (1)
Eomelanomyces Beimforde, Dörfelt & A.R. Schmidt (1)
Galloea Alstrup & Søchting (1)
Honeggeriella Matsunaga, Stockey & Tomescu (1)
Jimwhitea M. Krings & T.N. Taylor (1)
Palaeoanellus A.R. Schmidt, Dörfelt & Perrichot (1)
Potteromyces Strullu-Derrien & D. Hawksw. (1)*Strullu-Derrien et al. 2023
Speciophila Poinar (1)
Stomatothyrium Le Renard, Upchurch, Stockey & Berbee (fossil) (1)*Note 679
Szaferomyces G. Worobiec & Piątek (1)*Worobiec et al. 2023
Valsarites Puri (fossil)*Note 528
Verrudisporonites O'Keefe (fossil)*Note 533

BASIDIOMYCOTA
Agaricales
Aureofungus Hibbett, Manfr. Binder & Zheng Wang (1)*Hibbett et al. 2003
Archaeomarasmius Hibbett, D. Grimaldi & Donoghue (1)
Coprinites Poinar & Singer (1)
Gerontomyces Poinar (1)
Gondwanagaricites Heads, A.N. Mill & J.L. Crane (1)
Marasmiamimum N. Mao, S.L. Guo & W.J. Huang (1)*Guo et al. 2024c
Mesoagaracites N. Mao, S.L. Guo & W.J. Huang (1)*Guo et al. 2024c
Palaeoagaricites Poinar & Buckley (1)
Palaeoclavaria Poinar & A.E. Br. (1)
Protomycena Hibbett, D. Grimaldi & Donoghue (1)

Boletales
Palaeogaster Poinar, Alfredo & Baseia (1)

Polyporales
Eopolyporoides Rigby (1)
Ganodermites A. Fleischm., M. Krings, H. Mayr & Agerer (1)

Phellinites Singer & S. Archang. (1)
Pseudopolyporus Hollick (1)
Trametites A. Straus (3)

Pucciniales

Aecidites Debey & Ettingsh. (4)
Aeciosporonites Debi Mukh. (1)
Hapalophragmites Ramanujam & Ramachar (1)*Note 197, Fp208
Milesites Ramanujam & Ramachar (1)*Fp229
Pucciniasporonites Ramanujam & Ramachar (1)*Note 429
Shuklania J.N. Dwivedi, **nom. inval.** (1)

Sphaeropsidales

Ascochytites Barlinge & Paradkar (2)*Fp154
Deccanodia Singhai (1)*Fp198
Diplodites D.N. Babajan & Tasl. ex Kalgutkar, Nambudiri & Tidwell (= *Palaeodiplodites* Kyoto Watan., H. Nishida & Tak. Kobay.) (5)*Note 137, 1536, Fp192
Entopeltacites Selkirk (6)
Meniscoideisporites Kyoto Watanabe, H. Nishida & Tak. Kobay. (1)
Mohgaonidium Singhai (1)*Fp238
Palaeocytosphaera R.B. Singh & G.V. Patil (1)
Palaeophoma Singhai (1)
Phomites Fritel (2)
Rabenhorstinidium R.B. Singh & G.V. Patil (1)

Ustilaginales

Chlamydosporites Paradkar (1)*Fp164
Teliosporites R. Kar, Mand. & R.K. Kar (2)*Fp207

CHYTRIDIOMYCOTA

Chytridiales

Cultoraquaticus Strullu-Derr. (1)
Grilletia Renault & C.E. Bertrand (1)
Guizhounema X. Mu (1)
Trewinomyces M. Krings, T.N. Taylor & H. Martin (1)
Krispiromyces T.N. Taylor, Hass & W. Remy (1)
Lyonomyces T.N. Taylor, Hass & W. Remy (1)
Milleromyces T.N. Taylor, Hass & W. Remy (1)
Oochytrium Renault (1)

Chytridiomycota genera *incertae sedis*

Achlyella Lagerh. (1)
Achlyogeton Schenk (1)
Brijax M. Krings & C.J. Harper (1)*Note 79
Coenomyces K.N. Deckenb. (1)
Globicultrix M. Krings, Dotzler & T.N. Taylor (1)
Illmanomyces M. Krings & T.N. Taylor (1)
Nimbosphaera C.J. Harper & M. Krings (1)
Palaeozoosporites Strullu-Der (1)
Perexiflasca M. Krings, C.J. Harper & Ed.L. Taylor (2)*Note 383
Rhizophydites M. Krings, S.M. Serbet & C.J. Harper (1)*Notes 451, 841

GLOMEROMYCOTA

Archaeosporales

Archaeosporites C. Walker, C.J. Harper & M. Krings (1)*Note 43
Mycokidstonia D. Pons & Locq. (1)

Diversisporales

Scutellosporites Dotzler, M. Krings, T.N. Taylor & Agerer (1)

Glomeromycota genera *incertae sedis*

Glomites T.N. Taylor, W. Remy, Hass & Kerp (4)*Note 185
Glomorphites Garcia Mass. (1)
Gigasporites Carlie J. Phipps & T.N. Taylor (1)*Note 184
Palaeoglomus R. Redecker, Kodner & L.E. Graham (2)
Palaeogigaspora R. Kar, Mand. & R.K. Kar (1)*Note 362
Palaeomyces D. Ellis (8)

MUCOROMYCOTA

Endogonales

Chlamydospora R. Kar, Mand. & R.K. Kar (1)
Endochaetophora J.F. White & T.N. Taylor (1)
Palaeomycites Mesch. (21)
Udaria A. Gupta (2)

Mucoromycota genera *incertae sedis*

Lithomucorites R. Kar, Mand. & R.K. Kar (1)
Stolophorites Wilh. Bock (1)

Mycelia Sterilia

Animikiea Bargh. (1)
Archaeorestis Bargh. (1)
Celyphus Batten (1)
Dendromyceliates K.P. Jain & R.K. Kar (2)*Fp199
Entosphaeroides Bargh. (1)
Eoastrion Bargh. (2)
Eomycetopsis J.W. Schopf (1)
Fungites Hallier (7)
Gunflintia Bargh. (2)
Laevitubulus N.D. Burgess & D. Edwards (1)
Ornatifilum N.D. Burgess & D. Edwards (2)
Palaeancistrus R.L. Dennis (1)
Palaeofibulus J.M. Osborn, T.N. Taylor & J.F. White (1)
Sclerotites A. Massal. (16)
Tormentella H.D. Pflug (2)

Fossil fungi incertae sedis

Annella Sat. K. Srivast. (2)
Axisporonites Kalgutkar & Janson. (1)*Fp156
Caenomyces E.W. Berry (Pyrenomycetes Schwein?) (1)
Dennisiellinites Bannister, Conran & D.e. Lee (1)
Dictyomykus R. Kar, Mand. & R.K. Kar (1)*Fp188
Halifaxia M. Krings, J.F. White, Dotzler & C.J. Harper (1)
Hassiella T.N. Taylor, M. Krings & Kerp (1)

Helmutella M. Krings & T.N. Taylor (1)
Kryphiomyces M. Krings, Dotzler, Longcore & T.N. Taylor (1)
Leptostromites Poinar (1)
Leptothyrites Poinar (1)
Lithosporocarpia R. Kar, Mand. & R.K. Kar (1)*Fp337
Mycozygosporangia R. Kar, Mand. & R.K. Kar (1)*Fp264
Netothyrites C.M. Misra, S.N. Swamy, B. Prasad, B.S. Pundeer, R.S. Rawat & K. Singh (2)*Fp265
Ornatisporites M.G. Parsons & G. Norris (1)
Palaeocercospora S. Mitra and Manju Banerjee (1)*Fp267
Palaeocolletotrichum S. Mitra and Manju Banerjee (1)*Fp336
Paleopyrenomycites T.N. Taylor, Hass, Kerp, M. Krings & Hanlin (1)*Note 364
Paleoblastocladia W. Remy, T.N. Taylor & Hass (1)
Palynomorphites L.R. Moore (1)
Pestalozzites E.W. Berry (1)
Pilula Harker, Sarjeant & Caldwell ex Harker & Sarjeant (1)
Polycellaria H.D. Pflug (1)
Polystigmites A. Massal. (1)
Portalites Hemer and Nygreen(3)
Priscadvenaceae Poinar & F.E. Vega (1)
Protoascon L.R. Batra, Segal & R.W. Baxter (1)
Protocolletotrichum R. Kar, Mand. & R.K. Kar (1)
Quatsinoporites S.Y. Sm., Currah & Stockey (1)
Reymanella Marcink. (1)
Scepasmatocarpion M. Krings & T.N. Taylor (1)
Sorosporonites X. Mu (1)
Stauromyca R. Kar, Mand. & R.K. Kar (1)*Fp241
Tetradigita R. Kar, Mand. & R.K. Kar (1)*Fp217
Tricellaesporonites Sheffy & Dilcher (3)
Windipila M. Krings & C.J. Harper (3)*Note 538
Zwergimyces M. Krings & T.N. Taylor (1)*Note 542

Other fossil taxa with spores only
Amerosporae
Asyregraamspora Locq. & Sal.-Cheb. (1)*Fp215
Basidiosporites Elsik. (4)*Fp158
Biporipsilonites Kalgutkar & Janson. (11)*Fp162
Biporisporites Ke & Shi (2)
Cadyexinis Stach (3)
Diporisporites Hammen (36)*Fp213
Dremuspora Sal.-Cheb. & Locq. (1)
Exesisporites Elsik (4)*Fp185
Foliopollenites Sierotin (4)*Fp333
Foveodiporites C.P. Varma & Rawat (11)*Fp184
Fusidiporosporonites Z.C. Song (1)
Geotrichites Stubblef., C.E. Mill., T.N. Taylor & G.T. Cole (1)
Graphiolites Fritel (1)
Haplographites Félix (2)
Hypoxylonites Elsik (57)
Inapertisporites Hammen (76)
Incertisporites Hammen (1)
Lacrimasporonites R.T. Clarke (33)
Lepiotasporites T.C. Huang (1)

Magnosporites Rouse (1)*Fp329
Microsporonites R.K. Jain (2)
Monoporisporites Hammen (59)*Fp330
Nailisporites T.C. Huang (1)*Fp331
Nigrosporites Debi Mukh. (1)
Palaeoamphisphaerella Ramanujam & Srisailam (3)
Parapotamomyces O'Keefe (1)
Pezizasporites T.C. Huang (1)
Portalites Hemer & Nygreen (1)
Psiamspora Locq. & Sal.-Cheb. (1)
Retidiporites C.P. Varma & Rawat (1)
Saccisporonites Kalgutkar & Janson. (1)
Senegalosporites Jardiné & Magloire (2)
Spirotremesporites Dueñas (18)
Sporotrichites Göpp. & Berendt (3)
Striadiporites C.P. Varma & Rawat (15)*Fp228
Trichosporites Félix (1)
Uncinulites Pampal. (3)
Xylohyphites Kalgutkar & Sigler (1)

Didymosporae
Ampulliferinites Kalgutkar & Sigler (1)
Cladosporites Félix (3)
Dicellaeporisporites Kalgutkar (3)
Dicellaesporites Elsik (75)*Fp187
Didymoporisporonites Sheffy & Dilcher (25)
Didymosporonites Sal.-Cheb. & Locq. (1)
Diploneurospora K.P. Jain & R.C. Gupta (1)
Disparidicellites Kalgutkar & Janson. (1)*Fp187
Dyadosporites Hammen ex R.T. Clarke (42)*Fp193
Felixites Elsik ex Janson. & Hills (2)
Fusiformisporites Rouse (22)
Hilidicellites Kalgutkar & Janson. (18)*Fp254
Verrudisporonites O'Keefe (1)

Phragmosporae
Alleppeysporonites Ramanujam & K.P. Rao (1)*Fp150
Anatolinites Elsik, V.S. Ediger & Bati (14)
Axisporonites Kalgutkar & Janson. (1)
Brachysporisporites R.T. Lange & P.H. Sm.(25)*Fp157
Cercosporites E.S. Salmon (3)
Chaetosphaerites Félix. (5)*Fp163
Chordecystia C.B. Foster (1)
Circinoconites R. Kar, Mand. & R.K. Kar (1)*Fp165
Cladosporiumsporinites Debi Mukh. (1)*Fp268
Diporicellaesporites Elsik (69)*Fp209
Diporipollis S.K. Dutta & S.C.D. Sah emend. Kalgutkar & Janson. (2)*Fp231
Dwayabeejaesporonites Debi Mukh. (1)
Edmundmasonaesporites Debi Mukh. (1)
Foveoletisporonites Ramanujam & K.P. Rao (3)
Fractisporonites R.T. Clarke (10)
Heterocystinella Cookson & Eisenack (1)

Jansoniisporites Kalgutkar (1)
Kumarisporites Kalgutkar & Janson. (1)*Fp240
Mathurisporites Kalgutkar & Janson. (2)*Fp239
Monilites Pampal. (1)
Multicellaesporites Elsik emend. P. Kumar (95)
Multicellites Kalgutkar & Janson. (46)*Fp237
Ornasporonites Ramanujam & K.P. Rao (1)*Fp266
Palaeocurvularia Dörfelt & A.R. Schmidt (1)*
Paragranatisporites Zhong Y. Zhang (5)
Phialophoronites Debi Mukh. (1)
Pluricellaesporites Hammen (86)
Quilonia K.P. Jain & R.C. Gupta emend. Kalgutkar & Janson. (11)
Ramasricellites Kalgutkar & Janson. (2)*Fp252
Reduviasporonites L.R. Wilson (9)
Reticellites D.L.E. Glass, D.D. Br. & Elsik (1)
Scolecosporites R.T. Lange & P.H. Sm. (5)
Tripithonites Sat. K. Srivastava & Al-Tayyar (4)
Varmasporites Kalgutkar & Janson. (1)*Fp216

Dictyosporae
Centonites Peppers (1)
Ctenosporites Elsik & Janson. (3)
Dictyosporites Félix emend. Kalgutkar & Janson. (22)*Fp194
Kutchiathyrites R.K. Kar emend. Kalgutkar & Janson. (5)
Lirasporis R. Potonié & S.C.D. Sah (3)*Fp256
Octosporonites Sal.-Cheb. & Locq. (1)
Palambages Wetzel (3)
Papulosporonites Schmied. & G. Schwab (8)
Polyadosporites Hammen (9)
Polycellaesporonites Anil Chandra, R.K. Saxena & Setty (7)
Staphlosporonites Sheffy & Dilcher (23)

Helicosporae
Colligerites K.P. Jain & R.K. Kar (4)*Fp166
Elsikisporonites P. Kumar (1)*Fp186
Helicominites Barlinge & Paradkar (1)*Fp253
Helicoönites Kalgutkar & Sigler (1)
Helicosporiates Kalgutkar & Sigler (1)
Involutisporonites R.T. Clarke (8)*Fp255
Palaeocirrenalia Ramanujam & Srisailam (2)
Paleoslimacomyces Kalgutkar & Sigler (3)
Retihelicosporonites Ramanujam & K.P. Rao (1)

Staurosporae
Eoglobella W.H. Bradley (1)
Frasnacritetrus Taug. (7)
Mossopisporites Kalgutkar & Janson. (1)
Pesavis Elsik & Janson. (4)
Spegazzinites Félix (3)
Tribolites W.H. Bradley (2)
Trihyphites Kalgutkar & Janson. (1)
Triporicellaesporites Ke & Shi (4)

OUTLINE OF FUNGUS-LIKE ORGANISMS

The arrangement of taxa in the fungus-like organisms is rather confused and will evolve with future research.

OBAZOA Brown et al.
OPISTOKHONTA Cavalier-Smith
HOLOMYCOTA Liu et al. (= *Nucletmycea* Brown et al.)

Nucleariae Tedersoo et al.
Fonticulida Tedersoo et al.
Fonticulea Tedersoo et al.

Fonticulidae Worley, Raper & Hohl
Fonticula Worley, Raper & M. Hohl

RHIZARIA Cavalier-Smith
ENDOMYXA Cavalier-Smith
Phytomyxea Engler & Prantl
Plasmodiophorida Cook
Plasmodiophoridae Loeblich & Tappan
Hillenburgia Neuh., Hittorf & Kirchm. *Hittorf et al. 2020
Ligniera Maire & A. Tison
Membranosorus Ostenf. & H.E. Petersen
Plasmodiophora Worona
Octomyxa Couch, J. Leitn. & Whiffen
Polymyxa Ledingham
Pseudoligniera Neuh., Hittorf & Kirchm. *Hittorf et al. 2020
Sorodiscus Lagerh. & Winge
Sorosphaerula Neuh. & Kirchm.
Spongospora Brunch.
Tetramyxa K.I. Goebel
Woronina Cornu

Phagomyxida Cavalier-Smith
Phagomyxidae Cavalier-Smith
Feldmanniella Kolátková, Mooney, Kelly, Hineva, Gawryluk & Elliott *Kolátková et al. 2023
Maullinia I. Maier, E.R. Parodi, Westermeier & D.G. Müll
Ostenfeldiella Ferd. & Winge
Phagomyxa Karling

Phytomyxea genera *incertae sedis*
Marinomyxa Kolátková, Čepička, Hoffman et Vohník*Kolátková et al. 2021

CEROZOA Cavalier-Smith
Sainouroidea Schuler et al.
Guttulinopsidae L.S. Olive
Guttulinopsis E.W. Olive

STRAMINIPILA M.W. Dick
LABYRINTHULOMYCOTA Whittaker
Labyrinthulomycetes Dick

Labyrinthulales E.A. Bessey
Aplanochytriaceae Leander ex Cavalier-Smith
Aplanochytrium Bahnweg & Sparrow (9)

Stellarchytriaceae Bennett et al.
Stellarchytrium FioRito & Leander (1)

Labyrinthulaceae Haeckel
Labyrinthula Cienk. (15)
Phycophthorum Hassett (1)*Note 396

Oblongichytridiales Bennett et al. ad int.
Oblongichytridiaceae Caval.-Sm.
Oblongichytrium R. Yokoy. & D. Honda (3)

Thraustochytriales Sparrow
Althornidiaceae E.B.G. Jones & Alderman
Althornia E.B.G. Jones & Alderman (1)

Thraustochytriaceae Sparrow ex Cejp
Aurantiochytrium R. Yokoy. & D. Honda (3)
Botryochytrium R. Yokoy., Salleh & D. Honda (1)
Hondaea A. Amato & O. Cagnac (**nom. inval.**) (1)*Fp18
Japonochytrium Kobayasi & M. Ôkubo (1)
Monorhizochytrium K. Doi & D. Honda (1)
Mucochytrium S. Geraci-Yee & B. Allam (1)*Note 546
Parietichytrium R. Yokoy., Salleh & D. Honda (1)
Schizochytrium S. Goldst. & Belsky (3)
Sicyoidochytrium R. Yokoy., Salleh & D. Honda (1)
Thraustochytrium Sparrow (ca 25)
Ulkenia A. Gaertn. (6)

Amphitremida Gomaa et al.
Amphitremidae Poch
Amphitrema Archer
Archerella Loeblich & Tappan
Paramphitrema Valkanov

Diplophrydae Caval.-Sm.
Diplophrys J.S.F. Barker (3)

Amphifilida Caval.-Sm.
Amphifilidae Caval.-Sm.
Amphifila Caval.-Sm. (1)

Sorodiplophryidae Caval.-Sm.
Fibrophrys Takahashi, Masaki, Isao, Makoto (1)
Sorodiplophrys L.S. Olive & Dykstra (1)

HYPHOCHYTRIOMYCOTA Whittaker
Hyphochytriomycetes Sparrow
Hyphochytriales Bessey ex Sparrow

Hyphochytriaceae Fischer
Canteriomyces Sparrow (1)
Cystochytrium Ivimey Cook (1)
Hyphochytrium Zopf (6)

Rhizidiomycetaceae Karling ex Kirk, Cannon & David
Latrostium Zopf (1)
Reessia Fisch (3)
Rhizidiomyces Zopf (12)

OOMYCOTA Arx
Oomycetes
Ducellieriales Buaya & Thines*Note 1481, Buaya & Thines 2023
Ducellieriaceae M.W. Dick
Ducellieria Teiling (1)

Peronosporomycetes M.W. Dick
Albuginales Thines
Albuginaceae Schroet.
Albugo (Pers.) Roussel (ca 50)
Pustula Thines (ca 15)
Wilsoniana Thines (5)

Peronosporales A.N. Beketov
Peronosporaceae de Bary
Basidiophora Roze & Cornu (4)
Baobabopsis R.G. Shivas, Y.P. Tan, Telle & Thines (2)
Benua Constant. (1)
Bremia Regel (ca 30)
Calycofera R. Bennett & Thines (2)
Eraphthora Telle & Thines (1)
Graminivora Thines (1)
Halophytophthora H.H. Ho & S.C. Jong (9)
Hyaloperonospora Constant. (ca 40)
Kawakamia Miyabe (5)
Nothophytophthora T. Jung, Scanu, Bakonyi & M. Horta Jung (8)
Novotelnova Voglmayr & Constant. (1)
Paraperonospora Constant. (9)
Perofascia Constant. (2)
Peronophythora C.C. Chen ex W.H. Ko, H.S. Chang, H.J. Su, C.C. Chen & L.S. Leu (5)
Peronospora Corda (ca 400)
Peronosclerospora (S. Ito) Hara (ca 10)
Phytophthora de Bary (261)
Phytopythium Abad, de Cock, Bala, Robideau, A.M. Lodhi & Lévesque (ca 25)
Plasmopara J. Schröt. (ca 100)
Plasmoverna Constant., Voglmayr, Fatehi & Thines (7)
Poakatesthia Thines (1)
Protobremia Voglmayr, Riethm., Göker, Weiss & Oberw. (1)
Pseudoperonospora Rostov. (8)
Sclerophthora Thirum., C.G. Shaw & Naras. (6)
Sclerospora J. Schröt. (5)
Synchrospora T. Jung, Y. Balci, K. Broders & M. Horta Jung (1)*Note 1226

Viennotia J.A. Crouch & Thines (= *Viennotia* Göker, Voglmayr, Riethm., M. Weiss & Oberw. (2)*Note 696

Pythiaceae Schroet.
Aquaperonospora W.H. Ko (1)*Fp9
Elongisporangium Uzuhashi, Tojo & Kakish. (5)
Globisporangium Uzuhashi, Tojo & Kakish. (ca 70)
Lagena Vanterp. & Ledingham (1)
Lagenidium Schenk (ca 15)
Myzocytiopsis M.W. Dick (ca 15)
Myzocytium Schenk (5)
Pilasporangium (Uzuhashi & Tojo) Uzuhashi, Tojo & Kakish. (1)
Pythiogeton Minden (15)
Pythium Pringsh. (ca 150)*Note 1590

Salisapiliaceae
Salisapilia Hulvey, Nigrelli, Telle, Lamour & Thines (9)

Rhipidiales M.W. Dick
Rhipidiaceae Cejp
Aqualinderella Emerson & Weston (1)
Araiospora Thaxt. (4)
Mindeniella Kanouse (2)
Nellymyces A. Batko (1)
Rhipidium Cornu (6)
Sapromyces Fritsch (4)

Salispinaceae R. Bennett & Thines
Salispina Marano, A.L. Jesus & Pires-Zottar. (4)

Peronosporomycetes genera *incertae sedis*
Paralagenidium Grooters, C.F.J. Spies, de Cock & Lévesque (2)
Trachysphaera Tabor & Bunting (1)

Saprolegniomycetes Thines & Beakes
Leptomitales Kanouse
Atkinsiellaceae Sparrow
Atkinsiella Vishniac (1)

Leptomitaceae Kütz*Note 1597
Apodachlya Pringsh. (3)
Apodachlyella Indoh (1)
Blastulidium Pérez (1)
Crypticola Humber, Frances & A.W. Sweeney (1)
Ectrogella Zopf (6)
Lagenisma Schnepf (1)
Leptomitus C. Agardh (10)

Leptomitales genera *incertae sedis*
Bolbea Buaya & Thines (1)*Note 72
Periplasma W.W. Martin & A. Warren (1)*Note 548

Saprolegniales K. Prantl
Achlyaceae Pires-Zottar., Thines, A.L. Jesus & S.C.O. Paixão*Rocha et al. 2019, Pires-Zottarelli et al. 2024
Achlya Nees (ca 50)
Beakesia A.L. Jesus, Pires-Zottar. & S.C.O. Paixão (1)*Pires-Zottarelli et al. 2024
Brevilegnia Coker & Couch (15)
Dictyuchus Leitg. (8)
Thraustotheca Humphrey (4)

Saprolegniaceae Warm.*Rocha et al. 2019
Aplanopsis Höhnk (1)
Calyptralegnia Coker (3)
Cokeria S.C.O. Paixão, Pires-Zottar. & A.L. Jesus (3)*Pires-Zottarelli et al. 2024
Couchia W.W. Martin (3)
Geolegnia Coker (4)
Isoachlya Kauffmann (8)
Leptolegnia de Bary (9)*Rocha et al. 2018, Pires-Zottarelli et al. 2024
Newbya M.W. Dick & M.A. Spencer (= *Aplanes*) (13)*Rocha et al. 2019
Protoachlya Coker (7)
Pythiopsis de Bary (7)
Saprolegnia Nees (= *Scoliolegnia* M.W. Dick) (ca 50)

Verrucalvaceae M.W. Dick*Rocha et al. 2019
Aphanomyces de Bary (ca 40)
Aphanomycopsis Scherff. (8)
Aquastella Glockling & D.P. Molloy (2)
Pachymetra B.J. Croft & M.W. Dick (1)
Phragmosporangium R.L. Seym. (1)
Plectospira Drechsler (4)
Sommerstorffia Arnaudov (1)*Rocha et al. 2019
Verrucalvus P. Wong & M.W. Dick (1)

Saprolegniomycetes genera *incertae sedis*
Brevilegniella M.W. Dick (1)
Cornumyces M.W. Dick (8)
Chamydomyzium M.W. Dick (7)
Eurychasmopsis Canter & M.W. Dick (1)
Leptolegniella Huneycutt (6)
Nematophthora Kerry & D.H. Crump (1)
Pythiella Couch (3)
Synchaetophagus Apstein (1)

Oomycota orders *incertae sedis*
Anisolpidiales M.W. Dick
Anisolpidiaceae Karling
Anisolpidium Karling (6)

Diatomophthoraceae Buaya & Thines
Diatomophthora Buaya & Thines (3)

Eurychasmales Sparrow
Eurychasmataceae Petersen

Eurychasma Magnus (1)

Haliphthorales ined.
Haliphthoraceae Vishniac
Halioticida Muraosa & Hatai (1)
Halocrusticida K. Nakam. & Hatai (7)
Haliphthoros Vishniac (3)

Haptoglossales M.W. Dick
Haptoglossaceae M.W. Dick
Haptoglossa Drechsler (12)

Miraculales Buaya & Thines*Note 937
Miraculaceae Buaya, Hanic & Thines
Miracula Buaya, Hanic & Thines (4)

Olpidiopsidales M.W. Dick
Olpidiopsidaceae Sparrow
Olpidiopsis Cornu (17)

Pontismatales Thines
Pontismataceae H.E. Petersen
Petersenia Sparrow (4)
Sirolpidium H.E. Petersen (= *Pontisma* H.E. Petersen) (14)*Note 1598

Rozellopsidales M.W. Dick
Rozellopsidaceae M.W. Dick
Rozellopsis Karling (5)

AMORPHAEA Adl et al.
AMOEBOZOA Lühe
Evosea Kang et al.

Eumycetozoa L.S. Olive*from www.eumycetozoa.com
Dictyosteliomycetes Doweld
Acytosteliales S. Baldauf, S. Sheikh & Thulin
Acytosteliaceae Raper ex Raper & Quinlan
Acytostelium Raper (15)
Heterostelium S. Baldauf, S. Sheikh & Thulin (38)
Rostrostelium S. Baldauf, S. Sheikh & Thulin (1)

Cavenderiaceae S. Baldauf, S. Sheikh & Thulin
Cavenderia S. Baldauf, S. Sheikh & Thulin (31)

Dictyosteliales L.S. Olive ex P.M. Kirk et al.
Dictyosteliaceae Rostaf. ex Cooke
Dictyostelium Bref. (52)
Polysphondylium Bref. (4)

Raperosteliaceae S. Baldauf, S. Sheikh & Thulin
Hagiwaraea S. Baldauf, S. Sheikh & Thulin (6)
Raperostelium S. Baldauf, S. Sheikh & Thulin (14)

Speleostelium S. Baldauf, S. Sheikh & Thulin*Fp27 (1)
Tieghemostelium S. Baldauf, S. Sheikh & Thulin*Fp28 (7)

Dictyosteliales genus *incertae sedis*
Coremiostelium S. Baldauf, S. Sheikh, Thulin & Spiegel*Fp14 (1)
Dictyosteliomycetes genera *incertae sedis*
Coenonia Tiegh. (1)
Synstelium S. Baldauf, S. Sheikh & Thulin (1)

Ceratiomyxomycetes D. Hawksw., B. Sutton & Ainsw.
Ceratiomyxales G.W. Martin ex M.L. Farr & Alexop.
Ceratiomyxaceae J. Schröt.
Ceratiomyxa J. Schröt. (11)

Protosporangiaceae Leontyev, Stephenson, Schnittler, Shchepin, Novozhilov
Clastostelium L.S. Olive & Stoian. (1)
Protosporangium L.S. Olive & Stoian. (4)

Myxomycetes G. Winter
Lucisporomycetidae Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Cribrariales T. Macbr.
Cribrariaceae Corda
Cribraria Pers. (47)
Enteridium Ehrenb. (2)*Note 1575
Lindbladia Fr. (2)

Reticulariales Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Reticulariaceae Chevall. ex Corda
Alwisia Berk. & Broome (4)
Lycogala Adans. (ca 60)
Reticularia Bull. (8)
Siphoptychium Rostaf. (3)
Tubifera J.F. Gmel. (13)
Thecotubifera Leontyev, Schnittler, S.L. Stephenson & Novozh. (1)

Liceales E. Jahn
Liceaceae Chevall.
Licea Schrad. (80)
Listerella E. Jahn (1)

Trichiales T. Macbr.
Dianemataceae T. Macbr.
Calomyxa Nieuwl. (2)
Dianema Rex (14)
Prototrichia Rostaf. (1)

Dictydiaethaliaceae Luerss.
Dictydiaethalium Rostaf. (3)

Hemitrichiaceae Yatsiuk, Leontyev & Schnittler
Hemitrichia Rostaf. (34)*Note 1576
Heterotrichia Massee (8)*Note 1577

Arcyriaceae Rostaf. ex Cooke
Arcyria F.H. Wigg. (48)

Trichiaceae Chevall.
Cornuvia Rostaf. (1)
Gulielmina García-Cunch., J.C. Zamora & Lado (4)*Note 869
Metatrichia Ing (6)
Oligonema Rostaf. (11)
Ophiotheca Curr. (3)*****Note 1571
Perichaena Fr. (35)*Note 1578
Trichia Haller (40)

Lucisporomycetidae genera *incertae sedis*
Arcyriatella Hochg. & Gottsb. (1)
Calonema Morgan (5)
Minakatella G. Lister (1)
Spiromyxa Yatsiuk & Ehlers (1)*Note 1579
Trichioides Novozh., Hoof & Jagers (1)

Columellomycetidae Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Echinosteliopsidales Shchepin, Leontyev, Schnittler, S.L. Stephenson, Novozhilov
Echinosteliopsidaceae L.S. Olive
Echinosteliopsis Reinhardt & L.S. Olive (1)

Echinosteliales G.W. Martin
Echinosteliaceae Rostaf. ex Cooke
Barbeyella Meyl. (1)
Echinostelium de Bary (17)
Semimorula E.F. Haskins, McGuinn. & C.S. Berry (1)

Clastodermatales Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Clastodermataceae Alexop. & T.E. Brooks
Clastoderma A. Blytt. (4)

Meridermatales Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Meridermataceae Leontyev, Schnittler, S.L. Stephenson, Novozhilov & Shchepin
Meriderma Mar. Mey. & Poulain (4)

Stemonitidales T. Macbr.
Amaurochaetaceae Rostaf. ex Cooke
Amaurochaete Rostaf. (4)
Brefeldia Rostaf. (1)
Comatricha Preuss (40)
Enerthenema Bowman (4)
Paradiacheopsis Hertel. (8)
Stemonitopsis (Nann.-Bremek.) Nann.-Bremek. (10)

Stemonitidaceae Fr.
Macbrideola H.C. Gilbert (22)
Stemonaria Nann.-Bremek., R. Sharma & Y. Yamam. (16)
Stemonitis Gled. (24)

Symphytocarpus Ing & Nann.-Bremek. (8)
Valtocarpus Gmoshinskiy, Prikhodko, Bortnikov, Shchepin et Novozh. (2)*Note 1323

Physarales T. Macbr.
Didymiaceae Rostaf. ex Cooke
Diachea Fr. (17)
Diderma Pers. (86)
Didymium Schrad. (102)
Polyschismium Corda (14)*Note 1580

Lamprodermataceae T. Macbr.
Colloderma G. Lister (4)
Diacheopsis Meyl. (19)
Elaeomyxa Hagelst. (4)
Lamproderma Rostaf. (57)

Physaraceae Chevall.
Aethaliopsis Zopf (1)*Note 1581
Angioridium Grev. (1)*Note 1582
Badhamia Berk. (40)
Badhamiopsis T.E. Brooks & H.W. Keller (7)
Claustria Fr.*Note 1583
Craterium Trentep. (20)
Erionema Penz. (1)*Note 1584
Fuligo Haller (8)*Note 1585
Kelleromyxa Eliasson (1)
Leocarpus Link (1)
Lignydium Link (1)*Note 1586
Nannengaella J.M. García-Martín, J.C. Zamora & Lado (10)*Note 1364
Physarella Peck. (1)
Physarum Pers.; (145)
Trichamphora Jungh. (1)*Note 1587
Willkommlangea Kuntze (1)

Physarales genera *incertae sedis*
Collaria Nann.-Bremek. (7)*Note 1588
Tasmaniomyxa S.J. Lloyd, Leontyev, G. Moreno, López-Vill. & Schnittler (1)*Note 1322

Columellomycetidae genera *incertae sedis*
Carcerina Fr. (1)*Note 1589
Leptoderma G. Lister (2)
Paradiachea Hertel (5)
Physarina Höhn. (3)
Trabrooksia H.W. Keller (1)

Variosea Cavalier-Smith et al.
Protosteliida Olive & Stoian. *sensu* Shadwick & Spiegel
Protosteliidae Olive & Stoian., emend Spiegel
Protostelium L.S. Olive & Stoian. (5)

Fractovitellida Lahr et al. *sensu* Kang et al.
Schizoplasmodiidae Shadwick & Spiegel

Ceratiomyxella L.S. Olive & Stoian. (1)
Nematostelium L.S. Olive & Stoian. (2)
Schizoplasmodium L.S. Olive & Stoian. (3)

Soliformoviidae Lahr & Katz
Soliformovum Spiegel (2)

Cavosteliida Shadwick & Spiegel
Cavosteliidae S.L. Olive
Cavostelium S.L. Olive (1)
Schizoplasmodiopsis S.L. Olive (6)
Tychosporium Spiegel (1)

Tubulinea Smirnov et al.
Elardia Kang et al.
Euamoebida Lepşi
Copromyxidae L.S. Olive & Stoian.
Copromyxa Zopf (2)

Discosea Cavalier-Smith et al. *sensu* Smirnov et al.
Flabellinea Smirnov et al.
Thecamoebida Schaeffer
Sappinia P.A. Dang. (1)

Vannellida Smirnov et al.
Protosteliopsis L.S. Olive & Stoian. (1)

Centramoebia Cavalier-Smith et al.
Acanthopodida Page
Acanthamoeba Volkonsky
Luapelamoeba Shadwick et al.

Pellitida Smirnov & Cavalier-Smith *sensu* Kang et al.
Endostelium L.S. Olive, W.E. Benn. & Deasey (2)

DISCOBA Simpson in Hampl et al.
PERCOLOZOA Page & Blanton
Heterolobosea Page & Blanton
Tetramitia Cavalier-Smith
Eutetramitia Hanousková et al.
Acrasidae Poche
Acrasis Tiegh. (4)

Invalid genera without types (see Art. 40.1 (Shenzhen))
The following genera were described by Tedersoo et al. (2024) but are invalid as sequence data was deposited as type material. The higher taxa are also invalid.

Higher taxa
Bifiguratales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Bifigurataceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Densosporales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Hoforsales Tedersoo, **nom. inval.***Tedersoo et al. 2024

Hoforsaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Jimgerdemanniaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kahvenales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kahvenaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kelottijaerviales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kelottijaerviaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kungsaengenales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Kungsaengenaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Langduoales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Langduoaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Lehetuales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Lehetuaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Lokrumales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Lokrumaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Moosteales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Moosteaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Nikkaluoktales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Nikkaluoktaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Parachytriomycetes Caval. Sm., **nom. inval.***Note 1006
Parniguales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Parniguaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Planticonsortiaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Pseudoentrophosporaceae Tedersoo & Magurno, **nom. inval.***Tedersoo et al. 2024
Riederbergales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Riederbergaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Ruuales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Ruuaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Tammsaareales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Tammsaareaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Unemaeeales Tedersoo, **nom. inval.***Tedersoo et al. 2024
Unemaeeaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024
Vinositunicaceae Tedersoo, **nom. inval.***Tedersoo et al. 2024

Genera
Hoforsa Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Kahvena Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Kelottijaervia Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Kungsaengena Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Langduoa Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Lehetua Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Lokruma Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Moostea Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Nikkaluokta Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Parnigua Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Pseudoentrophospora Tedersoo & Magurno, **nom. inval.** (1)*Tedersoo et al. 2024
Riederberga Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Ruua Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Tammsaarea Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024
Unemaeea Tedersoo, **nom. inval.** (1)*Tedersoo et al. 2024

Notes on new genera and higher taxa

In this section notes are provided on new genera and higher taxa. They are organized by note number. All notes are linked to Index Fungorum, Facesoffungi, MycoBank and GenBank where possible. References are also linked and by clicking on the citation or reference it will take you to the reference webpage. The terms anamorph/asexual, teleomorph/sexual are used in the entries as the authors submitted them as there is no general consensus as to what term to use. The numbers in brackets are the number of species in the genus. If there are many species it is rounded to the nearest 5 or if over 100 to the nearest 10.

Note 544 *Mangifericomes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mangifericomes E.F. Yang & Tibpromma

Yang et al. (2022c) introduced *Mangifericomes* within *Pleosporales* genera *incertae sedis* with *M. hongheensis* as the type species. This monotypic genus was associated with *Mangifera indica* (mango) in China. It has a unique small epidermal clypeus with a thick ascomatal wall which is continuous with the clypeus. *Mangifericomes* is similar to botryosphaeria-like genera, but differs in having brown, muriform ascospores (Phillips et al. 2019, Wu et al. 2021b, Yang et al. 2022c). *Mangifericomes hongheensis* is allied with *Brunneoclavispora bambusae* (strain MFLUCC 11-0177), but is phylogenetically a distinct lineage. The genus formed a distinct clade distant from *Didymosphaeriaceae* (suborder *Massarinae*) and *Halotthiaceae*, where the type strain of *Brunneoclavispora bambusae* (MFLUCC 11-0177) was assigned (Ariyawansa et al. 2015, Tanaka et al. 2015). The tree in Yang et al. (2022c) has a few problems. *Brunneoclavispora bambusae* (MFLUCC 11-0177) previously clustered in *Halotthiaceae* (Ariyawansa et al. 2015, Hyde et al. 2020a).This family is included in the Yang et al. (2022c) However, the strain of *Brunneoclavispora bambusae* is unstable so the placement could possibly change. The family is not properly labelled, it is not *Didymosphaeriaceae*, it should also be *Pleosporales* genus *incertae sedis*. *Didymosphaeriaceae* in the tree was labelled as *Apiosporaceae* so this could be the reason why the former family was misplaced. Thus, further analysis of *Mangifericomes* is needed.

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Wu SH, Wei CL, Chen YP, Chen CC et al. 2021 – *Schizocorticium* gen. nov. (*Hymenochaetales*, *Basidiomycota*) with three new species. Mycological Progress 20, 769–779.

Yang EF, Tibpromma S, Karunarathna SC, Phookamsak R et al. 2022c – Taxonomy and phylogeny of novel and extant taxa in *Pleosporales* associated with *Mangifera indica* from Yunnan, China (Series I). Journal of Fungi 8, 152.

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(Edited by: **Kevin D. Hyde**)

Note 545 *Cyberloma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cyberloma D.W. Minter

Cyberloma was proposed by Minter (2020) mainly based on its position in a separate branch in the phylogenetic trees presented by Lom & Nilsen (2003, Figure 30) and Brown et al. (2010, Figure 71). Until more definitive evidence becomes available, the new genus is placed in the family *Glugeidae* within the poorly-known phylum *Microsporidia*, which, currently, contains ca 170 genera and over 1300 species. Two species are redisposed to this genus: *Cyberloma acerinae* (previously named as *Pleistophora acerinae* in 1901 by Vaney & Conte; *Glugea acerinae* in 1930 by Jírovec; *Loma acerinae* (Jírovec) in 1999 by Lom & Pekkarinen), as type species, and *Cyberloma psittaci* (Casal et al. 2009). *Cyberloma acerinae* has been recorded infecting fish of the families Atherinidae, Gobiidae and Percidae in freshwater, brackish coastal lagoons, and inshore marine areas of Europe. A summary of the main features was provided by Brown et al. (2010, Table 4). Additionally, a thorough morphological analysis using transmission electron microscopy was provided by Lom & Pekkarinen (1999).

References

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Note 546 _Mucochytrium_

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mucochytrium S. Geraci-Yee & B. Allam

Mucochytrium was introduced by Geraci-Yee et al. (2021) to accommodate a facultative parasite of the hard clam (*Mercenaria mercenaria*) commonly named as Quahog Parasite Unknown (QPX). This monotypic genus, typified by *M. quahogii*, belongs to the family *Thraustochytriaceae* (thraustochytrids) in the class *Labyrinthulomycetes* (= *Labyrinthulea*) of the division (or phylum) *Stramenopiles* based on 18S rRNA (SSU) gene sequencing (Maas et al. 1999, Ragan et al. 2000). The genus is distinguished from other genera based on molecular inference, production of mucus, and parasitism of hard clams.

References

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Note 547 *Morellospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Morellospora D. Corsaro, J. Walochnik, D. Venditti, B. Hauröder & R. Michel

Morellospora was introduced by Corsaro et al. (2020). This genus corresponds to the former spore-forming sphaerita-like parasites of amoebae and belongs to the same subgroup of *Mitosporidium* within the early fungal lineage *Rozellomycota*. *Morellospora* differs from *Mitosporidium* in having rounded, smaller spores (usually < 1 µm), whereas those of *Mitosporidium* are ovoid and clearly larger (> 2.3 × 1 µm). *Morellospora* consists of two species and the type species is *Morellospora saccamoebae*, an intracytoplasmic parasite of the free-living amoeba *Saccamoeba lacustris* (Amoebozoa, Tubulinea, Euamoebida). The second species within the genus, *M. lamprodermatis* (Yajima et al. 2013), needs further analysis for a complete description.

References

Corsaro D, Walochnik J, Venditti D, Hauröder B et al. 2020 – Solving an old enigma: *Morellospora saccamoebae* gen. nov., sp. nov. (*Rozellomycota*), a *Sphaerita*-like parasite of free-living amoebae. Parasitology Research 119, 929–934.

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Note 548 *Periplasma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Periplasma W.W. Martin & A. Warren

Periplasma was introduced by Martin & Warren (2020) to accommodate a new organism isolated from a moribund simuliid adult collected in Southeast United States (Virginia). This monotypic genus, typified by *P. isogametum*, belongs to the order *Leptomitales* (*Oomycota*). *Periplasma isogametum* forms a well-supported clade related to but distinct from *Apodachlya*, a member of the *Leptomitales*. *Blastulidium paedophthorum*, a brood parasite of *Daphnia*, clustered with *P. isogametum* and other members of the *Leptomitales* in all phylogenetic trees. The discovery and description of *P. isogametum* provides new insights into the morphological and phylogenetic diversity of the *Saprolegniomycetes*.

Reference

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Entry by Iván Sánchez-Castro, Estación Experimental del Zaidín, C.S.I.C., Calle Profesor Albareda 1, 18008 Granada, Spain

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Note 549 ***Schizocorticium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schizocorticium Sheng H. Wu

Schizocorticium was introduced to accommodate three species, *S. magnosporum*, *S. mediosporum* and *S. parvisporum* from East Asia (Wu et al. 2021b). Bayesian, maximum likelihood, and maximum parsimony algorithms based on ITS, LSU and *tef1-α* were used to delimit the species and the new genus. In all analyses, *Schizocorticium* is placed in an isolated position within *Hymenochaetales*, being also distinct from other genera, such as *Phlebia sensu stricto*, *Hyphoderma* Wallr., *Radulomyces* M.P. Christ., *Globulicium* Hjortstam, *Tsugacorticium* Nakasone & Burds, and *Dendrophlebia* Dhingra & Priyanka. Although not stated by Wu et al. (2021b), MycoBank and Index Fungorum indicate *Schizocorticium* as a member of *Rickenellaceae*. Besides being genetically different, the three species can be separated from each other by basidiospore length.

Reference

Wu SH, Wei CL, Chen YP, Chen CC et al. 2021 – *Schizocorticium* gen. nov. (*Hymenochaetales*, *Basidiomycota*) with three new species. Mycol Progress 20, 769–779.

Entry by Tatiana B. Gibertoni, Departamento de Micologia, Centro de Biociências, Universidade Federal de Pernambuco, Recife, PE, Brasil

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Note 550 ***Morakotia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Morakotia Mongkols., Noisrip., Khons., Thanakitp. & Luangsa-ard

Morakotia is a monotypic genus introduced by Mongkolsamrit et al. (2021) and typified by *Morakotia fusca*. *Morakotia fusca* was found on seeds of *Smilacaceae* in the central and northeastern regions of Thailand (Mongkolsamrit et al. 2021). Its sexual morph is characterized by erect, clavate, stipitate stromata, orange yellow to brown orange, cylindrical to clavate fertile heads, completely immersed, narrow flask-shaped perithecia, cylindrical, 8-spored asci with thick apices and hyaline whole, filiform, multiseptate ascospores (Mongkolsamrit et al. 2021). The asexual morph was described from an MEA culture, wherein monophialidic, awl-shaped conidiogenous cells and hyaline, globose conidia were produced (Mongkolsamrit et al. 2021). In a phylogenetic analysis of concatenated LSU, *rpb1* and *tef1-α* sequences, *Morakotia* constitutes a distinct clade branched off from *Shimizuomyces*. These two genera share the same characteristics in having cylindrical to clavate stromata arising from seeds and filiform, multiseptate ascospores. However, *Morakotia* is distinguished from *Shimizuomyces* by the shape and arrangement of perithecia. *Morakotia* has narrowly flask-shaped and completely immersed perithecia, while that of *Shimizuomyces* are pyriform and immersed with slightly projecting ostioles. *Morakotia* thus was established as a distinct genus in *Clavicipitaceae* of *Hypocreales*, *Sordariomycetes* (Mongkolsamrit et al. 2021).

Reference

Mongkolsamrit S, Noisripoom W, Thanakitpipattana D, Khonsanit A et al. 2021 – New species in *Aciculosporium*, *Shimizuomyces* and a new genus *Morakotia* associated with plants in *Clavicipitaceae* from Thailand. Fungal Systematics and Evolution 8, 27–37.

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(Edited by: **Kevin D. Hyde)**

Note 551 ***Xenovaginatispora***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenovaginatispora Boonmee, Huanraluek & K.D. Hyde

Xenovaginatispora is an ascomycetous genus belonging to *Lindgomycetaceae* (*Pleosporales*, *Dothideomycetes*). This genus includes a single species, *X. phichaiensis*, found from submerged decaying wood in a freshwater stream in Thailand (Boonmee et al. 2021). This genus is similar to *Vaginatispora*, but the latter is a member of *Lophiostomataceae* (Hashimoto et al. 2018, Andreasen et al. 2021). The ascospores of *Xenovaginatispora* resemble those of *Lindgomyces* which also has fusiform, 1-septate, hyaline ascospores surrounded by a prominent sheath or bipolar mucilaginous appendages (Hirayama et al. 2010). However, *Xenovaginatispora* is phylogenetically separated from *Lindgomyces* and forms a sister clade of the *Neolindgomyces* spp. (Boonmee et al. 2021) which has fusiform to cylindrical, 4–8-septate, hyaline ascospores (Hyde & Goh 1999, Jayasiri et al. 2019).

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(Edited by: **Kevin D Hyde**)

Note 552 ***Sublophiostoma***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sublophiostoma Phookamsak, Hongsanan & K.D. Hyde

Sublophiostoma is a pleosporalean genus placed in *Sublophiostomataceae*. The type species, *S. thailandicum*, was collected from dead stems of *Poaceae* (*Thysanolaena maxima*, bamboo, and grass) in Thailand (Hongsanan et al. 2021). On the natural specimens, *S. thailandicum* has hemisphaerical to lenticular, glabrous ascomata with a crest-like opening, cylindrical to clavate asci, and narrowly fusiform, hyaline ascospores with an entire sheath. In culture, it produces an asexual state with pycnidial conidiomata and 1-celled, small, hyaline conidia. These morphological features of *Sublophiostoma* superficially resemble those of genera in *Lophiostomataceae*, such as *Lophiostoma*, *Pseudolophiostoma* and *Vaginatispora*. However, *Sublophiostoma* is close to *Neomassarinaceae* or *Sporormiaceae*, rather than *Lophiostomataceae*. According to Hongsanan et al. (2021), *Sublophiostoma* differs from these lophiostomatoid genera in having ascomatal peridium with *textura angularis* to *textura epidermoidea*, rather than peridium with *textura angularis*.

Reference

Hongsanan S, Phookamsak R, Goonasekara ID, Thambugala KM et al. 2021 – Introducing a new pleosporalean family *Sublophiostomataceae* fam. nov. to accommodate *Sublophiostoma* gen. nov. Scientific Reports, 11(1), 9496.

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Note 553 ***Uniappendiculata***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Uniappendiculata Tibpromma

Uniappendiculata is a monotypic asexual genus represented by *U. kunmingensis* on dead stems of *Acer palmatum* in China. Phylogenetic analysis based on combined dataset of ITS, LSU, and *tef1-α* sequences suggests that *Uniappendiculata* is a member of *Sulcatisporaceae* (*Pleosporales*, *Dothideomycetes*) and is related to *Pseudobambusicola* (Wijayawardene et al. 2021a). On the other hand, characters of *Uniappendiculata kunmingensis*, such as acervular conidiomata surrounded by numerous black setae and subcylindrical, slightly curved, hyaline conidia with an appendage at both ends are extremely similar to those of *Pseudolachnella* (*Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*; Hashimoto et al. 2015). Considering that no genus with such asexual traits is known in *Sulcatisporaceae* (Tanaka et al. 2015) or even in *Dothideomycetes* (Hongsanan et al. 2020a), additional materials including pure cultures and molecular evidence for *U. kunmingensis* are required to confirm phylogenetic validity of this intriguing genus.

References

Hashimoto A, Sato G, Matsuda T, Matsumura M et al. 2015 – Taxonomic revision of *Pseudolachnea* and *Pseudolachnella* and establishment of *Neopseudolachnella* and *Pseudodinemasporium* gen. nov. Mycologia 107, 383–408.

Hongsanan S, Hyde KD, Phookamsak R, Wanasinghe DN et al. 2020a – Refined families of *Dothideomycetes*: *Dothideomycetidae* and *Pleosporomycetidae*. Mycosphere 11, 1553–2107.

Tanaka K, Hirayama K, Yonezawa H, Sato G et al. 2015 – Revision of the *Massarineae* (*Pleosporales*, *Dothideomycetes*). Studies in Mycology 82, 75–136

Wijayawardene NN, Phillips AJL, Tibpromma S, Dai DQ et al. 2021b – Looking for the undiscovered asexual taxa: case studies from lesser studied life modes and habitats. Mycosphere 12, 1186–1229.

Entry by Kazuaki Tanaka, Faculty of Agriculture and Life Science, Hirosaki University, Japan

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Note 554 *Neoantennariella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoantennariella Abdollahz. & Crous

Neoantennariella phylicae was introduced by Abdollahzadeh et al. (2020), as the type species of *Neoantennariella* which was collected from leaves of *Phyllica arborea* in South Africa. Species of this monotypic genus are saprobic and similar to *Antennariella*, however they differ in morphology of conidiomata and conidia. Maximum likelihood analysis based on combined LSU, ITS, *tef1-α* and *rpb2* sequence data showed that *Neoantennariella phylicae* formed a separate clade and clustered together with *Fumiglobus pieridicola* (UBC F23788T) and *Neoasbolisia phylicae* (CBS 146168). Abdollahzadeh et al. (2020) placed *Neoantennariella* in *Neoantennariellaceae* with *Fumiglobus* and *Neoasbolisia*.

Reference

Abdollahzadeh J, Groenewald JZ, Coetzee MP, Wingfield MJ et al. 2020 – Evolution of lifestyles in *Capnodiales*. Studies in Mycology 95, 381–414.

Entry by Diana S. Marasinghe, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai, Thailand

(Edited by: **Kevin D Hyde**)

Note 555 *Neoantennariellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoantennariellaceae Abdollahz. & Crous

Neoantennariellaceae was introduced by Abdollahzadeh et al. (2020) to accommodate three genera (*Fumiglobus*, *Neoantennariella* and *Neoasbolisia*) which was typified by the monotypic genus *Neoantennariella*. Species of these three genera are saprobic and have globose to subglobose, cylindrical or pyriform pycnidia developing from intercalary, lateral or terminal on erect hyphal branches. According to the multigene phylogeny (LSU, *tef1-α* and *rpb2*) using both RAxML and Bayesian analyses, *Fumiglobus*, *Neoantennariella* and *Neoasbolisia* species clustered together separately from the *Readerielliopsidaceae* clade.

Reference

Abdollahzadeh J, Groenewald JZ, Coetzee MP, Wingfield MJ et al. 2020 – Evolution of lifestyles in *Capnodiales*. Studies in Mycology 95, 381–414.

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Note 556 *Ahmadea* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ahmadea Aman, Khalid & Moncalvo

Ahmadea can be found in arid and semi-arid regions of Punjab, Pakistan, occurring on the ground near *Acacia nilotica* and *Sorghum vulgare* crop fields (Aman et al. 2020). Aman et al. (2020) described the monotypic genus *Ahmadea* in the family *Pezizaceae* based on LSU sequence data. The genus is typified by *Ahmadea dalanensis* (Aman et al. 2020) and only the sexual morph has been reported.

Reference

Aman N, Khalid AN, Moncalvo JM. 2020 – *Ahmadea dalanensis* gen. and sp. nov., an edible truffle from Pakistan. Studies in Fungi 5(1), 452–461.

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(Edited by **Kevin D Hyde**)

Note 557 *Aklioshbomyces* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aklioshbomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Aklioshbomyces an obligate anaerobic taxon associated with herbivore guts, was isolated from freshly deposited feces of a female white-tailed deer (*Odocoileus virginianus*) (Hanafy et al. 2020). This monotypic genus was introduced in *Neocallimastigaceae* by Hanafy et al. (2020), based on *A. papillarum*. *Aklioshbomyces* produces exogenous zoosporangia and globose monoflagellate zoospores (Hanafy et al. 2020). No sexual reproductive structures have been reported.

Reference

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM et al. 2020 – Seven new *Neocallimastigomycota* genera from wild, zoo-housed, and domesticated herbivores greatly expand the taxonomic diversity of the phylum. Mycologia 112(6), 1212–1239.

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(Edited by **Kevin D Hyde**)

Note 558 *Albocoprinus* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Albocoprinus Voto

Voto (2020) introduced the new name *Albocoprinus* for the illegitimate genus name *Coprinopsis*. *Albocoprinus* was introduced based on *Albocoprinus ealaensis* as the type and genus was accepted in *Agaricales* genera *incertae sedis* (Voto 2020). No asexual morph was reported.

Reference

Voto P. 2020 – Novelties in the Family *Psathyrellaceae*. Part IV. Rivista Micologica Romana, Bolletino dell' Associazione Micologica Ecologica Romana 110(2), 87–91.

Entry by Rekhani Hansika Perera, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D Hyde**)

Note 559 *Agriosomyces* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Agriosomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Agriosomyces is an obligate anaerobic taxon associated with herbivore guts, which was isolated from freshly deposited feces samples of male mouflon sheep (*Ovis orientalis*) (Hanafy et al. 2020).Hanafy et al. (2020) introduced the monotypic genus *Agriosomyces* in *Neocallimastigaceae* for *A. longus* as the type and the genus was emended by Hanafy et al. (2023). *Agriosomyces* produce both endogenous and exogenous globose zoosporangia and spherical monoflagellate zoospores (Hanafy et al. 2020). No sexual reproductive structures have been reported.

References

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM et al. 2020 – Seven new *Neocallimastigomycota*. Mycologia 112(6), 1212–1239.

Hanafy RA, Yan WJE, Stajich CJ, Pratt NH et al. 2023 – Phylogenomic analysis of the *Neocallimastigomycota*: proposal of *Caecomycetaceae* fam. nov., *Piromycetaceae* fam. nov., and emended description of the families *Neocallimastigaceae* and *Anaeromycetaceae*. International Journal of Systematic and Evolutionary Microbiology 73(2), 005735.

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(Edited by **Kevin D Hyde**)

Note 560 *Aestipascuomyces* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aestipascuomyces Stabel, R. Hanafy, Schweitzer, Greif, Aliyu, Flad, D. Young, Lebuhn, Elshahed, Ochsenreither & N.H. Youssef

Aestipascuomyces species are obligate anaerobic species associated with herbivore guts isolated from rumen contents and feces of female aoudad sheep (*Ammotragus lervia*) and an alpaca (*Vicugna pacos*) (Stabel et al. 2020). The monotypic genus *Aestipascuomyces* was described within the family *Neocallimastigaceae* based on *A. dupliciliberans* (Stabel et al. 2020). *Aestipascuomyces* is an asexual morph taxon producing polyflagellated zoospores in zoosporangia (Stabel et al. 2020). No sexual reproductive structures have been reported.

Reference

Stabel M, Hanafy RA, Schweitzer T, Greif M et al. 2020 – *Aestipascuomyces dupliciliberans* gen. nov, sp. nov., the first cultured representative of the uncultured SK4 clade from aoudad sheep and alpaca. Microorganisms 8(11), 1734.

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(Edited by **Kevin D Hyde**)

Note 561 *Acidotalaromyces* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Acidotalaromyces Houbraken, Frisvad & Samson

Acidotalaromycesis species are associated with rotting wood and require a low pH for their growth (Houbraken et al. 2020). Houbraken et al. (2020) introduced this monotypic genus in *Trichocomaceae* to accommodate *Penicillium lignorum*. The asexual morph of the *Acidotalaromycesis* is hyphomycetous. Both sexual and asexual morphs have been reported.

Reference

Houbraken J, Kocsubé S, Visagie CM, Yilmaz N et al. 2020 – Classification of *Aspergillus*, *Penicillium*, *Talaromyces* and related genera (*Eurotiales*): An overview of families, genera, subgenera, sections, series and species. Studies in Mycology 96(1), 141–153.

Entry by Rekhani Hansika Perera, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D Hyde**)

Note 562 *Achrochaeta* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Achrochaeta Réblová & Hern.-Restr. **(H)**

Achrochaeta species are saprobes on decaying wood and bark (Hughes & Kendrick 1968, Réblová et al. 2021d). The monotypic genus *Achrochaeta* was introduced by Réblová et al. (2021d) to accommodate *Chaetosphaeria talbotii*. The sexual morph of the genus is characterized by astromatic perithecial ascomata, cylindrical to cylindrical-fusiform, short-stipitate asci with nonamyloid apical annulus and ellipsoidal to ellipsoidal-fusiform, transversely septate ascospores (Fryar et al. 2023). *Achrochaeta* produce hyphomycetous asexual morphs dictyochaeta-like which lack setae and possess cylindrical-clavate conidia (Réblová et al. 2021d).

References

Fryar SC, Réblová M, Catcheside DE. 2023 – Freshwater fungi from southern Australia: *Minivolcanus unicellularis* gen. et. sp. nov. and *Achrochaeta rivulata* sp. nov. Australian Journal of Taxonomy 40, 1–9.

Hughes SJ, Kendrick WB. 1968 – New Zealand fungi 12. *Menispora*, *Codinaea*, *Menisporopsis*. New Zealand Journal of Botany 6, 323–375.

Réblová M, Nekvindová J, Kolařík M, Hernández-Restrepo M. 2021d – Delimitation and phylogeny of *Dictyochaeta*, and introduction of *Achrochaeta* and *Tubulicolla*, genera nova. Mycologia 113(2), 390–433.

Entry by Rekhani Hansika Perera, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D Hyde**)

Note 563 *Allocanariomyces* - morph notes

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Allocanariomyces Mehrabi, Asgari & Zare

Allocanariomyces species are seed endophytes of *Triticum boeoticum* and also isolated from human ear and prosthetic hip infection (Mehrabi et al. 2020, Ryan et al. 2021). Mehrabi et al. (2020) introduced *Allocanariomyces* for *Allocanariomyces tritici* based on morphology and combined ITS, LSU, *tub2* and *rpb2* phylogeny. *Allocanariomyces* possess cleistothecial ascomata and humicola-like or chrysosporium-like asexual morphs (Mehrabi et al. 2020, Ryan et al. 2021, Wang et al. 2022a). Both sexual and asexual morphs have been reported.

References

Mehrabi M, Asgari B, Zare R. 2020 – Description of *Allocanariomyces* and *Parachaetomium*, two new genera, and *Achaetomium aegilopis* sp. nov. in the *Chaetomiaceae*. Mycological Progress 19(12), 1415–1427.

Ryan K, Cañete-Gibas C, Sanders C, Sosa N et al. 2021 – *Pseudocanariomyces americanus*, gen. nov., sp. nov., A new Thielavia-like species in the *Chaetomiaceae*: Identification and management of a prosthetic hip infection. Mycopathologia 186(3), 441–447.

Wang XW, Han PJ, Bai FY, Luo A et al. 2022a – Taxonomy, phylogeny and identification of *Chaetomiaceae* with emphasis on thermophilic species. Studies in Mycology 101, 121–243.

Entry by Rekhani Hansika Perera, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D Hyde**)

Note 564 *Thyridiales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Thyridiales R. Sugita & Kaz. Tanaka

Thyridiaceae was introduced by Yue and Eriksson (1987). The family has long been treated in *Sordariomycetes* families *incertae sedis*, and sequence data were only available for two non-type isolates of the type species, *T. vestitum*. The asexual morph genus *Phialemoniopsis* was introduced by Perdomo et al. (2013) from clinical samples collected from patients with keratomycosis and phaeohyphomycosis. Based on phylogenetic analysis coupled with divergent time estimation, Hyde et al. (2021a) raised *Phialemoniopsis* to familial status. Sugita and Tanaka (2022) revised *Thyridium* and introduced several new species. They considered *Phialemoniopsis* to be congeneric with *Thyridium*. *Phialemoniopsidaceae* was therefore a synonym of *Thyridiaceae*. A new order *Thyridiales* in *Sordariomycetes* was established to accommodate *Thyridiaceae*.

References

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Perdomo H, García D, Gené J, Cano J. 2013 – *Phialemoniopsis*, a new genus of *Sordariomycetes*, and new species of *Phialemonium* and *Lecythophora*. Mycologia 105, 398–421.

Sugita R, Tanaka K. 2022 – *Thyridium* revised: Synonymisation of *Phialemoniopsis* under *Thyridium* and establishment of a new order, *Thyridiales*. MycoKeys 86, 147–176.

Yue JZ, Eriksson OE. 1987 – *Sinosphaeria bambusicola* gen. et sp. nov., (*Thyridiaceae* fam. nov.). Systema Ascomycetum 6, 229–236.

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Note 565 *Verrucoccum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Verrucoccum V. Atienza, D. Hawksw. & Pérez-Ort.

Verrucoccum is the only genus of lichenicolous fungi so far known in *Dictyosporiaceae*, *Pleosporales*, *Dothideomycetes*. This was introduced by Atienza et al. (2021) to accommodate *Verrucoccum coppinsii* as the type species. The name *Verrucoccum* was based on the characteristic warty appearance of the outer wall ornamentation of ascomata and conidiomata. *Verrucoccum* members show some morphological similarities with the genera *Didymocyrtis* and *Polycoccum*, which also have 1-septate, brown ascospores (Ertz et al. 2015, Atienza et al. 2021). However, *Verrucoccum* differs from those genera in that the cells of the ascomata wall, which are polygonal and dark brown, have unevenly thickened walls, giving a warty appearance, and are not radially compressed in vertical sections with evenly thickened cell walls. In addition, *Didymocyrtis* also differs in having a phoma-like conidial morph, evenly thick- walled cells, enteroblastic conidiogenous cells, and hyaline conidia (Atienza et al. 2021). The asexual morph of *Verrucoccum* also has some similarities with *Pseudocyclothyriella* in having uniloculate pycnidial conidiomata. Nevertheless, *Pseudocyclothyriella* can be distinguished from *Verrucoccum* in having multi-layered conidiomata wall which comprised scleroplectenchymatous cells and a minutely papillate ostiole filled with hyaline periphyses (Atienza et al. 2021, Jiang et al. 2021a). Currently, three *Verrucoccum* species are listed in Index Fungorum, such as *V. coppinsii*, *V. hymeniicola* and *V. spribillei*. LSU, SSU and ITS genes sequences are also available in GenBank for those species. It would be more interesting to have more collections of *Verrucoccum* species with protein coding genes for future studies.

References

Atienza V, Hawksworth DL, Pérez-Ortega S. 2021 – *Verrucoccum* (*Dothideomycetes*, *Dictyosporiaceae*), a new genus of lichenicolous fungi on *Lobaria* s. lat. for the *Dothidea hymeniicola* species complex. Mycologia 113, 1233–1252.

Ertz D, Diederich P, Lawrey JD, Berger B et al. 2015 – Dismantling *Dacampiaceae* (*Pleosporales*): *Didymocyrtis* (*Pleosporales*) with phoma-like anamorphs resurrected and segregated from *Polycoccum* (*Trypeteliales*, *Polycoccaceae* fam. nov.). Fungal Diversity 74, 53–89.

Jiang HB, Jeewon R, Karunarathna SC, Phukhamsakda C et al. 2021a – Reappraisal of *Immotthia* in *Dictyosporiaceae*, *Pleosporales*: introducing *Immotthia bambusae* sp. nov. and *Pseudocyclothyriella clematidis* comb. et gen. nov. based on morphology and phylogeny. Frontiers in Microbiology 12, 1–17.

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(Edited by: **Chayanard Phukhamsakda**)

Note 566 ***Mariorajchenbergia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mariorajchenbergia Gibertoni & C.R.S. Lira

Mariorajchenbergia was established by Lira et al. (2021) to replace *Megasporoporiella* B.K. Cui, Y.C. Dai & Hai J. Li. *Megasporoporiella* was proposed with the type species *Megasporoporiella cavernulosa* (= *Megasporoporia cavernulosa*), which is a species originating from the Brazilian Amazonia, but the studied the specimen of "*Megasporoporia cavernulosa"* was collected from China (Li & Cui 2013). Lira et al. (2021) collected *Megasporoporia cavernulosa* from the Brazilian Amazonia, and four-gene phylogenies showed that it is placed in the *Megasporia* clade. Thus, *Megasporoporia cavernulosa* was transferred to *Megasporia*. The remaining five species of *Megasporoporiella*, which were all from China and formed their own clade (*Megasporoporiella* clade), but out of the *Megasporia* clade, needed a new generic name and a new type. Wang et al. (2021a) had tried to name a type species for *Megasporoporiella* with a brief sentence "In the present study we select *Megasporoporiella pseudocavernulosa* as the type species of *Megasporoporiella*." (Wang et al. 2021a). However, they introduced an invalidly published generic name because they did not provide a diagnosis or description nor an official repository number for the genus. Instead, a new genus *Mariorajchenbergia* was established validly and legitimately with type species, *M. subcavernulosa*, by Lira et al. (2021), which presently includes *M. australiae*, *M. hubeiensis, M. pseudocavernulosa*, *M. rhododendri* and *M. subcavernulosa*.

References

Li H, Cui B. 2013 – Taxonomy and phylogeny of the genus *Megasporoporia* and its related genera. Mycologia 105(2), 368–383.

Lira CRS, Alvarenga RLM1, Soares AMS, Ryvarden L et al. 2021 – Phylogeny of *Megasporoporia* s.lat. and related genera of *Polyporaceae*: New genera, new species and new combinations. Mycosphere 12(1), 1262–1289.

Wang YR, Wu YD, Vlasák J, Yuan Y et al. 2021a – Phylogenetic analysis demonstrating four new species in *Megasporoporia sensu lato* (*Polyporales, Basidiomycota*) Mycosphere 12(1), 1012–1037.

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Note 567 *Jorgewrightia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Jorgewrightia Gibertoni & C.R.S. Lira

Jorgewrightia was established to accommodate one of two clades of *Megasporia* B.K. Cui, Y.C. Dai & Hai J. Li. *Megasporia* is typified by *M. hexagonoides* and the studied specimen was collected from China (Li and Cui 2013). However, the type locality of *M. hexagonoides* is Argentina. Lira et al. (2021) retrieved a sequence of *M. hexagonoides* from GenBank and the specimen was collected from Argentina. The rebuilt phylogenetic tree of *Megasporia* showed *Megasporia* was not monophyletic and that it included *Dichomitus squalens* (Lira et al. 2021). The clade with the Argentinean sequence of *M. hexagonoides* was named *Megasporia*, and another clade was named as *Jorgewrightia*. However, if the phylogenies use more samples from a clade named “unnamed clade” in Wang et al. (2021a), *Megasporia* is monophyletic and sister to *Dichomitus squalens* (Li and Cui 2013, Wang et al. 2021a). These different results may come from the different genes applied in the phylogenetic analyses [two genes ITS and LSU in Li and Cui (2013) and Wang et al. (2021a) four genes ITS, LSU, *rpb2* and *tef1-α* in Lira et al. (2021)], but may also be a result of different sampling [one unnamed clade in Wang et al. (2021a) was not used in Lira et al. (2021)]. I suggest that this topic needs further research in order to clarify the standing of *Jorgewrightia*.

References

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Lira CRS, Alvarenga RLM1, Soares AMS, Ryvarden L et al. 2021 – Phylogeny of *Megasporoporia* s.lat. and related genera of *Polyporaceae*: New genera, new species and new combinations. Mycosphere 12(1), 1262–1289.

Wang YR, Wu YD, Vlasák J, Yuan Y et al. 2021a – Phylogenetic analysis demonstrating four new species in *Megasporoporia sensu lato* (*Polyporales, Basidiomycota*) Mycosphere 12(1), 1012–1037.

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Note 568 ***Paralpova***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paralpova Cabero & P. Alvarado

Paralpova was introduced from Spain with the type species, *P. artikutzensis*. The three-gene phylogenetic analyses indicated that it is a monophyletic lineage of hypogeous fungi in *Paxillaceae*. The genus was characterized by a pseudoparenchymatic structure in their peridium or at least in the inner layer. The term "Para" refers to it being phylogenetically sister to *Alpova*. The only known species is *P. artikutzensis* found in acidic soil near *Fagus sylvatica* (Alvarado et al. 2021).

Reference

Alvarado P, Cabero J, Moreno Mateos D, Vizzini A et al. 2021– Phylogenetic relationships among false truffle genera of *Paxillaceae – Alpova, Melanogaster, Neoalpova, Paralpova*, gen. nov. Mycologia 113, 828–841.

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(Edited by: **Ruilin Zhao**)

Note 569 ***Kaziboletus***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kaziboletus Hosen & Zhu L. Yang

Kaziboletus was introduced to accommodate the new species *K. rufescens* found in tropical Bangladesh. It is putatively associated with *Shorea robusta*, resembling *Leccinum*, *Leccinellum*, and *Spongispora* but is genetically distinct. The four-gene (LSU, *tef1-α*, *rpb1*, and *rpb2)* phylogenetic analyses indicated its distinct position in the subfamily *Leccinoideae* of *Boletaceae*. Its closest sister relationships with other genera in *Leccinoideae* remains unclear.

Reference

Hosen MI, Yang ZL. 2021 – *Kaziboletus,* a new boletoid genus of *Boletaceae* associated with *Shorea robusta* in Bangladesh. Mycological Progress 20, 1145–1156.

Entry by Maoqiang He, Key State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by: **Ruilin Zhao**)

Note 570 ***Saprodesmium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Saprodesmium W. Dong & Doilom

The saprobic monotypic genus *Saprodesmium* which was typified by *S. dematiosporum* has been found on decaying wood in a freshwater habitat in China (Dong et al. 2021a). *Saprodesmium* is sister to *Rhexoacrodictys* in *Pleurotheciaceae* based on LSU, SSU, ITS, *rpb2* analysis (Dong et al. 2021a). The hyphomycetous *Saprodesmium* has micronematous conidiophores and holoblastic conidiogenous cells similar to *Dematipyriforma*, but differs by mature conidia having more septa (Dong et al. 2021a, Sun et al. 2017). *Rhexoacrodictys* shares characteristics with *Saprodesmium* in having muriform and obovoid conidia whereas *Rhexoacrodictys* has macronematous conidiophores (Baker et al. 2002, Dong et al. 2021a, Xiao et al. 2018). No sexual morph has been recorded; thus, *Saprodesmium* is placed in *Pleurotheciaceae* based on phylogenetic analyses and similar asexual morphs with *Dematipyriforma* and *Rhexoacrodictys* (Dong et al. 2021a).

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(Edited by **Sajeewa Maharachchimbura and Kevin D. Hyde**)

Note 571 ***Luteochaete***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Luteochaete C.C. Chen & Sheng H. Wu

Based on molecular and morphological data, Chen et al. (2021a) recognized *Luteochaete* as a new genus within *Meruliaceae* and presented a subsequent new combination, namely *Luteochaete subglobosa* (Oblg. Syn. *Phanerochaete subglobosa*, conspecific with *Phlebia wuliangshanensis*). The type specimen was isolated from the bark, possibly as a saprobe, of living *Melaleuca leucadendron* in Taiwan Island and the species is also recorded in Brazil. It is characterized by clamps either totally absent or scattered, effuse basidiocarps, a monotimic hyphal system, the presence of lamprocystidia, and a smooth hymenophore. The type *L. subglobosa* is morphologically close to *Phaeophlebiopsis* and *Phlebiopsis* (*Phanerochaetaceae*), but differs in having greenish-yellow basidiocarps in KOH. This can easily explain the erroneous identification of two sequenced specimens initially labelled *Phlebiopsis* cf. *ravenelii* and that were found to be sister to *L. subglobosa* in the ML analysis of Chen et al. (2021a) based on a combination of ITS and LSU markers. These newly labelled *Luteochaete* specimens have not been described yet and might represent a new clade occurring in North America. Further investigations towards the morphological and molecular description of *Luteochaete* species representatives should allow new insights into the diversity, phylogeography, as well as host interactions, and specificity among *Meruliaceae*.

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Note 572 *Microconidiobolus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Microconidiobolus B. Huang & Y. Nie

Microconidiobolus was introduced by Nie et al. (2020), alongside *Capillidium*, *Neoconidiobolus* and *Conidiobolus sensu stricto*, based on morphology and multi-locus phylogenetic analyses (LSU, SSU, and *EF1α*) as part of a re-evaluation and delimitation of the polyphyletic genus *Conidiobolus sensu lato*. This genus contains three species, namely *M. nodosus*, *M. paulus* (syn. *M. undulatus*) and *M. terrestris*, and is supported by both molecular and morphological data. The clade containing *Microconidiobolus* species was placed as a sister group of *Conidiobolus sensu stricto*, a position confirmed using the combination of LSU, *tef1-α*, SSU (Cai et al. 2021b) and LSU (Möckel et al., 2022). Species of *Microconidiobolus* mainly differ from *Conidiobolus* species by producing smaller primary conidia without microspores or capilliconidia. The first mitochondrial genome of the genus (GenBank accession number MW_795365) was generated by Cai et al. (2021a) from the mycelia of *M. nodosus*. Their phylogenetic tree constructed by maximum likelihood and based on 14 translated mitochondrial genomes placed *M. nodosus* as a sister clade of *Conidiobolus* sp., supporting its placement in *Entomophthoromycotina*. Yang et al. (2022d) and Nie et al. (2021) integrated the mitogenome of *M. nodosus* in phylogenetic reconstructions based on 14 mitochondrion-encoded proteins and found a similar well-supported placement. This genus illustrates the combined use of multi-loci and wide-genome molecular markers in the identification and phylogenetic assessment of fungal taxa.

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Entry by Jonathan Cazabonne, Groupe de Recherche en Écologie de la MRC Abitibi, Université du Québec en Abitibi-Témiscamingue, Amos, QC, Canada

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Note 573 *Neodictyosporium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodictyosporium Tennakoon, C.H. Kuo & K.D. Hyde

Tennakoon et al. (2021b) introduced *Neodictyosporium* within *Sordariales* genera *incertae sedis* with *N. macarangae* as the type species. This monotypic saprobic genus was associated with dead leaf petioles of *Macaranga tanarius* in Taiwan Island. As the genus develops cheirosporous conidia (hand-like) (Goh 1999, Boonmee et al. 2016a), the morphology of *Neodictyosporium* resembles *Dictyosporium*. Though the conidia of *Dictyosporium* is hyphomycetous and form directly on mycelia or substrate (Boonmee et al. 2016a), the conidia of *Neodictyosporium* form in pycnidia. *Neodictyosporium* possesses two types of conidia, namely cheirosporous conidia (type I) and clavate to obovoid conidia (type II) (Tennakoon et al. 2021b). According to the phylogenetic analyses of Tennakoon et al. (2021b), *Neodictyosporium* nested in-between *Acrodictys* and *Platytrachelon* within *Sordariomycetes*. *Neodictyosporium* could be distinguished from the above mentioned genera in having two types of conidia (cheirosporous conidia and clavate to obovoid conidia), whereas *Acrodictys* produces broadly clavate, obovoid to pyriform, muriform conidia (Luo et al. 2019) and *Platytrachelon* has cylindrical, one-celled, strongly curved conidia (Réblová 2013). We place it in *Sordariomycetidae* genus *incertae sedis* where it is most closely related to *Xylomelasma sordida*, although this is tentative as a detailed phylogenetic study is needed.

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Note 574 *Zaanenomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Zaanenomyces Crous & Osieck

Zaanenomyces was established in *Tubeufiaceae* (*Tubeufiales*, *Dothideomycetes*) by Crous et al. (2021e) based on morphological and phylogenetic evidence. This genus includes three species, *viz*. *Zaanenomyces moderatricis-academiae*, *Z. quadripartis* and *Z. versatilis*. All were collected from dead culms of *Juncus* spp. in the Netherlands, presumably saprobes. This hyphomycetous genus can be distinguished from other genera in *Tubeufiaceae* by their solitary, narrowly obclavate, straight to flexuous, septate and hyaline conidia, with subobtuse apex and obconically truncate base.

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Entry by Yong-Zhong Lu, School of Food and Pharmaceutical Engineering, Guizhou Institute of Technology, Guiyang 550003, P.R. China.

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Note 575 *Melanodevriesia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Melanodevriesia H.L. Si, W.Q. Cao & T. Bose

Chang et al. (2022) introduced *Melanodevriesia* within *Xenodevriesiaceae* with the type species *M. melanelixia* based on maximum likelihood analysis of the ITS and LSU nucleotide alignment. The monotypic genus was associated with medullary tissue of *Melanelixia subargentifera* (*Parmeliaceae*) as an endolichenic fungi in terrestrial habitats in Nei Mongol, China. It was described based on its two thallus morphologies, branched, septate, hyaline to brown, guttulate pseudohyphae in a yeast-like state and branched, septate, cylindrical, hyaline to pale brown hyphae and spherical to ovoid, monilioid chlamydospores in the mycelial state. *Melanodevriesia* is an endolichenic, oleaginous black yeast genus that may allow lichens to flourish in harsh environments (Crous et al. 2009, Gostinčar et al. 2012, Chang et al. 2022). Phylogenetically, *Melanodevriesia melanelixiae* was allied with *Xenodevriesia strelitziicola*, isolated from a *Strelitzia* sp. (*Strelitzianaceae*) in South Africa and formed a sister group within the family *Xenodevriesiaceae* (Crous et al. 2009, 2019a). The clustering demonstrated that the LSU gene was the only significant gene to delimit this family (Chang et al. 2022). However, *Melanodevriesia* can be distinguished by its yeast-like and mycelial morphologies and chlamydospores produced only in *Melanodevriesia* (Crous et al. 2019a, Chang et al. 2022).

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Note 576 *Crassoascoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crassoascoma Jian K. Liu

Crassoascoma is a monotypic genus in *Lentitheciaceae* (*Pleosporales*, *Dothideomycetes*). This genus was introduced by Liu et al. (2022h) to accommodate *C. potentillae* which was collected from living and decaying branches of *Potentilla fruticosa* in Qinghai-Tibet Plateau, China. Phylogenetically, *Crassoascoma* has a close affiliation with *Darksidea*. *Crassoascoma* however, is distinct from *Darksidea* in its ascomata and ascospore characteristics (Liu et al. 2022h). Within *Lentitheciaceae* members, *Crassoascoma* resembles *Lentithecium* (i.e. *L. fluviatile*) by its hyaline ascospores with large guttules (Zhang et al. 2012). However, their ascomata are different, wherein *Crassoascoma* has globose ascomata with setae around the ostioles, while *Lentithecium* has lenticular ascomata without setae. *Crassoascoma* has similar morphology to *Amniculicola*, *Ligninsphaeria*, *Neomassarina* and *Vaginatispora* based on the ascomata, asci and ascospore features (Wanasinghe et al. 2016, Zhang et al. 2016, Hongsanan et al. 2020a, but these genera are phylogenetically distant. No asexual morph was established.

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Note 577 ***Prathigadoides***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Prathigadoides M. Bakhshi, Zare & U. Braun

Bakhshi et al. (2021) introduced a cercosporoid genus, *Prathigadoides*, with its type species *P. gleditsiae-caspicae*. This monotypic genus was associated with *Gleditsia capsica* (*Fabaceae*) as a phytopathogen in terrestrial habitats in Iran. *Prathigadoides* is characterized by fasciculate, subcylindrical, brown conidiophores, polyblastic conidiogenous cells with a protuberant conidiogenous cell, subcylindrical to obclavate, usually distinctly rostrate conidia with a thickened and darkened hilum (Bakhshi et al. 2021). It is similar to several passalora-like species, such as *Cercospora condensata*, *Passalora condensata* and *Prathigada condensata*, but differs in having finely verruculose conidiophores with wider conidiogenous loci, shorter conidia with numerous dense septa and narrower hila (Braun et al. 2013, Bakhshi et al. 2021). The placement of *Prathigadoides* is supported as a monophyletic lineage within the *Mycosphaerellaceae* based on Bayesian analysis of LSU, ITS and *rpb2* sequence data, although similar to species, previously assigned to *Prathigada*, clustered in a separate clade within *Mycosphaerellaceae*, resulting in a genus of its own (Bakhshi et al. 2021).

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Note 578 ***Paraphomopsis***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paraphomopsis Udayanga & Castl.

Phylogenetic analyses (Udayanga et al. 2021) showed that the strawberry leaf blight taxon *Phomopsis obscurans* does not belong in *Diaporthaceae* but rather forms a separate lineage in *Melanconiellaceae*. Therefore, a new genus was introduced to accommodate this taxon, synonymizing it as *Paraphomopsis obscurans*. The new genus, which is so far only known in its asexual morph, is also distinct from the phylogenetically close taxa in *Melanconiellaceae* with known asexual morphs (Farr et al. 2001, Voglmayr et al. 2012, Udayanga et al. 2021). Furthermore, while the conidia of *Paraphomopsis* superficially resemble those of *Diaporthe* (= *Phomopsis*), thorough morphological examination has shown that the conidia of *Paraphomopsis* are fusiform and minutely guttulate towards the ends of the conidia while the conidia of *Diaporthe* are ovate to clavate and usually have two or more prominent guttules or are aguttulate (Udayanga et al. 2021).

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Note 579 ***Isthmomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Isthmomyces Z.F. Yu, M. Qiao & R.F. Castañeda

Isthmomyces was introduced by Qiao et al. (2021b), typified by the saprobic *Isthmomyces oxysporus* as the type species, and was collected from an aquatic habitat in southern China. The hyphomycetous genus *Isthmomyces* is similar to *Isthmolongispora* in having polyblastic, denticulate, sympodial conidiogenous cells and fusiform isthmo-conidia. However, *Isthmomyces* differs from *Isthmolongispora* in having schizolytic, while *Isthmolongispora* has rhexolytic conidial secession (Qiao et al. 2021b). According to the phylogenetic analysis based on LSU and ITS sequence data, *Isthmomyces* is placed in *Microthyriales* (Qiao et al. 2021b).

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Note 580 *Aquapteridosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aquapteridosporaceae K.D. Hyde & Hongsanan

The monotypic family *Aquapteridosporaceae* was introduced by Hyde et al. (2021) in *Distoseptisporales* to accommodate the genus *Aquapteridospora*, established by Yang et al. (2015). Phylogenetic analysis showed that *Aquapteridospora* forms a districted and stable clade within *Distoseptisporales*, sister to *Distoseptisporaceae*. Furthermore, the divergence time estimates of this *Aquapteridospora* falls within a family range (50–130 MYA); therefore, Hyde et al. (2021) introduced the *Aquapteridosporaceae* as a new family. Four species are known so far from *Aquapteridosporaceae*, and both are isolated from freshwater habitats.

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Note 581 *Cancellidiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cancellidiaceae K.D. Hyde & Hongsanan

The family *Cancellidiaceae* (*Cancellidiales*) was introduced by Hyde et al. (2021a) to accommodate the genus *Cancellidium*, which was established by Tubaki (1975). The stem age of *Cancellidiaceae* is around 137 MYA, which falls within the range of a family. Species of *Cancellidiaceae* are saprobic on wood and twigs in freshwater habitats and only known from unique, large, flattened, fan-shaped conidial asexual morphs (Hyde et al. 2021a). Presently six modern species are accommodated in *Cancellidium* (Cai et al. 2006, Dong et al. 2021b, Hyde et al. 2021a).

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Note 582 *Ceratolentaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ceratolentaceae K.D. Hyde & Hongsanan

The family was introduced by Hyde et al. (2021a) to accommodate the monotypic genus *Ceratolenta*, which was typified by *C. caudata* (Réblová et al. 2013). Phylogenetically *Ceratolenta* is closely related to the *Bullimyces* (Réblová et al. 2013, Maharachchikumbura et al. 2015, Luo et al. 2019). The two genera can be distinguished from each other by their paraphyses, asci and ascospore characters (Hyde et al. 2021a). Therefore, based on these morphological differences and their divergence estimates within the family range, Hyde et al. (2021a) introduced a new family *Ceratolentaceae*, in order *Ceratolentales* to represent the genus *Ceratolenta*.

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Note 583 *Brunneosporopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Brunneosporopsis Maharachch. & Wanas.

Brunneosporopsis is a saprobic genus introduced by Maharachchikumbura et al. (2022c) comprising a single species *Brunneosporopsis yunnanensis*. It has arthrinium-like asexual morphs, which are characterized by micronematous conidiophores, enteroblastic conidiogenous cells, and globose to subglobose, or ovoid, dark brown to black conidia (Maharachchikumbura et al. 2022c). The sexual morph has not been established. *Brunneosporopsis* is placed in the *Diaporthomycetidae* genera *incertae sedis* based on phylogenetic analyses (Maharachchikumbura et al. 2022c).

Reference

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(Edited by **Kevin D. Hyde**)

Note 584 *Yuxiensis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Yuxiensis Bundhun & K.D. Hyde

Yuxiensis was introduced by Bundhun et al. (2021) to accommodate a taxon in *Scortechiniaceae* (*Coronophorales*, *Sordariomycetes*) based on morphology together with phylogenetic inference from the analyses of LSU, ITS, *tef1-α* and *rpb2* sequence data. This genus was collected from decaying wood, presumably as a saprobe, from Yunnan Province, China and is typified by *Y. granularis*. It is phylogenetically close to *Euacanthe*; but differs from *Euacanthe* in terms of ascomatal position, surface and ascospore ornamentation. In addition, *Yuxiensis* has a close phylogenetic affinity to *Pseudocatenomycopsis*, but this genus is only known in its asexual morph. Thus, *Pseudocatenomycopsis* cannot be compared with closely related *Yuxiensis* species (Bundhun et al. 2021).

Reference

Bundhun D, Wanasinghe DN, Maharachchikumbura SSN, Bhat DJ et al. – 2021. *Yuxiensis granularis* gen. et sp. nov., a novel quellkörper- bearing fungal taxon added to *Scortechiniaceae* and inclusion of *Parasympodiellaceae* in *Coronophorales* based on phylogenetic evidence. Life 11(10).

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(Edited by **Sajeewa Maharachchimbura & Kevin D. Hyde**)

Note 585 *Halocryptosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Halocryptosphaeria Dayarath., Devadatha, V.V. Sarma & K.D. Hyde

Based on analysis of combined ITS and *tub2* sequence data, Dayarathne et al. (2020a) introduced *Halocryptosphaeria* to accommodate *H. bathurstensis* (≡ *Eutypa bathurstensis*) previously reported as a saprobe from a marine habitat in Australia by Hyde & Rappaz (1993). *Halocryptosphaeria* with *H. bathurstensis* as the type was re-collected from decaying wood of *Avicennia marina* in India, also presumably as a saprobe (Dayarathne et al. 2020a). *Halocryptosphaeria* is known from it sexual state, and is characterized by a poorly developed entostroma, dorsally limited by a black zone binding the stromatic area, submerged or occasionally deeply buried long necked ascomata and olive-brown, aseptate ascospores. *Halocryptosphaeria* resembles *Halodiatrype*; however, the phylogenetic evidence obtained from the analysis of ITS and *tub* sequence data show it as a distinct lineage (Dayarathne et al. 2020a). Based on phylogenetic inferences from analysis of ITS and *tub* datasets, *Halocryptosphaeria bathurstensis* had been transferred to *Cryptosphaeria bathurstensis* (K.D. Hyde & Rappaz) Dayar. & K.D. Hyde, in Dayarathne et al. (2020b). The taxonomic placement of *Halocryptosphaeria* is in *Diatrypaceae* (*Xylariales*, *Sordariomycetes*).

References

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Dayarathne MC, Wanasinghe DN, Devadatha B, Abeywickrama P et al. 2020b – Modern taxonomic approaches to identifying Diatrypaceous fungi from marine habitats, with a novel genus *Halocryptovalsa* Dayarathne & K.D. Hyde, gen. nov., Cryptogamie, Mycologie 41(3), 21–67.

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Note 586 ***Stilbochaeta***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Stilbochaeta Réblová & Hern.-Restr.

Réblová et al. (2021b) proposed *Stilbochaeta* for eight species formerly classified in *Codinaea* and *Dictyochaeta* which are presumably saprobes. All species are verified by molecular data. The sexual morph of *Stilbochaeta* is characterized by perithecial, globose to subglobose, papillate, dark brown, setose ascomata with ostioles, unitunicate, cylindrical-clavate asci, and fusiform, hyaline, septate ascospores, while asexual morph has macronematous, mononematous, brown, unbranched conidiophores, phialidic conidiogenous cells, and falcate, oblong-falcate, ellipsoidal-fusiform, hyaline, aseptate or septate conidia with a setula at each end (Réblová et al. 2021b). A synopsis with diagnostic features was provided by Réblová et al. (2021b).

Reference

Réblová M, Kolařík M, Nekvindová J, Réblová K et al. 2021b – Phylogenetic reassessment, taxonomy, and biogeography of *Codinaea* and similar fungi. Journal of Fungi 7, 1097.

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(Edited by: **Kevin D. Hyde**)

Note 587 ***Paracymostachys***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paracymostachys Crous

Paracymostachys was introduced by Crous et al. (2021c) to accommodate *P. euphorbiae* (type species) in *Stachybotryaceae* (Lombard et al. 2016). This presumed saprotrophic fungus was associated with leaf litter of *Euphorbia ingens* (*Euphorbiaceae*) from South Africa. *Paracymostachys* resembles *Cymostachys*, but can be distinguished by having smooth, mainly unbranched conidiophores, and fusoid to rarely subcylindrical conidia. This genus remains monotypic and can be distinguished from other genera in *Stachybotryaceae* by morphology and phylogenetic analysis (ITS, LSU, *cmdA*, and *rpb2* markers).

References

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Lombard L, Houbraken J, Decock C, Samson RA et al. 2016 – Generic hyper-diversity in *Stachybotryaceae*. Persoonia 36, 156–246.

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Note 588 ***Morinagamyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Morinagamyces Y. Marín & Stchigel

Morinagamyces was introduced by Harms et al. (2021) to accommodate the taxon *Apiosordaria vermicularis* based on analysis of sequences of ITS, LSU, *rpb*2, and *tub2* markers. This taxon was primarily isolated from soil in Hong Kong. *Morinagamyces* is most similar to *Echria* and *Rinaldiella*, but the latter have ostiolate ascomata and do not produce asexual morphs, while *Morinagamyces* has non-ostiolate ascomata. *Echria* is distinguishable by the production of one-celled roughened or smooth-walled ascospores; and *Rinaldiella* produces two-celled warted ascospores with the upper cell having five-angled in side view. *Morinagamyces* is monotypic and typified by *M. vermicularis* with phylogenetic placement in *Schizotheciaceae* (Marin-Felix et al. 2020).

References

Harms K, Surup F, Stadler M, Stchigel AM et al. 2021 – Morinagadepsin, a depsipeptide from the fungus *Morinagamyces vermicularis* gen. et comb. nov. Microorganisms 9(1191), 1–16.

Marin-Felix Y, Miller AN, Cano-Lira JF, Guarro J et al. 2020 – Re-evaluation of the order *Sordariales*: Delimitation of *Lasiosphaeriaceae* s. str., and introduction of the new families *Diplogelasinosporaceae, Naviculisporaceae* and *Schizotheciaceae*. Microorganisms 8, 1430.

Entry by Josiane S. Monteiro, Instituto Tecnológico Vale, CEP 66055-090, Belém, PA, Brazil/Coordenação de Botânica, Museu Paraense Emílio Goeldi, CEP 66077-830, Belém, PA, Brazil.

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Note 589 ***Tainosphaeriella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tainosphaeriella Réblová & Hern.-Restr.

Tainosphaeriella was introduced for two former *Tainosphaeria* species by Réblová et al. (2021b) who confirmed they were unrelated to the *Tainosphaeria* clade in their phylogenetic study. *Tainosphaeriella* is characterized by macronematous, mononematous, brown, unbranched conidiophores, phialidic conidiogenous cells, and falcate, cylindrical to fusiform or ellipsoidal-fusiform, hyaline or laurel green, septate conidia with a setula at each end (Li et al. 2021a, Réblová et al. 2021b). Its sexual morph has not been reported. *Tainosphaeriella* were reported from freshwater habitats in Thailand and is presumably a saprobe.

References

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Réblová M, Kolařík M, Nekvindová J, Réblová K et al. 2021b – Phylogenetic reassessment, taxonomy, and biogeography of *Codinaea* and similar fungi. Journal of Fungi 7, 1097.

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Note 590 *Xyladelphia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xyladelphia Réblová, A.N. Mill. & Hern.-Restr.

Xyladelphia was introduced by Réblová et al. (2021b) based on a single species *Xyladelphia longiseta*. The sexual morph of *Xyladelphia* is characterized by perithecial, subglobose to broadly ovoid, papillate, setose ascomata with ostioles, unitunicate, cylindrical-clavate asci, and broadly fusiform to ellipsoidal, hyaline, aseptate or transversely septate ascospores, while the asexual morph has macronematous, mononematous, brown, unbranched conidiophores, phialidic conidiogenous cells, falcate to fusiform, hyaline, aseptate macroconidia and ellipsoidal, hyaline to pale brown, aseptate microconidia (Réblová et al. 2021b). *Xyladelphia* was distantly related to similar taxa in the phylogenetic analyses (Réblová et al. 2021b).

Reference

Réblová M, Kolařík M, Nekvindová J, Réblová K et al. 2021b – Phylogenetic reassessment, taxonomy, and biogeography of *Codinaea* and similar fungi. Journal of Fungi 7, 1097.

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Note 591 *Paradinemasporium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paradinemasporium Crous & Osieck

Crous et al. (2021e) introduced *Paradinemasporium* as a monospecific genus to accommodate *P. junci* isolated on dead culm of *Juncus effusus* (*Juncaceae*) from the Netherlands. *Paradinemasporium* is presumably a saprobe and is distinct from related taxa in having stromatic, acervuloid, mostly solitary, setose conidiomata, straight, multi-septate, brown, unbranched, thick-walled, fertile at apex, with flared collarette setae arising from basal stroma, hyaline, smooth-walled, branched, septate conidiophores, phialidic, subcylindrical, hyaline to subhyaline, smooth-walled conidiogenous cells with flared collarette at the apex, and fusoid to subcylindrical, hyaline, smooth-walled, guttulate, 1-septate conidia with 2–3 excentric appendages at the apex and with a single central appendage at the base. ITS phylogeny showed that the genus is basal to the family *Chaetosphaeriaceae* (*Chaetosphaeriales*).

Reference

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

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Note 592 *Paramicrothecium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramicrothecium Crous, Krimhilde Müll., Siepe, Reul & Osieck

Paramicrothecium was introduced by Crous et al. (2021e) to accommodate *P. sambuci* collected on dead stem of *Sambucus ebulus* from Germany. The presumably saprobic genus is characterized by superficial to immersed, globose solitary ascomata, of *textura epidermoidea* on surface, of 3–6 layers of *textura prismatica* peridium, covered with short, stubby, thick-walled setae, unitunicate, clavate to subcylindrical, asci with a long stipe and (2–)4(–6)-spored, and ellipsoid, medium brown, becoming dark brown, smooth- and thick-walled ascospores with 2–3 large guttules, and a large refractive germ pore at each polar end. The hyphomycetous asexual morph is characterized by reduced conidiophores to conidiogenous cells in singly or more commonly in clusters, hyaline, smooth-walled conidiogenous cells arising from superficial mycelium, ampulliform, consisting of an obovoid venter, and a cylindrical neck, and smooth- and thin-walled, guttulate, aseptate, shortly clavate conidia with an obtuse apex, tapering to a truncate hilum, produced in short, false chains that slime down into a globoid mass. LSU phylogeny showed that *Paramicrothecium* clustered with *Melanospora* and *Gonatobotrys*, but as a distinct clade in *Ceratostomataceae* (*Coronophorales*).

Reference

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

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Note 593 *Nimesporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nimesporella Réblová & Hern.-Restr.

Nimesporella is a monotypic genus based on *Nimesporella capillacea* (Réblová et al. 2021b). *Nimesporella* is closely related to *Codinaea* but without significant statistical support in the phylogenetic analyses performed in Réblová et al. (2021b). This genus is characterized by macronematous, mononematous, brown, unbranched conidiophores, polyphialidic conidiogenous cells, and ellipsoidal, hyaline, aseptate conidia with a setula at each end (Réblová et al. 2021b) It is saprobic occurring in freshwater and terrestrial habitats.

Reference

Réblová M, Kolařík M, Nekvindová J, Réblová K et al. 2021b – Phylogenetic reassessment, taxonomy, and biogeography of *Codinaea* and similar fungi. Journal of Fungi 7, 1097.

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Note 594 *Obliquifusoideum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Obliquifusoideum W. Dong, Doilom & K.D. Hyde

The monotypic genus *Obliquifusoideum* was found on decayed wood in freshwater in

Thailand (Dong et al. 2021a). *Obliquifusoideum guttulatum* has an unstable placement. In LSU-SSU-ITS-*RPB2* analysis, it is sister to *Pleurotheciales* with poor support, and in single gene (LSU and ITS) analyses, *Obliquifusoideum* clusters with *Savoryellales* (Dong et al. 2021a). The dark ascomata with a lateral neck in *Obliquifusoideum* resemble *Helicoascotaiwania* in *Pleurotheciales* and *Ascotaiwania*, *Neoascotaiwania* and *Savoryella* in *Savoryellales*. The asexual morph of *Obliquifusoideum* is undetermined (Dayarathne et al. 2019, Dong et al. 2021a, Réblová et al. 2020a, Sivanesan & Chang 1992). *Obliquifusoideum guttulatum* has fusoid and hyaline ascospores, whereas the other four genera have ellipsoidal and pigmental ascospores (Dong et al. 2021a). Thus, Dong et al. (2021) place *Obliquifusoideum* in *Savoryellomycetidae* genera *incertae sedis*. More collection and sequence data are essential for a place this genus in its natural classification.

References

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Dong W, Jeewon R, Hyde KD, Yang EF et al. 2021a – Five novel taxa from freshwater habitats and new taxonomic insights of *Pleurotheciales* and *Savoryellomycetidae*. Journal of Fungi 7(9), 711.

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Sivanesan A, Chang H. 1992 – *Ascotaiwania*, a new amphisphaeriaceous ascomycete genus on wood from Taiwan. Mycological Research 96, 481–484.

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Note 595 *Ceratolentales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ceratolentales K.D. Hyde & Hongsanan

Ceratolentales was introduced by Hyde et al. (2021a) to accommodate two new families, *Bullimycetaceae* and *Ceratolentaceae*. The order forms a distinct clade in *Sordariomycetes* with a divergence estimate of 147 MYA, which falls within the order range. Phylogenetically it is closely related to the order *Distoseptisporales*. Members of *Ceratolentales* include both freshwater and terrestrial taxa that are saprobic on submerged, dead woody debris or decaying deciduous wood (Hyde et al. 2021a). So far, the members of the order are only known from their sexual morph, which is characterised by astromatic, immersed to erumpent ascomata and some species with a long neck; 8-spored, unitunicate, long-stipitate asci and uni- or biseriate, fusiform and hyaline ascospores (Hyde et al. 2021a).

Reference

Hyde KD, Bao DF, Hongsanan S, Chethana KWT et al. 2021a – Evolution of freshwater *Diaporthomycetidae* (*Sordariomycetes*) provides evidence for five new orders and six new families. Fungal Diversity 107, 71–105.

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Note 596 *Conlariales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Conlariales K.D. Hyde & Hongsanan

The order *Conlariales* (*Sordariomycetes*) was introduced by Hyde et al. (2021a) to accommodate the family *Conlariaceae*, which was previously placed in the order *Atractosporales* (Zhang et al. 2017). Hyde et al. (2021a) showed that this family formed a distinct clade, and the divergence time estimates of this family fall within an order range. Phylogenetically it is closely related to the *Atractosporales* and *Junewangiaceae*. Members of *Conlariales* are characterised by ascomycetous sexual morphs and hyphomycetous asexual morphs that are saprobic on submerged wood in freshwater or grow on soil in terrestrial habitats (Zhang et al. 2017). *Conlariaceae* comprises two genera, *Conlarium* and *Riomyces*, which are important plant decomposers in nutrient cycling (Hyde et al. 2020b).

References

Hyde KD, Bao DF, Hongsanan S, Chethana KWT et al. 2021a – Evolution of freshwater *Diaporthomycetidae* (*Sordariomycetes*) provides evidence for five new orders and six new families. Fungal Diversity 107, 71–105.

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Note 597 *Rhamphoriales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Rhamphoriales K.D. Hyde & Hongsanan

The order *Rhamphoriales* was introduced to the class *Sordariomycetes* by Hyde et al. (2021a) to accommodate the family *Rhamphoriaceae* which was established by Réblová et al. (2018). *Rhamphoriaceae* consists of three genera, *Rhamphoria* (type genus), *Rhamphoriopsis* and *Rhodoveronaea*. *Rhamphoriales* form a distinct clade separate from *Sporidesmiaceae* and are in the range of an order based on divergent time estimation (Hyde et al. 2021a). Species of *Rhamphoriales* are saprobes of decaying wood and are reported mainly from temperate regions of Europe (Hyde et al. 2021a). Members of *Rhamphoriales* are characterised by ascomycetous sexual morphs and hyphomycetous asexual morphs.

References

Hyde KD, Bao DF, Hongsanan S, Chethana KWT et al. 2021a – Evolution of freshwater *Diaporthomycetidae* (*Sordariomycetes*) provides evidence for five new orders and six new families. Fungal Diversity 107, 71–105.

Réblová M, Miller A, Réblová K, Štěpánek V. 2018 – Phylogenetic classification and generic delineation of *Calyptosphaeria* gen. nov., *Lentomitella*, *Spadicoides* and *Torrentispora*

(*Sordariomycetes*). Studies in Mycology 89, 1–62

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(Edited by **Kevin D Hyde**)

Note 598 ***Antidactylaria***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Antidactylaria Z.F. Yu, M. Qiao & R.F. Castañeda

Antidactylaria was introduced by Qiao et al. (2021b) with *Antidactylaria minifimbriata* as the type species. The taxon was collected from aquatic habitats in southern China. *Antidactylaria* is a saprobic hyphomycetous genus and similar to *Dactylaria* in having unbranched, septate, hyaline or pigmented conidiophores, denticulate, integrated, sympodially extending conidiogenous cells and cylindrical, fusiform, unicellular or septate, hyaline or pale pigmented conidia. *Dactylaria* has schizolytic conidial secession, while *Antidactylaria* has rhexolytic conidial secession (Qiao et al. 2021b). According to the phylogenetic analysis of LSU and ITS gene regions, *Antidactylaria* is placed in *Microthyriales*, while *Dactylaria* belongs to *Helotiales* (Qiao et al. 2021b).

Reference

Qiao M, Zheng H, Guo J, Rafael F et al. 2021b – Two new asexual genera and six new asexual species in the family *Microthyriaceae* (*Dothideomycetes*, *Ascomycota*) from China. Mycokeys 85, 1–30.

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Note 599 ***Luteonectria***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Luteonectria Sand.-Den., L. Lombard, Schroers & Rossman

Crous et al. (2021a) introduced *Luteonectria* to accommodate *Nectria albida* and *Fusarium nematophilum*. Combined *rpb2* and *acl* gene analysis also showed that *Nectria albida* clustered within fusaroid taxa, but were distantly related to *Fusarium sensu stricto*. The placement of the new genus in *Nectriaceae* is supported by the combined analysis of ITS, LSU, *rpb1*, *rpb2* and *tef1-α* sequence data (Crous et al. 2021a). The genus is characterized by off- white to pale luteous, KOH negative perithecia, 3-septate, finely striate ascospores and robust multi-septate conidia (Crous et al. 2021a). Buff-coloured perithecia are unique to *Luteonectria* (Crous et al. 2021a). *Luteonectria* is distinct from *Fusarium* in its luteous, thin-walled perithecia and 3-septate, finely striate ascospores, while *Fusarium* has dark blue-violet to black, thick-walled perithecia and 1–3-septate, smooth-walled ascospores (Crous et al. 2021a). *Luteonectria* species inhabit woody substrates, plant roots and soil, in terrestrial habitats (Crous et al. 2021a). *Luteonectria nematophila* is a clinically important plant endophytic species producing anti-tumor compounds and enzymes such as cellulase, glutenase, amylase and protease (Katoch et al. 2017, Qin et al. 2022).

O’Donnell et al. (2022) believed that *Luteonectria* should belong in *Fusarium*. The fusarioid taxa in *Nectriaceae* formed two large groups in phylogenetic analyses (Lombard et al. 2015, Gräfenhan et al. 2011, Crous et al. 2021a, Wang et al. 2022c). Based on phylogenetic analyses and sexual and macroconidial characters, fusarium-like taxa were divided into several genera (Lombard et al. 2015, Crous et al. 2021a, Gräfenhan et al. 2011). The presence of fusarium-like macroconidia within *Nectriaceae* and also outside the family supports the narrow *Fusarium* concept (Crous et al. 2021a). Combined *rpb1*, *rpb2* and *tef1-α* regions were effectively used for delineation of fusaroid taxa in *Nectriaceae* (Gräfenhan et al. 2011, Crous et al. 2021a, Wang et al. 2022c). Therefore, I consider *Luteonectria* as a distinct genus.

References

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Katoch M, Singh A, Singh G, Wazir P, Kumar R. 2017 – Phylogeny, antimicrobial, antioxidant and enzyme-producing potential of fungal endophytes found in *Viola odorata*. Annals of Microbiology 67(8), 529–40.

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Note 600 *Nothofusarium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nothofusarium Crous, Sand.-Den. & L. Lombard

Crous et al. (2021a) introduced *Nothofusarium* to accommodate a single lineage with a fusarium-like asexual morph, characterized by slightly curved and slender, 1–5-septate macroconidia. Only the asexual morph has been reported for this genus. O 'Donnell et al. (2022) believed that *Nothofusarium* is a part of monophyletic *Fusarium sensu lato*. Combined ITS, LSU, *rpb1*, *rpb2* and *tef1-α* revealed that *Nothofusarium* is a unique phylogenetic lineage which is distantly related to *Fusarium sensu stricto* within *Nectriaceae* (Crous et al. 2021a). Therefore, I follow this here. *Nothofusarium* is typified by *N. devonianum*, which is a terrestrial species associated with dead cladodes of *Ruscus aculeatus*.

References

Crous PW, Lombard L, Sandoval-Denis M, Seifert KA et al. 2021a – *Fusarium*: more than a node or a foot-shaped basal cell. Studies in Mycology 98, 100116.

O'Donnell K, Whitaker BK, Laraba I, Proctor RH et al. 2022 – DNA sequence-based identification of *Fusarium*: A work in progress. Plant Disease 106, 1597–1609.

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(Edited by **Sajeewa Maharachchimbura and Kevin D. Hyde**)

Note 601 ***Scolecofusarium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Scolecofusarium L. Lombard, Sand.-Den. & Crous

Crous et al. (2021a) introduced the monotypic genus *Scolecofusarium* based on *Atractium ciliatum*. The genus is characterized by red perithecia, cylindrical asci with ellipsoidal, 1-septate, finely spinulose ascospores and a fusarium-like asexual morph with monophialides producing slender and delicate, almost cylindrical macroconidia (Crous et al. 2021a). O'Donnell et al. (2022) believed that *Scolecofusarium* belongs to the *Fusarium* clade. However, combined analysis of ITS, LSU, *rpb1*, *rpb2* and *tef1-α* sequence data revealed that *Scolecofusarium* is a unique phylogenetic lineage in *Nectriaceae* (Crous et al. 2021a) and I follow this here. *Scolecofusarium* can be clearly differentiated from *Fusarium* by its red, thin-walled perithecia and finely striate ascospores, while *Fusarium* possess dark blue-violet to black, thick-walled perithecia and smooth-walled ascospores (Crous et al. 2021a). *Scolecofusarium ciliatum* is a plant pathogen causing branch cankers, as well as an endophyte of mangrove roots and is also associated with scale insects (Thorati et al. 2016, Crous et al. 2021a).

References

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Thorati M, Mishra JK, Kumar S. 2016 – Isolation, identification of endophytic Fungi from mangrove roots along the coast of South Andaman Sea, Andaman and Nicobar Islands. India. Journal of Marine Biology & Oceanography 5(2).

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Note 602 ***Kusaghiporia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kusaghiporia J. Hussein, S. Tibell & Tibuhwa

A new genus, now with two species, was introduced by Hussein et al. (2018) with the type *Kusaghiporia usambarensis*. Phylogeny based on a dataset of LSU + SSU + *tef1-α* + *rpb2* formed a well- supported separate clade within the family *Laetiporaceae* of *Agaricomycetes*. The type was at the base of the trees of *Maesopsis eminii* and *Ficus natalensis* in East Africa, and the species grows both on dry and green leaves of shrubs, attached to the base of living trees. It was also observed to degrade dead snakes and insects accidentally coming into contact with it. Basidiospores infect the substrate and mycelia grow in wood, and finally produce fruiting bodies. Basidioma are annual, spathulate, viscid when young, at maturity saucer-shaped, bumpy, and have a spongy surface. The upper surface is mottled dark brown with creamy patches. The hyphal system is dimitic, with simple septa on generative, gloeoplerous hyphae and basidiospores are hyaline, globose to subglobose, thin and smooth-walled and IKI-. The taxon causes brown rot.

Reference

Hussein JM, Tibuhwa DD, Tibell S. 2018 – Phylogenetic position and taxonomy of *Kusaghiporia* *usambarensis* gen. et sp. nov. (*Polyporales*). Mycology 9, 136–144.

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Note 603 *Sclerotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sclerotus Xavier de Lima

A new genus, with a single species *Sclerotus extensus* (Lév.) Xavier de Lima, was introduced by Xavier de Lima et al. (2022). *Sclerotus* is characterized by strongly ventricose hymenial setae, and a black line that is exposed as a dark crust on the pilear surface after the tomentum wears away. Phylogeny based on a dataset of LSU + ITS formed a weakly-supported separate clade within the family *Hymenochaetaceae* and sister to the clade of *Sanghuangporus/Tropicoporus*. *Sclerotus extensus* grows on fallen trunks or rotten wood of many angiosperms in Neotropical areas. Basidiospores infect the substrate and mycelia grow in wood, and finally produce fruiting bodies. Basidiocarps are perennial, pileate, and solitary and the pileal surface is reddish-brown to black and tomentose. A black crust is present under the tomentum, which is concentrically sulcate and cracked with age. The pore surface is yellowish to dark brown, the context is duplex with a black line and the hyphal system is dimitic, with simple septa on generative, hymenial setae strongly ventricose and basidiospores are subglobose to globose, pale yellow and thick-walled. The genus causes white rot. The species was treated as *Tropicoporus extensus* by other authors. Asexual morph unknown.

Reference

Xavier de Lima V, Oliveira VRT, Lima-Júnior NC, Oliveira-Filho JRC et al. 2022 – Taxonomy and phylogenetic analysis reveal one new genus and three new species in *Inonotus s.l.* (*Hymenochaetaceae*) from Brazil. Cryptogamie, Mycologie 43, 1–21.

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Note 604 *Bullimycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Bullimycetaceae K.D. Hyde & Hongsanan

The family was introduced by Hyde et al. (2021a) to accommodate *Bullimyces*, which was introduced by Ferrer et al. (2012). The genus comprised of *B. aurisporus*, *B. communis and B. costaricensis*. Phylogenetic analysis showed that taxa of *Bullimyces* clustered with *Ceratolenta* forming a distinct clade within *Ceratolentales* which falls within a family range (81 MYA) (Hyde et al. 2021a). So far, three species are known from *Bullimycetaceae* and are saprobic on submerged, dead woody debris and are only known from their sexual morphs (Hyde et al. 2021a).

References

Ferrer A, Miller AN, Sarmiento C, Shearer CA. 2012 – Three new genera representing novel lineages of *Sordariomycetidae* (*Sordariomycetes*, *Ascomycota*) from tropical freshwater habitats in Costa Rica. Mycologia 104, 865–879

Hyde KD, Bao DF, Hongsanan S, Chethana KWT et al. 2021a – Evolution of freshwater *Diaporthomycetidae* (*Sordariomycetes*) provides evidence for five new orders and six new families. Fungal Diversity 107, 71–105.

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Note 605 *Neoechinodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoechinodiscus Molinari & R. Sierra

The genus *Neoechinodiscus* provides a nom. nov. for the illegitimate *Echinodiscus* Etayo & Diederich 2000 (non *Echinodiscus* Benth. 1838, *Leguminosae*) (Sierra & Molinari-Novoa 2020). The two species in the genus are lichenicolous fungi, the type species *N. lesdainii* (Vouaux) R. Sierra & Molinari (basionym *Phacopsis lesdainii* Vouaux) reported on *Lecania*, with *N. kozhevnikovii* (Zhurb.) Sierra & Molinari-Novoa (2020) (basionym *Echinodiscus kozhevnikovii* Zhurb.) reported on *Cetraria*. *N. lesdainii* is known from Europe (British Isles, France, and Sweden), *N. kozhevnikovii* from the arctic of northern Eurasia. Placed in *Leotiales* by Etayo & Diederich (2000), there is no DNA sequence data available for the genus. The very simple morphology of the apothecia and asci with an undifferentiated apical wall, mean that there is little evidence these fungi really are *Leotiomycetes*, perhaps better regarded as *Pezizomycotina incertae sedis*.

Reference

Etayo J, Diederich P. 2000 – *Echinodiscus lesdainii* gen. et comb. nov., a new name for *Phacopsis lesdainii* Vouaux (lichenicolous *Ascomycetes*, *Leotiales*). Bulletin de la Société des Naturalistes Luxembourgeois 100, 63–66.

Sierra R, Molinari-Novoa EA. 2020 – *Neoechinodiscus*, a new name for *Echinodiscus* Etayo & Diederich (lichenicolous *Helotiales*). Opuscula Philolichenum 19, 172–173.

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Note 606 *Scolecoleotia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Scolecoleotia H.B. Jiang, Phookamsak & K.D. Hyde

First described in Boonmee et al. (2021), the type species of this monotypic genus, *Scolecoletia eriocamporesi* H.B. Jiang, Phookamsak & K.D. Hyde, is known only from its asexual state on dead fronds of *Pteridium aquilinum* from Italy. A phylogeny based on concatenated ITS and LSU sequences place it within *Leotiales*, but with no clear family-level relationship. Phylogenetically it is very close to a set of unnamed species isolated as endophytes from living fronds of the fern *Polystichum* and leaves of *Alnus* in North America, with sequences accessioned into GenBank as 'Leotiomycetes sp. BY-2018a', b, c, and d (Younginger & Stewart 2018, unpublished). The Younginger & Stewart isolates also have *tub*, *rpb1*, and *rpb2* sequences available and based on the data from these genes, these fungi appear to represent an unnamed family level clade within *Leotiales* (P.R. Johnston, unpubl. data, https://doi.org/10.7931/gx9a-c781 as 'Catenaspora'). Boonmee et al. (2021) discuss the morphological similarity between *Scolecoletia* and *Gelatinosporium*, a genus with no DNA sequence data available. They also discuss phylogenetic relationships between their new species, *Dicephalospora*, and *Unguicularia*, but these latter comparisons are based on sequences from misidentified specimens (unpubl. data, P.R. Johnston), with these two genera belonging in *Helotiales*.

Reference

Boonmee S, Wanasinghe DN, Calabon MS et al. 2021 – Fungal diversity notes 1387–1511: taxonomic and phylogenetic contributions on genera and species of fungal taxa. Fungal Diversity 111, 1–335.

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(Edited by **Kevin D Hyde**)

Note 607 *Fallacidiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Fallacidiscus U. Lindem., Roffler & Van Vooren

Fallacidiscus is a presumably saprobic genus placed in *Pyronemataceae* (*Pezizales*, *Pezizomycetes*). It was found on sandy soil near rivers where mosses grew, but the actual lifestyle has not been revealed due to the limitation of two collections localities in Switzerland (Lindemann et al. 2022b). There is only a single species, *Fallacidiscus helveticus*, which is the type species. *Fallacidiscus* represented by two *F. helveticus* strains grouped with *Spaniodiscus* and *Chaetothiersia* with 94% ML-BP support and formed a polytomous clade based on maximum likelihood analysis of LSU (Lindemann et al. 2022b). *Fallacidiscus* can be confused with several genera, especially *Ramsbottomia*, *Melastiza* and *Spaniodiscus*, when considering macroscopic characters. However, it can be distinguished from other genera by the narrow hairless margin and finely warted ascospores with small polar oil droplets. These characteristics distinguish *Fallacidiscus helveticus* from some species with similar features and habits (i.e. *Spaniodiscus fuckelii* and *Paratricharina poiraultii*) (Lindemann et al. 2022b).

Reference

Lindemann U, Van Vooren N, Roffler U. 2022b – Emendation of the genus *Parascutellinia* (*Pezizales*) based on phylogenetic, morphological and ecological data, introducing *Fallacidiscus helveticus* gen. and sp. nov., and *Spaniodiscus* gen. nov. Ascomycete.org 14(2), 34–50.

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(Edited by **Kevin D Hyde**)

Note 608 *Caesiodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Caesiodiscus Holien & Suija

The monotypic genus *Caesiodiscus*, typified by *C. populicola* Holien & Suija was described by Holien & Suija (2021). This bark-inhabiting fungus has a lichen-like macro- morphology but an LSU-based phylogeny placed it within *Helotiales*, with poor support as sister to *Pleuroascaceae* (Holien & Suija 2021). This family-level relationship within *Helotiales* is not supported by ITS sequences (P.R. Johnston, unpubl. data) and it should be retained as *Helotiales incertae sedis*. *Caesiodiscus populicola* has muriform ascospores, highly unusual for *Leotiomycetes*, and the mature asci are 4-spored. Known only from Norway at the time of publication, later reports show the fungus to be more widespread in Europe (A. Suija, pers. comm.) and it has also been found in a native forest in New Zealand (culture ICMP 22561, https://scd.landcareresearch.co.nz/Specimen/ICMP_22561, GenBank ITS and LSU, ON796947 and ON796949) (Holien & Suija 2021).

Reference

Holien H, Suija A. 2021 – *Caesiodiscus populicola* gen. et sp. nov. (*Leotiomycetes*, *Helotiales*), a remarkable new corticolous ascomycete from Norway. Agarica 42, 75–90.

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Note 609 ***Watsoniomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Watsoniomyces D. Hawksw., M. Powell & T. Sprib.

A new genus *Watsoniomyces* was introduced by Díaz-Escandón et al. (2021) with the type *Watsoniomyces obsoletus* (Nyl.) D. Hawksw., M. Powell & T. Sprib. (= *Lecidea lichenicola*). The nomenclature of *Lecidea lichenicola* had uncertainty in the history due to endolithic ecology and the presence of photobiont. Thus, the species was treated under *Lecanoromycetes* due to ascomatal and ascus structures (Schultz & Büdel 2002). However, metagenome-assembled genome data of six genes multi-locus phylogenetic analyses placed *Lecidea lichenicola* under the family *Lichinaceae* in *Lichinomycetes* (Schultz & Büdel 2002). Based on the re-examination of fresh and type materials, the earliest name for this species is *Lecidea obsoleta* (syn. *Thrombium cretaceum*) hence, neo-typified under *Watsoniomyces* (Schultz & Büdel 2002). The placement of *Watsoniomyces obsoletus* under *Lichinaceae* makes it to be the first member of *Lichinomycetes* with an endolithic thallus. Further the species is characterized by its saxicolous habit on the chalk stones, while the type and other original material of *L. lichenicola* was confirmed not to be on chalk and endolithic and identified as *Trapelia glebulosa* (Schultz & Büdel 2002). The cyanobacterium *Scytonema* was found in the thallus of *Watsoniomyces obsoletus*, and other green algae such as *Trentepohlia* and *Chlorella* also co-existed (Schultz & Büdel 2002). Therefore, the photobiont of *Watsoniomyces obsoletus* needs to be further confirmed.

References

Díaz-Escandón D, Hawksworth DL, Powell M, Resl P et al. 2021 – The British chalk specialist *Lecidea lichenicola* auct. revealed as a new genus of *Lichinomycetes*. Fungal Biology 125(7), 495–504.

Schultz M, Büdel B. 2002 – Key to the genera of the *Lichinaceae*. Lichenologist, 34, 39–62.

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Note 610 ***Longinectria***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Longinectria O. Savary, M. Coton, E. Coton & J.L. Jany

Longinectria (*Nectriaceae*, *Hypocreales*) was introduced and typified by *L. lagenoides* (Savary et al. 2021). Currently, there are two species listed in this genus with *Longinectria verticilliformis* O. Savary, M. Coton, E. Coton & J.L. Jany as the second one (Savary et al. 2021). No teleomorphs have been reported for this genus and it is described by only its anamorphs. A multi-gene phylogenetic analysis, based on ten loci, including large subunit of the ATP citrate lyase (*acl1*), alpha-actin (*act*), calmodulin (*cmdA*), histone H3 (*his3*), ITS,LSU, *rpb1*, *rpb2*, *tef1-α* and *tub2* revealed that *Longinectria* forms a distinct subclade which is basal to *Albonectria*, *Cyanonectria*, *Fusarium*, *Geejayessia* and *Neocosmospora* and also a sister clade to *Bisifusarium* (Savary et al. 2021). This genus is distinguished from other closely related genera in *Nectriaceae* by its extremely long, phialidic, lateral, verticillate conidiophores with blunt to papillate apical cell and notched basal cell, 0–3 septate macroconidia and ovoid, ellipsoid to allantoid, 0–1 septate microconidia (Savary et al. 2021).

Species in *Longinectria* were isolated in France from Swiss and Italian cheese. *Longinectria* species cease its growth on culture media when the temperature increases more than 30°C (Dugat-Bony et al. 2016). This indicates that *Longinectria* species are not human pathogens as they cannot survived at human body temperature. No known mycotoxins are produced by *Longinectria* species and most detected secondary metabolites belonged to 38 chromophore families viz. chromophore, extra-nonpolar free fatty acids, mid-cyclic lipopeptides, indole alkaloids, 2-pyruvoylaminobenzamide-like molecules, alkylphenone chromophore and atrovenetin chromophore (Bodinaku et al. 2019).

The genus and the species of *Longinectria* were mentioned invalid due to their preservation in a metabolically inactive state (Art. 40.1 Shenzhen). Later, the genus and all the species were validated in Index Fungorum (2021) but the type species of the genus was not indicated, thus the genus and all species were considered invalidly published [Art. 35.1, Art. 40.1 (Shenzhen)]. The genus and species were validated in Crous et al. (2022c).

References

Bodinaku I, Shaffer J, Connors A, Steenwyk J et al. 2019 – Rapid phenotypic and metabolomics domestication of wild *Penicillium* molds on cheese. MBio 10, e02445–19.

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Dugat-Bony E, Garnier L, Denonfoux J, Ferreira S et al. 2016 – Highlighting the microbial diversity of 12 French cheese varieties. International Journal of Food Microbiology 238, 265–273.

Index Fungorum (2021) (http://www.indexfungorum.org/Names/NamesRecord.asp?RecordID=559340)

Savary O, Coton M, Frisvad JC, Nodet P et al. 2021 – Unexpected *Nectriaceae* species diversity in cheese, description of *Bisifusarium allantoides* sp. nov., *Bisifusarium penicilloides* sp. nov., *Longinectria* gen. nov. lagenoides sp. nov. and *Longinectria verticilliforme* sp. nov. Mycosphere 12(1), 1077–1100.

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Note 611 *Sympodiorosea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sympodiorosea Q.V. Montoya & A. Rodrigues

The genus *Sympodiorosea* was introduced based on *Escovopsis kreiselii* L.A. Meirelles, Q.V. Montoya, S.E. Solomon & A. Rodrigues which was isolated from a fungus garden of *Mycetophylax morschi* in Brazil (Montoya et al. 2021). This genus is only known from its type species *S. kreiselii*.

Sympodiorosea is similar to *Escovopsis* and its allied genera viz. *Luteomyces* and *Escovopsioides* by dense germination of conidia and forming stolon-like mycelia (Meirelles et al. 2015). However, *Sympodiorosea* differs from other genera in *Hypocreaceae* by its pinkish colonies, holoblastic, sympodial proliferous conidiogenous cells in pairs or in verticils; alternate or opposite branches on both the axes of conidiophores and solitary, globose to subglobose, smooth or rough, light-brown to dark-brown conidia with denticles or lesion-like holes (Custodio & Rodrigues 2019, Montoya et al. 2021). The combined ITS, LSU, *tef1-α*, *rpb1* and *rpb2* gene analysis in Montoya et al. (2021) showed that *Sympodiorosea* forms a well-supported sister clade to *Luteomyces* and *Escovopsioides* as a distinct genus. Therefore, the generic establishment of *Sympodiorosea* is supported by its genetic and phenotypic distinctness. *Sympodiorosea* shares similar ecology and life modes with *Escovopsis* and its allied genera and occurs in fungus gardens of fungus-growing ant colonies. It is assumed that *Sympodiorosea* has co-evolved with the fungus-growing ants (*Mycetophylax morschi*) to build up this symbiosis (Yek et al. 2012).

References

Custodio BC, Rodrigues A. 2019 – *Escovopsis kreiselii* specialization to its native hosts in the fungi-culture of the lower attine ant *Mycetophylax morschi*. Antonie Van Leeuwenhoek 112, 305–317.

Meirelles LA, Montoya QV, Solomon SE, Rodrigues A. 2015 – New light on the systematics of fungi associated with attine ant gardens and the description of *Escovopsis kreiselii* sp. nov. PLoS ONE.

Montoya QV, Martiarena MJS, Bizarria Jr.R, Gerardo NM et al. 2021 – Fungi inhabiting attine ant colonies: reassessment of the genus *Escovopsis* and description of *Luteomyces* and *Sympodiorosea* gens. nov.. IMA Fungus 12, 23.

Yek SH, Boomsma JJ, Poulsen M. 2012 – Towards a better understanding of the evolution of specialized parasites of fungus-growing ant crops. Psyche 2012, 239392.

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Note 612 *Chrysosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chrysosphaeria W.J. Nel, Z.W. de Beer & T.A. Duong

This monotypic genus, typified by *Chrysosphaeria jan-nelii* W.J. Nel, Z.W. de Beer & T.A. Duong, is associated with *Termitomyces* fungus combs (Nel et al. 2021). It is one of the two genera in *Ophiostomataceae* which have been reported from this unique niche. The establishment of this new taxon is supported by morphological, phylogenetic and phylogenomic evidence (Nel et al. 2021). The ascomata of *C. jan-nelii* are distinct from other taxa of *Ophiostomataceae* in that they remain golden brown throughout all developmental stages. They also comprise short, hyaline to lightly pigmented hairs and their pale brown necks are very flexible, with tapered hyaline apices. The latter in turn consist of marginally divergent, hyaline ostiolar hyphae (Nel et al. 2021). While asci have not been observed, the ascospores have been described as aseptate, hyaline, cylindrical to bean-shaped and without any sheath. The asexual morph is characterized by sporothrix-like conidiophores and conidiogenous cells. The conidia are dimorphic, with the primary conidia being oblong while the secondary conidia being obovoid (Nel et al. 2021).

Sequence data from LSU and ITS loci (attempts to amplify the *tub2* region were continuously unsuccessful as reported in the study) were initially used in single-locus phylogenetic analyses to determine the placement of the isolates of *C. jan-nelii*. The latter formed a distinct clade in the phylogenetic trees, separate from other taxa of *Ophiostomataceae*, with, a however uncertain generic placement in the family (Nel et al. 2021). Phylogenomic analyses were thus conducted using the genomic data for one of the strains of *C. jan-nelii*, which in turn confirmed the placement of *Chrysosphaeria* as a distinct lineage in *Ophiostomataceae*, thereby, supporting its establishment as a new genus (Nel et al. 2021).

While its growth in culture has been reported to be independent of *Termitomyces* comb materials, media supplemented with different parts of *Termitomyces* combs promoted the growth and development of *C. jan-nelii* as compared to other growth medium (Nel et al. 2021). Moreover, *Chrysosphaeria* was isolated from *Termitomyces* fungus combs which had already been abandoned by termites (Nel et al. 2021). The opportune appearance and association of the taxon with the combs as well as a plausible association between *Chrysosphaeria* and termites still need to be further elucidated (Nel et al. 2021).

Reference

Nel WJ, de Beer ZW, Wingfield MJ, Poulsen M et al. 2021 – Phylogenetic and phylogenomic analyses reveal two new genera and three new species of ophiostomatalean fungi from termite fungus combs. Mycologia 113, 1199–1217.

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(Edited by **Sajeewa Maharachchimbura & Kevin D. Hyde**)

Note 613 *Intubia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Intubia W.J. Nel, Z.W. de Beer & T.A. Duong

Intubia was isolated from *Termitomyces* fungus combs devoid of termites (Nel et al. 2021). This taxon, which has been established based on morphology, combined with phylogenetic and phylogenomic analyses, belongs in *Ophiostomataceae*. It currently accommodates two taxa, with *Intubia macrotermitinarum* as the type (Nel et al. 2021). *Intubia* species are characterized by dark brown to black ascomata with uniformly dark necks which become narrower towards the apex and are devoid of ostiolar hyphae. Hyaline, aseptate and cylindrical ascospores are produced at the apex in slimy droplets. Their asexual morphs are hyalorhinocladiella- or sporothrix-like. Conidiophores are solitary, micronematous while conidiogenous cells either possess or lack denticles. Conidia are bacilliform or round to obovoid. Secondary conidia are often present (Nel et al. 2021).

The initial placement of *Intubia* strains in *Ophiostomataceae* was confirmed by single-locus phylogenetic analyses of LSU, ITS and *tub* regions. While the phylogenetic tree based on LSU sequence data showed a single clade for the strains, the phylogenies based on ITS and *tub* loci revealed two well-supported subclades for the isolates. Even though the single-locus phylogenies using the aforementioned three regions segregated the isolates from other taxa in the family, the distinct generic placement of these isolates was eventually confirmed by phylogenomic analyses. The novel genus *Intubia* was therefore established with two species (Nel et al. 2021).

Intubia, along with *Chrysosphaeria*, are distinct from other taxa of *Ophiostomataceae* in terms of its unique habitat, namely, the *Termitomyces* combs. Nel et al. (2021) reported that *Intubia* species appeared on the fungus combs only after that the latter had been abandoned by termites. Furthermore, with the exception of *Termitomyces* mycelium medium, media supplemented with *Termitomyces* combs as well as the extracts of *Termitomyces* sp. promoted the growth of the taxa as compared to other growth medium such as malt extract agar. Any association between *Intubia* and the *Termitomyces* combs or even with the termites, as well as the source of the inoculum of *Intubia* taxa are yet to be investigated (Nel et al. 2021).

Reference

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Note 614 *Luteomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Luteomyces Q.V. Montoya & A. Rodrigues

The monotypic genus *Luteomyces*, which is typified by *L. trichodermoides* (M. Cabello et al.) Q.V. Montoya & A. Rodrigues, was introduced based on *Escovopsis trichodermoides* (Montoya et al. 2021). *Luteomyces* is distinct from species in *Escovopsis* by its slower growth, different colony colour (mainly yellow), conidiophores without vesicles and large number of chlamydospores, while *Escovopsis* produces brown, fast-growing colonies with rarely observed chlamydospores (Masiulionis et al. 2015). Montoya et al. (2021) showed that *Luteomyces* is genetically close, but genetically distinct from *Escovopsis*, forming a well-supported sister clade in s combined ITS, LSU, *tef1-α*, *rpb1* and *rpb2* gene analysis. Therefore, morphology and phylogeny are well-supported for the generic establishment of *Luteomyces*.

Luteomyces trichodermoides was initially isolated from the upper part of a fungus garden of *Mycocepurus goeldii* in Brazil (Yek et al. 2012). This species forms a mutualistic association with fungus-growing ants (Vasse et al. 2017). Fungus-growing ants provide their nests with *Luteomyces* species as a substrate to grow on. In this symbiosis, plants produce the aromatic acids when ants chew their tissues and release them to ant nests and ants also secrete numerous organic compounds from exocrine glands (Hölldobler & Wilson 1990). *Luteomyces* species are able to metabolize those organic compounds and aromatic acids and utilize them as the nutrient sources (Yek et al. 2012). Later, these fungus-growing ants use fungal mycelia as a food source (Montoya et al. 2021). Fungus-growing ants are only reported in the Western Hemisphere especially in North and South America (Weber 1996, Branstetter et al. 2017). It is assumed that the distribution of *Luteomyces* species may be restricted to the Western Hemisphere.

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Note 615 *Obovoideisporodochium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Obovoideisporodochium Z.X. Zhang, J.W. Xia & X.G. Zhang

Obovoideisporodochium was introduced by Zhang et al. (2021a) based on morphology and phylogeny analysis. The members of this genus can be found as endophytes on leaves and pathogens causing leaf spots. The phylogenetic trees (ITS, *tef1-α* and *tub2*) show that this genus forms a basal clade to *Racheliella*, *Oblongisporothyrium* and *Paratubakia*, with separate lineage and high bootstrap support (Zhang et al. 2021a). The genus is monotypic and is typified by *Obovoideisporodochi umlithocarpi* Z.X. Zhang, J.W. Xia & X.G. Zhang. The asexual morph has sporodochial conidiomata, subulate to subcylindrical conidiophores with hyaline obovoid to ellipsoid conidia, while the sexual morph is unknown (Zhang et al. 2021a).

Reference

Zhang Z, Mu T, Liu S, Liu R et al. 2021a – Morphological and phylogenetic analyses reveal a new genus and two new species of *Tubakiaceae* from China. MycoKeys 84, 185–201.

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Note 616 *Pseudodiatrype*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodiatrype S.H. Long & Q.R. Li

Pseudodiatrype was introduced by Long et al. (2021) to accommodate a presumed saprobe collected from decaying branches in China. Phylogenetic analysis of ITS and *tub2* (Long et al. 2021) showed that *Pseudodiatrype* formed a separate branch basal to *Allodiatrype*. *Pseudodiatrype* was introduced as saprobic on branches of an unidentified plant from China with the sexual morph characterized by wart-like stromata, with 5–20 ascomata in a single stroma with an ostiolar opening through host bark, clavate, long-stalked asci, with inamyloid rings and subhyaline allantoid ascospores, slightly or moderately curved, aseptate and often with two oil droplets. The asexual morph is undetermined (Long et al. 2021). This genus resembles *Diatrype* and *Allodiatrype*, however, the morphology and phylogenetic analysis demonstrated that they are clearly distinct. The genus is monotypic and is typified by *Pseudodiatrype hainanensis* S.H. Long & Q.R. Li (Long et al. 2021).

Reference

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Note 617 *Caespitomonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Caespitomonium Crous

Caespitomonium was introduced by Crous et al. (2021e) with *Caespitomonium euphorbiae* Crous as the type species while *Fusidium squamicola* Berk. & Broome and *Torula hyalinula* Sacc. were synonymized under *Caespitomonium* (Crous et al. 2021e). Phylogenetic analyses of LSU showed that this genus clustered within *Bionectriaceae* and formed well-separated branches with 94% ML bootstrap support with *Acremonium persicinum* (CBS 203.73) (Crous et al. 2021e). In addition, a megablast search of *act* and *rpb2* showed a similarity of less than 96% with other genera in *Bionectriaceae* (Crous et al. 2021e). *Caespitomonium* is similar to *Acremonium*, but differs in having extensively branched tuft-like conidiophores and the presence of only asexual morphs (Crous et al. 2021e). The members of this genus can be found in different habitats and environments viz; stems of *Euphorbia* sp., on sooty moulds and aphids on *Clerodendron monahassa* and air in hospitals, while the life mode was not clearly mentioned (Crous et al. 2021e).

Reference

Crous PW, Osieck ER, Jurjevi Ž, Boers J et al. 2021e – Fungal planet description sheets: 1284–1382. Persoonia 47, 178–374.

Entry by Saowaluck Tibpromma, The Center for Yunnan Plateau Biological Resources Protection and Utilization, College of Biological Resource and Food Engineering, Qujing Normal University, Qujing, Yunnan 655011 P.R. China

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Note 618 *Xenoacrodontiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Xenoacrodontiaceae Crous

Xenoacrodontiaceae (*Hypocreales*) was erected by Crous et al. (2021e) to accommodate the monospecific hyphomycetous genus *Xenoacrodontium* Crous. The species in *Xenoacrodontiaceae* are characterized by hyaline, smooth-walled, branched, septate hyphae and conidiophores reduced to conidiogenous cells arising directly from the hyphae (Crous et al. 2021e). Conidiogenous cells are hyaline, smooth- and thin-walled, subulate, straight to flexuous, proliferating sympodially, forming a rachis in the upper part, with multiple subdenticulate loci, slightly thickened and refractive (Crous et al. 2021e). Conidia are solitary, hyaline, aseptate, smooth- and thin-walled, guttulate and ellipsoid with obtuse apex (Crous et al. 2021e). The hilum is slightly thickened and not darkened (Crous et al. 2021e). *Xenoacrodontium juglandis* Crous is the single species of the family, which is described on *Juglans regia* (*Juglandaceae*) from the Netherlands (Crous et al. 2021e). The LSU phylogeny showed that the *Xenoacrodontiaceae* is sister to the *Hypocreaceae* with uncertain phylogenetic placement (Crous et al. 2021e). However, further species discoveries and the stable phylogeny of the family are needed. The family is so far known only as asexual morphs and saprobes.

Reference

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

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Note 619 *Xenoacrodontium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenoacrodontium Crous

Crous et al. (2021e) introduced the monospecific genus, *Xenoacrodontium* in a new family *Xenoacrodontiaceae* (*Hypocreales*). *Xenoacrodontium* is typified by *X. juglandis* Crous, which has been isolated on *Juglans regia* (*Juglandaceae*) from the Netherlands. *Xenoacrodontium* has smooth-walled, branched, septate hyphae, reduced conidiophores, hyaline, subulate, straight to flexuous, proliferating sympodially, conidiogenous cells arising directly from hyphae with multiple subdenticulate loci, and solitary, hyaline, aseptate, smooth- and thin-walled, guttulate, ellipsoid conidia with obtuse apex and slightly thickened hilum (Crous et al. 2021e). The sexual morph of the genus is unknown. LSU based phylogeny showed that the *X. juglandis* clustered with *Acrodontium salmoneum* (CBS 580.67), and formed a distinct clade sister to *Hypocreaceae* (Crous et al. 2021e). *Acrodontium salmoneum* has been suggested to belong to *Xenoacrodontium*, but not formally established. It needs multigene phylogeny to assure the taxonomic placement of *Xenoacrodontium*. The genus is so far known only as asexual morphs and saprobes.

Reference

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

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Note 620 *Xenosphaeropsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenosphaeropsis (C.L. Xiao & J.D. Rogers) F. Liu, Crous & L. Cai

Zhao et al. (2021b) introduced *Xenosphaeropsis* as a monotypic genus within *Phacidiaceae*, *Phacidiales* in *Leotiomycetes*, with *Xenosphaeropsis pyriputrescens* (C.L. Xiao & J.D. Rogers) F. Liu, Crous & L. Cai as the type species based on LSU, ITS and *rpb2* multi-gene phylogeny. *Xenosphaeropsis pyriputrescens* was initially described as *Sphaeropsis pyriputrescens* C.L. Xiao & J.D. Rogers (*Botryosphaeriaceae*, *Botryosphaeriales*) in *Dothideomycetes* from a fruit rot on pears in the USA based only on morphology (Xiao & Rogers 2004). However, the initial study did not provide any data on the cultures of either the designated holotype or the isotype (Xiao & Rogers 2004). As the holotype and isotype of *Sphaeropsis pyriputrescens* could not be traced, Zhao et al. (2021b) studied the ex-paratype (ATCC MYA-2947) of *S. pyriputrescens* in Xiao & Rogers (2004) and provided sequence data. *Xenosphaeropsis* is similar to *Sphaeropsis* in having subglobose pycnidia, subglobose to globose conidiogenous cells and hyaline to brown conidia (Xiao & Rogers 2004, Zhao et al. 2021b). This ex-paratype of *S. pyriputrescens* clustered with three other reference isolates in a separate clade within *Phacidiaceae*, *Phacidiales* in the multi-gene phylogeny (LSU, ITS and *rpb2*) and a novel genus, *Xenosphaeropsis* was introduced to accommodate these four isolates (Zhao et al. 2021b). *Xenosphaeropsis* showed phylogenetic distance and several morphological differences from other genera in *Phacidiaceae* and also showed a few morphological similarities to the taxa in *Phacidiaceae* in having subglobose, separate to aggregate conidiomata, hyaline conidiophores reduced to conidiogenous cells and smooth-walled, hyaline to brown conidia (Crous et al. 2014). Since *Xenosphaeropsis* is a monotypic genus, the paratype isolate of its only member, *Xenosphaeropsis pyriputrescens*, clustered with three other isolates from pears and apple in the multi-gene (LSU, ITS and *rpb2*) phylogenetic tree (Zhao et al. 2021b). *Xenosphaeropsis pyriputrescens* has been reported as a pathogen causing fruit rot and postharvest diseases on pears (*Pyrus communis*) in British Columbia and Washington (Xiao & Rogers 2004, Sholberg et al. 2009). It is also reported as a pathogen on apples (*Malus* spp.) and crabapple (*Malus sylvestris*) trees, causing fruit rot, canker, twig dieback and postharvest diseases in Washington and

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Note 621 *Paramacroventuria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramacroventuria Crous & Bulgakov

Paramacroventuria was introduced by Crous et al. (2021e) to accommodate its type species, *P. ribis* Crous & Bulgakov, and belongs to the family *Didymellaceae*. This monotypic genus is known from its asexual morph, and is characterized by brown, medially septate, ellipsoid conidia, with a truncate hilum at the base, and percurrently proliferating conidiogenous cells (Crous et al. 2021e). Based on phylogenetic analysis using LSU, ITS, *rpb2* and *tub2* datasets, *Paramacroventuria* clustered close to the genera *Macroventuria* Aa and *Juxtiphoma* Valenzuela-Lopez, Cano, Crous, Guarro & Stchigel (Crous et al. 2021e). However, members of *Macroventuria* are all observed by the features from the sexual morph (Hou et al. 2020a), and *Juxtiphoma* species produce chlamydospores (Valenzuela-Lopez et al. 2018, Hou et al. 2020b, Yasanthika et al. 2021), which are lacking in *Paramacroventuria*. *Paramacroventuria* was recorded as a pathogen causing leaf spots on *Ribes aureum* in Russia (Crous et al. 2021e).

References

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Note 622 *Chlorocillium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chlorocillium W. Gams & Zare

Chlorocillium, an entomogenous phialidic hyphomycete parasitic on aphids, Coccidae and spiders, was introduced by Zare & Gams (2016) for *C. griseum* (Petch) Zare & W. Gams (basionym: *Acremonium griseum* Petch) based on morphology and LSU and ITS phylogenetic analyses. This monotypic genus has slow-growing, dry, greenish-ochraceous colonies, short, verticillate conidiophores, with phialidic conidiogenous cells, and produces fusiform, hyaline conidia in dry chains, which distinguishes it from *Verticillium* and other verticillium-like taxa (Zare & Gams 2016). *Chlorocillium* is a member of the *Hypocreales* genera *incertae sedis* (Bibi et al. 2021). Only the asexual morph was reported.

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Note 623 *Diaporthe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Diaporthe Nitschke

Diaporthe (syn. *Phomopsis*) is the most diverse genus in *Diaporthaceae*, with around 2000 species epithets available in public databases. More than 300 phylogenetically defined species and numerous unidentified DNA sequences available in GenBank are evidence of the hyperdiversity in the genus (Gomes et al. 2013, Udayanga et al. 2014b, 2012, Manawasinghe et al. 2019, Hongsanan et al. 2023a). Based on a comprehensive phylogenetic reappraisal of the genus, Norphanphoun et al. (2022) formulated a species-group concept through multi-gene phylogenetic analysis. These species groups are based on 13 monophyletic clades representing new and few formerly known species complexes (Norphanphoun et al. 2022). Although numerous species considered within species groups are primarily defined based on multigene phylogeny, differentiating species based on commonly used sets of genes are often argued by various authors (Udayanga et al. 2014a, Hilário et al. 2021 a, b). For instance, Hilário et al. (2021 a, b) observed a high degree of recombination among the formerly recognized phylogenetic species within *D. eres* and *D. amygdali* species complexes. Furthermore, recent phylogenetic studies further reveal that the genus is paraphyletic and several distinct genera such as *Phaeocytostroma* and *Stenocarpella* are placed among the species complexes of *Diaporthe* family level phylogenetic trees (Gao et al. 2017, Norphanphoun et al. 2022). Therefore, generic limits of this genus should be reconsidered in future studies with more available data and taxonomic overview within the family.

References

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Note 624 *Crassitunica*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Crassitunica Y.J. Zhao & T. Hosoya

A specimen previously treated as *Lambertella brunneola* (Pat.) Le Gal (Johnston et al. 2019), is phylogenetically distinct from the type species of *Lambertella*, *L. corni-maris* Höhn. Zhao & Hosoya (2021) placed this species as the only species in their new genus *Crassitunica*, by naming it *C. tubakii* Yan J. Zhao & Hosoya. Phylogenetically *Crassitunica* falls in the paraphyletic *Rutstroemiaceae*. *Crassitunica* can be distinguished from *Lambertella sensu stricto* by its excipular structure (Zhao & Hosoya 2021). A saprobe known only from decaying leaves of *Aucuba japonica* (Zhao & Hosoya 2021). Many host-specific *Leotiomycetes* have endophytic as well as saprobic stages to their life cycles.

References

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Note 625 ***Flexuomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Flexuomyces Crous

Flexuomyces is a hyphomycetous genus from leaf spots of *Astelia chathamica* (*Asteliaceae*) in New Zealand (Crous et al. 2021c). *Flexuomyces* is characterized by fanning to umbrella-like, short-stipitate to sessile, brown conidiomata with a crystalline mucoid conidial mass, phialidic, hyaline conidiogenous cells, tightly aggregated, cylindrical, septate conidiophores, and single, hyaline, subcylindrical to acicular, spirally twisted, multiseptate conidia with subobtuse apex and truncate base (Crous et al. 2021c). Crous et al. (2021c) placed *Flexuomyces* in *Tympanidaceae* (*Leotiales*, *Leotiomycetes*, *Ascomycota*) based on the close relationship of the type species *Flexuomyces asteliae* Crous with genera such as *Pallidophorina* and *Variabilispora*. However, the placement of related genera themselves (Bien et al. 2020, Quijada et al. 2022b) suggests *Flexuomyces* to be incertae sedis within *Leotiales*. The morphology of *Flexuomyces* is different from *Pallidophorina* and *Variabilispora* by its convex conidiomata with a short stipe and the spirally twisted, multiseptate conidia (Bien et al. 2020, Crous et al. 2021e).

References

Bien S, Kraus C, Damm U. 2020 – Novel collophorina-like genera and species from *Prunus* trees and vineyards in Germany. Persoonia 45(1), 46–67.

Crous PW, Cowan DA, Maggs-Kölling G, Yilmaz N et al. 2021c – Fungal Planet description sheets: 1182–1283. Persoonia 46, 313–528.

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, Fungi). Biology 11(4), 583.

Entry by Hongli Su, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai, Thailand; School of Science, Mae Fah Luang University, Chiang Rai, Thailand; Yunnan Key Laboratory of Fungal Diversity and Green Development, Key Laboratory for Plant Diversity and Biogeography of East Asia, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 626 ***Franziozyma***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Franziozyma Q.M. Wang, Begerow & M. Groenew., in Li et al.

Based on analysis of combined SSU + ITS + LSU (D1/D2), *rpb1*, *rpb2* and *tef1-α* sequence data, Li et al. (2022e) introduced *Franziozyma* to accommodate *F. bambusicola* Q.M. Wang, Begerow & M. Groenew. *Franziozyma bambusicola* is an asexual morphic basidiomycetous yeast in *Ustilaginomycotina*. It was isolated using a ballistoconidia-fall method from bamboo leaves in China (Li et al. 2022e). Sexual reproduction is not known (Li et al. 2022e). Colonies are butyrous, white, margin, or eroded, budding cells are present or not, ballistoconidia are produced and hyphae are formed (Li et al. 2022e). The genus is mainly circumscribed by the phylogenetic analysis of the six loci dataset (Li et al. 2022e). *Franziozyma* was proposed for the branch represented by strain XZ4C4T, which formed a separate branch from *Golubeviales* and other orders in *Exobasidiomycetes* (Li et al. 2022e). Concomitantly, the order *Franziozymales* was proposed along with the family *Franziozymaceae* to accommodate *Franziozyma*.

Reference

Li YY, Wang MM, Groenewald M, Li AH et al. 2022e – Proposal of two new combinations, twenty new species, four new genera, one new family, and one new order for the anamorphic basidiomycetous yeast species in *Ustilaginomycotina*. Frontiers in Microbiology 12(no. 777338), 23.

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Note 627 ***Longistriata***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Longistriata Sulzbacher, Orihara, Grebenc, M.P. Martín & Baseia

The type species of this monotypic genus, *Longistriata flava* was found, hypogeous to subhypogeous, solitary or scattered, in a nutrient-poor white sand habitat or under fallen leaves, associated with plant genera *Guapira* (*Nyctaginaceae*) and *Coccoloba* (*Polygonaceae*) in Brazil's Atlantic rainforest (Sulzbacher et al. 2020). These two plant genera are potential ectomycorrhizal host symbionts (Sulzbacher et al. 2020). Phylogenetic analyses based on ITS, LSU, and *tef1-α* indicated its phylogenetic position in *Boletaceae* (*Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Sulzbacher et al. 2020). This genus is distinguished from other genera in *Boletaceae* by hypogeous to subhypogeous, sequestrate, subglobose basidiocarps with a short stipe; bright yellow, smooth peridium with a cutis of gelatinized and interwoven inflated hyphae; the presence of a short stipe; loculate gleba white when immature, yellowish brown at maturity, older basidiocarps turning to dark green to black upon cutting, and absence of columella (Sulzbacher et al. 2020). The asexual morph is unknown.

Longistriata is phylogenetically sister to the African genus *Mackintoshia* in *Boletaceae* but *Longistriata* can be differentiated from *Mackintoshia* due to its well-developed, sterile short stipe, lageniform cystidia with rounded apices, basidiospores with persistent sterigmal attachments that are covered by thin longitudinal striations and associated with ectomycorrhizal plants in *Nyctaginaceae* and *Polygonaceae* (Sulzbacher et al. 2020). Even *Longistriata* was hypothesized as ectomycorrhizal in this study, the ectomycorrhizal status was not yet confirmed using the molecular techniques of root tips from native Brazilian trees (Sulzbacher et al. 2020).

Reference

Sulzbacher MA, Orihara T, Grebenc T, Wartchow F et al. 2020 – *Longistriata flava* (*Boletaceae*, *Basidiomycota*) a new monotypic sequestrate genus and species from Brazilian Atlantic Forest. MycoKeys 62, 53.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 628 *Pleocatenata*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pleocatenata Y.R. Sun, Yong Wang bis & K.D. Hyde

Pleocatenata was introduced by Sun et al. (2022b) for *P. chiangraiensis* Y.R. Sun, Yong Wang bis & K.D. Hyde based on morphology and phylogeny. The taxon was isolated from withered twigs of medicinal plants (Sun et al. 2022b). This monotypic genus has mononematous, septate, unbranched, brown or dark brown conidiophores, with monotretic conidiogenous cells, and produces catenate, multi-euseptate, obclavate, olivaceous to blackish brown conidia (Sun et al. 2022b). Maximum likelihood analysis based on combined LSU, SSU, *tef1-α*, *rpb2* and ITS sequence data showed that *Pleocatenata* formed a separate clade within *Pleosporales*, *Dothideomycetes*. *Pleocatenata* is a member of *Pleosporales* genera *incertae sedis* and only the asexual morph was reported (Sun et al. 2022b).

Reference

Sun YR, Liu NG, Hyde KD, Jayawardena RS et al. 2022b – *Pleocatenata chiangraiensis* gen. et. sp. nov. (*Pleosporales*, *Dothideomycetes*) from medicinal plants in northern Thailand. MycoKeys 87, 77–98.

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Note 629 *Myrmecopterula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Myrmecopterula Leal-Dutra, Dentinger & G.W. Griff.

The species of *Myrmecopterula* are usually associated with ant nests, growing on living or dead nests, or are cultivated by the ants (Leal-Dutra et al. 2020). Phylogenetic analyses of combined ITS, LSU, and *rpb2* confirmed its phylogenetic position in *Pterulaceae* (Leal-Dutra et al. 2020). *Myrmecopterula* formed a distinct clade sister to *Pterula*, and this distinct clade was erected as a new genus to accommodate ant-associated taxa previously grouped in *Pterula* (Leal-Dutra et al. 2020). The type species is *Myrmecopterula moniliformis*. The habit, shape, and colour of *Myrmecopterula* are very similar to *Pterula*, but it differs by having mycelial cords and subiculum from which the basidiocarps develop (Leal-Dutra et al. 2020). In comparison to other species in *Pterulaceae*, the species in this genus are characterized by bushy, pteruloid, white-cream to light-brown, and surface greyish basidiocarps, concolorous or stipe darker than the hymenophore, developing from cottony subiculum with mycelial cords; sterile stipe surface; dimitic hyphal system; relatively small basidiospores usually less than 7 µm wide (Leal-Dutra et al. 2020). The asexual morph is unknown. There are three species in this genus. It is presently unclear whether the existing mutualistic association found in *Myrmecopterula nudihortorum* and *M. velohortorum* is ancestral, suggesting that free-living taxa escaped the mutualism, or whether the free-living taxa are common amongst members of *Myrmecopterula* that were more recently evolved to a higher level of interdependence for *M. nudihortorum* and *M. Velohortorum* (Leal-Dutra et al. 2020).

Myrmecopterula is currently placed in *Pterulaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes, Agaricomycotina*, *Basidiomycota*.

Reference

Leal-Dutra CA, Griffith GW, Neves MA, McLaughlin DJ et al. 2020 – Reclassification of *Pterulaceae* Corner (*Basidiomycota*: *Agaricales*) introducing the ant-associated genus *Myrmecopterula* gen. nov., *Phaeopterula* Henn. and the corticioid *Radulomycetaceae* fam. nov. IMA Fungus 11(2), 1–24.

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Note 630 *Paraxerochrysium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paraxerochrysium Crous & Decock

Crous et al. (2021e) introduced *Paraxerochrysium* with the type species *P. coryli* Crous & Decock based on maximum likelihood analysis of a *Eurotiomycetes* LSU nucleotide alignment. *Paraxerochrysium coryli* is described based on its hyaline, septate, and branched hyphae and hyaline, sphaerical, drop-shaped chlamydoconidia with smooth cell walls (Crous et al. 2021e). This genus is close to *Xerochrysium*; however, they can be distinguished by the lack of aleuroconidia in *Paraxerochrysium* (Crous et al. 2021e).

Reference

Crous PW, Osieck ER, Jurjević Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47, 178–374.

Entry by Sahar Absalan, Chiang Mai University, Chiang Mai, Thailand

(Edited by **Kevin D. Hyde**)

Note 631 *Pseudomalbranchea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudomalbranchea Rodr.-Andr., Cano & Stchigel

Pseudomalbranchea is a new genus belonging to the family *Onygenaceae*, introduced by Rodríguez-Andrade et al. (2021) from Florida, USA, which was isolated from bronchial washings of a human. *Pseudomalbranchea* is characterized by one-celled, hyaline, and cylindrical arthroconidia with a smooth and thick cell wall. Based on phylogenetic analysis of ITS and LSU, *P. gemmata* Rodr.-Andr., Cano & Stchigel the type species is close to *Uncinocarpus reesii* Sigler & G.F. Orr and *Amauroascus volatilis-patellis* (G.F. Orr & Kuehn) Currah (Rodríguez-Andrade et al. 2021). However, *P. gemmata* is distinct from other related species because of its longer arthroconidia (Rodríguez-Andrade et al. 2021).

Reference

Rodríguez-Andrade E, Cano-Lira JF, Wiederhold N, Pérez-Cantero A et al. 2021 – A revision of malbranchea-like fungi from clinical specimens in the United States of America reveals unexpected novelty. IMA Fungus 12(25), 1–27.

Entry by Sahar Absalan, Chiang Mai University, Chiang Mai, Thailand
(Edited by **Kevin D. Hyde & Rekhani Hansika Perera**)

Note 632 ***Pyrrhulomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pyrrhulomyces E.J. Tian & Matheny

To resolve the non-monophyly of *Pholiota*, the new genus *Pyrrhulomyces* (*Strophariaceae*) was erected to accommodate *Pyrrhulomyces astragalinus* and its cryptic sister species, *Py. amariceps*, from the Southern Appalachians in North America (Tian & Matheny 2020). The species of *Pyrrhulomyces* are usually associated with late stages of conifer wood decay (Tian & Matheny 2020). Phylogenetic analyses based on ITS, LSU, *rpb2* and *tef1-α* indicated its phylogenetic position in *Strophariaceae* (*Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Tian & Matheny 2020). *Pyrrhulomyces* is phylogenetically closely related to *Stropharia* and *Hypholoma*, but it forms a separate clade apart from *Pholiota* (Tian & Matheny 2020). *Pyrrhulomyces* differs from the majority of species in *Stropharia* and *Hypholoma* by the brown spore deposit, the absence of an annulus, and the absence of a germ pore (Tian & Matheny 2020). Compared with other genera of *Strophariaceae* (Tian & Matheny 2020), taxa of this genus are characterized by the blackening of basidiocarps with a bitter taste, smooth basidiospores without a germ pore under light microscopy, presence of pleurochrysocystidia, an ixocutis, and rugulose spore ornamentation under the scanning electron microscope (SEM) (Tian & Matheny 2020). The asexual morph is unknown.

Reference

Tian E, Matheny PB. 2020 – A phylogenetic assessment of *Pholiota* and the new genus *Pyrrhulomyces*, Mycologia, 113(1), 146–167.

Entry by Samantha C. Karunarathna, Center for Yunnan Plateau Biological Resources Protection and Utilization, College of Biological Resource and Food Engineering, Qujing Normal University, Qujing, Yunnan 655011, P.R. China
(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 633 *Alloscorias*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloscorias Haituk & Cheew.

Haituk et al. (2021) introduced *Alloscorias* within *Readerielliopsidaceae* (*Capnodiales*) with *A. syngonii* Haituk & Cheew. as the type species. *Alloscarias* is an epiphytic genus and *A. syngonii* was found on living leaves of *Syngonium podophyllum* in Thailand (Haituk et al. 2021). The genus is characterized by a very thin and superficial thallus, with pale brown to brown walls (Haituk et al. 2021). The ascomata are brown to dark brown with an indistinct ostiole and the peridium consists of two sections in a *textura angularis* arrangement (Haituk et al. 2021). The asci are sessile, eight-spored with a rounded apex (Haituk et al. 2021). The ascospores are 2–3-seriate, overlapping, hyaline, 3–4 septate with a noticeable mucilaginous sheath (Haituk et al. 2021). *Alloscorias* has a coelomycetous asexual morph, characterized by single and brown to dark brown conidiomata (Haituk et al. 2021). The pycnidial walls are made up of pseudoparenchymatous cells in a *textura angularis* arrangement (Haituk et al. 2021). The conidiogenous cells are enteroblastic, integrated terminal and the conidia are hyaline (Haituk et al. 2021). Based on phylogenetic analyses of a LSU, ITS, *tef1-α* and *rpb2* dataset, *Alloscorias* formed a sister clade to *Scorias* (Haituk et al. 2021). *Alloscorias* has some morphological similarities to *Scorias* but differs in having ascostromata without stalks and fusoid ascospores with a mucilaginous sheath (Haituk et al. 2021). There is only one species listed in Species Fungorum (2022), therefore further collections are needed to understand the lifestyle and host distribution of *Alloscorias*.

References

Haituk S, Suwannarach N, Hongsanan S, Senwanna C et al. 2021 – New genus of epiphytic sooty mold: *Alloscorias syngonii* (*Readerielliopsidaceae*) from Thailand. Phytotaxa 507, 271–282.

Species Fungorum 2022 – http://www.speciesfungorum.org/Names/Names.asp. Accessed 14 July 2022.

Entry by Ashani D Madagammana & Chitrabhanu S. Bhunjun, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai 57100, Thailand.

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Note 634 *Neolentithecia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neolentithecia C. Phukhams., K.D. Hyde & Y. Li

Hyde et al. (2021b) introduced *Neolentithecia* as a monotypic genus in *Lentitheciaceae* (*Pleosporales*, *Dothideomycetes*) to accommodate *N. changchunensis* Phukhams., K.D. Hyde, W.X. Su & Y. Li. This fungus was collected as a saprobe on dried twigs of *Sorbus* sp. from a terrestrial habitat in Jilin Province, China (Hyde et al. 2021b). The genus is characterized by solitary, immersed, globose, uniloculate, ascomata with a central and papillate ostiole, a thick peridium of cells arranged in *textura angularis*, cellular pseudoparaphyses, clavate, long pedicellate asci with a well-developed ocular chamber and brown, oval to obovoid, muriform ascospores (Hyde et al. 2021b). *Neolentithecia* has similar morphology to *Murilentithecium* based on its globose ascomata, clavate asci and muriform ascospores (Wanasinghe et al. 2014) in *Lentitheciaceae*, but these two genera are not monophyletic. Phylogenetically, *Neolentithecia* has a sister affiliation to *Darksidea*, *Halobyssothecium* and *Lentithecium*, but differs in having brown, muriform ascospores. Based on the multi-gene (LSU, SSU, ITS and *tef1-α*) phylogenetic analyses, *Neolentithecia changchunensis* has a monophyletic affinity to *Lentithecium aquaticum* (CBS 123099). However, *L. aquaticum* is distinct from *Neolentithecia changchunensis* in its lenticular ascomata and broadly fusiform, hyaline, two-celled ascospores with distinctive globules, whereas *Neolentithecia* has globose ascomata and pale to brown, oval or obovoid, muriform ascospores without any guttules (Zhang et al. 2009a, Tanaka et al. 2015, Hyde et al. 2021b). The exact generic placement of *Lentithecium aquaticum* should be further investigated. Currently, *Neolentithecia changchunensis* is only known from its sexual morph characteristics and the asexual morph of the genus should be confirmed and discussed its relatedness to asexual morphic genera in the family. In a recent study, Liu et al. (2022h) introduced *Crassoascoma* to accommodate *C. potentillae* which was collected from living and decayed branches of *Potentilla fruticosa* in Qinghai-Tibet Plateau, China. The phylogenetic analyses of Liu et al. (2022h) showed that the later genus has a close phylogenetic affinity to *Darksidea*, *Halobyssothecium* and *Lentithecium* in *Lentitheciaceae*. They did not include *Neolentithecia changchunensis* in their phylogenetic analyses which was already published. Therefore, the phylogenetic relationship of *Crassoascoma* and *Neolentithecia* should be further investigated. However, they differ in their asci and ascospore characteristics (Hyde et al. 2021b, Liu et al. 2022h).

References

Hyde KD, Suwannarach N, Jayawardena RS, Manawasinghe IS et al. 2021b – Mycosphere notes 325-344 – Novel species and records of fungal taxa from around the world. Mycosphere 12(1), 1101–1156

Liu ZP, Zhang SN, Cheewangkoon R, Zhao Q et al. 2022h – *Crassoascoma* gen. nov. (*Lentitheciaceae*, *Pleosporales*): Unrevealing Microfungi from the Qinghai-Tibet Plateau in China. Diversity 14, 15.

Tanaka K, Hirayama K, Yonezawa H, Sato G et al. 2015 – Revision of the *Massarineae* (*Pleosporales*, *Dothideomycetes*). Studies in Mycology 82, 75–136

Wanasinghe DN, Jones EBG, Camporesi E, Boonmee S et al. 2014 – An exciting novel member of *Lentitheciaceae* in Italy from *Clematis vitalba*. Cryptogamie Mycologie 35, 323–337.

Zhang Y, Wang HK, Fournier J, Crous PW et al. 2009a – Towards a phylogenetic clarification of *Lophiostoma*/*Massarina* and morphologically similar genera in the *Pleosporales*. Fungal Diversity 38, 225–251.

Entry by Dhanushka N. Wanasinghe, Center for Mountain Futures, Kunming Institute of Botany, Chinese Academy of Sciences, Honghe 654400, Yunnan, China
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Note 635 *Amylosporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Amylosporia B.K. Cui, C.L. Zhao & Y.C. Dai.

This is a monotypic, resupinate polypore genus found growing on decaying angiosperm wood (branches, trunks) (Cui et al. 2019). The genus was proposed to accommodate *Perenniporia hattorii* (Dai et al. 2011) as *A. hattorii*, and so far, no other species have been described or recombined in *Amylosporia* (Cui et al. 2019). Phylogenetic analyses based on ITS, LSU, SSU, *tef1-α*, *tub1*, *rpb1*, and *rpb2* support its inclusion in the family *Polyporaceae* (Cui et al. 2019, Justo et al. 2017). It appears phylogenetically close to *Perenniporia*, *Megasporia*, *Sparsitubus*, *Dichomitus* and other polypore genera, but the exact phylogenetic relations between these genera remain unclear (Cui et al. 2019). This genus is characterized by a combination of amyloid, cyanophilous, thick-walled and truncate basidiospores, and the presence of amyloid and cyanophilous skeletal hyphae (Cui et al. 2019). The asexual morph is unknown. The amyloid reaction of basidiospores and skeletal hyphae is the main morphological feature separating this genus from *Perenniporia* (Cui et al. 2019). *Amylosporia* is known only from Asia (China). *Amylosporia* is currently placed in *Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Basidiomycota*.

References

Cui BK, Li HJ, Ji X, Zhou JL et al. 2019 – Species diversity, taxonomy and phylogeny of *Polyporaceae* (*Basidiomycota*) in China. Fungal Diversity 97(1), 137–392.

Dai YC, Cui BK, Yuan HS, He SH et al. 2011 – Wood-inhabiting fungi in southern China. 4. Polypores from Hainan Province. Annales Botanici Fennici 48(3), 219–231).

Justo A, Miettinen O, Floudas D, Ortiz-Santana B et al. 2017 – A revised family-level classification of the *Polyporales* (*Basidiomycota*). Fungal Biology 121(9), 798–824.

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Note 636 *Bleximothyrium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Bleximothyrium Le Renard, Upchurch, Stockey & Berbee (Fossil)

Bleximothyrium is a monotypic fossil genus having affinity with the *Pezizomycotina*, *Dothideomycetes*. The genus was found on a gymnospermous (ginkgophyte or cycad) leaf cuticle preserved in the clays of the Lower Zone 1 of the Potomac Group in Virginia USA (usually dating back to early Cretaceous, Aptian, 125–113 Mya) (Le Renard et al. 2021a). The leaf cuticle was colonized by 21 sporocarps of a single fungal morphotype (Le Renard et al. 2021a). This genus is characterized by ostiolate scutellum of radiate, dichotomizing hyphae (Le Renard et al. 2021a). The type species, *B. ostiolatum* Le Renard, Upchurch, Stockey & Berbee, has tangled hyphae at its scutellum margin (Le Renard et al. 2021a). *Bleximothyrium* is the oldest known fossil flyspeck fungus that occurs on plant cuticles (Le Renard et al. 2021a). The genus has radiate, ostiolate scutellum which is known only from *Dothideomycetes* (Le Renard et al. 2021a). The fossil taxon may belong to *Microthyriaceae* (*Microthyriales*, *Dothideomycetes*).

Reference

Le Renard L, Stockey R, Upchurch G, Berbee ML. 2021a – Extending the fossil record for foliicolous *Dothideomycetes*: *Bleximothyrium ostiolatum* gen. et sp. nov., a unique fly-speck fungus from the Lower Cretaceous of Virginia, USA. American Journal of Botany 108(1), 129–144.

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Note 637 *Crassisporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crassisporus B.K. Cui & Xing Ji

This is a wood-decaying genus found associated with conifers and hardwoods, causing a white rot (Ji et al. 2019a). Phylogenetic analyses based on ITS, LSU, SSU, *tef1-α* and *rpb2* indicated its phylogenetic position in *Polyporaceae* (Ji et al. 2019)a. The results also showed that *Crassisporus* grouped with *Haploporus*, but formed a monophyletic lineage (Ji et al. 2019a). The type species is *C. macroporus* (Ji et al. 2019a). Compared with other species of *Polyporaceae*, species of this genus are characterized by an annual growth habit, effused-reflexed to pileate basidiocarps with the pale yellowish brown to yellowish brown, concentrically zonate or sulcate, and velutinate pileal surface, a trimitic hyphal system with clamped generative hyphae, tissues turning to dark in KOH, and oblong to broadly ellipsoid, hyaline, smooth, and slightly thick-walled basidiospores (Ji et al. 2019a). There are four species in this genus. *Crassisporus* is currently placed in *Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Ji X, Wu DM, Liu S, Si J et al. 2019a – *Crassisporus* gen. nov. (*Polyporaceae*, *Basidiomycota*) evidenced by morphological characters and phylogenetic analyses with descriptions of four new species. MycoKeys 57, 61–84.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 638 *Crystallicutis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crystallicutis El-Gharabawy, Leal-Dutra & G.W. Griff.

This is a resupinate polypore genus growing on decaying angiosperm and gymnosperm wood, usually on well-decayed trunks (El-Gharabawy et al. 2021). The genus was proposed to accommodate the newly described *C. damittiensis*, *C. huangshanensis*, and *C. rajchenbergii* (El-Gharabawy et al. 2021). It also includes *C. serpens* (≡ *Merulius serpens*). The type species is *C. damiettensis* (El-Gharabawy et al. 2021). Phylogenetic analyses based on ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* support its inclusion in the family *Irpicaceae* as accepted in Justo et al. (2017). It appears phylogenetically close to *Byssomerulius*, *Efibula*, *Flavodon*, *Emmia*, *Irpex* and other polypore genera, but the exact phylogenetic relations between these genera remains unclear (El-Gharabawy et al. 2021). This genus is characterized mostly by the presence of crystals in the hyphae of the subiculum and hymenium, giving them a heavily encrusted aspect (El-Gharabawy et al. 2021). The hymenial surface is usually yellow when fresh (El-Gharabawy et al. 2021). The hymenophore might be smooth, tuberculate, papillate, merulioid or poroid (El-Gharabawy et al. 2021). The asexual morph is unknown. Known from Africa, Asia, Europe and North America (El-Gharabawy et al. 2021). A possibly mutualistic relation has been suggested between *C. damiettensis* and the red palm weevil (*Rhynchophorus ferrugineus*), a highly damaging pest of date palms in the Mediterranean region (El-Gharabawy et al. 2021). *Crystallicutis* is currently placed in *Irpicaceae*, *Polyporales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

References

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Justo A, Miettinen O, Floudas D, Ortiz-Santana B et al. 2017 – A revised family-level classification of the *Polyporales* (*Basidiomycota*). Fungal Biology 121(9), 798–824.

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Note 639 *Flavodontia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Flavodontia C.L. Zhao

This is a monotypic, resupinate polypore genus found growing on decaying angiosperm wood (trunks) (Wang & Zhao 2022). It is characterized by a combination of smooth, pink hymenophore; monomitic hyphal system; ellipsoid basidiospores; and absence of cystidia (Wang & Zhao 2022). The asexual morph is unknown. The phylogenetic analyses (LSU, ITS) by Wang & Zhao (2022), place *Flavodontia* in the *Irpicaceae* (*Polyporales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) as accepted in Justo et al. (2017), as sister to *Irpex* and in a more inclusive clade with *Flavodon*. Shortly after the publication of this genus a broader, global revision of the *Irpicaceae* was published (Li et al. 2022c), that synonymized *Flavodontia* with *Irpex*. A broad concept of *Irpex* also included *Emmia*, *Flavodon* and *Hydnopolyporus* Chen et al. 2021a). Since 2022, no new species or taxonomic combinations have been proposed in the genera *Irpex*, *Flavodontia*, *Hydnopolyporus*, or *Emmia*. As a result, it remains uncertain whether a broad or narrow concept of *Irpex* will be adopted. Known only from Asia (China).

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Justo A, Miettinen O, Floudas D, Ortiz-Santana B et al. 2017 – A revised family-level classification of the *Polyporales* (*Basidiomycota*). Fungal Biology 121(9), 798–824.

Li Y, He SH, Chen CC, Nakasone KK et al. 2022c – Global taxonomy and phylogeny of *Irpicaceae* (*Polyporales*, *Basidiomycota*) with descriptions of seven new species and proposals of two new combinations. Frontiers in Microbiology 13, 911978.

Wang H, Zhao CL. 2022. *Flavodontia rosea* gen. & sp. nov. from southwestern China. Mycotaxon 136(4), 755–767.

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Note 640 *Heterophaeomoniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heterophaeomoniella L. Mostert, C.F.J. Spies, Halleen & Gramaje

Heterophaeomoniella was established by Chen et al. (2022a) for a single species, *Heterophaeomoniella pinifoliorum*. The species was originally introduced as *Phaeomoniella pinifoliorum* from a needle surface of *Pinus densiflora* in its anamorphic state from Korea (Lee et al. 2006). The taxon was characterized by reduced, swollen, phialide-like cells, lateral production of conidia from hyphae and terminal, subterminal or less commonly lateral, secondary production of conidia from yeast-like primary conidia (Lee et al. 2006). Lee et al. (2006) placed this taxon within *Phaeomoniella* based on the ITS phylogenetic analysis also showed the close phylogenetic association with *P. chlamydospora*. Chen et al. (2022a) found that *Phaeomoniella pinifoliorum* formed a distinct clade from *P. chlamydospora* based on ITS, *tef1-α* and *tub2* sequence data which further differs in the optimal growth in culture and presence of little to no aerial mycelium from the latter. Thus, the monotypic genus *Heterophaeomoniella* was introduced within *Phaeomoniellales*, but the familial placement of the genus remains uncertain (Chen et al. 2022a).

References

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Published online 2 December 2022

Note 641 *Phanerochaetella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phanerochaetella C.C. Chen & Sheng H. Wu

This is a resupinate polypore genus found growing on decaying angiosperm wood and gymnosperm wood, including desert shrubs and cacti (Chen et al. 2021a). The genus was proposed to accommodate the already described *Phanerochaete angusticystidiata*, *Phanerochaete exilis*, *Phanerochaete leptoderma*, *Phanerochaete xerophila* and the newly described *Phanerochaetella formosana* (Chen et al. 2021a). The study of Li et al. (2022c) described a new species in the genus, *P. sinensis*, and recombined *Corticium queletii* in *Phanerochaetella*. The hymenophore is smooth to tuberculate (Chen et al. 2021a). The asexual morph is unknown. Phylogenetic analyses based on ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* support its placement in *Irpicaceae* (*Polyporales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) following Justo et al.

(2017). In the analyses of Chen et al. (2021a), based on the loci mentioned above, it appears as the sister taxon of *Irpex* (Chen et al. 2021a). In the analyses of Li et al. (2022c), based only on LSU and ITS, it appears in a more inclusive clade with *Irpex*, *Efibula*, *Byssomerulius* and *Cytidiella*. The type species is *C. angustocystidiata* (Chen et al. 2021a). This genus is characterized by yellowish cream and membranaceous basidiocarps; subiculum of fairly dense to compact texture; mostly simple-septate hyphae; cystidia (when present) strongly encrusted (Chen et al. 2021a). This combination of characters also occurs in other genera such as *Phanerochaete*, *Efibula*, *Phlebiopsis* and *Phaeophlebiopsis*, making necessary the use of molecular data for a proper separation of these genera (Chen et al. 2021a). Known from Asia, Australasia (New Zealand), Europe and North America (Chen et al. 2021a).

References

Chen CC, Chen CY, Wu SH. 2021a – Species diversity, taxonomy and multi-gene phylogeny of phlebioid clade (*Phanerochaetaceae*, *Irpicaceae*, *Meruliaceae*) of *Polyporales*. Fungal Diversity 111(1), 337–442.

Justo A, Miettinen O, Floudas D, Ortiz-Santana B et al. 2017 – A revised family-level classification of the *Polyporales* (*Basidiomycota*). Fungal Biology 121(9), 798–824.

Li Y, He SH, Chen CC, Nakasone KK et al. 2022c – Global Taxonomy and Phylogeny of *Irpicaceae* (*Polyporales*, *Basidiomycota*) with descriptions of seven new species and proposals of two new combinations. Frontiers in Microbiology 13, 911978.

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Note 642 *Pseudocryphonectria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocryphonectria Huayi Huang

The monotypic genus *Pseudocryphonectria* (type species, *P. elaeocarpicola*), so far only described in its asexual morph was introduced in *Cryphonectriaceae* (*Diaporthales*) based on a dual taxonomic approach (Huang et al. 2022). Isolated strains were subjected to multi-gene phylogenetic analyses (Huang et al. 2022). The strains formed a separate lineage, distinct from taxa of all other genera in the family in both the ITS–LSU phylogenetic tree as well as the phylogram based on combined ITS, LSU, *tef1-α* and *rpb2* loci (Huang et al. 2022). This indicative possibility of a novel genus was then supported by the morphological distinction of the isolated strains, which distinguished themselves from other taxa in *Cryphonectriaceae* by principally comprising dimorphic conidia produced within the same conidioma (Huang et al. 2022). The isolates were therefore introduced as the novel species *P. elaeocarpicola*, in the new genus *Pseudocryphonectria* (Huang et al. 2022).

Pseudocryphonectria elaeocarpicola is characterized by orange cryphonectriaceous stromata and yellow to orange, subglobose to pulvinate, pycnidial conidiomata which have multiple locules, with a single ostiole (Huang et al. 2022). Conidiogenous cells are characteristically phialidic while two types of conidia are produced, namely, microconidia, which are cylindrical, and macroconidia, which are obclavate (Huang et al. 2022). *Pseudocryphonectria elaeocarpicola* has a pathogenic lifestyle (Huang et al. 2022). The taxon was isolated from *Elaeocarpus apiculatus* and *E. hainanensis* (*Elaeocarpaceae*) which evidenced stem blight disease, with yellow to orange conidiomata and orange conidial tendrils formed on the cankered bars (Huang et al. 2022). The diseased trees died within five months after becoming infected, as observed by Huang et al. (2022). Pathogenicity tests conducted on seedlings of *Elaeocarpus apiculatus* and *E. hainanensis* revealed that the fungus was indeed highly pathogenic on the plants, quickly infecting and killing them (Huang et al. 2022). The high virulence of this fungus is of concern since it can be a serious plant pathogen, not only to *Elaeocarpus apiculatus* and *E. hainanensis*, but to other economically important plants as well (Huang et al. 2022).

Reference

Huang HY, Huang HH, Zhao DY, Shan TJ et al. 2022 – *Pseudocryphonectria elaeocarpicola* gen. et sp. nov. (*Cryphonectriaceae*, *Diaporthales*) causing stem blight of *Elaeocarpus* spp. in China. MycoKeys 91, 67–84.

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Note 643 ***Marthomamyces***

Web-links: Index Fungorum, Facesoffungi

Marthomamyces L.K. Mathew, Jac. Thomas & N.N. Nair

Lini et al. (2021) synonymised *Echidnodella vateriae* Hosag. & Kamar under *Marthomamyces vateriae* (Hosag. & Kamar.) L.K. Mathew, Jac. Thomas & N.N. Nair and introduced *Marthomamyces* to accommodate this species. The monotypic genus *Marthomamyces* is an ectoparasitic foliicolous taxon associated with *Vateria indica* L. (*Dipterocarpaceae*) in India (Lini et al. 2021). *Marthomamyces* is distinguishable by non-appressoriate mycelia with peculiar nutritive hyphae (haustoria) surrounding the stomata, elongated thyriothecia, with longitudinal dehiscence (Lini et al. 2021). Molecular data is unavailable for this genus. *Marthomamyces* is listed as a member of *Asterinaceae* in Index Fungorum (2022), while it was placed in *Lembosiaceae* by Lini et al. (2021). Hosagoudar et al. (2001) validly introduced *Lembosiaceae* using the morphological character of elongate thyriothecia with longitudinal or X- or Y-shaped slits. This was followed by Hosagoudar (2012). Hyde et al. (2013) treated this family as a possible synonym of *Asterinaceae*. Hongsanan et al. (2014) synonymised *Lembosiaceae* under *Asterinaceae* based on the presence of appressoria and sequence data of *Lembosia albersi*. Dai et al. (2018) showed that their two new species of *Lembosia* are phylogenetically separate from *Asterinaceae*. By adding more sequence data, Hongsanan et al. (2020a) and Marasinghe et al. (2021, 2022b) revealed that *Lembosia* should be raised to a family in *Asterinales*. Lini et al. (2021) accepted *Cirsosia*, *Echidnodes*, *Echidnodella*, *Eupelte*, *Lembosia*, *Maheshwaramyces*, and *Marthomamyces* in *Lembosiaceae* based on their elongate thyriothecia which dehisce to open by a longitudinal or X- or Y-shaped slits. According to unresolved placement and lack of molecular data in these genera, the characters of thyriothecia are recommended to key out the differentiate genera of *Asterinaceae* and *Lembosiaceae*. Therefore, *Cirsosia*, *Echidnodes*, *Echidnodella*, *Eupelte*, *Lembosia*, *Maheshwaramyces*, *Marthomamyces* are accepted in *Lembosiaceae* in this study. However, molecular data for these genera are needed to confirm their placement.

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Note 644 *Allocordyceps*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Allocordyceps Poinar in Poinar & Maltier 2021 (Fossil)

The monotypic fossil genus *Allocordyceps* was introduced to accommodate *A. baltica* (Poinar & Maltier 2021). This fungus was found attached as a parasite to *Camptonotus*, an ant genus (*Formicidae*, *Hymenoptera*), which is presently found all over the world (Poinar & Maltier 2021). Such ants usually make their nests in trees, rotting logs and stumps (Poinar & Maltier 2021). The host and the fungus were recovered from the Baltic amber, Central European Russia (Poinar & Maltier 2021). The type species is *Allocordyceps baltica* **(**Poinar & Maltier 2021), which is the oldest known fossil fungus (50 Mya old) of an ant (Poinar & Maltier 2021). This is the first fossil record of a member of the *Hypocreales* emerging from the body of an ant (Poinar & Maltier 2021). *Allocordyceps* is characterized by an orange, stalked, cup-shaped, partially immersed, perithecial ascoma that emerges from the rectum of the ant, two separate stromata with septate mycelium that emerge from the base of the neck and the abdomen of the ant, respectively, and free-standing putative perithecia bearing putative asci with putative multicellular ascospores fragmented into one-celled partspores **(**Poinar & Maltier 2021). This fossil fungus could represent a precursor of *Ophiocordyceps,* which at present is the only fungal lineage parasitizing ants of the genus *Camponotus* (Poinar & Maltier 2021). However, *Allocordyceps baltica* could not be placed in *Ophiocordyceps* because ascomata in those fungi usually come out the neck or head of an ant and not the rectum (Poinar & Maltier 2021). All of the stages, those are attached to the ant and the freestanding ones, are of the same species (Poinar & Maltier 2021). This fossil taxon may belong to *Clavicipitaceae* (*Hypocreales*, *Sordariomycetes*).

Reference

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 645 *Amyloceraceomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Amyloceraceomyces S.H. He

This is a monotypic, wood rotting genus found associated with an angiosperm branch, but the rot type is unknown (Yuan et al. 2020). Phylogenetic analyses based on ITS and LSU sequences indicated its phylogenetic position in *Amylocorticiales* (Yuan et al. 2020). The type species is *A. angustisporus* (Yuan et al. 2020). Compared with other species of *Amylocorticiaceae*, species of this genus is characterized by the pellicular to membranaceous, stratified basidiocarps, a monomitic hyphal system with nodose septate generative hyphae, and the cylindrical, smooth, thin-walled, amyloid basidiospores (Yuan et al. 2020). *Amyloceraceomyces* is currently placed in *Amylocorticiaceae*, *Amylocorticiales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Yuan HS, Lu X, Dai YC, Hyde KD et al. 2020 – Fungal diversity notes 1277-1386: taxonomic and phylogenetic contributions to fungal taxa. Fungal Diversity 104(1), 1–266.

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Note 646 *Melanina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Melanina Grube, Muggia & de Hoog

Muggia et al. (2021b) introduced a new genus and species, *Melanina gundecimermaniae* Grube, Muggia & de Hoog, from Austria, a rock-inhabiting species that associates with epilithic, crust-forming lichens in subalpine habitats. *Melanina* is characterized by a compact or yeast-like mycelia and sphaerical hyphae generated by lateral and apical cell divisions with conidia clumps (Muggia et al. 2021b). The placement of *Melanina* is supported as a monophyletic lineage close to *Herpotrichiellaceae*, *Chaetothyriaceae*, *Cyphellophoraceae*, and *Trichomeriaceae* within *Chaetothyriales* based on maximum likelihood analysis of LSU sequence data (Muggia et al. 2021b). However, *Melanina* does not fit well within any related family (Muggia et al. 2021b). Phylogenetic analysis places *Melanina* in *Chaetothyriales* genera *incertae sedis* (Muggia et al. 2021b).

Reference

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Note 647 *Mycobernardia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycobernardia Ghobad-Nejhad

A monotypic corticioid resupinate genus, found growing on decorticated wood, mainly on hardwoods, in wet localities, and saprotroph (Ghobad-Nejhad et al. 2021). Phylogenetic analyses based on ITS, LSU, SSU, and SSU indicated its phylogenetic basal position in *Corticiaceae* (*Corticiales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Ghobad-Nejhad et al. 2021). The type species of the genus is *M. incrustans* (Ghobad-Nejhad et al. 2021). *Mycobernardia* is characterized by ceraceous, corticioid basidiomata, a monomitic hyphal system with clamps at all septa, subcylindrical to suburniform basidia with occasional internal repetition, and curved, allantoid basidiospores (Ghobad-Nejhad et al. 2021). The asexual morph is unknown. *Mycobernardia incrustans* was previously assigned to *Galzinia* because of its curved, allantoid basidiospores and internally repetitive basidia (Ghobad-Nejhad et al. 2021). *Galzinia* species, including the generic type *G. pedicellate* develop very thin, almost invisible, watery gray basidiomata (Ghobad-Nejhad et al. 2021). In contrast, basidiomata in *Mycobernardia* are thicker, distinct, ceraceous, and cream-colored (Ghobad-Nejhad et al. 2021). Species in the two genera also differ in their nuclear behavior, subnormal in *G. pedicellata* and heterocytic in *M. incrustans* (Ghobad-Nejhad et al. 2021).

Reference

Ghobad-Nejhad M, Langer E, Nakasone K, Diederich P et al. 2021 – Digging Up the Roots: Taxonomic and Phylogenetic Disentanglements in *Corticiaceae sensu stricto* (*Corticiales, Basidiomycota*) and Evolution of Nutritional Modes. Front. Microbiol. 12, 704802.

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Note 648 *Noblesia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Noblesia Nakasone, in Nakasone, Ortiz-Santana & He

Noblesia is a crust taxon with tuberculate, odontoid to hydnaceous hymenophore, and saprobic on hardwood or conifers, in Europe and USA (Nakasone et al. 2021). Phylogenetic analyses based on ITS and LSU showed its position in the *Merulius* clade, with a sister relationship with *Phlebia fuscotuberculata* C.L. Zhao but not supported by bootstrap or posterior probability (Nakasone et al. 2021). This genus has two species, the type *N. crocea* (Schwein.) Nakasone (≡ *Sistotrema croceum* Schwein.) and *N. femsjoeensis* (Litsch. & S. Lundell) Nakasone (Nakasone et al. 2021). *Noblesia* is characterized by soft ceraceous, light yellow, bright orange yellow or brown basidiomata, turning from red to black in KOH, with fasciculate hyphae enclosed in yellowish-brown mucilage present in the hymenium (Nakasone et al. 2021). The asexual morph is unknown. *Noblesia* is currently placed in *Polyporales*, *Agaricomycetes*, *Basidiomycota*. Only one specimen was included in the molecular study, so more specimens of both species are needed to ascertain its phylogenetic position and its monophyly (Nakasone et al. 2021).

Reference

Nakasone KK, Ortiz-Santana B, He SH. 2021 – Taxonomic studies of crust fungi with spines in *Radulomyces, Sarcodontia,* and the new genus *Noblesia*. Mycological Progress 20, 1479–1501.

Entry by Virginia Ramírez-Cruz & Laura Guzmán-Dávalos, Laboratory of Mycology, Department of Botany and Zoology, University of Guadalajara, Apdo. postal 1–139, Zapopan, Jal., 45147, Mexico

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Note 649 ***Poriella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Poriella C.L. Zhao

Poriella is a polyporoid and saprotrophic genus that grows on conifers, rarely on hardwood, where it causes white rot and has been mainly recorded in temperate but has also been documented in tropical forests; known from Asia, North America and Europe (Chen et al. 2021b). Phylogenetic analyses based on ITS, LSU, SSU and *tef1-α* indicated its phylogenetic position in *Polyporaceae* (*Polyporales*, *incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Chen et al. 2021b). Phylogenetic data also showed *Poriella* is closely related to *Yuchengia narymica (*Pilát*)* B.K. Cui, C.L. Zhao & K.T. STEFfen and *Vanderbylia* D.A. Reid (Chen et al. 2021b). *Poriella* is a monotypic genus and the type species is *Poriella subacida* (Peck) C.L. Zhao [≡ *Perenniporia subacida (*Peck*)* Donk] (Chen et al. 2021b). *Poriella* is characterized by producing resupinate to effused-reflex basidiomata with dingy yellowish to pale tan to ochraceous surface, di-trimitic hyphal system with unbranched and strongly dextrinoid skeletal hyphae, and non-dextrinoid, cyanophilous, ellipsoid, non-truncate, hyaline, thick-walled basidiospores (Chen et al. 2021b). The asexual morph is unknown. *Poriella subacida* has also been recorded from Africa; however, representative samples from this region were not included in the phylogenetic analysis by Chen et al. (2021b). Therefore, it is necessary to include samples from this continent to know if they correspond to *Poriella subacida* and confirm its wide tropical distribution.

Reference

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Entry by Alonso Cortés-Pérez & Laura Guzmán-Dávalos, Doctorado BEMARENA, University of Guadalajara, Zapopan, 45200, Jalisco, Mexico & Laboratory of Mycology, Department of Botany and Zoology, University of Guadalajara, Apdo. postal 1-139, Zapopan, 45147, Jalisco, Mexico.

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 650 ***Pseudoarthropsis***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoarthropsis Stchigel, Rodr.-Andr. & Cano

Pseudoarthropsis was introduced by Rodríguez-Andrade et al. (2021) to accommodate two hyaline malbranchea-like hyphomycetes with arthroconidia. The generic type, *P. cirrhata* (Oorschot & de Hoog) Stchigel, Rodr.-Andr. & Cano was isolated from a wall surface in the Netherlands and originally had been described as *Arthropsis cirrhata* Oorschot & de Hoog (Rodríguez-Andrade et al. 2021). The second species, *P. crassispora* Rodr.-Andr., Stchigel & Cano, was isolated from a bronchial washing in the USA (Rodríguez-Andrade et al. 2021). A phylogenetic study based on ITS and LSU sequences revealed that these two species formed a well-supported clade in *Gymnoascaceae* (*Onygenales*), distinct from other members of this family (Rodríguez-Andrade et al. 2021). The type species of *Arthropsis*, *A. truncata* Sigler, M.T. Dunn & J.W. Carmich., is a phylogenetically distant fungus placed in *Sordariomycetes* (Rodríguez-Andrade et al. 2021).

Reference

Rodríguez-Andrade E, Cano-Lira JF, Wiederhold N, Pérez-Cantero A et al. 2021 – A revision of malbranchea-like fungi from clinical specimens in the United States of America reveals unexpected novelty. IMA Fungus 12(25), 1–27.

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Note 651 *Amnocutis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Amnocutis K.H. Larss.

Amnocutis is a monotypic, corticioid taxon, probably saprotrophic, fruiting near streams on decorticated wood temporarily submerged, and occurring in northern Europe (Norway, Sweden). The new genus was proposed based on morphological characters only (Larsson & Oldervik 2020). DNA was successfully extracted from the holotype material but sequencing failed (Larsson & Oldervik 2020). Molecular characters are not available. Therefore, the correct taxonomic position of this genus at the family and order rank is undetermined (Larsson & Oldervik 2020). The genus is characterized by effuse, soft, whitish basidiomata, monomitic hyphal structure, firm-walled subicular hyphae, presence of cystidia arising from subicular hyphae and extending beyond the hymenium, clamp connections on all septa, clavate basidia, and smooth, globose to subglobose, thin-walled basidiospores. The asexual morph is unknown. The type species is *A. rivularis*. Based on morphology, Larsson & Oldervik (2020) could not assign this species to any of the known genera, while the most similar were *Hypochnicium* and *Bulbillomyces* (Larsson & Oldervik 2020*)*. However, *Hypochnicium* differs from *Amnocutis* by its thick-walled basidiospores, while *Bulbillomyces* differs by a presence of anamorph state, its cystidia originating from the subhymenium, and cylindrical to utriform basidia (Larsson & Oldervik 2020*)*. *Amnocutis* is currently placed in *incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*. Further sampling, sequencing and multilocus phylogenetic studies are required to define the correct taxonomic position of this genus.

Reference

Larsson KH, Oldervik FG. 2020 – *Amnocutis,* a new corticioid genus with affinities to water-soaked wood. Synopsis Fungorum 41, 9–11.

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Note 652 *Asperosporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Asperosporus Karlsen-Ayala, Gazis & M.E. Sm.

Asperosporus is a monotypic truffle genus found associated with ferns but is possibly saprotrophic (Karlsen-Ayala et al. 2021). Phylogenetic analyses based on ITS, LSU, *rpb2* and *tef1-α* indicated its phylogenetic position in *Agaricaceae* (*Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Karlsen-Ayala et al. 2021). A sister relationship with *Agaricus* was shown without support from bootstrap or posterior probabilities (Karlsen-Ayala et al. 2021). The type species of the monotypic genus is *A. subterraneus* Karlsen-Ayala, Gazis & M.E. Sm. Compared with other species of *Agaricaceae*, species of this genus are characterized by lacking a stipe or columella, having large, ornamented spores, the fresh sporocarps rapidly stain pink-red when cut or bruised and a rancid smell (Karlsen-Ayala et al. 2021). The asexual morph is unknown. Further sampling with more collections are needed to examine the monophyly of this genus. More samples could also help to clarify whether it exists in wild since the known samples were collected in an artificial environment (in the soil of nursery production of ferns).

Reference

Karlsen-Ayala E, Gazis R, Smith ME. 2021 – *Asperosporus subterraneus*, a new genus and species of sequestrate *Agaricaceae* found in Florida nursery production. Fungal systematics and evolution 8(1), 91–100.

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Note 653 *Inosperma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Inosperma (Kühner) Matheny & Esteve-Rav., Matheny, Hobbs & Esteve-Raventós

This is an agaric genus associated with a wide range of plants (Kosentka et al. 2013, Deng et al. 2021b, 2022). Phylogenetic analyses based on ITS, LSU, *rpb1*, *rpb2*, *tef1-α* and SSU indicated it was closer to *Auritella*, *Tubariomyces*, and *Mallocye* within *Inocybaceae* (Matheny et al. 2020). The type species is *I. calamistratum (*Fr.*)* Gillet. There are no morphological synapomorphies for *Inosperma* in its entirety at the moment. Compared with other species of *Inocybaceae*, species in this genus are characterized by subspherical to subphaseoliform basidiospores, hyaline or necropigmented basidia, the absence of pleurocystida, thin-walled cheilocystidia sometimes with cyanophilus contents and distinctive smell (Matheny et al. 2020, Deng et al. 2021a). The asexual morph is unknown. Certain *Inosperma* species may contain muscarine, a neurotoxin that could cause poisoning incidents (Kosentka et al. 2013, Deng et al. 2021b, Deng et al. 2022). There are 78 species in this genus. *Inosperma* is currently placed in *Inocybaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

References

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Kosentka P, Sprague SL, Ryberg M, Gartz J et al. 2013 – Evolution of the toxins muscarine and psilocybin in a family of mushroom-forming fungi. PLoS One 8: e64646.

Matheny PB, Hobbs AM, Esteve-Raventós F. 2020 – Genera of *Inocybaceae*: new skin for the old ceremony. Mycologia 112(1), 83–120.

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Note 654 *Mallocybe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mallocybe (Kuyper) Matheny, Vizzini & Esteve-Rav., Matheny, Hobbs & Esteve-Raventós

This is an agaric genus associated with a wide range of plants. Phylogenetic analyses based on ITS, LSU, *rpb1*, *rpb2*, *tef1-α* and SSU indicated its close relationships with *Auritella* and *Tubariomyces* within the family, but with limited support (Matheny et al. 2020). The type species is *M. terrigena* (Fr.) Matheny, Vizzini & Esteve-Rav. Compared with other species of *Inocybaceae*, species in this genus are characterized by a tomentose or appressed scaly pileus, adnate to adnexed lamellae, ellipsoid to ovate-ellipsoid basidiospores and thin-walled, short and usually catenate cheilocystidia (Kosentka et al. 2013, Matheny et al. 2020). The asexual morph is unknown. Several species were reported to contain muscarine (Kosentka et al. 2013). The majority of the genus occurs in north temperate regions (Kosentka et al. 2013). The genus is considered as ectomycorrhizal based on anatomical observations and molecular evidence from ECM plant root tips, including orchidaceous plants (Agerer 1987–2006, Roy et al. 2009). There are 64 species in this genus. *Mallocybe* is currently placed in *Inocybaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

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Note 655 *Nothocybe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothocybe Matheny & K.P.D. Latha

This is a monotypic, agaric genus with single species occurring under *Acacia* only found in tropical India (Matheny et al. 2020). Phylogenetic analyses based on ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α* indicated its sister position with *Inocybe sensu stricto* (Matheny et al. 2020). The type species is *N. distincta* (K.P.D. Latha & Manim.) Matheny & K.P.D. Latha. Compared with other species of *Inocybaceae*, species in this genus are characterized by finely squamulose-rimulose pileus, fibrillose-pruinose stipe, phaseoliform to ovate-elliptic basidiospores with occasional weak angular outline, cheilocystidia often septate and covered apically with a resinous substance and caulocystidia present (at stipe apex) as modified terminal cells of stipitipellis hyphae (Matheny et al. 2020). It shares high similarity with species of *Pseudosperma* (furfuraceous stipe surface, absence of metuloids, hyaline basidia, and smooth spores) but differs from these principally by the somewhat angular outline to the spores, a resinous substance on the cheilocystidia (Matheny et al. 2020). The asexual morph is unknown. *Nothocybe* is currently placed in *Inocybaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Matheny PB, Hobbs AM, Esteve-Raventós F. 2020 – Genera of *Inocybaceae*: new skin for the old ceremony. Mycologia 112(1), 83–120.

Entry by Yuguang Fan, Hainan Key Laboratory for R & D of Tropical Herbs, School of Pharmacy, Hainan Medical University, Haikou 571199, China

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Note 656 *Stereodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Stereodiscus Rajchenb. & Pildain

This is a resupinate, discoid to stereum-like genus living on dead branches of angiosperms and causes white rot (Rajchenberg et al. 2021). Phylogenetic analyses based on ITS and LSU indicated its phylogenetic position in *Stereaceae* (Rajchenberg et al. 2021). Results also demonstrated its sister relationship with *Gloeosoma* receiving significant support from both bootstrap and posterior probabilities (Rajchenberg et al. 2021). The type species is *Stereodiscus antarcticus* (Rajchenberg et al. 2021). *Stereodiscus* produces smooth, thin-walled, cylindric, broadly ellipsoid to citriform, amyloid basidiospores up to 25 µm long and produce a white to cream spore print (Rajchenberg et al. 2021). Species lack any of the typical cystidia in *Aleurodiscus sensu lato*, i.e., acanthocystidia, acanthophyses, gloeocystidia, and dendrohyphidia, but skeletocystidia are present in three species (*S. antarcticus*, *S. parmuliformis* and *S. trivialis*) (Rajchenberg et al. 2021). The hyphal system is monomitic with simple-septate hyphae, except in the recently described *S. patagonicus* (as *Aleurodiscus*), which features scattered clamps on the hyphae and at the bases of basidia (Rajchenberg et al. 2021). The asexual morph is unknown. The latter feature probably explains why *S. patagonicus* is phylogenetically sister to the four other known species (Rajchenberg et al. 2021). The genus holds presently five species (mostly recombined from the genus *Aleurodiscus*), and is known only from the Southern Hemisphere (Argentina, Chile, Australia, and New Zealand) (Rajchenberg et al. 2021). *Stereodiscus* is currently placed in *Stereaceae*, *Russulales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Rajchenberg M, Pildain MB, de Errasti A, Riquelme C et al. 2021 – Species and genera in *Aleurodiscus sensu lato* as viewed from the Southern Hemisphere. *Mycologia* 113(6), 1264–1277.

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Note 657 *Adustochaete*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Adustochaete Alvarenga & K.H. Larss.

This is a genus of saprotrophic jelly fungi fruiting on dead hardwood branches in Neotropical regions (Brazil, Mexico) and China. *Adustochaete* was introduced based on morphological and phylogenetic studies (ITS and LSU sequences) of two newly described auricularioid species, *A. rava* Alvarenga & K.H. Larss. and *A. interrupta* Spirin & Malysheva (Alvarenga et al. 2019). Both clustered in an independent clade sister to *Eichleriella* which was strongly supported in Bayesian analysis (Alvarenga et al. 2019). Another new species (*A. nivea* Alvarenga) from Brazil was described with an updated phylogeny (ITS and LSU) for *Auriculariaceae* (Hyde et al. 2020a). In their analysis, *Adustochaete* formed a well-supported group, sister to a large clade including the genera *Proterochaete*, *Exidiopsis*, *Heteroradulum*, *Sclerotrema*, *Exidia*, and *Tremellochaete*. A fourth species was described from China (*A. yunnanensis*) (Li & Zhao 2022), which forms a well-supported lineage sister to a clade comprising *A. interrupta* and *A. rava*. The type species is *A. rava* (Alvarenga et al. 2019). The genus is characterized by resupinate, dry, soft basidiomata, monomitic hyphal structure, spiny or tuberculate hymenophore covered by smooth tramal hyphae and encrusted hyphidia, 4-celled basidia, clamp connections, and hyaline, thin-walled, cylindrical to broadly cylindrical basidiospores (Alvarenga et al. 2019, Hyde et al. 2020a, Alvarenga & Gibertoni 2021). The asexual morph is unknown. *Adustochaete* is currently placed in *Auriculariaceae*, *Auriculariales*, *Agaricomycetes*, *Basidiomycota*. Further sampling and sequencing of additional genes (e.g. *rpb2*, *tef1-α*, *tub2*) are required to determine the correct phylogenetic position of this genus within *Auriculariaceae*.

References

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Note 658 *Crystallodon*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Crystallodon Alvarenga

Crystallodon is a monotypic genus of saprotrophic jelly fungi occurring on dead wood in forests of Central America (Panama) and South America (Brazil) (Alvarenga et al. 2019). *Crystallodon* was introduced to determine the correct generic position of *Heterochaete subgelatinosa* (Bodman 1952), the species originally described in the genus are widely considered as polyphyletic (Alvarenga et al. 2019). In the phylogenetic analysis (based on ITS and LSU sequences) presented by Alvarenga & Gibertoni (2021), *Crystallodon* formed a well-supported lineage sister to a clade composed of *Tremellochaete* and *Exidia* species. The type species is *Crystallodon subgelatinosum* (Alvarenga & Gibertoni 2021). The genus is characterized by resupinate, effused, gelatinous to crustaceous basidiomata, monomitic hyphal structure, hymenophore with sterile spines enclosed by abundant crystals, thin-walled hyphidia, four-celled and ellipsoid-ovoid basidia, and cylindrical to broadly cylindrical basidiospores (Alvarenga & Gibertoni 2021). The asexual morph is unknown. *Crystallodon* is currently placed in *incertae sedis*, *Auriculariales*, *Auriculariomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*. Further sampling and sequencing of additional genes (e.g. *rpb2*, *tef1-α*, *tub2*) are required to determine the placement of this genus at the family rank within *Auriculariales*.

References

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Bodman MC. 1952 – A taxonomic study of the genus *Heterochaete*. Lloydia 15, 193–233

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Note 659 *Gallowayiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Gallowayiopsis S.Y. Kondr.

The genus was established for four species formerly included in *Trapelia* M. Choisy (three species) and *Placopsis* (Nyl.) Linds. (one species) (Kondratyuk et al. 2022). The species are: *Gallowayiopsis collaris* (Orange) S.Y. Kondr. (syn. *Trapelia collaris* Orange), *G. glebulosa* (Sm.) S.Y. Kondr. (syn. *T. glebulosa* (Sm.) J.R. Laundon), the type species *G. obtegens* (Th. Fr.) S.Y. Kondr.) (syn. *T. obtegens* (Th. Fr.) Hertel) and *G. roseonigra* (Brodo) S.Y. Kondr. (syn. *Placopsis roseonigra* Brodo). The taxonomic placement is in *Trapeliaceae* (*Trapeliales*, *Lecanoromycetes*). All taxa included in the genus are lichenized fungi growing on rocks, forming areolate thalli with apothecia and in case of one species sometimes also with vegetative lichenized diaspores (soredia), simple ascospores and *Trapelia*-type asci (Brodo 1995, Orange 2018). Kondratyuk et al. (2022) in the diagnosis stated also, that they contain varying amount of gyrophoric and 5-*O*-methylhiascic acids, however this character is hardly diagnostic as all species placed in *Trapelia sensu stricto* also contain the same substances. The species form monophyletic group based on separate ITS and LSU phylogenies (trees not shown in Kondratyuk et al. 2022, only discussion provided), but includes also *T. involuta* (Taylor) Hertel. However, the latter taxon is placed in *Trapelia* in combined SSU, LSU and ITS phylogeny and *Gallowayiopsis*, as circumscribed by Kondratyuk et al. (2022), in the combined three markers analysis forms two separate clades (one with *G. collaris*, *G. obtegens* and *G. glebulosa*, and the other one with *G. roseonigra* and '*Trapelia*' aff. *coarctata*) in a larger clade with several polytomies, which includes *Trapelia sensu stricto* and other segregates proposed by Kondratyuk et al. (2022). Since *Gallowayiopsis* is very similar in morphology and secondary chemistry to *Trapelia sensu stricto* and other related genera established by Kondratyuk et al. (2022), and also there are incongruencies in species placement and low supports in the phylogenetic trees as shown by these authors, the generic segregations seem to be premature and unjustified, and should await sequencing of additional markers, preferably protein coding genes. The relationships in this clade presented by Orange (2018) are also not fully supported.

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Note 660 *Helmutiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Helmutiopsis S.Y. Kondr., Lőkös & Hur

The genus includes three species, *Helmutiopsis alba* (Metzler ex Arnold) S.Y. Kondr., Lőkös & Hur, *H. aspersa* (Borrer) S.Y. Kondr., Lőkös & Hur and *H. atrocinerea* (Fr.) S.Y. Kondr., Lőkös & Hur (type species), previously placed in *Rinodina* (Ach.) Gray. The genus *Rinodina* itself is polyphyletic, as demonstrated previously also by Nadyeina et al. (2010), and two species used in the phylogeny, *H. alba* and *H. atrocinerea*, form monophyletic, well supported clade in phylogeny based on ITS and SSU markers. The clade is close to *Physcia sensu lato*, but this placement is with low support (Kondratyuk et al. 2021). All *Helmutiopsis* species are lichenized fungi growing on rocks, with crustose thalli (one species is sorediate), lecanorine apothecia, *Lecanora*-type ascus, *Pachysporaria*-type ascospores, and all produce atranorin and gyrophoric acid with related substances (Sheard 2010, Nimis 2022). Although the relationships of clades in the phylogeny presented by Kondratyuk et al. (2021) did not receive much support, the distinction of *Helmutiopsis* seems to be justified by the combination of morphological and chemical features. The taxonomic placement of the genus is in *Physciaceae* (*Caliciales*, *Lecanoromycetes*).

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Note 661 *Hondaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hondaria Kitaura & A.P. Lorenz

This is a monotypic genus established for *Collema leptosporum* Malme (Kitaura et al. 2020), which, as part of the *Collema fasciculare* group, was placed in *Collemataceae*, but later transferred to *Arctomia* (as *A. leptospora* (Malme) Otálora & Wedin) in *Arctomiaceae* by Otálora & Wedin (2013); however, the placement of the species in the latter genus was not supported by molecular data. Analyses of ITS, SSU and *m7*, suggested its return to the family *Collemataceae*, and the new genus *Hondaria* was introduced for this lineage (Kitaura et al. 2020). The only so far known species, *Hondaria leptospora* (Malme) Kitaura, M.C. Scur & A.P. Lorenz, is a cyanophilous, lichenized fungus (lichen) growing on bark of trees in Brazil and Paraguay. It is characterized mainly by foliose, homoiomerous thallus, frequently present apothecia with a euparaplectenchymatous proper exciple, very long, acicular, 5–8-septate ascospores measuring

120–175(–200) × 2–4(–5) µm and the production of isidia (Kitaura et al. 2020). Kitaura et al. (2020) suggested that two other species, *Arctomia papuanorum* (Degel.) Otálora & Wedin and *A. uviformis* (Hue) Otálora & Wedin, may also belong to *Hondaria*, but DNA sequences are not yet available for these taxa; therefore, its taxonomic placement is uncertain as morphological similarity in this group of lichens can be a result of convergent evolution. The taxonomic placement of *Hondaria* is in *Collemataceae* (*Peltigerales*, *Lecanoromycetes*).

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Note 662 *Huriopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Huriopsis S.Y. Kondr. & Lőkös

Based on analysis of combined ITS and SSU sequence data, Kondratyuk et al. (2021) introduced *Huriopsis* to accommodate the yellow *Rinodina* species; those containing thiomelin. Two identified species were sequenced, as well as one unidentified species. In total, eight species are combined into the new genus. The phylogenetic position is however quite close to the majority of species currently classified in *Rinodina* (including *R. oleae*, *R. pyrina* and *R. confragosa*), which however does not cluster with the type species of *Rinodina* in this analysis (Kondratyuk et al. 2021). Basal nodes are however rarely well-supported. The genus is distributed world-wide and occurs on rock, bark, wood and mosses from lowland tropics to boreal mountains (Kondratyuk et al. 2021). Apart from the yellow colour caused by the thiomelin pigment, they also share all other characters that characterize *Rinodina s. lat.*, as well as the *Physcia*- or *Pachysporaria*-type ascospores. It seems a natural group that is characterized both phylogenetically and morphologically (or rather chemically), but the evidence is a bit scanty; one of the species included in the genus (*H. plana*) even misses the yellow pigment and is only included because it clusters inside in the phylogeny based on ITS. The taxonomic placement of *Huriopsis* is in *Physciaceae* (*Teloschistales*, *Lecanoromycetes*) (Kondratyuk et al. 2021).

Reference

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Note 663 *Johnsheardia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Johnsheardia S.Y. Kondr., Kärnefelt & A. Thell

Based on analysis of combined ITS and SSU sequence data, Kondratyuk et al. (2021) introduced *Johnsheardia* to accommodate a group of mostly muscicolous species that were previously classified in *Rinodina* but prove to be phylogenetically distant. Seven identified species were sequenced, all of which are combined into the new genus. No discussion is presented about the possible existence of other species related to these among the ca 250 currently accepted *Rinodina* species (Lücking et al. 2017) that have not been sequenced. No morphological characters are mentioned that would enable to differentiate species of this phylogenetic group from other splits of *Rinodina sensu lato* The taxonomic placement of *Johnsheardia* is in *Physciaceae* (*Teloschistales*, *Lecanoromycetes*) (Kondratyuk et al. 2021).

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Note 664 *Klauskalbia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Klauskalbia S.Y. Kondr., Lőkös, Farkas & J.-S. Hur

Based on analysis of combined ITS and SSU sequence data, Kondratyuk et al. (2021) introduced *Klauskalbia* to accommodate the broad-lobed *Heterodermia* species with red pigment on the lower surface. Four species are attributed to the new genus. The genus is distributed almost world-wide and occurs on rock, bark, wood and mosses from lowland tropics to temperate regions. There are however, a number of issues. First, in the text and table of sequences, two species are said to have been sequenced ("the position of two of the four species are [sic] confirmed in the phylogeny [sic] analyses"), but only one is shown in the cladogram. There are recent papers on this group, which do not accept the previous split genera in *Heterodermia*. Souza et al. (2022) provide a phylogenetic tree for *Heterodermia sensu lato* showing that none of the previous split genera is monophyletic, and neither is the group of species that was raised to genus level as *Klauskalbia*. Cannon et al. (2022) had concluded that "two samples from the UK have been placed in the *H. japonica* group and not in the *H. obscurata* aggregate" and that the British material currently called *Heterodermia obscurata* (the type species of *Klauskalbia*), indeed shows all key characters of that species but phylogenetically clusters with another species that is in another split genus if accepted (viz. *Polysporidium*). Kondratyuk et al. (2021) do show the split genus *Polysporidium* to be polyphyletic in different branches, and their other monophyletic groups are not well-supported. For these reasons, it makes little sense to accept split genera in *Heterodermia*, and the acceptance of *Klauskalbia* only causes problems, because it has already been shown that species with the given characters do not form a monophyletic group. The taxonomic placement of *Klauskalbia* is in *Physciaceae* (*Teloschistales*, *Lecanoromycetes*) (Kondratyuk et al. 2021).

References

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Note 665 *Lecaimmeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lecaimmeria C.M. Xie, Lu L. Zhang & Li S. Wang

Based on analysis of a five-loci phylogenetic tree (ITS, LSU, SSU, *rpb1*, and *rpb2*) with combined sequence data, Xie et al. (2022a) introduced *Lecaimmeria* to accommodate all the lecanorine apotheciate species previously classified in *Immersaria*. *Lecaimmeria*, with *L. orbicularis* as the type, grows on exposed siliceous rock, mainly in Eurasia but also in North America. Three species that were accepted in *Immersaria* are relegated to this genus, and seven additional species from China are described in it. *Lecaimmeria* is distinguished from other genera of *Lecideales* with lecanorine apothecia by amyloid ascospores, and *Bellemerea* and *Koerberiella* by their adnate apothecia. *Lecaimmeria* is characterized by immersed lecanorine apothecia with a white margin and a distinct plectenchyma developed on top of the orange epihymenium. *Lecaimmeria* resembles *Immersaria* in the immersed apothecia and brown thallus, but *Lecaimmeria* differs in its red-brown lecanorine apothecia, often with a white margin, their orange epihymenium with a plectenchyma and the thallus containing gyrophoric acid. The phylogenetic evidence obtained from the analysis of ITS, LSU, SSU, *rpb1*, and *rpb2* show it as a distinct lineage (Xie et al. 2022a). The taxonomic placement of *Lecaimmeria* is in *Lecideaceae* (*Lecideales*, *Lecanoromycetes*) (Xie et al. 2022).

Reference

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Note 666 *Metulochaete*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Metulochaete Alvarenga

Metulochaete is a monotypic genus of saprotrophic jelly fungi occurring on wood remnants of angiosperms in southern Brazil (Alvarenga et al. 2019). Based on nomenclatural, morphological and phylogenetic studies (ITS and LSU sequences), the new genus *Metulochaete* was introduced to define the taxonomic position of *Heterochaete sanctae-catharinae*. The original generic placement of this species was inadequate because *Heterochaete* was characterized as polyphyletic (Alvarenga et al. 2019). According to Spirin et al. (2019) *Metulochaete* has an isolated position from the "core" *Auriculariales* genera (e.g., *Auricularia*, *Exidia*, *Exidiopsis*). The type species is *M. sanctae-catharinae* (Alvarenga et al. 2019). The genus is characterized by effused, gelatinous to waxy-dry basidiomata, sterile hymenophoral spines covered by thick-walled (metuloid) cystidia, monomitic hyphal structure, clamp-connections, and thin-walled, allantoid, straight to slightly curved basidiospores (Alvarenga et al. 2019). The asexual morph is unknown. *Metulochaete* is currently placed in *incertae sedis*, *Auriculariales*, *Auriculariomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*. Because the phylogenetic position of the genus was determined by only two sequenced marker genes from one specimen, further sampling and sequencing of additional genes (e.g., *rpb2*, *tef1-α*, *tub2*) are required to determine the correct taxonomic position of this genus at the family rank within *Auriculariales*.

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Note 667 ***Obscuroplaca***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Obscuroplaca Søchting, Arup & Bungartz

Bungartz et al. (2021) introduced *Obscuroplaca* Søchting, Arup & Bungartz as a replacement name for *Phaeoplaca* Søchting et al. (Bungartz et al. 2020). At the time of publication, Bungartz et al. (2020) overlooked that Chodat et al. (1926) had first proposed an identical name for a genus of freshwater algae in the *Chrysophyceae* Pascher. Originally, the lichen genus including three species (Bungartz et al. 2020) and they were all transferred into *Obscuroplaca* as *O. camptidia* (Tuck.) Søchting, Arup & Bungartz (the generic type species), *O. ochrolechioides* (S.Y. Kondr. & Kärnefelt) Søchting & Bungartz, and *O. tortuca* (Søchting & Bungartz) Søchting & Bungartz, a new species with identical morphology to *O. camptidia*, but nevertheless phylogenetically distinct, and more closely related to *O. ochrolechioides* than to *O. camptidia* (Bungartz et al. 2021). The genus is phylogenetically well delimited on a distinct clade in *Caloplacoideae* with *Oceanoplaca* as sister genus based on morphological and phylogenetic analyses of a combined ITS, LSU and SSU sequence dataset (Bungartz et al. 2020). Currently, the genus is recorded from Australia, southeastern USA, Mexico, and the Galapagos Islands growing on wood or bark. The genus is characterized by brown, biatorine apothecia on a gray thallus, asci clavate, of teloschistes-type, with 8 spores, ascospores polarilocular with wide septum, and anthraquinones absent. No discussion is presented about the possible existence of other species related to these among the c. 350 currently accepted *Caloplaca* species (Lücking et al. 2017). The taxonomic placement of *Obscuroplaca* is in *Caloplacoideae*, *Teloschistaceae* (*Teloschistales*, *Lecanoromycetes*).

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Note 668 *Poeltonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Poeltonia S.Y. Kondr., Lőkös & Hur

Kondratyuk et al. (2021) introduced *Poeltonia* with *P. grisea* as the type species based on phylogenetic analyses, combined with morphology characteristics. The genus comprises four other species viz. *P. elegantula*, *P. isidiomuscigena*, *P. perisidiosa*, and *P. venusta*. This genus is characterized by paraplectenchymatous or scleroplectenchymatous upper cortex, a whitish or pale brown underside in the central part, whitish to brownish or grey, simple or rarely brush-like rhizines, wider conidia and several unidentified substances. The type species, *P. grisea*, is recorded from Europe, North America, Nepal, Australia, and New Zealand where it grows on rock, soil, bark and wood. In the text, the phylogenetic position of five species within *Poeltonia* are said to have been confirmed by the phylogeny based on the combined matrix. However, only three of this species are shown in the phylogenetic tree. In the presented cladogram, *Poeltonia* is paraphyletic, basal to *Physconia* and one of these branches is supported. The genus will most likely not be readily accepted (e.g., Cannon et al. 2022). The taxonomic position of the genus is in *Physciaceae* (*Caliciales*, *Lecanoromycetes*).

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Note 669 *Pseudosperma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudosperma Matheny & Esteve-Rav., Matheny, Hobbs & Esteve-Raventós

Pseudosperma is an agaric genus having ectomycorrhizal associations with a wide range of plants. Phylogenetic analysis based on ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α* indicated its sister position to the subclade unifying *Inocybe sensu stricto* and *Nothocybe* within *Inocybaceae* (Matheny et al. 2020). The type species is *P. sororium* (Kauffman) Matheny & Esteve-Rav. Compared with other species of *Inocybaceae*, species in this genus are characterized by a combination of the rimulose to rimose pileus, furfuraceous to appressed furfuraceous stipe with a pruinose apex, elliptic to subphaseoliform basidiospores, absence of pleurocystidia, presence of thin-walled cheilocystidia and sometimes spermatic smell (Matheny et al. 2020). The asexual morph is unknown. Species in *Pseudosperma* contain muscarine, a neurotoxin that could cause poisoning incidents (Kosentka et al. 2013, Zhao et al. 2022a). There are 101 species in this genus (Yu et al. 2020, Zhao et al. 2022a). *Pseudosperma* is currently placed in *Inocybaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

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Note 670 *Neodactylaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodactylaria Guevara-Suarez, Deanna A. Sutton, Wiederh. & Gené (**H**)

Neodactylaria, a dactylaria-like genus, was introduced by Crous et al. (2017a) for *N. obpyriformis* Guevara-Suarez, Deanna A. Sutton, Wiederhold & Gené based on morphology and phylogenetic analysis of LSU sequences (Crous et al. 2017a). *Neodactylaria obpyriformis* was isolated from human bronchoalveolar lavage (Crous et al. 2017a). Two species have been accepted in this genus (Crous et al. 2017a, Qiao et al. 2020). *Neodactylaria* has hyphomycetous asexual morphs with macronematous, mononematous, septate, unbranched, brown conidiophores, polyblastic, sympodial, denticulate conidiogenous cells and solitary, aseptate or septate, obpyriform or rostrate, brownish conidia (Crous et al. 2017a). It differs from similar genera by its conidial morphology and phylogenetic analyses (Crous et al. 2017a, Qiao et al. 2020). Qiao et al. (2020) placed this genus within *Neodactylariaceae* (*Neodactylariales*, *Dothideomycetes*, *Ascomycota*). Only asexual morph has been reported.

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Note 671 *Candidacolonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Candidacolonium P.L. Vines & M. Tomaso-Peterson

Candidacolonium was introduced by Vines (2015) without designating a holotype, then being effectively published by Vines & Tomaso-Peterson (2021) to follow the rules of The International Code of Nomenclature for algae, fungi, and plants *(*Turland et al. 2018*)*. Pathogenicity evaluations showed that this genus accommodates a plant parasitic fungus collected on roots of *Cynodon dactylon* × *C. transvaalensis* (*Poaceae*) from the USA. *Candidacolonium* is a distinguishable genus in *Magnaporthaceae* based on morphology and molecular analysis (ITS, LSU, SSU, minichromosome maintenance (*m7*), *rpb2*, and *tef1-α* markers). It is characterized by the luminous white colony, lack of reproductive structures, and chiroid or mitten-shaped hyphopodia (Vines 2015) that differ from *Gaeumannomyces graminis* var. *graminis* which has deeply lobed hyphopodia, ascomata perithecial, and asexual morph, when present, with brown conidiophores and lunate conidia (Hernández-Restrepo et al. 2016b). This genus is monotypic and is typified by *C. cynodontis* P.L. Vines & M. Tomaso-Peterson.

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Entry by Josiane S. Monteiro, Instituto Tecnológico Vale, CEP 66055-090, Belém, PA, Brazil/Coordenação de Botânica, Museu Paraense Emílio Goeldi, CEP 66077-830, Belém, PA, Brazil**.**

(Edited by **Sajeewa Maharachchimbura & Kevin D. Hyde)**

Note 672 *Magnuscella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Magnuscella Y.S. Anteneh, M.H. Brown & C.M.M. Franco

Magnuscella was introduced by Anteneh et al. (2019), typified by *Magnuscella marina* which was isolated from a marine sponge. These species are considered as symbiotic with living host and favour to grow under extreme environmental conditions with some degree of salt (Anteneh et al. 2019). *Magnuscella* is characterized by bicellular, branched, thick-walled, smooth and aseptate hyphae with aggregated masses of conidia and conidiogenous cells with chains of conidia. According to phylogenetic analysis of ITS and LSU regions *Magnuscella* is closely related to genera in *Teratosphaeriaceae* (*Eupenidiella* and *Hortaea*) and *Mycosphaerellaceae* (*Stenella*) in *Capnodiales* (Anteneh et al. 2019).

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Entry by Diana S Marasinghe, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai, Thailand

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Note 673 *Neosporidesmina*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neosporidesmina R.F. Castañeda, Rajn.K. Verma, Prasher, Sushma, A.K. Gautam & Rajeshk.

Neosporidesmina was introduced by Verma et al. (2021) for *Neosporidesmium micheliae* based on its euseptate conidia. This species was originally described from dead branches of *Michelia maudiae* in Hainan, China (Zhang et al. 2011). *Neosporidesmina* is characterized by its hyphomycetous asexual morphs with macronematous, synnematous, brown to dark brown, unbranched conidiophores, monoblastic conidiogenous cells, and obclavate or cylindrical, brown, euseptate conidia (Verma et al. 2021). It is worth mentioning that *Neosporidesmium vietnamense*, which has euseptate conidia, remains in *Neosporidesmium* (Mel'nik & Braun 2013). The euseptate/distosepta may not be a critical criterion for generic delimitation (Su et al. 2016a). However, due to the lack of sequence data of *Neosporidesmina* and *Neosporidesmium*, their phylogenetic placements cannot be inferred. *Neosporidesmina* is presently assigned to *Ascomycota incertae sedis*.

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Note 674 *Pseudocanariomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudocanariomyces Cañete-Gibas, Wiederh., C. Sanders, K. Ryan & N. Sosa

Pseudocanariomyces was introduced by Ryan et al. (2021) to accommodate a thielavia-like species isolated from a prosthetic hip infection in the USA. *Pseudocanariomyces* is a holomorphic genus similar to *Canariomyces* and *Stolonocarpus* (*Chaetomiaceae*) in producing a chrysosporium-like asexual morph, cleistothecial ascomata and darkly pigmented, aseptate, ellipsoidal to fusiform ascospores, but can be phylogenetically separated from them by ITS, *tub2* and *rpb2* markers (Ryan et al. 2021) *Madurella* and *Batnamyces* (*Chaetomiaceae*) differ from *Pseudocanariomyces* by lack of reproductive structures (Ryan et al. 2021). This genus remains monotypic and is typified by *P. americanus* Cañete-Gibas, Wiederh., C. Sanders, K. Ryan & N. Sosa (Ryan et al. 2021).

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Note 675 *Setofusarium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Setofusarium (Nirenberg & Samuels) Crous & Sand.-Den.

Crous et al. (2021e) introduced the monotypic genus *Setofusarium* based on *Fusarium setosum*. The genus is characterized by dark red perithecia, cylindrical to clavate asci with 1-septate, finely striate ascospores and a fusarium-like asexual morph (Crous et al. 2021e). O'Donnell et al. (2022) believed that *Setofusarium* belongs to the *Fusarium* clade. However, a combined analysis of ITS, LSU, *rpb1*, *rpb2* and *tef1-α* sequence data revealed that *Setofusarium* is a unique phylogenetic lineage in *Nectriaceae* (Crous et al. 2021e) and I follow this here. Phylogenetically *Setofusarium* is closer to *Albonectria* (Crous et al. 2021e). The single species of this genus is associated with tree bark (Crous et al. 2021e).

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(Edited by **Sajeewa Maharachchimbura & Kevin D. Hyde**)

Note 676 *Azygosporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Azygosporus B. Huang & Y. Nie

Within the framework of elucidating the phylogenetic placement of *Conidiobolus parvus*, Cai et al. (2021b) described *Azygosporus* as a new synapomorphic clade in the family *Ancylistaceae* (*Entomophthorales*) using morphological and molecular evidence. In their ML tree based on LSU, SSU, and *tef1-α* sequences, the type *A. parvus* (Drechsler) B. Huang & Y. Nie (= *Conidiobolus parvus* Drechsler) and the newly described species *A. macropapillatus* B. Huang & Y. Nie formed a well-supported monophyletic group sister to *Conidiobolus sensu stricto* (Gryganskyi et al. 2022). This genus is characterized by azygospore production (synapomorphy) and associated species are easy to culture on nutrient media (Gryganskyi et al. 2022). The discovery of this new basal lineage provides new evidence for the saprotrophic lifestyle to be the ancestral state of *Entomophthorales* (Gryganskyi et al. 2022).

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Note 677 *Hirticrusta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hirticrusta Matozaki, T. Hatt. & Sotome

This is a bracket-shaped polyporoid taxon, growing on decayed wood, known from Brazil, China, and Japan (Matozaki et al. 2020). Phylogenetic analyses based on ITS, LSU, and *rpb2* indicated the phylogenetic position of *Hirticrusta* in *Polyporaceae* (*Polyporales*, *incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Matozaki et al. 2020). It was segregated from *Neofomitella*, which is its sister group, albeit with low maximum likelihood and maximum parsimony bootstrap support (Matozaki et al. 2020). The type species is *H. subradiata* (Lloyd) Matozaki, T. Hatt. & Sotome (≡ *Polyporus subradiatus* = *Neofomitella polyzonata*). There are two species in this genus. *Hirticrusta* is characterized by annual to biennial sessile basidiomes, semicircular or dimidiate pileus, velutinous or tomentose pileus surface, thin crustose layer formed by parallel hyphae, and a leathery to fibrous corky and brownish context, as well as a trimitic hyphal system, crustose layer comprising parallel and densely arranged, brown hyphae and cylindrical basidiospores (Matozaki et al. 2020). The asexual morph is unknown. More studies including molecular and morphological studies are needed to differentiate *Fomitella*, *Hirticrusta* and *Neofomitella*.

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Note 678 *Parateichospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parateichospora Crous

The monotypic genus *Parateichospora* was introduced by Crous et al. (2021c) with *P. phoenicicola* Crous as the type species. The strain was found from the leaves of *Phoenix reclinata* in South Africa (Crous et al. 2021c). Only the asexual morph has been reported for this genus and is characterized by pycnidial, solitary to aggregated, brown, ostiolate conidiomata and aseptate, ellipsoid, initially hyaline conidia, which turn brown at maturity (Crous et al. 2021c). This asexual morph tally well with other several genera with phoma-like asexual morphs in *Teichosporaceae* (i.e. *Aurantiascoma nepheli*, *A. quercus*, *Magnibotryascoma mali*, *M. rubriostiolata*, *Teichospora grandicipis*) (Phukhamsakda et al. 2020, Tennakoon et al. 2021a). However, *Floricola* significantly differ from *Parateichospora* in having pale brown to dark brown, 3-septate, cylindrical to elongate ellipsoidal conidia (Kohlmeyer & Volkmann-Kohlmeyer 2000, Tennakoon et al. 2021a). Currently ITS, LSU, *rpb2* and *tef1-α* sequences are available for *Parateichospora* species. *Parateichospora* is presently known as a saprobic member in the leaves of *Phoenix reclinata*. In addition, it has only been reported from South Africa (Crous et al. 2021c). Thus, future collections are needed to understand the life modes, distribution and further expansion of this genus.

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Note 679 *Stomatothyrium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Stomatothyrium Le Renard, Upchurch, Stockey & Berbee

Stomatothyrium is a monotypic fossil genus (type**:** *S. placocentrum* Le Renard, Upchurch, Stockey & Berbee) of epiphyllous fungi that forms shield-like coverings (scutella) of sporulating tissue on leaf surfaces (Le Renard et al. 2021b). This fungal sporocarp type consists of radiate scutella growing from the stomata of leaves of a conifer dispersed on plant cuticles from the Early Cretaceous sediments of Virginia, USA. Isolated fragments of conifer cuticles, colonized by the fungus from macerated clays of the Potomac Group, Lower Zone 1 (Aptian, 125–113 Ma), were studied, using light microscopy (Le Renard et al. 2021b). Comparative anatomical study of the scutella from the fossil fungus and that from extant taxa was made. The extant taxa producing either rhizothyria (asexual sporocarps that release spores from below the outer edge of the scutellum) or thyriothecia (sporocarps that release spores through dorsal cracks or an ostiole) were considered (Le Renard et al. 2021b). The study of more than 63 specimens at different developmental stages on cuticle fragments revealed that *Stomatothyrium placocentrum* has a radial arrangement of scutellum hyphae, characteristic of extant and fossil thyriothecial species in *Dothideomycetes* (*Ascomycota*) (Le Renard et al. 2021b). The scutella develops cracks on the dorsal surface that may show the dehiscence mechanism (Le Renard et al. 2021b). Unusually for dehiscence in *Dothideomycetes*, the cracks follow the scutellum circumference rather than its radius (Le Renard et al. 2021b). Each scutellum arises from a host plant stoma, appearing first as a hyphal columella that broadens into a flat scutellum disk on the leaf surface (Le Renard et al. 2021b).

Based on morphological characters of *Stomatothyrium placocentrum* Le Renard et al. (2021b) suggest that it represents a now extinct group of leaf-dwelling, thyriothecia forming *Dothideomycetes*. However, the extant relationship of this genus can further be traced to the order *Microthyriales*, family: *Microthyriaceae*.

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Note 680 *Hyphocapnodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyphocapnodia Z.H. Lu & Maharachch.

Hyphocapnodia was introduced by Lu et al. (2022) as a monotypic genus (type *H. sichuanensis* Z.H. Lu, Wanas., Madrid & Maharachch.), based on morphological characteristics and phylogenetic analysis of LSU, ITS, *rpb2* and *tef1-α* sequence data. *Hyphocapnodia sichuanensis* was found as a saprobe on bamboo plants in Sichuan Province, China (Lu et al. 2022). Phylogenetically, this genus is closely related to *Capnodium* species (Lu et al. 2022). However, the asexual morph of *Capnodium* is coelomycetous (Abdollahzadeh et al. 2020, Wijayawardene et al. 2017a), whereas *Hyphocapnodia* has hyphomycetous asexual morph. Lu et al. (2022) noted that *Hyphocapnodia* is similar to *Phaeoisaria* (*Pleurotheciaceae*), *Dokmaia* (*Pleosporales* genera *incertae sedis*) and *Neosporidesmium* (*Dothideomycetes* genera *incertae sedis*) by its morphology, but they are phylogenetically apart (except *Neosporidesmium*, of which sequence data is unavailable). The genera *Capnokyma* (*Euantennariaceae*), *Pseudoveronaea* (*Dissoconiaceae*), *Rostriconidium* (*Torulaceae*) and *Sporidesmioides* (*Torulaceae*) resemble *Hyphocapnodia* based on their appearance on the substrate. However, these genera do not form synnematal conidiomata and the morphology of their conidia are different from *Hyphocapnodia*. Phylogenetically, *Pseudoveronaea*, *Pseudoveronaea* and *Sporidesmioides* are not closely related to *Hyphocapnodia* (sequence data of *Capnokyma* is unavailable). *Hyphocapnodia* resembles *Tandonella* in having synnematal conidiomata, erect, usually unbranched conidiophores. However, *Tandonella* has terminal, rarely lateral conidiogenous region, with denticulate conidiogenous cells, and short simple or branched chains conidia (Sutton & Pascoe 1987), while *Hyphocapnodia* has conidiogenous cells distributed mostly laterally, mainly towards the upper half of the synnemata with monoblastic and schizolytic conidial secession. Currently, there is no sequence data available for *Tandonella* to confirm that it is not congeneric with *Hyphocapnodia*. *Hyphocapnodia* resembles the sympodioconidial state of *Metacapnodium* (= *Capnocybe*), by forming effuse and hairy colonies on the natural substrate that are black as typical ‘sooty moulds’ with multi-septate conidia develop on synnemata. However, conidia of *Metacapnodium* develop on sympodulae which are the terminal cells of the penicillately branched ends of synnematous hyphae (Hughes 1972), while conidia of *Hyphocapnodia* develop on lateral conidiogenous cells which are distributed mostly towards the upper half of the erect synnemata. The mycelium of *Hyphocapnodia* is dark brown, immersed and superficial, while mycelium of *Metacapnodium* is dense, friable, spongy, septate hyphae deeply constricted at the septa, moniliform and anastomosing (Hughes 1972, Hyde et al. 2013). *Hyphocapnodia* also resembles *Euantennaria* (*Euantennariaceae*) based on its appearance on substrate and forming synnemata. However, *Euantennaria* produces two types of asexual morphs viz. antennatula-like and hormisciomyces-like (phialophores) (Hughes 1974).

Hawksworth & Boluda (2020) provided sequence data of *Metacapnodium ericophilum* (Link) D. Hawksw. & S. Hughes which is the first DNA data reported for *Metacapnodium*. Phylogenetic analysis indicated that *M. ericophilum* formed within *Chaetothyriales sensu lato*. in the class *Eurotiomycetes* (Hawksworth & Boluda 2020). Later, the sequences of *M. neesii* (S. Hughes) Sugiy. & Hosoya (= *Capnobotrys neesii*, the type species of *Capnobotrys*) were provided by Sugiyama et al. (2020), and it also formed at the base of *Chaetothyriales* (Hawksworth & Boluda 2020, Sugiyama et al. 2020). Further studies are needed to consider the placement of genera included in *Metacapnodiaceae* since the generic type of the family was found to be a member of *Chaetothyriales*. There is only one unpublished sequence for *Euantennaria* (*E. pacifica* isolate JAC16746), and it belongs to *Chaetothyriales* based on the Blast results in GenBank. Although, we agree to retain *Hyphocapnodia* as a distinct genus for now as it formed within *Capnodiaceae* in *Dothideomycetes*, but suggest that further fresh collections and molecular data for *Hyphocapnodia* and those older genera are needed to confirm their placements and relationships.

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Note 681 *Kazuakitanaka*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kazuakitanaka Wanas.

Kazuakitanaka was introduced by Wanasinghe et al. (2022b) in *Sulcatisporaceae* (*Massarineae*, *Pleosporales*) to accommodate two species *K. lancangensis* Wanas. and *K. yuxiensis*

Wanas. These species are saprobic on unidentified woody substrates in terrestrial habitats (Tanaka et al. 2015). *Kazuakitanaka* species have been recorded only from China. Both sexual and asexual morphs are recorded for the genus, and the sexual morph is characterized by semi-immersed, coriaceous, dark brown to black, ostiolate ascomata, bitunicate, cylindric-clavate, asci with an ocular chamber and hyaline, fusiform, 1–2-septate ascospores with a distinct mucilaginous sheath. The asexual morph is coelomycetous which comprises hyaline, 1–3-septate, fusiform conidia with conical ends. *Kazuakitanaka* is sister to *Pseudobambusicola* in the phylogenetic analysis of combined LSU, SSU, ITS, *tef1-α*, and *rpb2* loci. Species of this genus resemble *Parasulcatispora* (Phukhamsakda et al. 2020) and *Sulcatispora* (Tanaka et al. 2015) with its cylindric-clavate asci and fusiform, 1-septate hyaline ascospores. However, these genera are phylogenetically distant (Wanasinghe et al. 2022b). Although this is a well-established genus in the family *Sulcatisporaceae*, further collections and host identification are crucial to have a clear understanding of the genus.

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Note 682 *Neoarthrinium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoarthrinium Ning Jiang

Jiang et al. (2022) described *Neoarthrinium* with *N. lithocarpicola* Ning Jiang, isolated from leaf spots of *Lithocarpus glaber* from China, as the type. The asexual morph of the genus has cylindrical, septate, verrucose, flexuous conidiophores that are occasionally reduced into conidiogenous cells, erect, blastic, smooth-walled, doliiform, subglobose to lageniform, branched conidiogenous cells grouped in clusters on hyphae, and brown to dark brown, smooth to finely roughened, subglobose, ellipsoid to lenticular conidia with a longitudinal germ slit, occasionally elongated to ellipsoidal (Jiang et al. 2022). *Neoarthrinium* species have been recorded from *Arecaceae* (dead petiole of *Mauritia minor*, Gams 1995; diseased branches of *Trachycarpus fortunei*, Yan et al. 2019), *Fagaceae* (on leaf spots of *Lithocarpus glaber*, Jiang et al. 2022), and *Urticaceae* (on dead stems of *Urtica dioica*, Ellis 1965). However, the species associated with diseased plant substrates need further confirmation of their pathogenicity.

Gams (1995) introduced *Wardomyces moseri* W. Gams isolated from dead petiole of the palm *Mauritia minor* from Colombia and placed in *Microascaceae*. During a phylogenetic and taxonomic revision of *Microascaceae*, Sandoval-Denis et al. (2016) excluded *Wardomyces moseri* from *Microascaceae* due to its phylogenetic affinity to members of the *Amphisphaeriaceae* and *Clypeosphaeriaceae*. In the combined ITS, LSU, *rpb2*, *tub2*, *tef1-α* phylogeny, Samarakoon et al. (2022) revealed that *Wardomyces moseri* is a well-supported sister to *Amphisphaeriaceae*. *Neoarthrinium moseri* was recognized as a novel combination of *Neoarthrinium* by Jiang et al. (2022) based on the ITS, LSU, *tef1-α*, *tub2* phylogeny and asexual morphology. Pintos et al. (2019)

showed that *Arthrinium trachycarpi* C.M. Tian & H. Yan and *A. urticae* M.B. Ellis formed separate clades to *Apiosporaceae* in an ITS, LSU, *tef1-α*, *tub2* phylogeny. *A. trachycarpi* (≡ *Neoarthrinium trachycarpi* (C.M. Tian & H. Yan) Ning Jiang) and *A. urticae* (≡ *N. urticae* (M.B. Ellis) Ning Jiang) were transferred to *Neoarthrinium* by Jiang et al. (2022).

Similar basauxic conidiogenesis can be found in *Apiospora*, *Arthrinium* and *Neoarthrinium*. The conidia of *Apiospora* and *Neoarthrinium* are often more or less spherical in the face view and lenticular in the side view, whereas conidia are differently shaped in *Arthrinium* (Pintos & Alvarado 2021, Jiang et al. 2022). Thick blackish septa, which are infrequently seen in conidia of *Apiospora* species, are present in *Arthrinium* and *Neoarthrinium* (Ellis 1965, Pintos & Alvarado 2021, Jiang et al. 2022). Asexual morphologies, however, are inadequate for these three genera to be distinguished. More fresh collections, sexual morphological analysis and phylogenetic approaches are required to resolve the taxonomic uncertainties.

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Note 683 *Caeliomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Caeliomyces Crous & Jurjević

Caeliomyces was introduced as a monotypic genus in *Teratosphaeriaceae*, (*Mycosphaerellales*, *Dothideomycetes*). The type species, *Caeliomyces tampanus* Crous & Jurjević, was found from office dust in the USA (Crous et al. 2021e). Phylogenetically, the genus is sister to *Caatingomyces* and *Readeriella*, with up to 98% similarity and 100% query cover in ITS (OK664726), LSU (OK663765), *cmdA* (OK651143), *tef1-α* (OK651189) and *tub2* (OK651207) (Crous et al. 2021e). This genus is similar to *Caatingomyces* in having pycnidial conidiomata, phialidic conidiogenous cells, and aseptate, pigmented conidia, but differs in having variously-shaped conidia and percurrently proliferating conidiogenous cells with thicker-wall and darker pigmentation, while the latter has septate, branched conidiophores with terminal and intercalary conidiogenous cells (Crous et al. 2021e).

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Note 684 *Jamesreidia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Jamesreidia Z.W. de Beer & M. Procter

De Beer & Wingfield (2013) introduced the *Ophiostoma tenellum* complex under the *Ophiostoma sensu lato*. Species in this complex share sporothrix-like asexual morphs and are confined to conifer wood in North America (Linnakoski et al. 2010). However, based on phylogenetic analysis of LSU and ITS sequences, De Beer et al. (2016) stated that the *O. tenellum* complex should be further investigated since it grouped distinctly from the *Ophiostoma sensu lato*. De Beer et al. (2022) raised the *O. tenellum* complex to genus level and named it as *Jamesreidia*. *Jamesreidia tenella* (R.W. Davidson) Z.W. de Beer & M. Procter (= *Ophiostoma tenellum*), which was previously placed in *O. tenellum* complex was designated as the generic type by giving priority as the oldest described species. The genus presently includes four species viz., *J. coronata* (Olchow. & J. Reid) M. Procter & Z.W. de Beer, *J. nigricarpa* (R.W. Davidson) M. Procter & Z.W. de Beer, *J. rostrocoronata* (R.W. Davidson & Eslyn) M. Procter & Z.W. de Beer and *J. tenella* (De Beer et al. 2022).

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Note 685 *Masuyamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Masuyamyces Z.W. de Beer & M. Procter

In their phylogenies, De Beer et al. (2022) noted *Ophiostoma ambrosium* (B.K. Bakshi) Georg Hausner, J. Reid & Klassen, *O. botuliforme* Masuya and *O. pallidulum* Linnak., Z.W. de Beer & M.J. Wingf. group distinct from the *Ophiostoma sensu stricto* and form a monophyletic group (Lineage XVII in De Beer et al. 2022). They raised this clade to a generic status and named it *Masuyamyces*, and *M. botuliformis* was designated as the type species. Species of *Masuyamyces* are characterized by reniform ascospores and the species of the genus have different asexual morphs, viz. pesotum-like, raffaelea-like, hyalorhinocladiella-like and hyalorhinocladiella-like synasexual morph (Masuya et al. 2003, Linnakoski et al. 2010, De Beer & Wingfield 2013). Species of *Masuyamyces* are associated with insects such as bark beetles (De Beer & Wingfield 2013; De Beer et al. 2022).

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Note 686 ***Metacapnodium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Metacapnodium Speg.

Metacapnodium was introduced by Spegazzini (1918) and is typified by *M. juniperi* (W. Phillips & Plowr.) Speg. Species of this genus are widespread in tropical regions (Kirk et al. 2008). Collections were mostly found in New Zealand, and some were also found in Australia, Austria, Canada, Ecuador, Germany, Japan, Malaysia, Poland, Portugal, Spain, the UK, and the USA (Sugiyama et al. 2020, Index Fungorum 2022). The genus is characterized by distinctive hyphae recognized by superficial, glossy, moniliform, widely branched, dark brown walls, strong constrictions at the septa, except for the cells of synnematous asexual morphs, which are progressively narrower and longer, usually tapered towards the apex at the ends (Hughes et al. 2012, Hyde et al. 2013, Hongsanan et al. 2020a). All *Metacapnodium* species produce capnophialophora phialides, but some species may produce *Capnobotrys*, *Capnocybe* or *Capnosporium* asexual states (Hughes 1966, 1976, 1981, Hughes & Seifert 2012, Chomnunti et al. 2013). However, the genera *Capnocybe*, *Capnophialophora*, *Capnosporium* and *Hormiokrypsis* were synonymized under *Metacapnodium* by Hyde et al. (2013) and Rossman et al. (2016). *Metacapnodium* is the generic type of *Metacapnodiaceae*. This family was placed in *Capnodiales* (*Dothideomycetes*) for more than a decade based on its sooty molds characters. Some species in *Metacapnodiaceae* were discovered in fossil ambers and were used as a representative from *Capnodiales* in divergence time estimates. Hawksworth & Boluda (2020) provided the first sequence data of *M. ericophilum* (Link) D. Hawksw. & S. Hughes and indicated that *M. ericophilum* formed within *Chaetothyriales sensu lato* in the class *Eurotiomycetes* (Hawksworth & Boluda 2020). Later, Sugiyama et al. (2020) provided the sequence data of *M. neesii* (S. Hughes) Sugiy. & Hosoya (= *Capnobotrys neesii* S. Hughes, the type species of *Capnobotrys*), and their phylogenetic tree revealed that *Metacapnodium neesii* formed at the base of *Chaetothyiales*, but they could not confirm its basal position due to the lack of representative strains used in the analysis. The placement of *Metacapnodium* at the basal of *Chaetothyriales* (*Eurotiomycetes*) is another example of a sooty mold species which is found to be member of *Chaetothyriales* (Hawksworth & Boluda 2020). We suggest transferring *Metacapnodiaceae* to *Eurotiomycetes* based on molecular data provided by Hawksworth & Boluda (2020) and Sugiyama et al. (2020).

However, the relationship between *M. ericophilum* and *M. neesii* needs to be confirmed and it is necessary to add more representative sequence data of *Chaetothyriales* and its sister orders in further phylogenetic analysis to consider the placement of *Metacapnodiaceae* within *Chaetothyriales*. *Metacapnodium* is often found in the same specimen with species of *Euantennariaceae* (no sequence data is available for this family). Thus, fresh collections and sequence data for *Metacapnodium* and species of *Euantennariaceae* are needed.

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Note 687 *Paucimyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paucimyces R.A. Hanafy, N.H. Youssef & Elshahed

Hanafy et al. (2021) introduced this monotypic, anaerobic gut fungus (reported with zoospores) from the feces of a wild blackbuck antelope, in Oklahoma, the USA. The genus is typified by *Paucimyces polynucleatus* R.A. Hanafy, N.H. Youssef & Elshahed and currently only the type species is known. Phylogenetic analysis using the LSU (D/D2) and the ribosomal internal transcribed spacer 1 (ITS1) by Hanafy et al. (2021) confirmed that this genus resides in *Neocallimastigaceae* (Hanafy et al. 2021). *Paucimyces* is characterized by possessing spherical vesicles at the hyphal tips and mainly monoflagellated zoospores (Hanafy et al. 2021). Multiple sporangia are developed on the spherical vesicles or the end of sporangiophores (Hanafy et al. 2021).

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Note 688 ***Phialoturbella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phialoturbella Réblová & Hern.-Restr.

Phialoturbella was introduced by Réblová et al. (2021c) to accommodate the species of *Tainosphaeria* (*T. crassiparies*, *T. aseptata*, *T. lunata*) that cluster apart from the core clade of the *Tainosphaeria sensu stricto*, in the phylogenetic analysis of LSU and ITS loci (Réblová et al. 2021c) The genus is typified by *Phialoturbella lunata* (Z.L. Luo, K.D. Hyde & H.Y. Su) Réblová & Hern.-Restr., and presently, four species are known for this genus (Réblová et al. 2021c, Wu & Diao 2022). Species of *Phialoturbella* are characterised by conidiophores that are macronematous, solitary or crowded, with monophialidic conidiogenous cells and aseptate, falcate to lunate conidia without setulae (Réblová et al. 2021c). *Phialoturbella* species are saprobes on dead plant material and are known from China, Japan and New Zealand (Wu & Diao 2022).

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Note 689 *Phytochytrium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phytochytrium Longcore & Jerônimo

The monotypic genus *Phytochytrium* was introduced by Jerônimo et al. (2022) to accommodate *P*. *stagnum* Longcore & Jerônimo, which was isolated from onion skin bait placed with a water collection containing plant detritus from Maine, USA. It was reported as a saprobic species (Jerônimo et al. 2022). The type species (asexual) is characterized by 'Rhizomycelium branched, profuse, without septate or aseptate swellings, saprobic on plant material (Jerônimo et al. 2022). Zoosporangia is initially pear-shaped, non-stalked, directly attached to the rhizomycelium wall, producing broad, operculate discharge tubes. Resting spores thick-walled with a large lipid globule, formed like zoosporangia' (Jerônimo et al. 2022). Based on LSU and SSU loci, Jerônimo et al. (2022) confirmed that *Phytochytrium* resides as a distinct clade in *Septochytriaceae* (*Cladochytriales*, *Cladochytriomycetes*, *Chytridiomycota*).

Reference

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Note 690 *Pseudohumicola*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudohumicola X.Wei Wang, P.J. Han, F.Y. Bai & Houbraken

Wang et al. (2022b) proposed the new genus *Pseudohumicola* for the group of species (*Humicola atrobrunnea*, *H. pulvericola*, *H. semispiralis*, *H. subspiralis*) clustering close to *Aporothielavia* but apart from *Humicola sensu stricto*, in the phylogenetic analysis of concatenated partial, ITS, LSU, *rpb2*, and *tub2* loci. *Humicola and Pseudohumicola* produce similar asexual morphs (humicola-like); however, their sexual morphs are different. Ascomata of *Pseudohumicola* usually have coiled terminal hairs; however, such character is rare in *Humicola* species (Wang et al. 2022a). The group diverged from each other about 60 Mya. *Pseudohumicola* is typified by *P. subspiralis* (Chivers) X. Wei Wang, P.J. Han, F.Y. Bai & Houbraken (= *Humicola subspiralis*), and there are four species known from the genus. *Pseudohumicola* species are associated with soil, house dust and paper felt (Wang et al. 2019b).

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Note 691 *Schizotheciaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schizotheciaceae Y. Marin & Stchigel

Superfluous synonym: *Neoschizotheciaceae* S.K. Huang & K.D. Hyde

Marin-Felix et al. (2020) established *Schizotheciaceae* raising *Schizothecium* as its type genus, which is typified by *S. fimicola* Corda. However, Huang et al. (2021) erroneously changed its name to *Neoschizotheciaceae* based on the previous study of Wang et al. (2019a). Wang et al. (2019a) designated an incorrect epitype for *Schizothecium fimicola* and therefore, based on morphology and phylogenetic affiliation of this epitype, Huang et al. (2021) considered younger name *Schizothecium* as a synonym of *Podospora*. Thus, the new genus *Neoschizothecium* was introduced with *N. curvisporum* S.K. Huang & K.D. Hyde as its type species to accommodate species of *Schizothecium* that distantly grouped from the *Podosporaceae* (Huang et al. 2021). Then, a new family *Neoschizotheciaceae* was introduced for species in *Schizotheciaceae* and *Neoschizothecium* designated as the type genus (Huang et al. 2021). However, *Podospora* and *Schizothecium* have two distinct type specimens representing two different type species for each genus (Lundqvist 1972, Ament-Velásquez et al. 2020, Vogan et al. 2021). This segregation was clarified based on morphology (Lundqvist 1972) and molecular data (Cai et al. 2005).

Wang et al. (2019a) was not aware of the conserved type of *Podospora*, *P. fimiseda* (Ces. & De Not.) Niessl. (≡ *Sordaria fimiseda*) and incorrectly cited *Schizothecium fimicola* as the type species. Furthermore, Wang et al. (2019a) designated an epitype specimen (CBS H-24048) for *Schizothecium fimicola*, but morphologically and genetically this epitype represents *Podospora fimiseda*. Thus, the type species of *Schizothecium* should be conserved as *S. fimicola* and then, *Podospora* and *Schizothecium* are not synonyms as Huang et al. (2021) thought. Thus, *Neoschizotheciaceae* is invalid as it is a superfluous synonym of *Schizotheciaceae* (Marin-Felix & Miller 2022).

Schizotheciaceae includes 12 genera *viz*., *Apodus*, *Cercophora*, *Echria*, *Immersiella*, *Jugulospora*, *Lundqvistomyces*, *Morinagamyces*, *Pseudoechria*, *Pseudoschizothecium*, *Rinaldiella*, *Schizothecium* and *Zygopleurage* and it is characterized by ostiolate ascomata, cylindrical to clavate asci and ellipsoidal ascospores, sometimes with long or short cylindrical or lash-like gelatinous appendages (Marin-Felix et al. 2020). *Schizotheciaceae* species, such as *Schizothecium aloides*, *S. glutinans* and *S. vesticola*, have been reported mainly from dung (Cai et al. 2005). Some species have been collected from soil, e.g. *Jugulospora antarctica* and *J. rotula*, and as saprobes on dead plant parts, e.g. *Cercophora caudata*, *Echria gigantospora* and *Immersiella immersa* (Mirza & Cain 1969, Luo et al. 2019, Marin-Felix et al. 2020).

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Note 692 ***Schizothecium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schizothecium Corda

Superfluous synonym: *Neoschizothecium* S.K. Huang & K.D. Hyde

Schizothecium was introduced and typified by *S. fimicola* Corda, which has membranaceous ascomata with agglutinated hairs and ascospores with lash-like caudae (Corda 1838). Later *Schizothecium* and its type species were erroneously synonymized under *Podospora* (Cesati 1856). Lundqvist (1972) resurrected *Schizothecium* discussing its nomenclatural legitimacy and recognized 17 species. Lundqvist (1972) also discussed the phenotypic uniqueness of *Schizothecium* and suggested that the perithecia adorned with swollen agglutinated hairs or prominent protruding peridial cells are characteristic of *Schizothecium*. Kirk et al. (2001) treated *Schizothecium* as a synonym of *Podospora* based on their morphological similarity of asci and ascospores. However, ascomatal morphology is a better taxonomic predictor than ascospore morphology within *Sordariales* (Miller & Huhndorf 2005). As the perithecial morphologies of *Schizothecium* species are prominent and easily recognizable, Cai et al. (2005) resuscitated *Schizothecium* as a valid genus in *Sordariales*. The combined gene analysis of ITS, LSU, and *tub2* by Cai et al. (2005) showed that *Schizothecium* species form a well-supported, monophyletic clade, and this phylogenetic stability of *Schizothecium* was confirmed in later studies (Marin-Felix et al. 2020, Huang et al. 2021).

The type material of *Schizothecium fimicola* has been lost and the illustration in the protologue was designated as the lectotype of *S. fimicola* (Wang et al. 2019a). Wang et al. (2019) also designated an epitype for *Schizothecium fimicola* with strain CBS 482.64 as the ex-epitype culture. However, morphologically and phylogenetically this epitype fits to *Podospora fimiseda* not the lectotype of *S. fimicola*. Thus, the synonymy of *Schizothecium fimicola* under *Podospora fimiseda* is not correct. Therefore, introduction of a new generic name *Neoschizothecium* by Huang et al. (2021) for *Schizothecium* species, which was performed based on the epitypification error of Wang et al. (2019a), was also not correct. Marin-Felix & Miller (2022) resurrected the generic name *Schizothecium* explaining the taxonomic and nomenclatural mistakes made by Wang et al. (2019a) and Huang et al. (2021).

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Note 693 *Sparrowiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sparrowiella Longcore & Jerônimo

Jerônimo et al. (2022) introduced this genus, which was typified by *S. insolita* Longcore & Jerônimo. *Sparrowiella insolita*, was reported from plant detritus in freshwater, Maine, the USA. The type species is characterized by 'Polycentric rhizoidal system, branched, profuse, without septate or aseptate swellings' (Jerônimo et al. 2022). Zoosporangia are lateral, originating from stalked, ovate swellings and producing an extensive discharge tube (Jerônimo et al. 2022). Operculum is smooth, thin-walled, colorless (Jerônimo et al. 2022). Zoospores are spherical, with a single and hyaline lipid globule (Jerônimo et al. 2022). Resting spores are thick-walled with a central lipid globule, spherical or subspherical, originating from stalked, ovate swellings' (Jerônimo et al. 2022). Based on LSU and SSU loci, Jerônimo et al. (2022) revealed that *S. insolita* resides in *Septochytriaceae*. At the same time, Jerônimo et al. (2022) introduced *Phytochytrium* in *Septochytriaceae* but both genera are phylogenetically distinct and distantly related to monocentric species.

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Note 694 *Stromatoneolamya*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Stromatoneolamya Zhurb.

Zhurbenko (2021) introduced this genus to accommodate a sexually typified, lichenicolous taxon, which was reported on *Canoparmelia nairobiensis* from Uganda. The genus is typified by *Z. ugandensis* Zhurb. and it mainly differs from *Neolamya peltigerae* in 'its well-developed clypeus, completely immersed ascomata clustered in stromatic warts on the host thallus, and the absence of external periphyses'. DNA sequences are lacking thus phylogenetic placement is uncertain in *Ascomycota* (Zhurbenko 2021).

Reference

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Note 695 *Thermocarpiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Thermocarpiscus X.Wei Wang & Houbraken

The monotypic genus *Thermocarpiscus* was introduced by Wang et al. (2022a) and is typified by *T. australiensis (*Tansey & M.A. Jack) X. Wei Wang & Houbraken. *Thermocarpiscus australiensis* was previously placed under *Thielavia* (as *Thielavia australiensis*), and the phylogenetic analysis of concatenated ITS, LSU, *rpb2*, and *tub2* loci showed that it is distinct from *Thielavia sensu stricto*. *Thermocarpiscus* is characterized by superficial, glabrous, black ascomata, broadly ovate to subglobose, 8-spored asci and aseptate, olivaceous brown, ovate ascospores (Wang et al. 2022a). Asexual morph is hyphomycetous with monoblastic conidiogenous cells and aseptate, solitary, ovoid, hyaline ascospores, conidiophores are lacking (Wang et al. 2022a). The ex-type of the *T. australiensis* no longer produces ascomata in culture, and according to the original observations the fungus can grow in temperatures ranging from 20°C to 50°C. *Thermocarpiscus australiensis* was isolated from the nesting material of *Leipoa ocellata* in New South Wales (Tansey & Jack 1975).

References

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Wang XW, Han PJ, Bai FY, Luo A et al. 2022a – Taxonomy, phylogeny and identification of *Chaetomiaceae* with emphasis on thermophilic species. Studies in Mycology 101, 121.

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Note 696 *Viennotia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Viennotia J.A. Crouch & Thines

Viennotia Göker et al. 2003 was invalid (Art. 35.1) thus Crouch et al. (2022) validated the genus. The genus is typified by *Viennotia oplismeni* J.A. Crouch & Thines (a graminicolous downy mildews) which was reported on *Oplismeni hirtellus* (basket grass) and *Oplismeni compositus* (running mountain grass) from Guinea (Viennot-Bourgin 1959, Kranz 1965). Furthermore, Crouch et al. (2022) compared *Viennotia oplismeni* with *Graminivora graminicola* and stated that the latter is 'different by 28S DNA sequences and, by successive outgrowth of the ultimate branchlets after sporangia have been shed, a feature that also distinguishes the species from all other graminicolous downy mildews'.

References

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Kranz J. 1965 – Fungi collected in the Republic of Guinea, III. Collections from the Kindia area in 1963/64, and host index. Sydowia 19, 92–107.

Viennot-Bourgin G. 1959 – Champignons nouveaux de la Guinée. Bulletin de la Société Mycologique de France 75, 33–37.

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Note 697 *Wenhsuisporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Wenhsuisporus C.H. Kuo & Goh

The monotypic dematiaceous hyphomycete *Wenhsuisporus* was proposed by Kuo et al. (2022) for the decaying wood samples collected from submerged in a freshwater stream in Taiwan Island. The type species, *Wenhsuisporus taiwanensis* C.H. Kuo, S.Y. Hsieh & Goh is characterized by producing slimy masses of hyaline, cylindrical, and aseptate phialoconidia from ampulliform or lageniform conidiogenous cells intercalary in the superficial hyphal network and associated with dark, erect, stiff, unbranched subulate setae bulbous at the base (Kuo et al. 2022). The phylogenetic analysis based on ITS, LSU, and *rpb2* showed that the *Wenhsuisporus* was placed in *Glomerellales* close to *Reticulascaceae*. However, it could not assign any of the families in the order. Therefore, Kuo et al. (2022) treated *Wenhsuisporus* in *Glomerellales* genera *incertae sedis*.

Reference

Kuo CH, Hsieh SY, Goh TK. 2022 – *Wenhsuisporus taiwanensis* gen. et sp. nov., a peculiar setose hyphomycete from submerged wood in Taiwan. Mycological Progress 21, 409–426.

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(Edited by **Kevin D. Hyde**)

Note 698 *Xanthiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xanthiomyces X. Wei Wang & Houbraken

Based on phylogenetic analysis of concatenated ITS and LSU, *rpb2*, and *tub2* loci, Wang et al. (2022a) showed that the *Chaetomium spinosum* Chivers is distinct and sister to the *Chaetomium sensu stricto*. Therefore, they introduced a monotypic genus *Xanthiomyces*, to replace *Chaetomium spinosum* (Wang et al. 2022a). The type species *Xanthiomyces spinosus* is distinct from *Chaetomium sensu stricto* in having ovate ascospores that are usually less than 7 µm long (Wang et al. 2022a). Divergent time estimation showed that *Xanthiomyces spinosus* diverged from *Chaetomium* about 50 Mya, significantly earlier than the rest of the members in the *Chaetomiaceae* (Wang et al. 2022a). *Xanthiomyces spinosus* was isolated from straw and culture of algae in Switzerland (Wang et al. 2022a). *Chaetomium spinosum* was isolated from a culture of algae (Wang et al. 2022a).

Reference

Wang XW, Han PJ, Bai FY, Luo A et al. 2022a – Taxonomy, phylogeny and identification of *Chaetomiaceae* with emphasis on thermophilic species. Studies in Mycology 101, 121.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 699 *Sanguinoderma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sanguinoderma Y.F. Sun, D.H. Costa & B.K. Cui

This is a tropical stipitate polypore genus with about ten species, found growing on the ground associated with rotten stumps or roots of angiosperm wood, saprotrophic. Phylogenetic analyses based on ITS, LSU, *rpb1*, *rpb2*, *tef1-α* and *tub2* indicated its phylogenetic position in *Ganodermataceae* (*Polyporales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Sun et al. 2020). Results also showed its sister relationship with *Haddowia*, *Furtadoa*, *Trachyderma*, *Magoderna*, and *Amauroderma sensu stricto* (Sun et al. 2020). The type species is *S. rude* (Sun et al. 2020). The main macro and microscopic characteristics are the corky to woody hard basidiomata, dark pileus, poroid hymenophore with pore surface color changing to blood red when bruised and double-walled basidiospores in which exospore wall is semi-reticulate or vermiculate to verrucose and the endospore wall has solid and columnar to coniform spinules under SEM (Sun et al. 2020). The asexual morph is unknown.

Sanguinoderma has similar macro- and micro-morphology to *Amauroderma sensu stricto*, however, it can be distinguished by its conspicuous reaction in the pore surface, which rapidly changes to blood red when bruised (Sun et al. 2020). The species of *Sanguinoderma* are mainly found in warm temperate to subtropical or tropical regions of Asia, Africa, and Oceania, while *Amauroderma sensu stricto* has a neotropical distribution (Sun et al. 2020).

Reference

Sun YF, Costa-Rezende DH, Xing JH, Zhou JL et al. 2020 – Multi-gene phylogeny and taxonomy of *Amauroderma* s.lat. (*Ganodermataceae*). Persoonia 44, 206–239.

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Note 700 *Pulvinora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pulvinora Davydov, Yakovczenko & Printzen

Phylogenetic reconstructions based on three ribosomal markers (ITS, LSU, SSU) showed that the North American lichen *Lecanora pringlei* and an undescribed species from the Altai Mountains (Russia and Kazakhstan) were distantly related to *Lecanora sensu stricto* but instead formed an unsupported sister-group relationship with the genus *Frutidella*. Consequently, Davidov et al. (2021) described the new genus *Pulvinora* to accommodate these two species. The genus is characterized by having lecanorine apothecia soon becoming convex with the algal layer pushed below the hypothecium, a pulvinate thallus with squamules at the tip of podetioid branches, and a medullary chemistry dominated by beta-orcinol depsidones. The two species currently recognized in the genus occur on siliceous rocks in the alpine or subalpine belt of Asia and western North America. The genus is placed in the *Lecanoraceae* (*Lecanorales*) (Davidov et al. 2021).

Reference

Davydov EA, Yakovchenko LS, Hollinger J, Bungartz F et al. 2021 – The new genus *Pulvinora* (*Lecanoraceae*) for species of the '*Lecanora pringlei*' group, including the new species *Pulvinora stereothallina*. Bryologist 124, 242–256.

Entry by Thorsten Lumbsch, The Field Museum, Chicago, IL, USA

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Note 701 *Sanguineodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sanguineodiscus I.V. Frolov & Vondrák

Based on a multi-gene sequence data set including eight DNA loci, Frolov et al. (2021) introduced *Sanguineodiscus* to accommodate the *Caloplaca haematites* group, which was included in *Pyrenodesmia* by Kondratyuk et al. (2020a, b). All species are lichen-forming. The genus currently includes species but the authors mention potentially additional, undescribed species. The species in the genus occur in xerothermic, sun-lit conditions, mainly on calciferous rocks or bark in Eurasia and northern Africa, mostly in the Mediterranean basin and Central Asia. The genus is characterized by having pale to dark red or rarely black apothecial discs with anthraquinones of the chemosyndrome A (*sensu* Søchting 1997). The thallus lacks anthraquinones. The genus is classified in the subfamily *Caloplacoideae* of *Teloschistaceae* (*Teloschistales*).

References

Frolov I, Vondrák J, Košnar J, Arup U. 2021 – Phylogenetic relationships with *Pyrenodesmia sensu lato* and the role of pigments in taxonomic interpretation. Journal of Systematics and Evolution 59, 454–474.

Kondratyuk SY, Lőkös L, Farkas E, Kärnefelt I et al. 2020a – Three new genera of the *Teloschistaceae* proved by three gene phylogeny. Acta Botanica Hungarica 59, 137–260.

Kondratyuk SY, Lökös L, Oh S-O E, Kondratíuk TO et al. 2020b – New and noteworthy lichen-forming and lichenicolous fungi, 11. Acta Botanica Hungarica 62, 225–291.
Søchting U. 1997 – Two major anthraquinone chemosyndromes in *Teloschistaceae*. Bibliotheca Lichenologica 68, 135–144.

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Note 702 ***Antarctolichenia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Antarctolichenia Selbmann, Muggia & Coleine

Based on analysis of combined ITS, LSU, and SSU sequence data, Muggia et al. (2021a) introduced *Antarctolichenia* to accommodate *A. onofrii* Selbmann & Muggia. *Antarctolichenia onofrii* is a lichen-forming fungus, found within endolithic lichen communities. It was isolated from fragmented endolithic rock samples inoculated in a Petri plate containing medium (Muggia et al. 2021a). *Antarctolichenia* is a monotypic genus in the family *Phaeococcomycetaceae*, order *Lichenostigmatales*, *Arthoniomycetes*, and *Ascomycota*. Endolithic, anamorphic fungus. sexual reproduction is not known (Muggia et al. 2021a). Heavily melanized colonies grow rather slowly in vitro. Thallus composed of yeast-like cells and filamentous hyphae; yeast-like cells with a thick cell wall, and slightly verrucose in more mature cells, almost hyaline in young stages; filamentous thallus with rectangular cells and more isodiametric cells at the branches. Occasionally growing together with stichococcus-like algae, but not forming haustoria-like or more organized mycelium or lichen-like thallus structures (Muggia et al. 2021a). The ITS single locus confirms the new taxon as a new lineage basal in *Arthoniomycetes* within the *Lichenostigmatales* (Muggia et al. 2021a).

Reference

Muggia L, Coleine C, De Carolis R, Cometto A et al. 2021a – *Antarctolichenia onofrii* gen. nov. sp. nov. from Antarctic Endolithic Communities Untangles the evolution of rock-inhabiting and lichenized fungi in *Arthoniomycetes*. Journal of Fungi 7, 935.

Entry by R.G. Udeni Jayalal, Department of Natural Resources, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka.
(Edited by **Vinodhini Thiyagaraja and Kevin D. Hyde)**

Note 703 ***Fasciodontia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fasciodontia Yurchenko & Riebesehl

This is a resupinate corticioid genus found on dead angiosperms and widely distributed (Yurchenko et al. 2020, Luo & Zhao 2021). Phylogenetic analyses based on ITS and LSU placed this genus in *Schizoporaceae* (*Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Yurchenko et al. 2020). Results also showed the clade formed by *Lyomyces* and *Xylodon* as a sister group with good support by bootstrap and posterior probabilities (Yurchenko et al. 2020). The type species is *F. bugellensis* (Ces.) Yurchenko, Riebesehl & Langer. Compared to other species of *Schizoporaceae*, the three species of the genus are characterized by annual, resupinate, membranaceous basidioma, minutely odontioid hymenophore, pseudodimitic hyphal system with clamps, cylindrical to slightly moniliform and capitate cystidia, utriform to subcylindrical basidia, usually with two constrictions, ellipsoid, smooth, with thickened or thick walled basidiospores, slightly to moderately cyanophilous

(Yurchenko et al. 2020, Luo & Zhao 2021). The asexual morph is unknown. All species have sequence data. *Fasciodontia* is similar to *Xylodon*, but the species of *Xylodon* with thick-walled basidiospores lack the combination of characters listed above (Yurchenko et al. 2020).

References

Luo KY, Zhao CL. 2021 – *Fasciodontia yunnanensis* (*Schizoporaceae*, *Hymenochaetales*), a new species from Southern China. Annales Botanici Fennici 58(4-6), 259–266.

Yurchenko E, Riebesehl J, Langer E. 2020 – *Fasciodontia* gen. nov. (*Hymenochaetales*, *Basidiomycota*) and the taxonomic status of *Deviodontia*. Mycological Progress 19(2), 171–184.

Entry by Tatiana Baptista Gibertoni, Laboratório de *Basidiomycota*, Departamento de Micologia, Centro de Biociências, Universidade Federal de Pernambuco, Avenida da Engenharia s/n, Recife, Pernambuco, Brasil, CEP 50740-600

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Note 704 *Aspiciliella*

Web-links: Index Fungorum, MycoBank, GenBank

Aspiciliella M. Choisy

The currently accepted taxonomy of the lichenized family *Megasporaceae* (*Pertusariales*) includes eight genera i.e. *Aspicilia* A. Massal., *Circinaria* Link, *Lobothallia* (Clauzade & Cl. Roux) Hafellner, *Megaspora* (Clauzade & Cl. Roux) Hafellner & V. Wirth, *Sagedia* Ach., *Teuvoa* Sohrabi & S. Leavitt, *Aspiciliella* M. Choisy, and *Oxneriaria* S.Y. Kondr. & Lőkös (Nordin et al. 2010, Sohrabi et al. 2013, Haji Moniri et al. 2017, Zakeri et al. 2017, Paukov et al. 2019). *Aspiciliella* was resurrected based on three phylogenetic markers: ITS, mtSSU, and nuLSU (Zakeri et al. 2019a, b) and is characterized by a crustose thallus that is rimose–areolate and K+, red in part; a green, olive–green to greenish–brown N+ light green epihymenium; 8–spored asci, ellipsoid, colorless, simple ascospores and very short (7–11µm long) conidia. The genus includes four species; *Aspiciliella cupreoglauca* (B. de Lesd.) Zakeri, Divakar & Otte, *A. intermutans* (Nyl.) M. Choisy, *A. portosantana* Sipman & Zakeri and *A. pakistanica* K. Habib, Q. Firdous, Sohrabi & Khalid (Zakeri et al. 2017, 2019a, b, Habib et al. 2021).

References

Habib K, Firdous Q, Sohrabi M, Khalid AN. 2021 – *Aspiciliella pakistanica* a new lichen species (*Megasporaceae*, *Pertusariales*, *Ascomycota*) from Pakistan. Phytotaxa 511(2), 175–182.

Haji-Moniri M, Gromakova AB, Lőkös L, Kondratyuk SY. 2017 – New members of the *Megasporaceae* (*Pertusariales*, lichen forming *Ascomycota*): *Megaspora iranica* spec. nova and *Oxneriaria* gen. nova. Acta Bot Hung 59(3–4), 343–370

Nordin A, Savič S, Tibell L. 2010 – Phylogeny and taxonomy of *Aspicilia* and *Megasporaceae*. Mycologia 102(6), 1339–1349.

Paukov A, Davydov EA, Nordin A, Roux C et al. 2019 – Three new species, new combinations and a key to known species of *Lobothallia* (*Megasporaceae*). The Lichenologist 51, 301–322.

Sohrabi M, Rico SDLVJ, Halici MG, Shrestha G et al. 2013 – *Teuvoa*, a new lichen genus in *Megasporaceae* (*Ascomycota*: *Pertusariales*), including *Teuvoa junipericola* sp. nov. The Lichenologist 45, 347–360.

Zakeri Z, Divakar PK, Otte V. 2017 – Taxonomy and phylogeny of *Aspiciliella*, a resurrected genus of *Megasporaceae*, including the new species *A. portosantana*. Herzogia 30, 166–176.

Zakeri Z, Otte V, Sipman H, Malíček J et al. 2019a – Discovering cryptic species in the *Aspiciliella intermutans* complex (*Megasporaceae*, *Ascomycota*) – First results using gene concatenation and coalescent–based species tree approaches. PLOS ONE 14, e0216675.

Zakeri Z, Sipman H, Paukov A, Otte V. 2019b – Neotypification of *Aspiciliella cupreoglauca* and lectotypification and synonymization of *Aspicilia reticulata* (*Megasporaceae, Ascomycota*). The Lichenologist 51, 97–99.

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Note 705 *Abtylopilus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Abtylopilus Yan C. Li & Zhu L. Yang

Abtylopilus was established based on morphological and multi-locus phylogenetic studies with LSU, *tef1-α*, *rpb1*, and *rpb2* sequences (Li and Yang 2021). The genus is placed in *Boletaceae*, *Boletales*, *Agaricomycetes*, *Basidiomycota* (Li & Yang 2021). *Abtylopilus* differs from other genera in the *Boletaceae* in its nearly glabrous pileus, white to cream hymenophore, fine hymenophore pores (0.3–1 mm wide), initially red and then black discoloration when injured, and palisadoderm pileipellis (Li & Yang 2021). Currently, two species, namely *Abtylopilus scabrosus* Yan C. Li & Zhu L. (type) and *Abtylopilus alborubellus* Yan C. Li & Zhu L. Yang are occurring on soil associated with *Fagaceae* in China (Li & Yang 2021).

Reference

Li, YC, Yang, ZL. 2021 – *Anthracoporus* Yan C. Li & Zhu L. Yang. In The Boletes of China: *Tylopilus* s.l. (pp. 49–60). Springer, Singapore.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 706 *Amoenoboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Amoenoboletus G. Wu, E. Horak & Zhu L. Yang

This genus was established by phylogenetic analyses based on ITS, LSU, *tef1-α*, and *rpb2* sequence data by Wu et al. (2021a). *Amoenoboletus* is currently placed in *Boletaceae* (*Boletales*, *Agaricomycetes*, *Basidiomycota*). The type species is *Amoenoboletus granulopunctatus* (Hongo) G. Wu, E. Horak & Zhu L. Yang. There were three species from *Boletus* and *Xerocomus* recombined in this genus (Wu et al. 2021a). *Amoenoboletus* species are ectomycorrhizal (McNabb 1968). *Amoenoboletus mcrobbii* is associated with *Nothofagaceae* (McNabb 1968). Species of this genus can be distinguished from other genera of *Boletaceae* by following features: the unchanging context and hymenophore upon bruising, the reddish to red hymenophoral surface and the yellowish tubes, the furfuraceous squamules on the pileus and stipe, subcutis pileipellis, and the ovoid to ellipsoid, smooth-walled, inamyloid basidiospores lacking a suprahilar depression (Wu et al. 2021a). This genus is only recorded from Asia and New Zealand.

References

McNabb RF. 1968 – The *Boletaceae* of New Zealand. New Zealand Journal of Botany 6(2), 137–176.

Wu G, Li MX, Horak E, Yang ZL. 2021a – Phylogenetic analysis reveals the new genus *Amoenoboletus* from Asia and New Zealand. Mycologia 14(1), 144–156.

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Note 707 *Austrocortinarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Austrocortinarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data (Liimatainen et al. 2022). Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, glyceraldehyde-3-phosphate dehydrogenase (*gapdh*) and *tef1-α*) of 245 species, a classification of *Cortinariaceae* with ten genera including seven new genera was established (Liimatainen et al. 2022). The type species is *Austrocortinarius victoriaensis* (Liimat.) Niskanen. *Austrocortinarius* is a genus established to accommodate species with the combination morphological characteristics of pileipellis simplex, large, ± white basidiomata and a peronate universal veil often forming a distinct ring at the upper part of the rooting stipe (Liimatainen et al. 2022). The basidiomata are agaricoid (phlegmacioid), stipito- carpic and the spores are rather large and amygdaloid (Liimatainen et al. 2022). The asexual morph is unknown. *Austrocortinarius* species have been found in Australia and New Zealand (Liimatainen et al. 2022). *Austrocortinarius* is currently placed in *Cortinariaceae* (*Agaricales*, *Agaricomycetes*, *Basidiomycota*).

Reference

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

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Note 708 *Bryopistillaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bryopistillaria Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen

Phylogenetic analysis based on ITS, SSU, LSU, *rpb1*, *rpb2*, and *tef1-α* showed *Ceratellopsis sensu* auct. is polyphyletic because *C. acuminata* nests in *Clavariaceae* and *C. sagittiformis* in the *Hymenochaetales*. *Bryopistillaria* was introduced to accommodate *C. sagittiformis* and placed in *Rickenellaceae* (*Hymenochaetales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*). The genus is monotypic and the type species is *Bryopistillaria sagittiformis* (Pat.) Olariaga, Huhtinen, Læssøe, J.H. Petersen & K. Hansen. Species of this genus are biotrophic on mosses, and might be saprobic on dead leaves and culms (Olariaga et al. 2020). Basidiomata are gregarious or fasciculate (2–5 basidiomata), simple clavarioid, initially lanceolate and with sterile apex, then cylindrical or claviform, with rounded fertile apex, white (Olariaga et al. 2020). The stipe is short, cylindrical, glabrous or pubescent or absent (Olariaga et al. 2020). The hyphal system is monomitic (Olariaga et al. 2020). *Bryopistillaria* produces smooth-walled basidiospores without iodine reactions, claviform basidia, parallel-arranged, cylindrical, septate, thin-walled medulla hyphae without iodine reactions (Olariaga et al. 2020). Clamp connections are absent (Olariaga et al. 2020). The asexual morph is unknown. Species of this genus are distributed in Denmark, Estonia, Finland, France and Sweden (Olariaga et al. 2020).

Reference

Olariaga I, Huhtinen S, Læssøe T, Petersen JH et al. 2020 – Phylogenetic origins and family classification of typhuloid fungi, with emphasis on *Ceratellopsis*, *Macrotyphula* and *Typhula* (*Basidiomycota*). Studies in Mycology 96(1), 155–184.

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Note 709 *Cacaoporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cacaoporus Raspé & Vadthanarat

This boletoid genus is known from Thailand. It is associated with *Fagaceae* and *Dipterocarpaceae* and is likely ectomycorrhizal with members of those plant groups (Vadthanarat et al. 2019). Phylogenetic analysis based on ATP synthase subunite 6 (*atp6*), *tef1-α*, *rpb2*, and cytochrome c oxidase 3 (*cox3*) supports the monophyly of the genus and its position in *Boletaceae* (*Boletales*, *Agaricomycetes*, *Basidiomycota*) (Vadthanarat et al. 2019). Results also suggested a sister relationship with *Cupreoboletus* and/or *Cyanoboletus* (two taxa in the *Pulveroboletus* group), however, further investigation is needed to clarify the relationships. The type species is *Cacaoporus tenebrosus* Vadthanarat, Raspé & Lumyong. *Cacaoporus* is characterized by chocolate brown to dark brown basidiomata and hymenophore, tubes not separable from the pileus context, white to off-white basal mycelium reddening when bruised, amygdaliform to ovoid spores and dark brown spore deposit (Vadthanarat et al. 2019).

Cacaoporus closely resembles *Sutorius* but can be distinguished from it by the chocolate brown to dark brown or blackish-brown basidiomata (darker than *Sutorius* and never purplish-brown like in *Sutorius*), chocolate brown to dark brown hymenophore (darker than *Sutorius* and never reddish- to purplish-brown like in *Sutorius*), tubes that are not separable from the pileus context (can be separated in *Sutorius*) and off-white basal mycelium that more or less turns red when bruised (which is never the case in *Sutorius*) (Vadthanarat et al. 2019).

Reference

Vadthanarat S, Lumyong S, Raspé O. 2019 – *Cacaoporus*, a new *Boletaceae* genus, with two new species from Thailand. MycoKeys 54, 1–29.

Entry by Naveed Davoodian, National Herbarium of Victoria, Royal Botanic Gardens Victoria, Melbourne 3004, Australia

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 710 *Calonarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calonarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data (Liimatainen et al. 2022). Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, *gapdh*, and *tef1-α*) of 245 species, a classification of *Cortinariaceae* with ten genera including seven new genera was established (Liimatainen et al. 2022). *Calonarius* is one of those new genera. *Calonarius* accommodates three subgenera, viz., *Calonarius*, *Calochroi* and *Fulvi* (Liimatainen et al. 2022). The type species is *Calonarius typicus* (Liimat.) Niskanen. The characteristics of this genus are medium- to large-sized, pileocarpic, aga- ricoid (phlegmacioid) or sometimes sequestrate, often brightly coloured basidiomata with a more or less, usually distinctly marginated bulb at the base of the stipe (Liimatainen et al. 2022). Amygdaloid to citriform coarsely verrucose basidiospores and simplex pileipellis are also typical. Some species have a positive KOH-reaction (± red, yellowish or orange-brown, olivaceous green, black) (Liimatainen et al. 2022). The asexual morph is unknown. Members of this genus are distributed in the northern hemisphere (Garnica et al. 2011). Forming ectomycorrhizal associations mainly with the trees of *Fagaceae* (*Castanea*, *Castanopsis*, *Chrysolepis*, *Fagus*, *Notholithocarpus*, *Quercus*) and *Pinaceae* (*Abies*, *Larix*, *Picea*, *Pinus*, *Pseudotsuga*, *Tsuga*), some species also with *Betulaceae* (*Alnus*, *Corylus*, *Carpinus*), *Cistaceae* (*Cistus*, *Helianthemum*) and *Malvaceae* (*Tilia*) (Garnica et al. 2011). Most species are rare and have narrow ecological preferences (Frøslev et al. 2007), and the majority are calcicolous or calciphilous. *Calonarius* is currently placed in *Cortinariaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

References

Frøslev TG, Jeppesen TS, Læssoe T, Kjøller R. 2007 – Molecular phylogenetics and delimitation of species in *Cortinarius* section *Calochroi* (*Basidiomycota*, *Agaricales*) in Europe. Molecular Phylogenetics and Evolution 44, 217–227.

Garnica S, Spahn P, Oertel B, Ammirati J et al. 2011 – Tracking the evolutionary history of *Cortinarius* species in section Calochroi, with transoceanic disjunct distributions. BMC Evolut Biol 11, 213.

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 711 *Cystinarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cystinarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data (Liimatainen et al. 2022). Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, *gapdh*, and *tef1-α*) of 245 species, a classification of *Cortinariaceae* with ten genera including seven new genera was established (Liimatainen et al. 2022). *Cystinarius* currently accommodated section *Crassi*. The type species is *Cystinarius eutactus* (Soop) Niskanen & Liimat. Species of this genus is characterized by combination of small basidiospores (6–9 × 3.5–5 µm) and presence of cheilo- and pleurocystidia (Liimatainen et al. 2022). The basidiomata are medium- to large-sized, stipitocarpic and agaricoid (phlegmacioid/cortinarioid) (Liimatainen et al. 2022). The pileipellis is somewhat duplex (Liimatainen et al. 2022). The asexual morph is unknown. *Cystinarius* species are distributed in the northern and southern Hemisphere with coniferous and deciduous trees (Liimatainen et al. 2022). *Cystinarius* is currently placed in *Cortinariaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China
(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 712 *Hygronarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hygronarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data. Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, *gapdh*, and *tef1-α*) of 245 species, a classification of *Cortinariaceae* with ten genera including seven new genera was established. *Hygronarius* is one of the new genera with two subgenera, viz., *Hygronarius* and *Visincisi*. The type species is *Hygronarius renidens* (Fr.) Niskanen & Liimat. This genus includes small- to medium-sized, stipitocarpic, agaricoid (telamonioid) species with yellow-brown to red-brown (Liimatainen et al. 2022). The stipe is dry and the pileus is dry or viscid and hygrophanous (Liimatainen et al. 2022). The basidiospores are subglobose or ellipsoid and the pileipellis is duplex with a more or less developed hypoderm (Liimatainen et al. 2022). The asexual morph is unknown. The species are reminiscent of those in *Cortinarius* subgenus *Iodolentes* and *Telamonia* but are genetically distinct from them (Garnica et al. 2005, Stensrud et al. 2014). *Hygronarius* species are distributed in the Northern and Southern Hemisphere with deciduous and coniferous trees (Liimatainen et al. 2022). This genus is currently placed in *Cortinariaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

References

Garnica S, Weiß M, Oertel B, Oberwinkler F. 2005 – A framework for a phylogenetic classification in the genus *Cortinarius* (*Basidiomycota*, *Agaricales*) derived from morphological and molecular data. Botany 83, 1457–1477.

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

Stensrud Ø, Orr RJS, Reier-Røberg K, Schumacher T et al. 2014 – Phylogenetic relationships in *Cortinarius* with focus on North European species. Karstenia 54, 57–71.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China
(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 713 *Mystinarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mystinarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data. Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, *gapdh*, and *tef1-α*) of 245 species, a classification of *Cortinariaceae* with ten genera including seven new genera were established. *Mystinarius* is one of the new genera with one subgenus *Mystinarius*. The type species is *Mystinarius lustrabilis* (Moënne-Locc.) Niskanen & Liimat. The species of this small, bihemispheric genus have medium-sized, stipitocarpic, agaricoid (myxacioid/ phlegmacioid) basidiomata with a yellow to reddish brown, somewhat viscid to almost dry pileus and a white to yellow, dry stipe (Liimatainen et al. 2022). The basidiospores are medium-sized and the pileipellis is duplex (Liimatainen et al. 2022). The asexual morph is unknown. The species of this genus resemble most of those in *Thaxterogaster* subgenus *Multiformes*, *T.* sect. *Pinophili* or *T.* sect. *Vibratiles* (Liimatainen et al. 2022). However, they are not closely related to *Thaxterogaster* or other genera of *Cortinariaceae* (Liimatainen et al. 2022). The species of this genus are distributed in the Southern Hemisphere in forests of *Nothofagaceae* (Liimatainen et al. 2022). *Mystinarius* is currently placed in *Cortinariaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 714 *Neotropicomus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neotropicomus A.C. Magnago, Alves-Silva & T.W Henkel

Magnago et al. (2022) introduced *Neotropicomus* with *Neotropicomus australis* A.C. Magnago as the type. There, two species currently known, one species known from the Brazil's Atlantic Forest and one species from the Pakaraima Mountains of Guyana (Magnago et al. 2022). The phylogenetic analysis based on ITS, LSU, *tef1-α*, *rpb1* and *rpb2* sequences indicated *Neotropicomus* is a distinct genus in subfamily *Boletoideae* (in *Boletaceae*, *Boletales*, *Agaricomycetes*, *Basidiomycota*). Species from this genus are characterized by epigeous basidiomata, smooth to rugulose pileus, Tubulose-poroid, pale olivaceous yellow hymenophore, 1–2 mm wide, isodiametric to subangular pores, smooth to minutely scabrous stipe, unchanging context, olivaceous in deposit, subfusoid to fusoid, smooth-walled basidiospores and phylloporoid hymenophoral trama (Magnago et al. 2022). The asexual morph is unknown.

Reference

Magnago AC, Alves-Silva G, Henkel TW, da Silveira RMB. 2022– New genera, species, and combinations of *Boletaceae* from Brazil and Guyana. Mycologia 114(3),607-625.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 715 *Nielozyma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nielozyma Xin Zhan Liu, F.Y. Bai, M. Groenew. & Boekhout

This genus was described from leaves of *Melastoma candidum* in Taiwan Island by Liu et al. (2015b). Phylogenetic analyses based on seven markers (SSU, ITS, LSU, *rpb1*, *rpb2*, *tef1-α*, and cytochrome b (*cytb*)), indicated its phylogenetic position in melastomae clade in *Bulleribasidiaceae* (*Tremellales*, *Tremellomycetidae*, *Tremellomycetes*, *Basidiomycota*). The type species is *Nielozyma melastomae* (Nakase, Tsuzuki, F.L. Lee & M. Takash.) X.Z. Liu, F.Y. Bai, M. Groenew. &

Boekhout. This genus contains two species (Liu et al. 2015b). *Nielozyma* is mostly characterized by absence of basidiomata and usually yellowish to brownish colonies (Liu et al. 2015b). Pseudohyphae and true hyphae were not observed by Liu et al. (2015b). Budding cells and ballistoconidia are (Liu et al. 2015b). Fermentation absent and nitrate not utilized (Liu et al. 2015b). The sexual morph is not known.

Reference

Liu XZ, Wang QM, Göker M, Groenewald M et al. 2015b – Towards an integrated phylogenetic classification of the *Tremellomycetes*. Studies in Mycology 81, 85–147.

Entry by Mendes-Alvarenga RL, Departamento de Micologia, Centro de Biociências Universidade Federal de Pernambuco (UFPE), Recife, Brazil

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 716 *Penttilamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Penttilamyces Zmitr., Kalinovskaya & Myasnikov

This is a resupinate/corticioid genus with species that usually grow on dead wood (primarily of conifers, though sometimes other trees such as birch), causing a brown rot, or are lichenicolous (Zmitrovich et al. 2019). Species of this genus grow on coniferous wood of various conditions or on lichen thalli, causing a brown rot of the wood. Zmitrovich et al. (2019) transferred *Penttilamyces* into *Coniophoraceae* (*Boletales*, *Agaricomycetes*, *Basidiomycota*) based on morphological data. While the protologue presents little direct genetic evidence to support the genus, publicly available sequences of *rpb2*, *tef1-α* and various rDNA loci suggest a close relationship between the constituent species. The type species is *Penttilamyces romellii* (Ginns) Zmitr., Kalinovskaya & Myasnikov. (= *Leucogyrophana romellii* Ginns). Another species previously in *Leucogyrophana*, *L. lichenicola* Thorn, Malloch & Ginns, was also moved to *Penttilamyces* by Zmitrovich et al. (2019). Currently there are three species in this genus. *Penttilamyces* is characterized by annual, resupinate, orbicular basidiomata adhering to the substrate with byssoid margin and subiculum, a ceraceous merulioid (or almost even) apricot-ochraceous or olivaceous hymenophore, monomitic hyphal system, nodose-septate hyphae, fusoid or hyphoid leptocystidia, utriculate 4-spored basidia, basal clamp connections, ellipsoid-cylindric basidiospores with smooth one-layered brownish wall that are CB+ and strongly dextrinoid (Zmitrovich et al. 2019). Asexual morph unknown.

Reference

Zmitrovich IV, Kalinovskaya NI, Myasnikov AG. 2019 – Funga photographica - *Boletales* I: *Coniophoraceae, Hygrophoropsidaceae, Paxillaceae, Serpulaceae, Tapinellaceae* boreales. Folia Cryptogamica Petropolitana 7, 1–58.

Entry by Naveed Davoodian, National Herbarium of Victoria, Royal Botanic Gardens Victoria, Melbourne 3004, Australia

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 717 *Proterochaete*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Proterochaete Spirin & Malysheva

This is a monotypic genus found on rotten wood of deciduous trees (saprotrophic) (Alvarenga et al. 2019). Phylogenetic analyses based on ITS and LSU, indicated its phylogenetic position in

Auriculariales (*Agaricomycetes*, *Basidiomycota*) (Alvarenga et al. 2019). The type species is *Proterochaete adusta* (Burt) Spirin & V. Malysheva, and this species has been documented in Eurasia and North America, although the species does not appear to be widely distributed (Alvarenga et al. 2019). This genus is characterized by resupinate, arid, soft, medium-sized, cream-colored to grayish or pale ochraceous basidiomata with smooth or irregularly spiny hymenophores, monomitic hyphal structures and thin-walled, clamped generative hyphae (Alvarenga et al. 2019). Species of this genus produce ovoid, longitudinally septate, 4-celled basidia occasionally tapering to the stalk-like base and hyaline, thin-walled, cylindrical to broadly cylindrical, slightly curved basidiospores with oil droplets in the cytoplasm (Alvarenga et al. 2019). Hyphidia and cystidia are present (Alvarenga et al. 2019). The asexual morph is unknown.

Reference

Alvarenga RLM, Spirin V, Malysheva V, Gibertoni TB et al. 2019 – Two new genera and six other novelties in *Heterochaete sensu lato* (*Auriculariales, Basidiomycota*). Botany 97, 439–451.

Entry by Mendes-Alvarenga RL, Departamento de Micologia, Centro de Biociências Universidade Federal de Pernambuco (UFPE), Recife, Brazil

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 718 *Psilochaete*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Psilochaete Spirin & V. Malysheva

This is a monotypic genus found on rotten wood of *Ulmus glabra* (saprotrophic) (Spirin et al. 2019). Phylogenetic analyses based on ITS, LSU, and *tef1-α* indicated its phylogenetic position in *Auriculariales* (*Agaricomycetes*, *Basidiomycota*) (Spirin et al. 2019). The type species is *Psilochaete multifora* Spirin & V. Malysheva, and have been only collected once in Norway (Spirin et al. 2019). The genus is characterized by effused, smooth, reticulate, semitranslucent, thin basidiomata, monomitic hyphal structure, clamped, thin-walled hyphae (Spirin et al. 2019). Cystidia abundant, clavate to skittle-like, thin-walled (Spirin et al. 2019). Hyphidia present, crystal aggregations absent (Spirin et al. 2019). Basidia are 4-celled, globose, sessile or with a strongly reduced stipe (Spirin et al. 2019). Basidiospores broadly cylindrical to narrowly ellipsoid (Spirin et al. 2019). The asexual morph is not known.

Reference

Spirin V, Malysheva V, Miettinen O, Vlasák J et al. 2019 – On *Protomerulius* and *Heterochaetella* (*Auriculariales, Basidiomycota*). Mycological Progress 18(9), 1079–1099.

Entry by Mendes-Alvarenga RL, Departamento de Micologia, Centro de Biociências Universidade Federal de Pernambuco (UFPE), Recife, Brazil

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 719 *Rajchenbergia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rajchenbergia Salvador-Montoya, Popoff & Drechsler-Santos

This is a resupinate polypore found predominately on dead angiosperms and distributed mainly in the tropical areas (Salvador-Montoya et al. 2020). Phylogenetic analyses based on ITS and LSU placed this genus in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Salvador-Montoya et al. 2020). *Phellinotus* is a sister taxon to *Rajchenbergia*, with low support by bootstrap and good support by posterior probabilities (Salvador-Montoya et al. 2020). The type species is *R. pertenuis* Salvador-Montoya, Popoff & Drechsler-Santos. Compared to other species of *Hymenochaetaceae*, the three species of this genus are characterized by annual, resupinate basidioma, poroid hymenophore, subiculum thin, homogenous or with a dark line, monomitic hyphal system without clamps, absence of setae and cystidioles, ellipsoid, broadly ellipsoid to ovoid, thick-walled, yellowish to rusty brown basidiospores (Salvador-Montoya et al. 2020). The asexual morph is unknown. These three species have DNA sequence data. *Rajchenbergia* is similar to *Fomitiporella* and *Arambarria*, but they both have effused-reflexed basidiomata (Salvador-Montoya et al. 2020). Additionally, *Fomitiporella* has a homogenous context and dimitic hyphal system, while *Arambarria* presents a rudimentary mycelial core in the base of basidiomata (Salvador-Montoya et al. 2020).

Reference

Salvador-Montoya CA, Popoff OF, Góes-Neto A, Drechsler-Santos ER. 2020 – Global phylogenetic and morphological reassessment of *Fomitiporella* s.l. (*Hymenochaetales, Basidiomycota*): taxonomic delimitation of *Fomitiporella sensu stricto* and segregation of *Rajchenbergia*, gen. nov. Plant Systematics and Evolution 306, 34.

Entry by Tatiana Baptista Gibertoni, Laboratório de *Basidiomycota*, Departamento de Micologia, Centro de Biociências, Universidade Federal de Pernambuco, Avenida da Engenharia s/n, Recife, Pernambuco, Brasil, CEP 50740-600

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 720 *Rubinosporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rubinosporus Vadthanarat, Raspé & Lumyong

This is a monotypic bolete genus thus far known only from the type locality in Thailand (Vadthanarat et al. 2022). It has been found on soil in evergreen forest dominated by *Fagaceae* mixed with *Dipterocarpaceae* (*Dipterocarpus obtusifolius*, *D. costatus*, *Shorea siamensis*, *Hopea* sp.), and it is presumably ectomycorrhizal with members of one or both of those plant families (Vadthanarat et al. 2022). Phylogenetic analyses based on *atp6*, *cox3*, *rpb2*, and *tef1-α* support the monophyly of *Rubinosporus* and its position in *Boletaceae* subfamily *Xerocomoideae* (*Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Vadthanarat et al. 2022). The type species is *Rubinosporus auriporus* Vadthanarat, Raspé & Lumyong. *Rubinosporus* is distinguished from the other genera in *Boletaceae* primarily by its dark ruby spore deposit (Vadthanarat et al. 2022). Other characters of *Rubinosporus* are as follows: pileus surface even, with matted, cracked tomentum; stipe surface even, scattered with minute squamules; golden yellow tubular hymenophore which is relatively thin, especially when young; unchanging surfaces and context when touched or cut; smooth, broadly ellipsoid basidiospores (Vadthanarat et al. 2022). The asexual morph is unknown. The most similar genera to *Rubinosporus* appear to be *Aureoboletus* and *Baorangia*, though the dark ruby spore deposit of *Rubinosporus* clearly distinguishes it from those genera (Vadthanarat et al. 2022).

Reference

Vadthanarat S, Raspé O, Lumyong S. 2022 – *Rubinosporus auriporus* gen. et sp. nov. (*Boletaceae*: *Xerocomoideae*) from tropical forests of Thailand, producing unusual dark ruby spore deposits. Journal of Fungi 8(3), 278.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 721 *Spodocybe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spodocybe Z.M. He & Zhu L. Yang

This new genus was introduced based on two new species found in China (He & Yang 2021) Multigene analyses based on ITS, LSU, *rpb1*, *rpb2*, *tef1-α* and *atp6* sequence data as well as the morphological characteristics support it as a new genus in the tricholomatoid clade (Matheny et al. 2006, Alvarado et al. 2015, He &Yang 2021). The type species is *Spodocybe rugosiceps* Z.M. He & Zhu L. Yang. Species of this genus are characterized by small, clitocyboid basidiomes (He & Yang 2021). The pileus is convex, applanate to infun- dibuliform; surface dry, greyish, grey-brown to dark grey-brown; center depressed with age (He &Yang 2021). Lamellae is decurrent to deeply decurrent, white to cream, thin, moderately crowded, sometimes furcate and interveined (He &Yang 2021). The stipe is central, subcylindrical, concolorous with pileus (He &Yang 2021). Basidiospores are ellipsoid, oblong to cylindrical, colourless, hyaline, smooth, thin-walled, inamyloid; ratio of basidia to basidiospore length is less than five (He &Yang 2021). The pileipellis and stipitipellis are cutis, lamellar trama subregular and, clamp connections are abundant and present in all parts of basidiome (He &Yang 2021). The asexual morph is unknown. Species of this genus are usually gregarious or caespitose on ground, rarely on wood and widespread in temperate and tropical regions (He &Yang 2021). *Spodocybe* species are currently placed in *Hygrophoraceae* (*Agaricales*, *Agaricomycetes*, *Basidiomycota*) (He &Yang 2021).

References

Alvarado P, Moreno G, Vizzini A, Consiglio G et al. 2015 – *Atractosporocybe*, *Leucocybe* and *Rhizocybe*: three new clitocyboid genera in the Tricholomatoid clade (*Agaricales*) with notes on *Clitocybe* and *Lepista*. Mycologia 107(1), 123–136.

He ZM, Yang ZL. 2021 – A new clitocyboid genus *Spodocybe* and a new subfamily *Cuphophylloideae* in the family *Hygrophoraceae* (*Agaricales*). MycoKeys 79, 129.

Matheny PB, Hofstetter V, Aime MC, Moncalvo JM et al. 2006a – Major clades of *Agaricales*: a multilocus phylogenetic overview. Mycologia 98(6), 982–995.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 722 *Statesia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Statesia Castellano, T. Lebel, Davoodian & K. Hosaka

Species of *Statesia* are sequestrate (truffle-like), presumably ectomycorrhizal, typically associated with *Quercus* or occasionally *Fagus* (Lebel et al. 2022). The related generic clade is firstly indicated in the phylogenetic analysis based on *atp6* and *tef1-α* sequences and labeled as "*gen. prov.* 15" (Davoodian et al. 2021). Later it was formally proposed with descriptions and discussions by Lebel et al. (2022). *Statesia* is currently placed in *Hysterangiaceae* (*Hysterangiales*, *Agaricomycetes*). The type species is *S. cazaresii* Castellano, T. Lebel, Davoodian & K. Hosaka. Species of this genus are characterized by hypogeous, sequestrate, subglobose basidiomata with glabrous or tomentose, white surface (often staining brownish to reddish), hyaline to brownish, single to double-layered peridium composed of *textura intricata*, *textura porrecta* or *textura angularis*, reddish to brownish or olive gleba with empty, partially filled or filled locules, often numerous rhizomorphs adherent across the surface, dendroid columella, 2-spored basidia and ellipsoid, broadly ellipsoid, fusoid to broadly fusiform, smooth to verrucose basidiospores with a pedicellate base and distinct or amorphous utricle (Lebel et al. 2022). The asexual morph is unknown. *Statesia* species are distributed in temperate zones in Northern Hemisphere. Four species are accommodated in this genus.

References

Davoodian N, Lebel T, Castellano MA, Hosaka K. 2021 – *Hysterangiales* revisited: expanded phylogeny reveals new genera and two new suborders. Fungal Systematics and Evolution 8, 65–80.

Lebel T, Davoodian N, Bloomfield MC, Syme K et al. 2022 – A mixed bag of sequestrate fungi from five different families: *Boletaceae*, *Russulaceae*, *Psathyrellaceae*, *Strophariaceae*, and *Hysterangiaceae*. Swainsona 36, 33–65

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 723 ***Teunia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Teunia Q.M. Wang & F.Y. Bai

Species of *Teunia* are found on phylloplane and soil (Li et al. 2020a). The phylogenetic analyses based on seven markers (SSU, ITS, LSU, *rpb1*. *rpb2*. *tef1-α*, and *cyt-b*), indicated its phylogenetic position in *Cryptococcaceae* (*Tremellales*, *Tremellomycetes*, *Basidiomycota*). The type species *Teunia korlaensis* Q. M. Wang, F. Y. Bai & A. H. Li. was collected from soil in China (Li et al. 2020a). The genus is characterized by cream coloured to yellow, butyrous to mucoid colonies, presence of budding cells and absence of pseudohyphae, hyphae and ballistoconidia (Li et al. 2020a). The sexual morph is unknown. This genus contains seven species (Li et al. 2020a).

Reference

Li AH, Yuan FX, Groenewald M, Bensch K et al. 2020a – Diversity and phylogeny of basidiomycetous yeasts from plant leaves and soil: Proposal of two new orders, three new families, eight new genera and 107 new species. Studies in Mycology 96, 17–140.

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Note 724 ***Tricholyophyllum***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tricholyophyllum Qing Cai, G. Kost & Zhu L. Yang

This genus is described from southwestern China based on both morphological and molecular phylogenetic evidence (Cai et al. 2020). Phylogenetic analyses based on LSU, ITS, *tef1-α, rpb1* and *rpb2* sequences indicated that the sample of *Tricholyophyllum* collected from China is included in the core *Lyophyllaceae*, and forms a well-supported clade with other known isolates corresponding to clade XI in Bellanger et al. (2015) (Cai et al. 2020). Cai et al. (2020) reconfirmed that this clade represents a discrete generic lineage and it was introduced as a new genus. The type species is *Tricholyophyllum brunneum* Qing Cai, G. Kost & Zhu L. Yang. This genus differs phenotypically from the other genera of the family by a trichodermal pileipellis, a discontinuous trichodermal stipitipellis, presence of cheilocystidia, and elongate to cylindrical basidiospores (Cai et al. 2020). Species from this genus are characterized by small to medium-sized, stipitate-pileate basidiomes with lamellate hymenophore, convex to applanate, tomentose-squamulose pileus, whitish context, sinuate lamellae, central, solid, subcylindrical, covered with squamules stipe, basidia with siderophilous granulation and, smooth, thin-walled, non-amyloid, elongate to cylindrical basidiospores (Cai et al. 2020). The pileipellis is a trichoderm while stipitipellis is a discontinuous trichoderm (Cai et al. 2020). *Tricholyophyllum* species lack pleurocystidia and they produce cheilocystidia (Cai et al. 2020). Clamp connections are present (Cai et al. 2020). The asexual morph is unknown. *Tricholyophyllum* is currently placed in *Lyophyllaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

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Cai Q, LvLi YJ, Kost G, Yang ZL. 2020 – *Tricholyophyllum brunneum* gen. et. sp. nov. with bacilliform basidiospores in the family *Lyophyllaceae*. Mycosystema 39(9), 1728–40.

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Note 725 *Veloboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Veloboletus Fechner & Halling

This is a monotypic bolete genus thus far known from Queensland, Australia (Crous et al. 2020a); with records from New South Wales and Western Australia fitting the protologue require further close study but are almost certainly congeneric if not conspecific (https://www.inaturalist.org/observations?place_id=any&subview=map&taxon_id=1268834). The taxon occurs solitarily to gregariously on soil or sand under *Allocasuarina* sp., *Eucalyptus* sp., and *Eucalyptus grandis*, and is probably ectomycorrhizal with one or more of those plant taxa (Crous et al. 2020a). The analyses of LSU and *tef1-α* loci supported the monophyly of *Veloboletus* (Crous et al. 2020a). Its position in *Boletaceae* subfamily *Xerocomoideae* (*Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Basidiomycota*) was supported by LSU, *atp6*, *tef1-α* and *rpb2* analysis (Crous et al. 2020a). Beyond its placement in *Xerocomoideae*, no sister group to *Veloboletus* was clearly inferred in Crous et al. (2020a), though Tremble et al. (2024) placed *Gastroboletus valdivianus* as sister based on whole genome data. The type species of *Veloboletus* is *V. limbatus* Fechner & Halling. Compared with other *Boletaceae*, *Veloboletus* is unique in displaying a conspicuous squamulose universal veil which ruptures to form a limbate rim (Crous et al. 2020a). The pileus, stipe, and flesh in *Veloboletus* stain blue, with the hymenophore staining blue-green to blue or sometimes hardly bluing (Crous et al. 2020a). The tubes are bright yellow to bright greenish yellow, and the pores are olive yellow to olive brown to brown (Crous et al. 2020a). The flesh is pale yellow to lemon yellow, with mild odor and slowly unpleasant to nearly bitter taste (Crous et al. 2020a). *Veloboletus* has a universal veil, which is notable (Crous et al. 2020a). The asexual morph is unknown. Several other boletes in *Xerocomoideae* exhibit veils that could be interpreted as universal (*Boletellus ananas*, *B. ananiceps*, *B. emodensis*, *B. deceptivus*, *B. singeri*, *Aureoboletus longicollis*), but in those taxa the portion of the veil nearest the stipe is not physically connected to the stipe tissue (Crous et al. 2020a).

Reference

Crous PW, Cowan DA, Maggs-Kölling G, Yilmaz N et al. 2020a – Fungal Planet description sheets: 1112–1181. Persoonia 45, 251–409.

Tremble K, Henkel T, Bradshaw A, Domnauer C et al. 2024 – A revised phylogeny of *Boletaceae* using whole genome sequences. Mycologia 116, 392–408.

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Note 726 *Volvanarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Volvanarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data. Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis (*rpb1*, *rpb2*, *mcm7*, *gapdh*, and *tef1-α*) of 245 species, a system of *Cortinariaceae* with ten genera including seven new genera was established. *Volvanarius* is one of the genera, and it currently accommodates two subgenera, viz., *Thaumasti* and *Volvanarius*. The type species is *Volvanarius chlorosplendidus* (Furci, Niskanen, San-Fabian, Liimat. & Salgado Salomón) Niskanen & Liimat. Species of this group can easily be identified in the field by the small and phlegmacium-like basidiomata with a bulbous stipe, and the universal veil that in most species forms a distinct volva at the base of the stipe (Liimatainen et al. 2022). This genus also possesses citriform to amygdaloid, rarely ellipsoid basidiospores and pileipellis duplex (Liimatainen et al. 2022). A few species produce balloon-shaped cheilocystidia (Liimatainen et al. 2022). The asexual morph is unknown. *Volvanarius* species are distributed in the southern Hemisphere with species of *Nothofagaceae* (Liimatainen et al. 2022). *Volvanarius* is currently placed in *Cortinariaceae*, *Agaricales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Liimatainen K, Kim JT, Pokorny L, Kirk PM et al. 2022 – Taming the beast: a revised classification of *Cortinariaceae* based on genomic data. Fungal Diversity 112(1), 89–170.

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Note 727 *Neoarthrinium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoarthrinium Ning Jiang

Neoarthrinium was established with the type species, *N. lithocarpicola* Ning Jiang and three combinations, *N. moseri* (W. Gams) Voglmayr, *N. trachycarpi* (C.M. Tian & H. Yan) Ning Jiang and *N. urticae* (M.B. Ellis) Ning Jiang in *Amphisphaeriales* genera *incertae sedis* based on morphological characters and phylogenetic analysis of combined ITS, LSU, *tef1-α*, and *tub2* sequences (Jiang et al. 2022). The members of *Neoarthrinium* were formerly described as the species in *Arthrinium* and *Wardomyces*. Sandoval-Denis et al. (2016) mentioned that *Wardomyces moseri* W. Gams does not belong to *Wardomyces* based on phylogenetic analysis of LSU and ITS sequences of the ex-type culture. Furthermore, Tian et al. (2021b) acknowledged that two

Arthrinium species viz., *Ar*. *trachycarpum* and *Ar*. *urticae* formed a phylogenetically distinct clade out of *Arthrinium* and this result is consistent with the previous study by Tang et al. (2020). Jiang et al. (2022) determined the taxonomic placement of those three species with new isolates and proposed them in *Neoarthrinium* based on morphological characters and phylogenetic analysis. The asexual morph of this genus is characterized by cylindrical, septate, verrucose conidiophores, erect, blastic, doliiform, subglobose to lageniform, branched conidiogenous cell and subglobose, ellipsoid to lenticular conidia, with a longitudinal germ slit (Jiang et al. 2022). The sexual morph is unknown. *Neoarthrinium* species are saprobes, endophytes and plant pathogens reported in China, Colombia, Great Britain and India (Ellis 1965, Sandoval-Denis et al. 2016, Yan et al. 2019, Jiang et al. 2022). *Neoarthrinium* was referred to *Amphisphaeriales* genera *incertae sedis* in *Sordariomycetes* (Jiang et al. 2022). The familial placement of the genus is uncertain.

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Tian X, Karunarathna SC, Mapook A, Promputtha I et al. 2021b – One new species and two new host records of *Apiospora* from bamboo and maize in northern Thailand with thirteen new combinations. Life 11, 1071.

Yan H, Jiang N, Liang LY, Yang Q et al. 2019 – *Arthrinium trachycarpum* sp. nov. from *Trachycarpus fortunei* in China. Phytotaxa 400, 203–210.

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Note 728 *Arthrodermataceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Arthrodermataceae Locq. ex Currah

The dermatophytes, classified in a single family *Arthrodermataceae* (*Onygenales*), have been studied since the mid-19th century, when skin lesions were recognized for the first time to have a fungal etiology. Since then, phenotypic species recognition has been applied successfully for more than 150 years. However, conventional taxonomy appeared to match poorly with modern, experimental data (Gräser et al. 2000). Therefore, a new molecular classification should be proposed. The phylogeny of *Arthrodermataceae* appeared to be remarkably stable, not only using ITS but also with other genes (Rezaei-Matehkolaei et al. 2014, Mirhendi et al. 2015, Zhan et al. 2018): the geophilic *Arthroderma* species are found at the base, and the anthropophilic species in *Trichophyton*, infecting the evolutionary most recent host, *Homo sapiens*, at the top.

Zhang et al. (2022b) collected a massive amount of multilocus data, applying sequences of ITS, LSU, *tub2*, *tef3*, 60S L1 rDNA, mostly downloaded from GenBank. Multi-locus phylogenetic reconstruction, a distance-based analysis using SplitsTree, and ITS haplotype network were used to capture the diversity in *Arthrodermataceae*. Their results further confirm the basic structure of *Arthrodermataceae* with the distinction of nine genera (*Arthroderma*, *Ctenomyces*, *Epidermophyton*, *Guarromyces*, *Lophophyton*, *Microsporum*, *Nannizzia*, *Paraphyton*, *Trichophyton*). Most genera were highly supported in this novel multilocus analysis, but, as previously noted, *Arthroderma* species are highly diverse. In contrast, species of *Trichophyton* are highly similar, several being grouped together in species complexes. The taxonomic approach of Zhang et al. (2022b) is dual: one phylogenetic criterion is bootstrap support, whereas illustrative haplotype networks use distance an alternative as parameter. These methods are effective at different levels of diversity. In their paper, the phylogenetic approach can be applied at family level, while haplotype networks maximally reach the genus level. Nevertheless, this combination of approaches generates more solid taxonomic conclusions than pure phylogeny. All data confirm the high diversity of the ancestral genus *Arthroderma*. Zhang et al. (2022b) consider the genus as being polyphyletic, and distinguish three remotely related groups. In *Nannizzia*, a single species is considered too remote to belong to the same genus. Even *Trichophyton*, though showing differences at a much lower level of diversity, is suggested to be split up in three groups. The authors are to be congratulated for not having formalized these subdivisions, but their suggestions are likely to stimulate taxonomic rearrangements in the future.

Before the suggestions are followed, some inconsistencies in Zhang et al. (2022b) proposal should be noted. The grouping of *Trichophyton* is based on bootstrap support of individualized clusters, while overall sequence diversity within the genus is low. In *Nannizzia*, the proposed separation of the single known strain of *N. polymorpha* is based purely on distance. The latter proposal might be impacted by sampling effects, as only a single strain of the maverick, *N. polymorpha* is known. It differs in 66 SNPs from its nearest neighbor, *N. corniculatum*. Knowing that the internal ITS variability of a better represented species as *N. fulva* is 33 bp, and assuming that *N. polymorpha* should have a similar degree of variance when properly sampled, a distance of 66 bp hardly justifies the erection of a separate genus. The position of the rare species is unstable: earlier publications (Dukik et al. 2020) came to another conclusion with nearly the same data. When more strains become available allowing a better picture of intraspecific variability, the deviant character of *N. polymorpha* may disappear. In general, it is not recommended to introduce taxonomic changes on the basis of a single strain in a single research paper – which the authors luckily indeed did not do.

The situation with *Arthroderma* is ambiguous. It has been known for decades that this genus is highly diverse. Zhang et al. (2022b) found the genus to be polyphyletic. Although not explicitly mentioned, this was also noted by earlier authors (e.g. Ahmadi et al. 2016, Hainsworth et al. 2021). Zhang et al. (2022b) distinguished at least three separate groups, with the suggestion that these could be genera. Is this a basis for novel taxonomy? The genus suffers even more from sampling effects than *Nannizzia*. Most species in *Arthroderma* are known from just a single strain or a pair of mating isolates. Several species seem to be associated with particular mammal hosts or vectors. Many habitats and regions such as the tropics have poorly been investigated. Quite in contrast to the overclassified genus *Trichophyton* (Gräser et al. 2008), and other onygenalean genera with continuous name changes (Kandemir et al. 2022), a large part of the extant diversity of *Arthroderma* is yet to be described. Reclassification on the basis of the currently available, relatively limited dataset would be premature.

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Note 729 *Baueromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Baueromyces Q.M. Wang, Begerow & M. Groenew.

Based on analysis of combined SSU + ITS + LSU (D1/D2), *rpb1*, *rpb2*, and *tef1-α* sequence data, Li et al. (2022e) introduced *Baueromyces* to accommodate *B. planticola* Q.M. Wang, Begerow & M. Groenew., a newly described asexual morphic basidiomycetous yeast in *Ustilaginomycotina* (Li et al. 2022e). It was isolated using a ballistoconidia-fall method from leaves of an unidentified plant in China (Li et al. 2022e). The sexual reproduction is not known. Colonies are butyrous, pink, and have smooth margins, budding cells are present, callistoconidia are not produced and hyphae are not formed (Li et al. 2022e). The genus is mainly circumscribed by the phylogenetic analysis of the six-gene sequences (Li et al. 2022e). *Baueromyces* was proposed for the branch represented by strain CGMCC 2.4532, which formed a separate branch from genera in the *Microstromatales* (*Exobasidiomycetes*) (Li et al. 2022e).

Reference

Li YY, Wang MM, Groenewald M, Li AH et al. 2022e – Proposal of two new combinations, twenty new species, four new genera, one new family, and one new order for the anamorphic basidiomycetous yeast species in *Ustilaginomycotina*. Frontiers in Microbiology 12(777338), 23.

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Note 730 *Guomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Guomyces Q.M. Wang, E. Tanaka, M. Groenew. & Begerow., in Li et al.

The genus is mainly circumscribed by phylogenetic analysis using ITS + LSU sequences for *Meira nicotianae* H.K. Wang & F.C. Lin ex Denchev & T. Denchev, isolated from the rhizosphere of tobacco root in China by Cao et al. (2018a). *Guomyces* was introduced in Li et al. (2022e) to accommodate *Guomyces nicotianae* H.K. Wang & F.C. Lin ex Q.M. Wang, E. Tanaka, M. Groenew. & Begerow (≡ *Meira nicotianae*), an asexual morph basidiomycetous yeast in *Ustilaginomycotina*. Sexual reproduction is not known. Colonies are butyrous, yellow with eroded margin, budding cells present or not, hyphae are formed and ballistoconidia are not produced (Li et al. 2022e). This genus was proposed for the branch represented by *Meira nicotianae*, which formed a separate branch from other genera in the *Brachybasidiaceae* (*Exobasidiales*, *Exobasidiomycetes*) (Li et al. 2022e). The genus is presently invalid,

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Note 731 *Hellenicoscyphus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hellenicoscyphus U. Lindem., Van Vooren & Kaounas

Hellenicoscyphus is a monotypic genus in *Pyronemataceae* (*Pezizales*, *Pezizomycetes*) typified by *H. hyalotrichus* U. Lindem., Van Vooren & Kaounas (Lindemann et al. 2022a). *Hellenicoscyphus hyalotrichus* is a probably saprobic species, which was reported from the soil between the moss and the cypress litter in Greece (Lindemann et al. 2022a). It is characterized by cupuliform, sessile, light brown to ochre apothecia, hairless receptacle, septate, marginal hairs organized in small bundles, medullary excipulum of *textura intricata*, and ectal excipulum of *textura globulosa* to *angularis*, slender, hyaline paraphyses, operculate, 8-spored, inamyloid asci with croziers, and ellipsoid, smooth hyaline ascospores with small bipolar granules (Lindemann et al. 2022a). Lindemann et al. (2022a) established *Hellenicoscyphus* based on morphological studies of and phylogenetic analyses of LSU, *tef1-α* and *rpb2* sequences. Lindemann et al. (2022a) revealed *Hellenicoscyphus* is phylogenetically related to *Ascorhizoctonia*, *Geopora*, *Picoa*, *Pseudotricharina* and *Tricharina*. However, *Hellenicoscyphus* is different from the latter five genera in its hairless receptacle, paraphyses without pigments, and elliptical, smooth-walled ascospores with bipolar spore granules (Vittadini 1831, Yang & Korf 1985, Van et al. 2015, Lindemann & Böhning 2016, Lindemann 2017, Saba et al. 2019, Lindemann et al. 2022a).

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 732 *Neohyperdermium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neohyperdermium Thanakitp. & Luangsa-ard

Neohyperdermium was introduced by Thanakitpipattana et al. (2022) to accommodate two combinations: *Neohyperdermium piperis* (J.F. Bisch. & J.F. White) Thanakitp. & Luangsa-ard (type species) and *Neohyperdermium pulvinatum* (J.F. White, R.F. Sullivan, Bills & Hywel-Jones) Thanakitp. & Luangsa-ard. Both the species are epibiotic on remnants of scale insects attached to branches of *Asteraceae* and *Piper carrilloanum* (*Piperaceae*), producing stromata larger than that of their scale insect hosts (Sullivan et al. 2000, Bischoff & White Jr 2004). The disparity in fungal stroma size to scale insects also can be seen in other clavicipitalean genera, such as *Dussiella* (Torres & White 2009) and *Ascopolyporus* (Thanakitpipattana et al. 2022). Previous mycologists proposed that these fungi first consume their hosts by acting as a parasite and then continue to absorb the nutrition from the associated plant host through the insect's remaining stylet (Bischoff & White Jr 2004, Thanakitpipattana et al. 2022). By having *Lecanicillium* anamorphs with close affinity with *Lecanicillium lecanii* based on phylogenetic analysis of the LSU gene, Bischoff & White Jr (2004) initially identified *N. piperis* as *Torrubiella piperis*. Later, the phylogenetic analysis of combined SSU, LSU, *tef1-α*, *rpb1*, *rpb2* sequence shown that *Torrubiella piperis* was restricted to the *Cordyceps sensu stricto* clade which contains *Cordyceps confragosa*, a species with sexual morph and asexual morph similar to the former species (Johnson et al. 2009). The authors thus transferred *Torrubiella piperis* to *Cordyceps* (Johnson et al. 2009). Although the phylogenetic analysis of LSU sequence shown *Neohyperdermium pulvinatum* was closely related to *Cordyceps militaris*, Sullivan et al. (2000) assigned the former species to *Hyperdermium* in view of its multi-septate conidia.

Neohyperdermium is characterized by sessile, white to yellow, flattened to pulvinate stroma, immersed, obpyriform, cymbiform to cone-shaped perithecia, filiform asci with thickened cap, hyaline, filiform, multiseptate, ascospores which disarticulating into part-spore or not (Sullivan et al. 2000, Bischoff & White Jr 2004). Conidiophores are verticillate, erect, form on the surface of stroma, with cylindrical, septate, slightly attenuated toward the apex, phialides and hyaline, fusiform, subcylindrical, aseptate to multiseptated conidia aggregated in globose head on the tip of phialides (Sullivan et al. 2000, Bischoff & White Jr 2004). The sexual morph of *Neohyperdermium* shares similarity with other clavicipitalean scale insect pathogenic genera, such as *Hypocrella*, *Moelleriella*, and *Samuelsia* (Chaverri et al. 2008). These three clavicipitalean genera typically produce Aschersonia-like asexual morphs, while it is Lecanicillium-like in *Neohyperdermium*. Additionally, the multigene phylogeny based on concatenated LSU, *tef1-αrpb1*, *rpb2* sequences also shown that species of *Neohyperdermium* clustered into a separated lineage within *Cordycipitaceae* and was distantly related to *Hypocrella*, *Moelleriella*, and *Samuelsia* (Thanakitpipattana et al. 2022). Therefore, *Neohyperdermium* was established to harbor species with hypocrella-like sexual morphs and lecanicillium-like asexual morphs.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 733 *Novopuccinia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Novopuccinia Y.M. Liang & Yun Liu

Based on analysis of LSU and ITS regions from this study and reference sequences, Liu et al. (2021c) introduced *Novopuccinia* to accommodate *N. sycopsis-sinensis* Yun Liu & Y.M. Liang (type species), *N. corylopsidis* (Cummins) Yun Liu & Y.M. Liang (≡ *Puccinia corylopsidis* Cummins), and *N. hamamelidis* (Dietel) Yun Liu & Y.M. Liang (≡ *Aecidium hamamelidis* Dietel, syn. *Puccinia mitriformis* Ito), three rust species recognised on host family *Hamamelidaceae* in China and Japan. Spermogonia, aecia and uredinia are unknown in *N. sycopsis-sinensis* and *N. corylopsidis*. *Novopuccinia sycopsis-sinensis* produces catenate, one-celled teliospores with elongated pedicel-like intercalary cells, while *N. corylopsidis* produces two-celled puccinia-like teliospores (Liu et al. 2021c). *Novopuccinia hamamelidis* produces spermogonia, aecia and two-celled puccinia-like teliospores (Liu et al. 2021c). The teliospores of both *N. corylopsidis* and *N. hamamelidis* tend to have unilateral thickening of the side cell wall (Liu et al. 2021c). The taxonomic placement of *Novopuccinia* is in *Pucciniaceae* (*Pucciniales*, *Pucciniomycetes*, *Pucciniomycotina*, *Basidiomycota*) (Liu et al. 2021c).

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Entry by Eric H.C. McKenzie, Manaaki Whenua−Landcare Research, Auckland, New Zealand
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Note 734 ***Purpureodiscus***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Purpureodiscus (G. Hirsch) Van Vooren

Purpureodiscus is a saprobic genus with four accepted species, *P. bananincola* (Rehm) Van Vooren, *P. kreiselii* (G. Hirsch) Van Vooren, *P. luteorosellus* (Le Gal) Van Vooren and *P. subisabellinus* (Le Gal) Van Vooren (Van Vooren 2020), in *Pezizaceae* (*Pezizales*). *Purpureodiscus bananincola* was found on dead banana in Philippines; *P. kreiselii* was isolated from damp soil in Germany, *P. luteorosellus* was collected from dead wood amongst *Coffea Arabica* in Congo and *P. subisabellinus* was on rotten wood in Europe (Rehm 1913, Le Gal 1959, 1967, Hirsch 1992). *Purpureodiscus* is characterized by discoid or pulvinate, whitish to reddish, or purplish brown ascomata, ectal excipulum of *textura globulosa/angularis*, with large cells, operculate asci with croziers, diffusely amyloid reaction of ascus wall, filiform paraphyses containing small vacuolar bodies, and elliptical to oblong ascospores with or without isolated warts (Van Vooren 2020). *Purpureodiscus* was originally a section of *Peziza* with *Pe. subisabellina* as the type species (Hirsch 1992). Trimbach (1999) erroneously replaced *Pe. subisabellina* in *Pachyella* based on the asci wall with diffusely amyloid reaction. Hansen et al. (2001, 2005) used the different amyloid reaction of asci apex and the phylogenetic analyses based on LSU, *rpb2*, *tub2* data to divide the species of *Peziza* into seven groups, and revealed *Pe. subisabellina* and *Pe. bananincola* form an isolated group. Van Vooren (2020) raised *Peziza* sect. *Purpureodiscus* to the generic rank and specified *P. subisabellinus* as the type species based on the research results of Hansen et al. (2001, 2005) and Pfister et al. (1978, 1979, 1991, 2015, 2016).

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Note 735 ***Allodiatrypella***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Allodiatrypella H.Y. Zhu & X.L. Fan

Allodiatrypella H.Y. Zhu & X.L. Fan was introduced as a new genus by Zhu et al. (2020) in a paper in the Research Square online portal. Based on this Niranjan and Sarma (2021) introduced a new species *Allodiatrypella ananthapadmanabanii* (as '*ananthapadmanabhae*'). However, in their original publication in Frontiers in Microbiology, Zhu et al. (2021) did not introduce a new genus by the name of *Allodiatrypella*, although they had mentioned this in the Research Square paper. The genus is therefore invalid, as it has not been published, and the new species *A. ananthapadmanabanii* is also invalid (Niranjan and Sarma, 2021).

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Note 736 ***Savitreella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Savitreella Nutaratat, Boontham & Khunnamw

Nutaratat et al. (2022) introduced the monotypic genus *Savitreella* with the type species *Savitreella phatthalungensis* Nutaratat, Boontham & Khunnamw., isolated from pineapple (*Ananas comosus*) leaves in Thailand. This genus is classified in *Taphrinales*, *incertae sedis* (*Taphrinomycetidae*, *Taphrinomycetes*, *Ascomycota*). In the phylogenetic analysis of ITS and LSU, *Savitreella* is closely related to *Protomyces* and *Taphrina* species (Nutaratat et al. 2022).

Savitreella formed a well-separated lineage from the species of these genera and confirmed that it represented a new distinct genus (Nutaratat et al. 2022). Beside phylogenetic analysis, phenotypic features also can distinguish this genus from the neighboring genera, *Protomyces* and *Taphrina*. Yeast cells divide by multilateral budding while pseudohyphae are not produced (Nutaratat et al. 2022). Ascospores have not been observed in individuals or in mixed cultures (Nutaratat et al. 2022). Glucose is not fermented, while diazonium blue B reaction, urease activity and acid production are negative (Nutaratat et al. 2022).

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Note 737 *Spaniodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spaniodiscus Van Vooren, U. Lindem. & Roffler

Spaniodiscus is a saprobic genus on decaying wood or calcareous soil with wood debris under conifers (*Larix decidua* or *Picea abies*) in the subalpine forests of Austria, France and Switzerland (Lindemann et al. 2022b). This genus is characterized by disciform, sessile, orange apothecia, receptacle and margin covered by short, septate brown hairs, medullary excipulum of textura intricate, ectal excipulum of *textura globulosa/angularis*, slender paraphyses with enlarged top, containing carotenoid pigments, operculate, 8-spored, inamyloid asci with croziers, and smooth, thick-walled ascospores with oil droplets (Lindemann et al. 2022b). *Spaniodiscus* and *Scutellinia* are easily confused because of their orange hymenium. Lindemann et al. (2022b) compared the morphology of *Spaniodiscus*, *Scutellinia* and other genera with orange hymenium. *Spaniodiscus* is different from other genera by simple-based hairs occurring on receptacle and margin, smooth, thick-walled ascospores filled with oil droplets (Han et al. 2010). *Spaniodiscus* is a monotypic genus with *Spaniodiscus fuckelii* (Donadini & Svrček) Van Vooren, Roffler & U. Lindem. (≡ *Parascutellinia fuckelii*) as type species. The phylogenetic analyses of *Pyronemataceae* based on LSU, *tef1-α* and *rpb2* data revealed that *Parascutellinia fuckelii* formed a distinct clade within *Pyronemataceae* (*Pezizales*, *Pezizomycetes*), and did not belong to the same clade as *Parascutellinia carneosanguinea* (Van Vooren et al. 2021). Besides, the morphological characters of *Parascutellinia fuckelii* deserve its own genus. So Lindemann et al. (2022b) proposed *Spaniodiscus* to accommodate *Parascutellinia fuckelii* as *Spaniodiscus fuckelii*. Maximum likelihood analysis of *Pyronemataceae* based on LSU showed that *Spaniodiscus* grouped with *Fallacidiscus* and *Chaetothiersia* with moderate statistical support and formed a polytomous clade. However, *Spaniodiscus* is different from *Fallacidiscus* by margin covered by hairs and ascospores without warts, and different from *Chaetothiersia* by paraphyses without vacuole bodies (Van Vooren et al. 2021). *Chaetothiersia* is currently placed in *Pyronemataceae* (*Pezizales*) (Lindemann et al. 2022b).

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Note 738 *Yunzhangomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Yunzhangomyces Q.M. Wang, E. Tanaka, M. Groenew. & Begerow

Based on analysis of combined SSU + ITS + LSU (D1/D2), *rpb1*, *rpb2*, and *tef1-α* sequence data, Li et al. (2022e) introduced *Yunzhangomyces* to accommodate *Y. scirpi* (Raitv.) Q.M. Wang, E. Tanaka, M. Groenew. & Begerow. (≡ *Dicellomyces scirpi* Raitv., in Parmasto), and four newly described asexual morphic basidiomycetous yeasts, which were all isolated using a ballistoconidia-fall method from leaves in China (*Y. clavatus* Q.M. Wang, E. Tanaka, M. Groenew. & Begerow; *Y. cylindricus* Q.M. Wang, E. Tanaka, M. Groenew. & Begerow; *Y. orchidis* Q. M. Wang, E. Tanaka, M. Groenew. & Begerow; *Y. qinlingensis* Q. M. Wang, E. Tanaka, M. Groenew. & Begerow). *Yunzhangomyces* was established for the branch in *Ustilaginomycotina* represented by *Dicellomyces scirpi*, which formed a separate branch from other genera in the *Brachybasidiaceae* (*Exobasidiales*, *Exobasidiomycetes*). The genus is mainly circumscribed by the description of *Y. scirpi* (≡ *Dicellomyces scirpi*) and the phylogenetic analysis of the six-genes sequences (Li et al. 2022e). This genus includes sexual and asexual species. The sexual member (*Y. scirpi*) infects *Scirpus sylvaticus* (*Cyperaceae*), basidia develop in gelatinous basidiocarps breaking through the epidermis, swollen, not persistent probasidia, with paraphyses, sterigmata 2; producing allantoid or coiled conidia (Parmasto 1968a, Reid 1976, Ingold 1985, Piepenbring et al. 2020). Asexual species present butyrous, yellow or brown colonies, smooth or eroded margin with budding cells present (Li et al. 2022e).

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Note 739 *Zongqia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Zongqia Zhi Y. Zhang & Y.F. Han

Zongqia is a monotypic asexual genus which is typified by *Z. sinensis* Zhi Y. Zhang & Y.F. Han. *Zongqia sinensis* is saprobic on soils in China (Zhang et al. 2022c). The genus is characterized by branched, septate, smooth hyphae, degenerated conidiophores, clavate, hyaline conidiophore cells occurring directly from the hyphae, solitary, clavate to subglobose, or obovate, smooth, aseptate conidia (Zhang et al. 2022c). In the maximum likelihood analysis and Bayesian analysis of five-loci (ITS, LSU, *mcm7*, *rpb2*, and *tef1-α*), *Zongqia* was sister to *Pseudeurotium* with high statistical support (Zhang et al. 2022c). *Zongqia* had similar conidiomata with *Pseudeurotium* (Minnis & Lindner 2013, Adhikari et al. 2016). However, *Zongqia* can be distinguished from *Pseudeurotium* by the presence of chains of conidia, conidiophores degenerated into conidiophore cells and clavate conidiophores cells (Zhang et al. 2022c). Because many genera of *Thelebolales* lacked molecular data and records of the asexual stage, *Zongqia* was limited on morphological and phylogenetic comparisons with other taxa (Zhang et al. 2022c). Thus, *Zongqia* was placed in *Thelebolales incertae sedis* (*Leotiomycetes*) (Zhang et al. 2022c).

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 740 *Aureonarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aureonarius Niskanen & Liimat.

To resolve the higher-level classification of *Cortinariaceae*, both targeted capture sequencing and shallow whole genome sequencing were adopted to produce data (Liimatainen et al. 2022). Based on the phylogenomic analyses of 75 single-copy genes from 19 species and 5-locus analysis of 245 species, a system of *Cortinariaceae* with ten genera including seven new genera was established (Liimatainen et al. 2022). *Aureonarius* is one of the new genera proposed and typified by *Aureonarius kroegeri* (Niskanen, Liimat., E. Harrower, Berbee, Garnica & Ammirati) Niskanen & Liimat (Liimatainen et al. 2022). Two subgenera are included in this genus, *viz*., subgenus *Aureonarius* and subgenus *Callistei* (Liimatainen et al. 2022). The species of this bihemispheric genus *Aureonarius* are characterized by vivid yellow, orange or red colours, at least in some parts of the basidiomata (Liimatainen et al. 2022). The basidiomata are small- to rather large-sized, agaricoid (cortinarioid/leprocyboid), and the development type is stipitocarpic (Liimatainen et al. 2022). No sequestrate species are reported from this genus (Liimatainen et al. 2022). Some species have a weak yellow UV fluorescence, and some species exhibit a ± red KOH-reaction in stipital veil, pileus, or context (Liimatainen et al. 2022). Asexual morph is not known. Species of this genus are mainly distributed in the Northern and Southern Hemispheres with a centre of the diversity in the Southern Hemisphere. They are occurring on coniferous (*Pinaceae*) and deciduous forests (*Nothofagaceae*, *Fagaceae*, *Betulaceae*) (Liimatainen et al. 2022).

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Note 741 *Dendrodacrys*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dendrodacrys J.C. Zamora, A. Savchenko, Á. Gonz.-Cruz, Prieto-García, Olariaga & Ekman

Dendrodacrys was proposed for a monophyletic group in *Dacrymycetaceae* (*Dacrymycetales*, *Dacrymycetes*, *Basidiomycota*) based on phylogenetic analysis with sequences SSU, ITS, LSU, *rpb1*, *rpb2*, *tef1-α*, and 12S as well as morphological characteristics. The type species is *Dendrodacrys ellipsosporum* J.C. Zamora, A. Savchenko, Á. González-Cruz, Prieto-García, Olariaga & Ekman. Species of this genus are characterized by pulvinate to depressed basidiocarps, distinctly branched hymenial hyphidia and up to 3-septate mature basidiospores, when compared to other taxa in *Dacrymycetaceae* (Zamora et al. 2022). No asexual morph is known. So far, eleven species are accepted (Zamora et al. 2022, Savchenko et al. 2022). *Dendrodacrys* species are broadly distributed wood-inhabiting taxa (Zamora et al. 2022, Savchenko et al. 2022).

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Note 742 *Furtadoella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Furtadoella B.K. Cui & Y.F. Sun

This new genus was introduced to accommodate *Furtadoa biseptata* Costa-Rezende et al., *Scutiger brasiliensis* Singer and *Amauroderma corneri* Gulaid & Ryvarden (Sun et al. 2022a). The type species is *Furtadoella biseptata* (Costa-Rezende et al.) B.K. Cui & Y.F. Sun, which is a new combination of *Furtadoa biseptata*. This genus is classified in *Ganodermataceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*). Phylogenetic analyses of ITS, LSU, SSU, *tef1-α*, and *rpb2* sequences of *Ganodermataceae* showed a distinct and monophyletic position of these three species (Sun et al. 2022a). Thus, based on the phylogenetic analysis and morphological characters, *Furtadoella* was proposed to accommodate these three species (Sun et al. 2022a). Species of this genus differs from other genera by soft basidiomata, white context and monomitic hyphal system in context, with both clamped and simple-septate generative hyphae (Sun et al. 2022a). No asexual morph is known. Before publishing *Furtadoella* (Sun et al. 2022a), a new genus *Furtadomyces* Leonardo-Silva, Cotrim & Xavier-Santos was validly published based on the same species *Furtadoa biseptata* (Leonardo-Silva et al. 2022). Therefore, *Furtadoella* is not a validly published genus (Art. 52.1).

References

Leonardo-Silva L, Cotrim CF, Xavier-Santos S. 2022 – *Furtadomyces* nom. nov. (*Ganodermataceae*, *Basidiomycota*) with description of *F. sumptuosus*, a new species of ganodermatoid fungi from Brazil. Mycological Progress 21(3), 1–2.

Sun YF, Xing JH, He XL, Wu DM et al. 2022a – Species diversity, systematic revision and molecular phylogeny of *Ganodermataceae* (*Polyporales*, *Basidiomycota*) with an emphasis on Chinese collections. Studies in Mycology 101(1), 287–415.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 743 *Furtadomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Furtadomyces Leonardo-Silva, Cotrim & Xavier-Santos

Furtadomyces, a new name proposed to replace *Furtadoa* Costa-Rezende, Robledo & Drechsler-Santos, which name was declared an illegitimate homonym according to Art. 53.1 (ICN). The type species is *Furtadomyces biseptatus* (Costa-Rezende, Drechsler-Santos & Reck) Leonardo-Silva, Cotrim & Xavier-Santos. Species of this poroid genus are wood saprotrophs found in the Neotropics: Brazil, Guyana, and Venezuela (Costa-Rezende et al. 2017, Leonardo-Silva et al. 2022). Phylogenetic analyses based on ITS, LSU, *rpb1*, and *tef1-α* loci indicated it is monophyletic placement in *Ganodermataceae*, *Polyporales* (Costa-Rezende et al. 2017). This genus is characterized by a stipitate basidiomata that are soft when fresh, dull pilear surface and white to pale brown context. The hyphal system is dimitic while context is monomitic, composed of both clamped and simple-septate generative hyphae. Trama of tubes are dimitic, thin to slightly thick-walled, composed of clamped generative hyphae and arboriform skeletal hyphae. Basidiospores are ornamented and double-walled (Costa-Rezende et al. 2017, Leonardo-Silva et al. 2022). No asexual morph is known.

References

Costa-Rezende DH, Robledo GL, Goes-Neto A, Reck MA et al. 2017 – Morphological reassessment and molecular phylogenetic analysis of *Amauroderma* s. lat. raised new perspectives in the generic classification of the *Ganodermataceae* family. Persoonia 39, 254–269.

Leonardo-Silva L, Cotrim CFC, Xavier-Santos S. 2022 – *Furtadomyces* nom. nov. (*Ganodermataceae*, *Basidiomycota*) with description of *F. sumptuosus*, a new species of ganodermatoid fungi from Brazil. Mycological Progress 21, 36.

Entry by Bin Cao, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 744 *Gelatinofungus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gelatinofungus Sheng H. Wu, C.C. Chen & C.L. Wei

Gelatinofungus is a monotypic, wood-inhabiting, corticioid genus, typified by *G. brunneus* Sheng H. Wu, C.C. Chen & C.L. Wei (Chen et al. 2021a). *Gelatinofungus brunneus* cause a white-rot of angiosperm wood (Chen et al. 2021). Phylogenetic analysis based on ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* sequences indicated it is a monophyletic lineage in *Phanerochaetaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) (Chen et al. 2021a). The diagnostic morphological features of the genus are the resupinate basidiome with tuberculate hymenial surface, monomitic hyphal system with clamped hyphae, subiculum and hymenial layer of compact texture, absence of cystidia, clavate basidia, and ellipsoid to broadly ellipsoid basidiospores (Chen et al. 2021a). No asexual morph is known.

Reference

Chen CC, Chen CY, Wu SH. 2021a – Species diversity, taxonomy and multi-gene phylogeny of phlebioid clade (*Phanerochaetaceae*, *Irpicaceae*, *Meruliaceae*) of *Polyporales*. Fungal Diversity 111, 337–442.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 745 *Hemiaustroboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hemiaustroboletus Ayala-Vásquez, García-Jiménez & Garibay-Orijel

Phylogenetic analyses of concatenated LSU and *rpb2* alignment showed that *Hemiaustroboletus* is a monophyletic group, belonging to the *Austroboletoideae* (*Boletaceae*, *Boletales*, *Agaricomycetes*, *Basidiomycota*). *Hemiaustroboletus* is characterized by small and medium basidiomes with slightly ornamented pileus surface, stipe fibrillose to striated without veil, slightly verrucose or cracked to pitted basidiospores and ixotrichoderm or trichoderm pileipellis (Ayala-Vásquez et al. 2022). No asexual morph is known. Both species *H. vinaceobrunneus* (the type) and *H. vinaceus*, presently known to reside in the genus, are only known from Mexico, but circumstantial evidence suggests that representatives of the genus are more widespread in the North American continent (also USA and Canada), as well as in Eastern Asia (China, Japan and Korea) (Ayala-Vásquez et al. 2022). *Hemiaustroboletus* forms ectomycorrhizae with *Fagaceae* (*Quercus*) and *Pinus* in temperate, subtropical and tropical forests (Ayala-Vásquez et al. 2022).

Reference

Ayala-Vásquez O, García-Jiménez J, Aguirre-Acosta E, Castro-Rivera R et al. 2022 – *Hemiaustroboletus*, a new genus in the subfamily *Austroboletoideae* (*Boletaceae*, *Boletales*). MycoKeys 88, 55–78.

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Note 746 *Meganotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Meganotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui.

Meganotus, a poroid genus, which is typified by *M. everhartii* (Ellis & Galloway) Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui, was reported from angiosperm wood and living tree of *Quercus*, distributed in North America (Wu et al. 2022b). Phylogenetic analysis based on ITS and LSU sequences indicated its phylogenetic position in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*) (Wu et al. 2022b). The results also showed its close relationship with *Tropicoporus*, *Sanghuangporus*, *Perennininotus* and *Pachynotus*, however, *Meganotus* form a distinct lineage from others (Wu et al. 2022b). *Meganotus* is characterized by perennial and pileate basidiocarps, presence of hymenial setae and colored subglobose basidiospores (Wu et al. 2022b). No asexual morph has been reported. *Sanghuangporus* resembles *Meganotus*, but the former genus lacks hard granular tissue in the context, and it has a dimitic hyphal structure at least in the tube trama (Wu et al. 2022b). In addition, phylogenetically both genera are distantly related (Wu et al. 2022b).

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

Entry by Jiaxin Li, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 747 *Neoganoderma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoganoderma B.K. Cui & Y.F. Sun

The monotypic genus *Neoganoderma* is typified by *N. neurosporum* (J.S. Furtado) B.K. Cui & Y.F. Sun, known from dead wood of deciduous trees in Neotropics (Sun et al. 2022a). Phylogenetic analyses based on ITS, LSU, SSU *rpb2*, and *tef1-α* loci indicated it is monophyletic placement within *Polyporaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) (Sun et al. 2022a). The ganoderma-like basidiomata and haddowia-like ornamentation of the endospore wall make *Neoganoderma* easily confused with *Ganoderma* and *Haddowia*. *Neoganoderma* however, has unique basidiospores with longitudinal ridges on the endospore wall without obvious traverse ridges, which are equal in length to the basidiospores (Sun et al. 2022a). No asexual morph is known.

Reference

Sun YF, Xing JH, He XL, Wu DM et al. 2022a – Species diversity, systematic revision and molecular phylogeny of *Ganodermataceae* (*Polyporales*, *Basidiomycota*) with an emphasis on Chinese collections. Studies in Mycology 101(1), 287–415.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 748 *Neophellinus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neophellinus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui.

Neophellinus is a poroid, monotypic genus, which is typified by *N. uncisetus* (Robledo, Urcelay & Rajchenb.) Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui, distributed in Neotropics regions (Wu et al. 2022b). Phylogenetic analysis based on ITS and LSU sequences indicated its phylogenetic position in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*). Two samples of the only species of *Neophellinus* show a distinct lineage in the multi-gene phylogenetic tree (Wu et al. 2022b). *Neophellinus* is phylogenetically closely related to *Fomitiporia* (Wu et al. 2022b). *Neophellinus* is characterized by perennial basidiocarps, dimitic hyphal system, uncinate or hooked hymenial setae and subglobose and thick-walled basidiospores (Wu et al. 2022b). No asexual morph is known. *Phellinus* is similar to *Neophellinus*, but they are phylogenetically distant (Wu et al. 2022b).

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

Entry by Jiaxin Li, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 749 *Nothonotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothonotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui.

This monotypic genus was introduced based on *Nothonotus nothofagi* (G. Cunn.) Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui (Wu et al. 2022b). *Nothonotus nothofagi* is parasitic on *Nothofagus* causing a white rot (Wu et al. 2022b). Multi-gene phylogenetic analysis based on ITS and LSU sequences revealed this genus belonged to *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*) (Wu et al. 2022b). The phylogenetic results also showed *Nothonotus* is closely related to *Inonotus sensu lato* (Wu et al. 2022b). Species of this genus are characterized by annual basidiocarps, monomitic hyphal structure, and rust brown, ellipsoid basidiospores (Wu et al. 2022b). No asexual morph is known.

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

Entry by Jiaxin Li, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 750 *Perenninotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Perenninotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui

This monotypic genus is found on angiosperm wood causing white rot in Thailand (Wu et al. 2022b). The type species is *Perenninotus shoreicola* (L.W. Zhou, Y.C. Dai & Vlasák) Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui. Phylogenetic analyses based on ITS and LSU indicated its placement in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*) (Wu et al. 2022b). *Perenninotus* is not phylogenetically close to its morphologically similar genera *Inonotus* and *Phellinus* (Wu et al. 2022b). Compared with other taxa of *Hymenochaetaceae*, species of this genus are characterized by a monomitic hyphal structure and thin-walled, perennial growing habit and pileate basidiocarps (Li et al. 2016, Wu et al. 2022b). No asexual morph is known. So far, only one species has been discovered. Further collections with more samples are needed to examine the monophyly of this genus.

References

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Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

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(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 751 *Pseudophylloporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudophylloporia Y.C. Dai, F. Wu, L.W. Zhou & B.K. Cui

The monotypic genus *Pseudophylloporia*, which is typified by *P. australiana* Y.C. Dai, F. Wu, L.W. Zhou & B.K. Cui, was found on angiosperm wood causing white rot in Australia (Wu et al. 2022b). Phylogenetic analyses based on ITS and nLSU indicated its phylogenetic position in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*) (Wu et al. 2022b). *Pseudophylloporia* is not phylogenetically close to *Phylloporia* (morphologically similar to *Pseudophylloporia*), and formed a separate clade in *Hymenochaetaceae* (Wu et al. 2022b). Compared with other genera of the family, this genus is characterized by bone hard basidiocarps, homogeneous context with a black line and thick crust at pileal surface, and a distinct dimitic hyphal structure. Basidiospores are subglobose to globose, yellowish, thick-walled (Wu et al. 2022b). The asexual morph is unknown. This genus is introduced based on one species with one sample. Further collections with more samples are needed to examine the monophyly of this genus.

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

Entry by Xinyu Zhu, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai 57100, Thailand

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 752 *Pachynotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pachynotus Y.C. Dai, F. Wu, L.W. Zhou & B.K. Cui

This monotypic genus is found on angiosperm wood causing white rot in Singapore (Wu et al. 2022b). The type species is *Pachynotus punctatus* Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui. Phylogenetic analyses based on ITS and LSU indicated its phylogenetic position in *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetes*, *Basidiomycota*) (Wu et al. 2022b). *Pachynotus* is not phylogenetically close to its morphologically similar genus *Inonotus*, and formed a separate clade in *Hymenochaetaceae* (Wu et al. 2022b). Compared with other genera of the family, *Pachynotus* is characterized by a monomitic hyphal structure and thin-walled, perennial growing habit, resupinate, thick and bone hard basidiocarps. Basidiospores are ellipsoid, pale yellow, slightly thick and smooth-walled (Wu et al. 2022b). No asexual morph is known. So far only one species is discovered. Further collections with more samples are needed to examine the monophyly of this genus.

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–192.

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Note 753 *Parvomelanocarpus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parvomelanocarpus X.Wei Wang & Houbraken

Wang et al. (2022) introduced this new genus based on the ITS, LSU, *tub2* and *rpb2* phylogenetic analysis. *Parvomelanocarpus* is distinct from the phylogenetically sister genus *Melanocarpus* in morphology, reproduction, temperature adaptation, and divergence time estimation (Wang et al. 2022). The genus is typified by *Parvomelanocarpus tardus* (X.Wei Wang & Samson) X. Wei Wang & Houbraken, isolated from a cotton jacket in Switzerland, and the species was previously placed in *Melanocarpus* (*M. tardus* X.Wei Wang & Samson).

Species of *Parvomelanocarpus* are thermophilic, and no asexual morph has been recorded so far (Wang et al. 2022). The morphological characteristic of the genus includes superficial or embedded ascomata, which lack ostioles and are spherical, glabrous or covered by finger-like ascomatal hairs and ovate to broadly ovate asci that have eight irregularly-arranged ascospores (Wang et al. 2022). Species of *Parvomelanocarpus* can be easily distinguished from *Melanocarpus* as they grow very slowly on agar media and produce smaller ascospores. *Parvomelanocarpus* diverged from *Melanocarpus* about 60 Mya (Wang et al. 2022).

Reference

Wang XW, Han PJ, Bai FY, Luo A et al. 2022 – Taxonomy, phylogeny and identification of *Chaetomiaceae* with emphasis on thermophilic species. Studies in Mycology 101, 121.

Entry by Sajeewa Maharachchimbura, School of Life Science and Technology, University of Electronic Science and Technology of China, People's Republic of China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 754 *Angularia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Angularia R. Xu, Phukhams. & Y. Li

Xu et al. (2022b) introduced this monotypic genus within *Leptosphaeriaceae*, with *Angularia xanthoceratis* R. Xu, Phukhams. & Yu Li as the type, based on morphological characters and phylogenetic analysis of combined ITS, LSU, SSU, and *tub*2 sequence data. *Leptosphaeriaceae* species are widely distributed in terrestrial habitats as pathogens, endophytes and saprobes (Hongsanan et al. 2020a). *Angularia* has been reported as a saprobe, collected from the dead stem of *Xanthoceras sorbifolium* in China (Xu et al. 2022b). The genus is known only from its asexual morph and is characterized by solitary, uniloculate, globose, coriaceous conidiomata, enteroblastic, phialidic, subcylindrical to truncate, hyaline conidiogenous cells and fusiform, aseptate, hyaline conidia (Xu et al. 2022b). The genus was introduced without the unique character of scleroplectenchymatous or plectenchymatous cell types of peridium layers (Xu et al. 2022b). There is only one species in *Angularia*, therefore, further new collections with the sexual morph link are needed to understand its morphology and phylogenetic relationship.

References

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Xu R, Su W, Tian S, Bhunjun CS et al. 2022b – Synopsis of *Leptosphaeriaceae* and introduction of three new taxa and one new record from China. Journal of Fungi 8, 416.

Entry by Chunfang Liao, Innovative Institute for Plant Health/ Key Laboratory of Green Prevention and Control on Fruits and Vegetables in South China, Ministry of Agriculture and Rural Affairs, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, Guangdong, P.R. China; Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai 57100, Thailand; School of Science, Mae Fah Luang University, Chiang Rai 57100, Thailand
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Note 755 *Appendicosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Appendicosporaceae Samarak. & K.D. Hyde

Phylogenetic analysis of Samarakoon et al. (2022), showed that the genera *Appendicospora* and *Neoamphisphaeria* form a distinct clade in *Amphisphaeriales* apart from *Apiosporaceae*. Thus, with the help of morphology, phylogeny and divergence time estimation, this clade was introduced as the new family *Appendicosporaceae*. *Appendicosporaceae* split from *Hyponectriaceae* and *Nothodactylariaceae* 89 (65–117) MYA. This range is within the common divergence trend at the family level of *Sordariomycetes* (50– 150 MYA), as detailed in Hyde et al. (2017a). The type genus of the family, *Appendicospora* is distinct from the *Apiospora* in having ascospores with basal bifurcate appendages (Hyde 1995a, b). The previous studies (Wang and Hyde 1999, Smith et al. 2003, Bahl 2006) based on the only available LSU sequence of *Appendicospora* sp. (HKUCC 1120) suggests placing *Appendicospora* within *Hyponectriaceae.* However, additional species with multilocus phylogeny of Samarakoon et al. (2022) showed that *Appendicospora* is not related to *Hyponectriaceae*. *Appendicosporaceae* is characterized by immersed, conical to subglobose ascomata, multi-layered peridium, paraphyses embedded in a gelatinous matrix, 8-spored, unitunicate asci lacking an apical ring and hyaline, clavate to broadly ellipsoidal, 1-septate ascospores (Samarakoon et al. 2022). No asexual morph has been reported.

References

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Smith GJD, Liew ECY, Hyde KD. 2003 – The *Xylariales*: a monophyletic order containing 7 families. Fungal Diversity 13, 185–218.
Wang YZ, Hyde KD. 1999 – *Hyponectria buxi* with notes on the *Hyponectriaceae*. Fungal Diversity 3, 159–172.

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Note 756 ***Biligiriella***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Biligiriella S. Sengupta & Rashmi Dubey

The monotypic genus *Biligiriella* was introduced by Sengupta & Dubey (2021) based on *Biligiriella indica* S. Sengupta & Rashmi Dubey. The species is saprobic on unidentified wood litter from forest areas in India (Sengupta & Dubey 2021). *Biligiriella* is characterized by its hyphomycetous asexual morph, which has cylindrical, hyaline, acapitate synnemata with loosely aggregated, branched conidiophores, monoblastic conidiogenous cells, cylindrical phialides, and globose to subglobose, hyaline, aseptate conidia (Sengupta & Dubey 2021). *Biligiriella* is comparable with *Akanthomyces* and *Hymenostilbe*. Due to lack of sequence data, we temporarily assign *Biligiriella* to *Ascomycota* genera *incertae sedis*. The sexual morph is unknown.

Reference

Sengupta S, Dubey R. 2021 – *Biligiriella indica* gen. et sp. nov.- a new hyaline synnematous fungus from hills of Biligiri Rangaswamy Temple Wildlife Sanctuary, Karnataka, India. Journal of Mycopathological Research 59, 319–321.

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(Edited by: **Kevin D. Hyde & Rekhani Hansika Perera)**

Note 757 ***Brunneofissura***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Brunneofissura Marasinghe, Hongsanan & K. D Hyde

Marasinghe et al. (2022a) introduced this monotypic genus based on epiphytic species found on dead leaves of a deciduous tree. The colonies on the leaves form blackened areas as single to confluent thyriothecia (Marasinghe et al. 2022a). *Brunneofissura* is typified by *B. thailandica* Marasinghe, Hongsanan & K.D. Hyde, which was collected from deciduous forest from Northern

Thailand (Marasinghe et al. 2022a). Based on the LSU and ITS region, the genus was placed in *Brunneofissuraceae* (*Asterinales*, *Dothideomycetes*, *Ascomycota*). The genus is similar to other *Asterinales* genera such as *Morenoina* (*Morenoinaceae*) by having X-, Y-, or star-shaped thyriothecia (Marasinghe et al. 2022a). Additionally, hyphae with appressoria are also present which are considered as typical characters of *Asterinales* (Marasinghe et al. 2022a). The genus is represented by its sexual morph characters which are similar to the genus *Morenoina*, however, molecular data prove that they are phylogenetically different (Hongsanan et al. 2014, Marasinghe et al. 2022a). No asexual morph has been reported. The status of this genus remains to be confirmed based on its holomorph connections. Extensive studies are also needed to understand its life mode.

References

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Note 758 *Brunneofissuraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Brunneofissuraceae Marasinghe, Hongsanan & K.D. Hyde

Brunneofissuraceae was introduced as a distinct family in *Asterinales* (*Dothideomycetes*) to accommodate *Brunneofissura* Marasinghe, Hongsanan & K.D. Hyde as the type genus (Marasinghe et al. 2022a). Species of this family have superficial, X-, Y-, or star-shaped thyriothecia with free dark brown hyphae and appressoria at the margin, dark brown to pale brown cells of *textura prismatica*, trabeculate pseudoparaphyses, oblong to clavate asci and hyaline, ovoid to clavate ascospores (Marasinghe et al. 2022a). The ascus pedicel can be present or absent, and are short and rounded (Marasinghe et al. 2022a). The family was reported from the dried leaves of a deciduous tree (Marasinghe et al. 2022a). Members of *Asterinales* have biotrophic lifestyles (Marasinghe et al. 2022a). *Brunneofissuraceae* formed a closely related clade with *Cylindrohyalosporaceae* based on the supportive phylogenetic results of LSU and 5.8S part of the ITS region, however, only the sexual morph with unique thyriothecia characters are present in *Brunneofissuraceae* while the latter is only represented by asexual morph character (Hongsanan et al. 2014, Marasinghe et al. 2022a, Tennakoon et al. 2021b). Further collections are needed to determine the lifestyle of the species of this family.

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Note 759 *Cippumomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cippumomyces Crous, Overton & Ricci

Crous et al. (2021e) introduced the monotypic genus *Cippumomyces* within *Neoantennariellaceae* (*Capnodiales*, *Dothideomycetes*) with the type species *C. mortalis* Crous, Overton & Ricci, based on ITS, LSU, *tef1-α*, and *rpb2* phylogeny. Members of *Neoantennariellaceae* have been reported as sooty molds on various plant leaves (Crous et al. 2021e). *Cippumomyces* is an epilithic black yeast-like genus that is associated with tombstones in terrestrial habitats in Pennsylvania, USA (Crous et al. 2021e). It was described based on its brown stroma with initially catenulate conidiomata in a mycelial network, brown, cylindrical conidiogenous cells and hyaline to brown, ellipsoid to globose, verruculose, muriform conidia at maturity, encased in a thick mucoid sheath that gives rise to hyaline, globose endoconidia (Crous et al. 2021e). Phylogenetically, *Cippumomyces mortalis* is allied with *Fumiglobus pieridicola* T. Bose (UBC F23788) and *Neoasbolisia phylicae* Abdollahz. & Crous (CBS 146164, CBS 146168 and CPC 19992), and formed a sister group within *Neoantennariellaceae* (Crous et al. 2021e). However, *Fumiglobus pieridicola* has pyriform pycnidia with bulbous, multiseriate stalk and round to slightly oval conidia in short chains; and *Neoasbolisia phylicae* has globose or pyriform pycnidia and hyaline, aseptate, oblong to ellipsoid conidia (Crous et al. 2021e). *Cippumomyces mortalis* can be distinguished by its brown stroma, unique conidial morphologies and endoconidia produced only in *Cippumomyces mortalis* (Bose et al. 2014, Abdollahzadeh et al. 2020). No sexual morph has been reported.

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Note 760 *Crinitomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crinitomyces Sakpuntoon, G. Peter, M. Groenew., Daluchy, Limtong & Srisuk

Sakpuntoon et al. (2022) introduced the yeast genus *Crinitomyces* within *Saccharomycetales* with *C. flavificans* (Nakase) as the type species and is now placed in the *Dipodascales* (Groenewald et al. 2023). Yeast identification based only on morphology can often lead to misidentification due to the simplicity of their features (Lücking et al. 2020, Chethana et al. 2021). Thus, to determine the correct placement, phylogenetic analyses (SSU, ITS, and the D1/D2 domain of the LSU rRNA), morphology and ecology are used (Sakpuntoon et al. 2022). Sakpuntoon et al. (2022) introduced the new species *Crinitomyces reliqui* Sakpuntoon, G. Péter, M. Groenew., Dlauchy, Limtong & Srisuk which was isolated from food waste in Thailand. *Crinitomyces reliqui* clustered with *Trichosporiella flavificans* (Nakase) de Hoog, Rodr. Mir. & Oorschot and *Candida ghanaensis* Kurtzman, which were synonymized as *C. flavificans* (Nakase) Sakpuntoon, G. Péter, M. Groenew., Dlauchy, Limtong & Srisuk and *C. ghanaensis* (Kurtzman) Sakpuntoon, G. Péter, M. Groenew., Dlauchy, Limtong & Srisuk, respectively. *Crinitomyces* is characterized by septate hyphae, spherical or ellipsoidal cells, asexual reproduction by multilateral budding and hairy colonies (Sakpuntoon et al. 2022). Urea hydrolysis test and Diazonium Blue B (DBB) test were negative.

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Note 761 *Cylindrotorula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cylindrotorula Rajeshkumar, Wijayaw. & Bhat

Cylindrotorula was introduced by Boonmee et al. (2021) to accommodate a single species *Cylindrotorula indica* Rajeshkumar, Wijayaw., Bhat, N. Ashtekar & S. Lad. It is a saprobic genus described from decaying *Cocos nucifera* spathe in India (Boonmee et al. 2021). The genus is characterized by sporodochial conidiomata, micronematous conidiophores, cylindrical or button-shaped conidiogenous cells, and cylindrical, elongated, pale to dark brown, phragmosporous primary conidia, and globose and cylindrical, or cylindrical or finger shaped, brown, aseptate secondary conidia (Boonmee et al. 2021). It is interesting that primary conidia are arising holoblastically, while the secondary conidia have monotretic development (Boonmee et al. 2021). Sexual morph is not known. Based on multi-gene analyses of combined ITS, LSU, *rpb2*, and *tef1-α* sequence data, *Cylindrotorula* is placed in *Torulaceae*, *Dothideomycetes*, *Ascomycota* (Boonmee et al. 2021).

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Note 762 *Keqinzhangia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Keqinzhangia Z.F. Yu, M. Qiao & R.F. Castañeda

Zheng et al. (2022) introduced the monotypic genus *Keqinzhangia* within *Microthyriaceae* (*Microthyriales*, *Dothideomycetes*) with the type species *K. aquatica* Z.F. Yu, M. Qiao & R.F. Castañeda. *Keqinzhangia aquatica* was isolated from the leaves of an unidentified plant as a saprobic fungus in freshwater habitats in E'mei National Conservation Area, Sichuan Province, China (Zheng et al. 2022). *Keqinzhangia* is characterized by prostrate conidiophores, holothallic conidiogenous cells and thallic-arthric, polymorphic, cylindrical to fusiform, sub-oblecythiform or cuneiform, unicellular to septate, hyaline conidia with globose, terminal, solitary or short catenulate chlamydospores (Zheng et al. 2022). The sexual morph has been not reported. Phylogenetically, *Keqinzhangia aquatica* clustered with the sexual species *Microthyrium buxicola* (MFLUCC 15-0212 and MFLUCC 15-0213) and the asexual species *Neoanungitea eucalypti* (CBS 143173) within the family *Microthyriaceae* (Zheng et al. 2022). *Keqinzhangia* can be distinguished by its holothallic conidiogenous cells and thallic-arthric, polymorphic conidia while chlamydospores were only observed in *K. aquatica* (Zheng et al. 2022). *Neoanungitea* has holoblastic conidiogenous cells and fusoid-ellipsoid conidia (Crous et al. 2019b). The LSU sequences of *K. aquatica* and *M. buxicola* are 90% similar, but they could not link the sexual and asexual morphs of these two distinct species. The placement of *Keqinzhangia* is supported as a monophyletic lineage within *Microthyriaceae* based on maximum likelihood analysis of ITS and LSU nucleotide alignment, although it is similar to species of *Neoanungitea* (Crous et al. 2019b).

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Note 763 *Neoacrodictys*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoacrodictys J.W. Xia & X.G. Zhang

Neoacrodictys, typified by *N. elegans* J.W. Xia & X.G. Zhang, is an asexual morph genus that is distinguished by darkly pigmented turbinate to obpyriform, muriform conidia produced from monoblastic, integrated terminal conidiogenous cells on macronematous unbranched conidiophores (Xia et al. 2022). No sexual morph has been reported. It is a monotypic genus which includes species with saprophytic lifestyles that are associated with deciduous, rotten leaves or dead twigs in a tropical rainforest (Xia et al. 2022). *Acrodictys* species are related to *Neoacrodictys* but differ in conidial shape, i.e., obovoid to clavate, broadly ellipsoidal, or irregular with appendages (Ellis 1976). *Neoacrodictys* was introduced based on its typical morphology and molecular phylogeny (based on the LSU gene), of which *Neoacrodictys elegans* formed an independent lineage close to the members in *Stictographaceae* (Xia et al. 2022). However, the taxonomic classification of this genus was not indicated by Xia et al. (2022). The nomenclature of *Neoacrodictys* registered in MycoBank (accessed on October 18th, 2022) is affiliated with *Kirschsteiniotheliaceae*, *Kirschsteiniotheliales*. Based on a Blastn search of NCBI GenBank (accessed on October 18th, 2022), the closest hits using the LSU sequence of *N. elegans* had highest similarity to *Actinocladium aquaticum* (isolate CS27-4) and *Stictographa lentiginosa* (voucher van den Boom 47621 (herb van den Boom)). *Actinocladium aquaticum* (isolate CS27-4) is the type of *Actinocladium* (Yang et al. 2023b, *submitted*), a hyphomycete genus that was considered as congeneric with *Triposporium* and represented the first asexual morph in *Stictographaceae*. Therefore, the molecular data of *Neoacrodictys* (*N. elegans*) and phylogeny indicate that the genus belongs to *Stictographaceae* and is closely related to *Actinocladium*.

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Note 764 *Neodactylariaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodactylariaceae H. Zheng & Z.F. Yu

Neodactylariaceae was introduced by Qiao et al. (2020) to accommodate *Neodactylaria*, which was previously placed in the genus *incertae sedis* in *Dothideomycetes* by Crous et al. (2017a). This monotypic family constitutes only two species *Neodactylaria obpyriformis* Guevara-Suarez, Deanna A. Sutton, Wiederh. & Gené, the type species, and *N. simaoensis* H. Zheng & Z.F. Yu. The former was isolated from the human bronchoalveolar lavage while the latter is a freshwater fungus observed from submerged dicotyledonous leaves showing a broad distribution of this genus in different habitats (Crous et al. 2017a, Qiao et al. 2020). *Neodactylaria* resembles species of *Dactylaria* (e.g., *D. kumamotoensis* and *D. madresensis*), *Pyricularia* (e.g., *P. valdalurensis*), and *Pseudopyricularia* (e.g., *P. higginsi*) but differs from conidial sizes and septation. Furthermore, the phylogenetic placements of these genera differ from *Neodactylaria* (*Dothideomycetes*) as *Dactylaria* belongs to *Helotiales* genera *incertae sedis* (*Leotiomycetes*) (Wijayawardene et al. 2022), while both *Pyricularia* and *Pseudopyricularia* belong to *Pyriculariaceae* (*Magnaporthales*, *Sordariomycetes*) (Klaubauf et al. 2014, Wijayawardene et al. 2022). *Neodactylaria obpyriformis* was introduced using LSU sequence data and *N. simaoensis* was introduced based on multi-locus (LSU, SSU, and *TEF1*) phylogenetic analysis (Crous et al. 2017a, Qiao et al. 2020). However, the placement of *Neodactylariaceae* is not strongly supported and further analysis is needed.

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Note 765 *Neodactylariales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodactylariales H. Zheng & Z.F. Yu

Qiao et al. (2020) introduced the monotypic order *Neodactylariales* to accommodate *Neodactylaria*, which was previously placed in the genus *incertae sedis* in *Dothideomycetes* by Crous et al. (2017a). The type family is *Neodactylariaceae*. *Neodactylariales* is known only for its asexual morph and is characterized by blastic-sympodial conidiogenous cells and obpyriform to obclavate, aseptate or septate conidia. Multi-locus (LSU, SSU, and *tef1-α*) phylogenetic analysis of Qiao et al. (2020) showed that *Neodactylariales* is closely related to *Pleosporales*, but the placement is not strongly supported.

References

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Note 766 *Neodigitodesmium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neodigitodesmium W.H. Tian & Maharachch.

The monotypic genus *Neodigitodesmium* was introduced by Tian et al. (2022a) with type species *N. cheirosporum* W.H. Tian & Maharachch., which was isolated from submerged decayed wood in a freshwater habitat in China. Multi-gene (LSU, ITS, SSU, and *tef1-α*) phylogeny revealed *Neodigitodesmium* belongs to *Dictyosporiaceae*, *Dothideomycetes* (Tian et al. 2022a). *Neodigitodesmium* has typical hyphomycetous asexual morph of *Dictyosporiaceae* (Tian et al. 2022a). It is characterized by micronematous to semi-macronematous conidiophores, holoblastic conidiogenous cells, and cheiroid, non-complanate, brown, muriform conidia with mostly 4 rows of cells (Tian et al. 2022a). The sexual morph is unknown.

Reference

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Note 767 *Neostemphylium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neostemphylium Torres-Garcia, Gené & Cano

The monotypic genus *Neostemphylium* was introduced by Torres-Garcia et al. (2022) to accommodate the type species *N. polymorphum* Torres-Garcia, Gené & Cano. It is a hyphomycetous genus and is characterized by macronematous or semi-macronematous, subhyaline to pale brown conidiophores, blastic, integrated or discrete, subglobose to obclavate, pale brown conidiogenous cells and solitary or catenate, subglobose, ellipsoidal, or oblong, brown to dark brown, muriform conidia (Torres-Garcia et al. 2022). The synasexual morph of *Neostemphylium* can also be present, which has blastic, cylindrical, pale to brown fragmoconidia often remaining attached on hyphae (Torres-Garcia et al. 2022). *Neostemphylium polymorphum* was reported from freshwater sediment in Spain, but environmental data suggest that this species is worldwide distributed and primarily inhabits soil in Australia, France and the USA (Torres-Garcia et al. 2022). A multi-gene (ITS, LSU, *gapdh*, *rbp2*, and *tef1-α*) phylogeny revealed *Neostemphylium* belongs to *Pleosporaceae*, *Dothideomycetes* (Torres-Garcia et al. 2022). The sexual morph is unknown.

Reference

Torres-Garcia D, García D, Cano-Lira JF, Gené J. 2022 – Two novel genera, *Neostemphylium* and *Scleromyces* (*Pleosporaceae*) from freshwater sediments and their global biogeography. Journal of Fungi 8, 868.

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Note 768 *Parathozetella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Parathozetella F.R. Barbosa, J.S. Monteiro, Fiuza, R.F. Castañeda & Gusmão

The monotypic, hyphomycetous genus *Parathozetella* was established by Barbosa et al. (2021) to accommodate a thozetella-like species, *Parathozetella microsperma* F.R. Barbosa, J.S. Monteiro, Fiuza, R.F. Castañeda & Gusmão. The type species was found on decaying petioles of *Bactris gasipaes* and decaying wood of unidentified plant from Brazil. *Parathozetella* is characterized by sporodochial conidiomata, macronematous, cylindrical, pale to brown, septate conidiophores, monophialidic conidiogenous cells and lunate, hyaline, aseptate or septate conidia with microawns mixed and immersed in conidial mass (Barbosa et al. 2021). *Parathozetella* differs from *Thozetella* by the absence of conidial setulae (Barbosa et al. 2021). Because of the existence of microawns, *Parathozetella* is presumed to be in *Chaetosphaeriaceae* (Barbosa et al. 2021). However, due to lack of molecular evidence, the genus is currently treated as *Ascomycota incertae sedis* (Index Fungorum 2022). The sexual morph is unknown.

Reference

Barbosa FR, Fiuza PO, Monteiro JS, Silva APD et al. 2021 – *Parathozetella microsperma* gen. & sp. nov. from the Brazilian Amazon. Mycotaxon 136, 351–357.

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Note 769 *Pseudocoronospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocoronospora Z.F. Yu, M. Qiao & R.F. Castañeda

Zheng et al. (2022) introduced *Pseudocoronospora* in *Microthyriaceae* (*Microthyriales*, *Dothideomycetes*). It was introduced to accommodate a single species *P. hainanensis* Z.F. Yu, M. Qiao & R.F. Castañeda, which was isolated from the leaves of an unidentified dicotyledonous plant submerged in a stream in China (Zheng et al. 2022). *Pseudocoronospora* is different from *Coronospora* (*Ascomycota* genera *incertae sedis*) in having conidiogenous loci which are tiny or conspicuous denticles, and conidia which are fringed at the basal cells after the rhexolytic conidial secession. *Coronospora* has cicatrized loci formed by sympodial extensions of the polyblastic conidiogenous cells, and conidia with liberated via schizolytic conidial secession (Ellis 1971, Zhang & Zhang 2004, Seifert et al. 2011). Based on the analyses of the concatenated LSU and ITS dataset, *P. hainanensis* formed a distinct lineage within *Microthyriaceae*, and is closely related to the type species of the asexual genus *Hamatispora* (Zheng et al. 2022). However, *Pseudocoronospora* is different from *Hamatispora* in having obclavate conidia, with mammiform protuberances arranged near the apex, while *Hamatispora* has staurospores, which are question mark-shaped or hook-shaped with three arms developing from each cell on the helicoid part (Yen et al. 2018). Therefore, *Pseudocoronospora* was introduced as a new genus in *Microthyriaceae* based on morphological characters and molecular analysis (Zheng et al. 2022). The sexual morph is unknown.

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Note 770 *Pseudosoloacrosporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

***Pseudosoloacrosporiella* Crous**

Crous et al. (2021e) introduced this monotypic genus with *Pseudosoloacrosporiella cryptomeriae* Crous as the type species, based on ITS, LSU, and *tef1-α* sequences. *Pseudosoloacrosporiella cryptomeriae* was found on the leaves of *Cryptomeria japonica* (*Cupressaceae*) in the Netherlands (Crous et al. 2021e). The family placement of *Pseudosoloacrosporiella* is uncertain within *Microthyriales* (*Dothideomycetes*). The genus is characterized by conidiophores that are mostly reduced to conidiogenous cells. Conidiogenous cells have 1–3 sympodial conidiogenous cells at their apical loci, and they undergo rhexolytic conidiogenesis, which results in the formation of tiny collarettes at denticulate loci (Crous et al. 2021e). Ramoconidia are fusoid to ellipsoid, tapering towards both ends, septate, light brown, guttulate and smooth-walled (Crous et al. 2021e). *Pseudosoloacrosporiella* is phylogenetically closely related to *Soloacrosporiella* (Crous et al. 2021e). However, *Pseudosoloacrosporiella* differs from *Soloacrosporiella* lacking setae, without thickened and darkened hila, but rather have a characteristic marginal frill (also on conidiogenous loci) (Castañeda-Ruiz et al. 1997, Crous et al. 2014). This genus also resembles the asexual morph of *Zeloasperisporium* (*Zeloasperisporiaceae*, *Zeloasperisporiales*) in having conidiophores reduced to conidiogenous cells, sympodial conidial proliferation, with one to several conidiogenous loci. However, *Pseudosoloacrosporiella* has fusoid to ellipsoid, septate ramoconidia in long unbranched chains, rhexolytic loci with minute marginal frill (Crous et al. 2021e), while *Zeloasperisporium* has fusiform to obclavate or cylindrical, straight to curved, 1–3-septate conidia tapered towards the apex (Hongsanan et al. 2015). The sexual morph of *Microthyriaceae* and *Zeloasperisporiaceae* are also similar by forming thyriothecium. The genera commonly occur as epiphyte on plant leaves (Hongsanan et al. 2015, Crous et al. 2021e). Further studies are needed to explain their close relationship and evolution of the characters.

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Note 771 *Salinomyces*

Web-links: Index Fungorum, ***Facesoffungi***, MycoBank, GenBank

Salinomyces Czachura & Piatek

Salinomyces was introduced by Czachura et al. (2021) with *S. polonicus* Czachura & Piątek as the type species. The name is derived from the environment inhabited by the isolates collected from brine samples (Czachura et al. 2021). As described by Czachura et al. (2021), members of the genus typically have greenish grey or blackish colonies. The mycelia consist of hyphae which are hyaline, pale brown to brown, septate, branched verrucose or smooth (Czachura et al. 2021). Brown chlamydospores and multicellular bulbil-like structures are sometimes present (Czachura et al. 2021). The conidiogenous cells are intercalary on hyphae which may be simple or with inconspicuous collarettes (Czachura et al. 2021). The conidia are aseptate to 3-septate, pale brown to brown, smooth or rugose (Czachura et al. 2021). The genus is closely related to *Hortaea*; however, analysis of combined ITS, LSU, and *rpb2* loci revealed that this genus formed a well-supported clade separate from other species of *Hortaea* (Czachura et al. 2021). Moreover, they also differ from the members of *Hortaea* based on the appearance of the conidiomata and conidia (Czachura et al. 2021). *Salinomyces polonicus* was isolated from brine samples collected from Southern Poland; thus, it is moderately halophilic (Czachura et al. 2021). Another species, previously known as *Hortaea thailandica* (Crous et al. 2009), was reassigned to this genus after analysis of combined ITS, LSU, and *rpb2* genes showed that it is a sister species of *S. polonicus*. This was subsequently renamed *Salinomyces thailandicus* (Crous & K.D. Hyde) Czachura & Piątek. This species was previously isolated from corals (Mitchison-Field et al. 2019) and monumental sites close to the sea (Isola et al. 2016). Thus, it is believed that this species is also halotolerant. The sexual morph is unknown.

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Note 772 *Scleromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Scleromyces Torres-Garcia, Dania García & Gené

Scleromyces was introduced by Torres-Garcia et al. (2022) with the type species *S. submerses* Torres-García, Dania García & Gené. *Scleromyces submerses* was reported from freshwater sediment in Spain, and this species may also associate with soil and plant material in temperate areas (Torres-Garcia et al. 2022). *Scleromyces* produces sclerotium-like structures *in vitro* that are globose, subglobose, or irregularly shaped, olivaceous brown to dark brown and multi-celled (Torres-Garcia et al. 2022). *Scleromyces* is placed in *Pleosporaceae*, *Dothideomycetes* based on phylogenetic analyses of combined ITS, LSU, *gapdh*, *rbp2*, and *tef1-α* sequence data. No sexual morph is known.

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Note 773 *Neochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neochalara Crous

Crous et al. (2021e) introduced *Neochalara*, the monotypic genus with the type species *N. spireae* Crous, in *Pezizellaceae* (*Helotiales*). *Neochalara* is typical of *Chalara*. *Pezizellaceae* includes other similar genera such as *Zymochalara* and *Bloxamia*, but based on ITS and LSU sequences, *Neochalara spireae* is phylogenetically distant on a long branch within the family. However, its familial position needs to be confirmed with additional genes. *Neochalara spireae* is associated with *Spiraea japonica*, the lifestyle is undetermined (Crous et al. 2021e). *Neochalara* is characterized by cylindrical conidiophores arising from bulbous base, or as extension of hyphae and cylindrical, aseptate, hyaline, conidia occur in long, unbranched chains (Crous et al. 2021e). The sexual morph is not known.

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Note 774 *Alboefibula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alboefibula C.C. Chen & Sheng H. Wu

This is a wood-inhabiting corticioid genus, comprising two species that cause white-rot of branches of angiosperm and bamboo culms (Chen et al. 2021a). Phylogenetic analysis based on ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* indicated its phylogenetic position in *Phanerochaetaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) (Chen et al. 2021a). Phylogenetically, this genus is closely related to the genera *Crepatura* and *Pirex*, while the similar genus *Efibula* is placed in *Irpicaceae*. The type species is *A. bambusicola* C.C. Chen & Sheng H. Wu. Compared with other genera in *Phanerochaetaceae*, the diagnostic morphological features of the genus are white to cream resupinate basidiomes with a smooth hymenial surface, a monomitic hyphal system without clamp connections, absence of cystidia, clavate basidia and ellipsoid basidiospores that are thin- to slightly thick-walled (Chen et al. 2021a). The asexual morph is unknown.

Reference

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Note 775 *Cremeoderma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cremeoderma Sheng H. Wu & C.C. Chen

Cremeoderma is a monotypic wood-inhabiting corticioid genus, typified by *C. unicum* (H.S. Jacks. & Dearden) C.C. Chen & Sheng H. Wu (≡ *Peniophora unica* H.S. Jacks. & Dearden) that cause a white-rot of gymnosperm and angiosperm wood (Chen et al. 2021a). Phylogenetic analysis based on ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* indicated its phylogenetic position in *Phanerochaetaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*). Results of the five gene datasets showed its sister relationship with *Rizochaete*, while it grouped close to the poroid genus *Hapalopilus* in phylogenetic tree using the combined ITS+LSU dataset (Chen et al. 2021a). Since the genus did not receive support either by bootstrap or posterior probability, further studies are required to clarify its systematic position within the *Phanerochaetaceae* (Chen et al. 2021a). Compared with other species of the family, *C. unicum* is characterized by having efused, ceraceous to pruinose basidiome with smooth hymenophore, monomitic hyphal system with clamp connections, presence of lamprocystidia, clavate to cylindrical basidia, and small, ellipsoid basidiospores. The asexual morph is unknown.

Reference

Chen CC, Chen CY, Wu SH. 2021a – Species diversity, taxonomy and multi-gene phylogeny of phlebioid clade (*Phanerochaetaceae, Irpicaceae, Meruliaceae*) of *Polyporales*. Fungal Diversity 111, 337–442.

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Note 776 *Crepatura*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crepatura C.L. Zhao

Crepatura is a monotypic wood-inhabiting corticioid genus, typified by *C. ellipsospora* C.L. Zhao that cause white-rot of angiosperm wood (Ma and Zhao 2019). Phylogenetic analysis based on ITS and LSU sequences indicated its phylogenetic position in *Phanerochaetaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) and showed that it is closely related to the hydnoid genus *Pirex* (Chen et al. 2021a). *Crepatura* is characterized by resupinate basidiome with smooth to irregularly tuberculate hymenial surface, a monomitic hyphal system, thick-walled generative hyphae bearing both clamp connections and simple septa, clavate basidia with two sterigmata and hyaline, thick-walled basidiospores. The asexual morph unknown.

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Note 777 *Tolypocladium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tolypocladium W. Gams

Tolypocladium was circumscribed based on three soil-inhabiting asexual species with sparingly branched conidiophores, swollen phialides, and one-celled conidia adhering in slimy heads (Gams 1971b). This genus is typified with *T. inflatum* (Gams 1971b). Later, the asexual-sexual connection between *Tolypocladium inflatum* and *Cordyceps subsessilis* was established based on cultural study by Hodge et al. (1996). *Elaphocordyceps* was introduced to accommodate a subclade of *Ophiocordycipitaceae* that contains *Elaphomyces*-infecting *Cordyceps* species and some closely related arthopoda-pathogens. *Chaunopycnis* is a genus with similar conidiogenesis to *Tolypocladium* (Gams 1980). Quandt et al. (2014) synonymized *Chaunopycnis* and *Elaphocordyceps* under *Tolypocladium* following the principle of *"*One Fungus One Name". The sexual morph of *Tolypocladium* is characterized by solitary to multiple, stipitate, fleshy, fibrous to tough stromata, clavate to capitate fertile head, immersed perithecia, cylindrical asci with thickened apex and filiform, multiseptate, disarticulating ascospores (Quandt et al. 2014, Yu et al. 2021a). The asexual morph is tolypocladium-, chaunopycnis-, or verticillium-like. The conidiophores laterally or terminally carry whorls of phialides. Phialides usually comprise a cylindrical to swollen base and a thin, bent neck. Conidia are hyaline, globose to oval, aseptate, smooth-walled, aggregating in globose heads at the tips of the phialides (Yu et al. 2021a).

Recent morphological and phylogenetic analyses have ascribed many novel species to *Tolypocladium*, e.g., *T. bacillisporum* (Yamamoto et al. 2022), *T. cucullae* (Wijayawardene et al. 2021a), *T. flavonigrum* (Crous et al. 2020a), *T. inusitaticapitatum* (Yu et al. 2021a), *T. pseudoalbum* (Dong et al. 2022), *T. reniformisporum* (Wang et al. 2022), *T. subparadoxum* (Dong et al. 2022), and *T. yunnanense* (Dong et al. 2022). Presently, *Tolypocladium* comprises 49 species with a cosmopolitan distribution, and inhabits diverse hosts/substrates that range from various insects (such as mosquito larvae, fireflies, beetles, cicada nymphs, batmoth larvae) to nematodes, bdelloid rotifers, other fungi (truffle, *Ophiocordyceps sinensis*), soil, and even plants (as endophytes) (Yu et al. 2021a, Dong et al. 2022). Species of *Tolypocladium* have been subjected to investigation of nutritional and medicinal properties (Lin et al. 2009). Some metabolites with anti-fungal, anti-inflammatory, anti-parasitic and anti-tumorous properties have been reported from *Tolypocladium* species and they are cyclosporin A, cyclosporin D hydroperoxide, tolypoalbin, tolypin, and tolyprolinol (Leung et al. 2006).

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Note 778 ***Anastomitrabeculiaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Anastomitrabeculiaceae Bhunjun, Phukhams. & K.D. Hyde

Anastomitrabeculiaceae was introduced to accommodate a bambusicolous species collected in Thailand (Bhunjun et al. 2021b). The family includes the monotypic genus *Anastomitrabeculia*, which is associated with submerged and terrestrial bamboo substrates (Bhunjun et al. 2021b, Phookamsak et al. 2022). *Anastomitrabeculiaceae* is distinguishable from the other bambusicolous taxa in *Pleoporales* by its semi-immersed, coriaceous or carbonaceous ascomata with septate, trabeculate pseudoparaphyses and hyaline ascospores with longitudinally striate wall ornamentation and surrounded by a mucilaginous sheath (Bhunjun et al. 2021b). The asexual morph is not known. In the multi-locus phylogenetic analysis using LSU, SSU, and *tef1-α* sequences, *Anastomitrabeculiaceae* formed a well-supported independent lineage within *Pleosporales* (*Dothideomycetes*) (Bhunjun et al. 2021b).

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Phookamsak R, Jiang H, Suwannarach N, Lumyong S et al. 2022 – Bambusicolous fungi in *Pleosporales*: introducing four novel taxa and a new habitat record for *Anastomitrabeculia didymospora*. Journal of Fungi 8, 630.

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Note 779 ***Extremopsis***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Extremopsis G. Delgado & Maciá-Vicente

Crous et al. (2021c) introduced *Extremopsis* to accommodate *E. radicicola* G. Delgado & Maciá-Vicente. *Extremopsis radicicola* is a sterile fungus which was isolated as an endophyte from asymptomatic roots of *Arabidopsis thaliana* inoculated with soil and grown under controlled conditions in Spain (Crous et al. 2021c). Morphological characteristics of the genus is based on the chlamydospores formed in culture, which are terminal or intercalary, solitary, occur in short chains of up to 8 or forming more or less dense clusters, globose or subglobose, ellipsoidal, pyriform or elongated, subhyaline to pale brown, smooth, thin-walled, that may become brown, thick-walled, 0–1-septate and smooth to verruculose, dark brown when forming in large clusters (Crous et al. 2021c). The sexual morph is not known. Gorfer et al. (2011) isolated a fungal strain ('*Devriesia*' sp. NG_p52) from Austrian agricultural soils. This isolate was grouped within the *Extremopsis* clade appearing to be conspecific with *E. radicicola* (Crous et al. 2021c). Thus, known *Extremopsis* distribution can be given as Southern Spain to other parts of Europe (Crous et al. 2021c). Based on the analysis of LSU sequences, *Extremopsis* was placed in *Extremaceae* (*Mycosphaerellales*, *Dothideomycetes*). Thus, multi-loci analysis is required for the robust placement of the genus.

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Note 780 *Leptodophora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leptodophora Koukol & Maciá-Vicente

Leptodophora was established by Koukol et al. (2022) for root-inhabiting taxa previously placed in *Cadophora*, but phylogenetically distinct from the type species, *C. fastigiata* Lagerb. & Melin. The type species is *L. orchidicola* (Sigler & Currah) Koukol & Maciá-Vicente, a well-known root endophyte widely referred to as *Cadophora orchidicola* (Sigler & Currah) M.J. Day & Currah in the literature (Koukol et al. 2022). The genus is characterized by hyphomycetous asexual morphs with mono- or polyblastic conidiogenous cells and aseptate conidia forming chains of strongly constricted cells and complex tuft-like bodies (Koukol et al. 2022). No sexual morph has been reported. The familial placement of *Leptodophora* is uncertain (Koukol et al. 2022). Based on combined ITS, LSU, *rpb2*, and *tef1-α* data the genus was placed in *Helotiales* (*Leotiomycetes*) (Koukol et al. 2022).

Reference

Koukol O, Maciá-Vicente JG. 2022 – *Leptodophora* gen. nov. (*Helotiales*, *Leotiomycetes*) proposed to accommodate selected root-associated members of the genus *Cadophora*. Czech Mycology 74(1), 57–66.

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Note 781 *Neochaetothyrina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neochaetothyrina Crous

The monotypic genus *Neochaetothyrina* with *N. syzygii* Crous as the type species was proposed to accommodate a taxon associated from the leaves of *Syzygium cordatum* in South Africa (Crous et al. 2021c). The phylogenetic analysis from the LSU sequences revealed that the taxon formed a distinct clade within *Phaeothecoidiellaceae* (*Mycosphaerellales*, *Dothideomycetes*). *Neochaetothyrina* is characterized by associating superficially at the underside of a leaf tissue and globose ascomata (Crous et al. 2021c). It comprises brown *textura epidermoidea* peridium, with radiating anastomosing superficial hyphae, with mucoid sheath, constricted at septa, without hyphopodia, presenting of anastomosed pseudoparaphyses (Crous et al. 2021c). The asci are obovoid to broadly ellipsoid, arranged in basal layer of peridium wall, ascospores presented as fusoid-ellipsoid, 1-septate, constricted at median septum, widest above septum, hyaline, turning brown at the germinating states (Crous et al. 2021c). The species has protruding setae arising from outer wall of ascoma, multi-septate, tapering to sub-obtuse apex; setae also arising from superficial mycelium surrounding ascoma, with basal T-cell (Crous et al. 2021c). The asexual morph is not known. *Neochaetothyrina syzygii* is similar to *Chaetothyrina* especially *C. musarum* (Speg.) Theiss. in having setae on top of ascoma wall (Singtripop et al. 2016). *Neochaetothyrina* is distinguishable by having anastomosing superficial hyphae, as well as the setae arising from superficial mycelium surrounding ascoma (Crous et al. 2021c). *Neochaetothyrina syzygii* is reported as a saprobe, forming structures in moist chamber after one week of incubation. Multi-loci phylogeny for *Neochaetothyrina* will provide insight into the relationship of the genus within *Phaeothecoidiellaceae*.

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Note 782 ***Nothophaeotheca***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothophaeotheca Crous

Nothophaeotheca is a monotypic genus with *N. mirabibensis* Crous as the type species. The species was plant associated, isolated from persistent inflorescence remains of *Blepharis obmitrata* in Namibia (Crous et al. 2021c). Based on the phylogenetic analysis of nucLSU sequences, the genus resided within *Neophaeothecaceae* (*Neophaeothecales*, *Dothideomycetes*) and showed closed affinity to *Neophaeotheca* (Crous et al. 2021c). *Nothophaeotheca* fits the family concept in having endoconidia developing inside the swollen hyphae, with swollen terminal or intercalary cells (Crous et al. 2016b, Abdollahzadeh et al. 2020). *Nothophaeotheca* is characterized by having branched, hyaline to green-brown hyphae, presence of endoconidia, initially in clusters of 2–6 and gradually disarticulating into solitary, thick-walled, verruculose to warty, 0–1-septate, ellipsoid-globose, green-brown conidia. The sexual morph is not known. *Nothophaeotheca* differs from *Neophaeotheca* (the generic type) in its endoconidia shape and colour, hyphal swellings up to 120 µm diameter and branched hyphae that give rise to microsclerotia (Crous et al. 2021c). The blast search showed that the closest hits using the ITS and LSU sequences are 90% and 97% respectively, similar to the type species of *Neophaeotheca* (*N. salicorniae* (Crous & Roets) Abdollahz. & Crous). *Nothophaeotheca* species were reported from dried plant material but formed structures in axenic condition. Thus, the lifestyle of the genus could not be confirmed. Further analysis of multi-gene phylogeny is required for the robust taxonomic position of *Nothophaeotheca*.

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Note 783 *Paradissoconium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paradissoconium Crous & Boers

Crous & Boers (2021e) introduced the monotypic genus *Paradissoconium* to accommodate *P. narthecii* Crous & Boers. The species was isolated from dead leaves of *Narthecium ossifragum* (*Nartheciaceae*) as saprobes in the Netherlands (Crous et al. 2021e). This genus is characterized by solitary conidiophores which are unbranched, septate, pale brown and smooth-walled. The conidiogenous cells are terminal, integrated, loci slightly darkened, proliferating sympodially and rejuvenating percurrently. Primary conidia are solitary, straight, constricted at median septum, smooth-walled, hyaline, ellipsoid, apex obtuse, base obconically truncate, hilum pronounced and darkened. Secondary conidia are adjacent to primary conidia, hyaline, smooth, aseptate, ellipsoid, tapering to truncate hilum and anastomosing with primary conidia after active discharge (Crous et al. 2021e). The sexual morph is not known. *Paradissoconium* has a typical dissoconium-like asexual morph that develops in culture and is similar to *Dissoconium* s. str (Hyde et al. 2020a). However, based on a megaBLAST search of NCBI GenBank nucleotide database, only the ITS sequence is the closest to *Dissoconium*, and the LSU, *act*, and *rpb2* sequences are all different from *Dissoconium* (Crous et al. 2021e). The taxonomic placement of *Paradissoconium* is in *Dissoconiaceae* (*Mycosphaerellales*, *Dothideomycetes*).

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Note 784 *Phlebiodontia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phlebiodontia Motato-Vásq. & Westphalen

A small corticioid hydnoid genus, currently including three species, *P. acanthocystis* (Gilb. & Nakasone) Motato-Vásq. & Westphalen, described from the United States (Hawaii), *P.*

rajchenbergii Westphalen & Motato-Vásq., from Brazil and *P. subochracea* (Bres.) Motato-Vásq. & Gugliotta, from Germany, growing on wood and bark of numerous angiosperms branches. In the phylogenetic analysis based on ITS, LSU (D1-D2), *rpb1*, and *tef1-α* sequences, *Phlebiodontia* forms a strongly supported clade sister to *Allophlebia* and *Ceriporiopsis fimbriata* C.L. Zhao & Y.C. Dai (Motato-Vásquez et al. 2022). The species of *Phlebiodontia* are characterized by yellowish ceraceous basidiomes, with slightly warted to hydnoid hymenophore, monomitic hyphal system, clamped generative hyphae and obclavate, fusiform to ventricose, smooth, thin-walled leptocystidia sometimes with small knobs or projections at the apical part (acanthocystidia). Basidiospores are broadly ellipsoid to allantoid, IKI–, CB–, smooth and thin-walled (Motato-Vásquez et al. 2022). The asexual morph is unknown. *Phlebiodontia* is included in the *Hydnophlebia* clade. *Allophlebia* differs from *Phlebiodontia* species by the presence of heavily encrusted cylindrical metuloid cystidia immersed in the hymenium. Another genus included in this clade is *Hydnophlebia*, can be easily distinguished from *Phlebiodontia* by the bright reddish orange to yellow hymenophore, margins with mycelial cords formed by encrusted hyphae, cylindrical cystidia and cylindrical to subglobose basidiospores (Motato-Vásquez et al. 2022).

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Note 785 *Sclerococcum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sclerococcum Fr.

Sclerococcum is one of the species–rich lichenicolous genera belonging to *Dactylosporaceae*, *Sclerococcales* in *Eurotiomycetes*. The genus was originally introduced for an obligatory lichenicolous species *Sclerococcum sphaerale* (= *Spiloma sphaerale*) (Fries (1819, 1825). The taxa have been reported as saprotrophs and lichenicolous in both terrestrial and marine habitats (Dong et al. 2020a, Joshi 2021). Diederich et al. (2018) synonymized *Dactylospora* under *Sclerococcum* based on phylogenetic analyses and treated *Dactylospora* as a sexual morph of *Sclerococcum*. The sexual morph is characterized by superficial to stalked black apothecia and amyloid asci with an apical gelatinous cap (Olariaga et al. 2019). The asexual morph is characterized by blackish sporodochial-stromatic conidiomata, conidiogenesis thallic that are probably meristematic and dark brown, uni- to multi-cellular conidia (Joshi 2021). The genus presently comprised 66 species (Diederich et al. 2018, Joshi 2021). However, molecular data are available only for few species and the genus recovered as paraphyletic in *Dactylosporaceae* in the recent study conducted by Thiyagaraja et al. (2022).

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Note 786 *Superstratomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Superstratomyces van Nieuwenh., Miądl. & Samson

Superstratomyces (typified with *S. albomucosus* van Nieuwenh. & Samson) was introduced for taxa found on the surfaces of biotreatment evaluation on sapwood of pine (*Pinus sylvestris*), spruce (*Picea abies*) and ilomba (*Pycnanthus angolensis*) (van Nieuwenhuijzen et al. 2015, 2016, Crous et al. 2021d). They are wood saprotrophs or foliar endophytes (van Nieuwenhuijzen et al. 2015, 2016, Crous et al. 2021d). The higher ranks *Superstratomycetaceae* and *Superstratomycetales* were introduced to accommodate an individual lineage of the isolates from the sapwood experiment together with the species isolated from the leaf of *Hakea multilinearis* and human eye specimen, based ITS, nucSSU, nucLSU, mtSSU, *rpb1*, *rpb2*, and *tef1-α* sequences (van Nieuwenhuijzen et al. 2016). *Superstratomyces* is characterised by having dark pycnidia, solitary or confluent, globose conidiomata, pycnidia forming aggregated white or green or yellow slimy masses with single cell conidia (van Nieuwenhuijzen et al. 2016). The sexual morph is not known. As the morphological characters of *Superstratomyces* largely overlap with genera with phoma-like asexual morph, thus molecular information is of significant importance for accurate identification of *Superstratomyces* taxa.

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Note 787 *Superstratomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Superstratomycetaceae van Nieuwenh., Miądl., Houbraken, Adan, Lutzoni & Samson van Nieuwenhuijzen et al. (2016) introduced *Superstratomycetaceae* (*Superstratomy cetales*, *Dothideomycetes*) with *Superstratomyces* as a generic type, but the family was not properly proposed as detail for the generic type was not provided. Thus, Crous et al. (2021d) validated the family status by giving the proper detail for the family. The family comprised a single genus, *Superstratomyces* which was reported as saprobes or foliar endophytes from Australia and the Netherlands. *Superstratomycetaceae* is characterised by forming dark pycnidia, solitary or confluent, globose conidiomata with slimy conidia mass shooting outside, pseudoparenchymatous pycnidial wall with cell arrangement in *textura angularis* and producing phoma-like asexual morph (van Nieuwenhuijzen et al. 2016). The sexual morph is not known. The phylogenetic result from ITS, nucLSU, nucSSU, mtSSU, *rpb1*, *rpb2*, and *tef1-α* revealed it is a distinct lineage within *Dothidomycetes* (van Nieuwenhuijzen et al. 2016, Crous et al. 2021d). *Superstratomycetaceae* members were reported from the top surface of wood and leaves based on culture-based approach. Thus, studies on other substrates at the same site could reveal further diversity of *Superstratomycetaceae*.

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Note 788 ***Superstratomycetales***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Superstratomycetales van Nieuwenhuijzen, Miadlikowska, Lutzoni & Samson

Superstratomycetales (*Dothideomycetes*) was introduced to accommodate wood saprotrophs or foliar endophytes isolated from the top layer or surface of plant material including leaves and wood material (van Nieuwenhuijzen et al. 2016, Crous et al. 2021d). *Superstratomycetales* taxa have superficial, solitary or confluent, glabrous, black conidiomata exuding a white mass of slimy conidia. The sexual morph is not known. The order was originally introduced by van Nieuwenhuijzen et al. (2016), however, the ordinal status was not verified as detail for the generic type was not provided. Crous et al. (2021d) verified the ordinal status with a detailed description for the order, family and genus based on the nuLSU and multi-locus phylogenetic analyses. Type genus is *Superstratomyces* van Nieuwenh., Miadl. & Samson. Based on the phylogenetic evidence of ITS, nuLSU, nuSSU, mtSSU, *rpb*1, *rpb*2, and *tef*1-*α*, the order resided with *Trypetheliales* (van Nieuwenhuijzen et al. 2016). The analysis of nuLSU sequences revealed a close phylogenetic relationship with *Eremomycetales* (Crous et al. 2021d).

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Note 789 *Honghemyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Honghemyces Wanas., J.D.P. Bezerra & P.E. Mortimer

Honghemyces was introduced as a monotypic genus with *H. pterolobii* Wanas. & J.D.P. Bezerra as the type species. It was isolated from dead twigs of *Pterolobium macropterum* in Yunnan, China (Wanasinghe et al. 2022a). Morphological characters and phylogenetic analyses based on combined sequences of ITS, LSU, SSU, *tef1-α*, and *rpb2* confirmed that *Honghemyces* can be clearly distinguished from allied genera *Neorhamphoria* Boonmee, Hüseyın & Selçuk, *Bezerromyces* Bezerra, Souza-Motta & Crous in *Bezerromycetaceae* and form a distinct clade. The results supported *H. pterolobii* as a new species of *Honghemyces* within *Bezerromycetaceae*, *Tubeufiales*. *Honghemyces* is characterized by a saprotrophic life mode, semi-immersed to superficial ascomata, clavate, short pedicellate asci, ellipsoidal, hyaline with 3-septate ascospores, a hamathecium comprising filamentous, branched, septate pseudoparaphyses and chlamydospores forming a chain of a torulose-like structure in culture (Wanasinghe et al. 2022a). Furthermore, *Honghemyces pterolobii* shares some characteristics with species in *Bezerromyces* and *Neorhamphoria* such as dark-pigmented ascomata, broad clave asci, and multi-septate, hyaline ascospores, and it was able to produce an asexual state as chlamydospores-like structure in culture (Boonmee et al. 2016b, Bezerra et al. 2017). Currently, there is only one species known from China (Index Fungorum 2022).

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Note 790 *Mangifericola*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mangifericola E.F. Yang & Tibpromma

Yang et al. (2022a) described *Mangifericola* with *M. hongheensis* E.F. Yang & Tibpromma as the type species, a saprobe, isolated from a dead branch of *Mangifera indica* in Yunnan Province, China, and placed within the *Diatrypaceae*, *Sordariomycetes*. The sexual morph of the genus has poorly developed, irregular, and raised pseudostroma delimited by a black surface, with immersed, irregular to subglobose, clustered ascomata with extended necks on the distinct black region. Ostioles are cylindrical, sulcate with periphysate ostiolar canals. The multi-layered peridium with dark brown outer and hyaline inner layers of cells of *textura angularis*, 8-spored, cylindrical to oblong, unitunicate, pedicellate, straight to fairly-curved, hyaline, apically flat asci, and oblong to allantoid, hyaline, or yellowish ascospores with oil droplets at both ends when mature, are characteristics of the genus (Yang et al. 2022a). *Mangifericola* differs from the other diatrypaceous genera by having a single prolonged neck erect from black pigmented lesions on the wood surface. In addition, the combined ITS and *tub* phylogeny shows that *M. hongheensis* forms a distinct clade with poor statistical support (Yang et al. 2022a). Liu et al. (2015a) introduced *Diatrype palmicola* J.K. Liu & K.D. Hyde as a saprobe on dead branches of *Caryota urens* L. (*Arecaceae*) from Thailand, which is similar in having a black corticated area, clustered ascomata in small groups, immersed ascomata with visible extended necks, and lack of paraphyses. However, future phylogeny needs to be revised with *Diatrype palmicola* to confirm the taxonomic placement due to the lack of *tub* gene.

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Note 791 *Tretospeira*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tretospeira Piroz.

Liu et al. (2023c) introduced a new species of *Tretospeira* from decaying wood in the terrestrial habitat of the Mushroom Research Centre in Chiang Mai Province, Thailand. They considered it as a second species in the genus (type *Tretospeira ugandensis* (Hansf.) Piroz.), the type described from dead twigs in Uganda (Index Fungorum 2023). Phylogenetic analysis of combined LSU and ITS sequence data placed *Tretospeira cheirospora* in *Phaeosphaeriaceae* and formed a distinct lineage sister to *Banksiophoma australiensis* (Liu et al. 2023c), which we follow here. *Banksiophoma* is a monotypic coelomycetous asexual morph genus and very different, although this does not rule them out from being the same genus. *Tretospeira* was also compared with *Hughesinia verrucosa* (Delgado et al. 2005), *Acrodictys lignicola* Manohar., N.K. Rao, D.K. Agarwal & Kunwar (Index Fungorum 2023), some species in *Pseudotetraploa* (*Tetraplosphaeriaceae*), e.g., *P. curviappendiculata* (Sat. Hatak., Kaz. Tanaka & Y. Harada) Kaz. Tanaka & K. Hiray. and *P. longissimi* (Sat. Hatak., Kaz. Tanaka & Y. Harada) Kaz. Tanaka & K. Hiray. All have long obpyriform, distoseptate conidia made up of several columns (Hatakeyama et al. 2005, Tanaka et al. 2009), but tend to differ in the shape of the conidia and *Pseudotetraploa* lacks conidiophores and has monoblastic conidiogenous cells. Future collections of similar fungi will need sequencing to establish their placement.

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Note 792 *Extremaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Extremaceae Quaedvl. & Crous

Extremaceae was introduced by Quaedvlieg et al. (2014) based on partial DNA sequence data of the LSU and *rpb2* genes. Subsequently, this was accepted and expanded by Crous et al. (2019a). *Extremus* is the type genus of *Extremaceae*. The family includes 10 genera based on morphological and phylogenetic analyses. Most genera in *Extremaceae* are rock-dwelling groups, however, there are saprobic species and several species have been isolated from soil (Arzanlou et al. 2007, Jiang et al. 2017). The asexual form of *Extremaceae* is characterized by conidiogenous cells which are monoblastic or polyblastic, integrated, terminal or lateral, brown, subcylindrical to ellipsoid or doliiform, scars somewhat darkened and thickened and slightly reflective or not. Conidia are variously shaped, solitary or in chains, subhyaline to dark brown, aseptate or septate, smooth to slightly verruculose and sometimes with hila (Quaedvlieg et al. 2014). No sexual morph has been reported. The taxonomic placement of *Extremaceae* is in *Mycosphaerellales* (*Dothideomycetidae*, *Dothideomycetes*).

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Note 793 *Neopolystigma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neopolystigma Dianese, Guterres, M.D.M. Santos & R.W. Barreto

Based on analysis of combined 28S, 18S and ITS sequence data, Guterres et al. (2022) introduced *Neopolystigma* to accommodate *N. pusillum* (Syd. & P. Syd.) Dianese, Guterres, M.D.M. Santos & R.W. Barreto and *N. saraivae* Dianese Guterres, M.D.M. Santos & R.W. (the type). *Neopolystigma saraivae* is a biotrophic pathogen reported from leaves of *Andira humili* in

Brazil (Guterres et al. 2022). *Neopolystigma* is known from its sexual morph and is characterized by ampulliform, subepidermal, epiphyllous, pseudostromatic, mostly unilocular ascomata, on top of a discoloured layer of the palisade parenchyma. Asci are unitunicate, cylindrical, short-pedicellate, paraphysate asci. Ascospores of this genus are mostly uniseriate, hyaline, smooth, aseptate, elliptical to oblong-elliptical, thick-walled and guttulate. However, the phylogenetic evidence obtained from the analysis of LSU, SSU, and ITS sequence data showed that *Neopolystigma* is placed in *Phyllachorales* forming a distinct cluster (Guterres et al. 2022). Hence, a new family, *Neopolystigmataceae* (*Phyllachorales*, *Sordariomycetes*) was introduced to accommodate *Neopolystigma*. Based on phylogenetic inferences, *Polystigma pusillum* found on which is the sister taxon of *N. saraivae* was recombined into *N. pusillum*.

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Note 794 *Pteridopassalora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pteridopassalora C. Nakash. & Crous

Pteridopassalora is a leaf associated genus which was introduced to accommodate *Pteridopassalora nephrolepidicola* Crous & R.G. Shivas (the type) and *Pteridopassalora lygodii* Goh & W.H. Hsieh by Chen et al. (2022a). The type species of this genus was isolated from *Nephrolepis falcata* leaves (*Nephrolepidaceae*) as *Pseudocercospora nephrolepidicola* in Australia. The taxonomic position of *Pseudocercospora nephrolepidicola* was discussed by Kirschner & Wang (2015) and Nakashima et al. (2016), however, it needs further resolution. Videira et al. (2017) attempted to resolve the phylogenetic relationships of the genera in *Mycosphaerellaceae* based on phylogenetic analyses of combined LSU, ITS, and *rpb2* sequences. The results showed that it was necessary to transfer *Pseudocercospora nephrolepidicola* to a new genus, thus *Pteridopassalora* was introduced (Videira et al. 2017). The asexual morph is characterised by conidiogenous cells that are integrated into the terminal of the conidiophore and are not thickened or slightly thickened. Conidia are solitary, variable in shape, cylindrical, filamentous to narrowly-obclavate, multi-septate, truncate with an unthickened hilum at the base (Chen et al. 2022a). *Pseudocercospora nephrolepidicola* has mycosphaerella-like sexual morph, which has globose, erumpent and brown ascomata with central ostiole. Asci are subcylindrical to narrowly obovoid. Ascospores are fusoid-ellipsoidial and wider in the middle of the apical cell and tapering towards both ends. The apex is actually round and constricted at the septum. The taxonomic placement of *Pteridopassalora* is in *Mycosphaerellaceae* (*Mycosphaerellales*, *Dothideomycetes*).

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Note 795 *Australidea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Australidea Kantvilas et al.

Based on ITS, mrSSU and nLSU data, Kantvilas et al. (2021) established a new genus *Australidea* accommodating *Lecidea canorufescens* Kremp. as type species, but so far for no other additional species. *Australidea* is forming a sister clade to *Malmidea*. As phenotypic diagnostic characters are highlighted a hyaline hypothecium, thin excipular hyphae and a tholus with an intensely amyloid ring. A distinction for *Malmidea* at generic level is therefore well justified. The presence versus lack of amyloidity in the upper ascus wall, the tholus, a trait of the heterokaryotic generation not being subject to environmental influences (compared to those of the haploid generation), is reason enough to consider *Australidea* and *Malmidea* as well separated genera. The taxonomic classification of *Australidea* is in the *Malmideaceae* (*Lecanorales*, *Lecanoromycetes*). Therein the combined clade of *Australidea*, and *Malmidea* forms the sister clade to several rather small genera.

Reference

Kantvilas G, Wedin M, Svensson M. 2021. *Australidea* (*Malmideaceae*, *Lecanorales*), a new genus of lecideoid lichens, with notes on the genus *Malcolmiella*. The Lichenologist 53, 395–407.

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Note 796 *Brianiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Brianiopsis S. Y. Kondr.

Based on combined ITS, mrSSU and nLSU data, Kondratýuk in Kondratýuk et al. (2022) established a new genus *Brianiopsis* accommodating *Rimularia globulosa* Coppins as type species and six additional species (*B. aliphatica* (T. Sprib. & Resl) S.Y. Kondr., *B. cerebriformis* (Kantvilas) S.Y. Kondr., *B. globulosa* (Coppins) S.Y. Kondr., *B. gyrizans* (Nyl.) S.Y. Kondr., *B. gyromuscosa* (Aptroot) S.Y. Kondr., *B. impavida* (Th. Fr.) S.Y. Kondr., *B. mullensis* (Stirt.) S.Y. Kondr.) formerly having been included in *Rimularia sensu* Hertel & Rambold (1990) (and subsequently in the genus *Lambiella*), forming the sister clade to *Lambiella*. As diagnostic phenotypic characters, rounded, strongly convex and sometimes stipitate areoles are highlighted, along with the presence of compounds of the stictic acid complex and fatty acids as well as the partial lack of gyrophoric acid. For recognizing genus level status to this clade Kondratýuk et al. (2022) did not provide a weighty justification. The taxonomic classification of *Brianiopsis* is in the *Xylographaceae* (*Baeomycetales*, *Lecanoromycetes*). Therein the combined clade of *Brianiopsis* and *Lambiella* forms the sister clade to *Xylographa* in a wider sense. According to the etymology given, the taxon name *Brianiopsis* refers to Brian Coppins in recognition of his contribution to the taxonomy of the *Trapeliaceae*. Since '*-opsis*' is a combining form meaning 'likeness', it seems as if similarities between the genus and another genus, already dedicated to the honoured person, have been seen. Since this is not the case, the name is formalistically unfortunate.

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Note 797 *Farkasiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Farkasiella S. Y. Kondr. & L. Lőkös

Based on combined ITS, mrSSU and nLSU data, Kondratýuk in Kondratýuk et al. (2022) established a new genus *Farkasiella* accommodating *Trapeliopsis aeneofusca* (Flörke ex Flot.) Coppins & P. James as type species and one additional species (*F. gelatinosa* (Flörke) S.Y. Kondr. & Lőkös, also formerly having been included in *Trapeliopsis*. *Farkasiella* is forming a common clade with *Placynthiella* and another newly described genus, *Trapejamesia*. No phenotypic diagnostic characters are provided. Kondratýuk et al. (2022) justified the recognition of genus level status to this clade by the formation of a "separate robust monophyletic sister branch to the *Placynthiella* branch. However, one might have expected a reflection on why the three clades mentioned cannot be recognised as a combined clade at genus level with the name *Placynthiella*. (In general, the existence of one or more accepted generic names of a subclade does not automatically mean that taxa in the remaining subclades must also be recognised at the generic level. Finally, the options of extension of the generic delimitation (in the case of an already existing accepted generic name) plus synonymisation (in the case of two or more already accepted names) still are accepted taxonomic approaches. The taxonomic classification of *Farkasiella* is in the *Trapeliaceae* (*Baeomycetales*, *Lecanoromycetes*). Therein the combined clade of *Farkasiella*, *Trapejamesia* and *Placynthiella* forms the sister clade to *Trapelia* in a wider sense along with other clades described as new genera.

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Reference

Kondratyuk SY, Lökös L, Kondratiuk AS, Kärnefelt I et al. 2022 – Contributions to molecular phylogeny of lichens. New monophyletic branches of the *Trapeliaceae* and *Xylariaceae*. Acta Botanica Hungarica 64(1–2), 97–135.

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Note 798 *Phaeotubakia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

PhaeotubakiaNing Jiang

The genus *Phaeotubakia*was introduced with *P. lithocarpicola* Y.Q. Zhu & Ning Jiang as the type species. It was isolated from leaves of *Lithocarpus glaber* in China (Jiang et al. 2023). This monotypic genus is placed in *Tubakiaceae*, *Sordariomycetes* and it is clearly distinguished from other genera in the family *Tubakiaceae* by having brown to dark brown conidia (Braun et al. 2018, Zhang et al. 2021c). Its distinct phylogenetic placement within the family is based on the combined ITS, LSU, *tef1-α*, and *tub2* (Jiang et al. 2023). Several species of *Tubakia viz. T. americana* Höhn, *T. cyclobalanopsidis* Ning Jiang, *T. quercicola* Ning Jiang, comprise brown conidia, which is similar to *Phaeotubakialithocarpicola* (Braun et al. 2018, Zhu et al. 2022). However, those species are phylogenetically distant from *Phaeotubakialithocarpicola* (Jiang et al. 2023). *Phaeotubakialithocarpicola* is a pathogen that forms leaf spot disease of *Lithocarpus glaber* (Thunb.) Nakai. Two species in *Tubakiaceae* were reported from *Lithocarpus* sp. *viz*. *Obovoideisporodochium lithocarpi* in China and *Tubakia californica* in the USA (Braun et al. 2018, Zhang et al. 2021c). However, *P. lithocarpicola* differs from those two species by brown conidiogenous cells and brown to dark brown conidia (Braun et al. 2018, Zhang et al. 2021c). Thus, the generic establishment of *Phaeotubakia*is well-sustained.

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Zhang ZX, Mu TC, Liu SB, Liu RY et al. 2021c – Morphological and phylogenetic analyses reveal a new genus and two new species of *Tubakiaceae* from China. MycoKeys 84, 185–201.

Zhu YQ, Jiang N, Dou ZP, Xue H et al. 2022 – Additions to the knowledge of *Tubakia (Tubakiaceae, Diaporthales)* in China. Journal of Fungi (Basel, Switzerland) 8(11), 1143.

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Note 799 *Pseudohepatospora*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudohepatospora J. Bojko, D.C. Behringer, K.S. Bateman, G.D. Stentiford & K.F. Clark

Based on ultrastructural, developmental, pathological, genetic, and phylogenetic analyses, *Pseudohepatospora* was introduced by Bojko et al. (2023) to accommodate *P. borealis* J. Bojko, D.C. Behringer, K.S. Bateman, G.D. Stentiford & K.F. Clark as the type species. *Pseudohepatospora borealis* was isolated from the hepatopancreas of *Cancer borealis*, a brachyuran crap eastern northeastern coast of the USA and southeastern coast of Canada as a microsporidian parasite. *Pseudohepatospora borealis* is closely related to *Parahepatospora carcini* J. Bojko, F. Clark, D. Bass, A.M. Dunn, S. Stewart-Clark, P.D. Stebbing & G.D. Stentiford and *Hepatospora eriocheir* (Wen Wang & Jain Xiu Chen) G.D. Stentiford, K.S. Bateman, A. Dubuffet, E. Chambers & D.M. Stone - in both host and pathologically (Bojko et al. 2023). The type species is characterized by undergoing merogony and sporogony in direct contact with the host cytoplasm (Bojko et al. 2023). The spores are unikaryotic and include 4–5 coils of the polar filament (Bojko et al. 2023). The polaroplast is bilaminar, with electron-dense and electron lucent layers (Bojko et al. 2023). The spores are ovoid (Bojko et al. 2023).

Reference

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Note 800 *Aculeastrum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aculeastrum M. Scholler, U. Braun & Bubner

Based on analysis of ITS sequence data, Scholler et al. (2022), introduced *Aculeastrum* to accommodate *A. americanum* (Farl.) M. Scholler & U. Braun (≡ *Pucciniastrum arcticum* var. *americanum* Farl.) as a type species and *A. arcticum* (Tranzschel) M. Scholler & U. Braun (≡ *P. arcticum* Tranzschel). *Aculeastrum americanum* was originally described as a rust pathogen on leaves of *Rubus occidentalis* from the USA (Farlow 1908), while *A. articum* was described on leaves of *Rubus* spp. from North America, Lappland, and Russia (Tranzschel 1895). *Aculeastrum* with *A. americanum* as the type was re-collected from leaves of *Rubus occidentalis* in the USA (Scholler et al. 2022). *Aculeastrum* produces uredinia and telia on *Rubus* spp. and its aecia on needles of the alternate host, *Picea*. The genus is characterized by uredinia with four to six conspicuously spiny ostiolar cells, urediniospores with 4–6(–7) strictly bipolar germ pores, and mostly 2–4-celled teliospores without any visible germ pores. *Aculeastrum* resembles *Quasipucciniastrum* and *Thekopsora* and members of all three genera have telial hosts within the *Rosaceae* and have previously been included in the genus *Pucciniastrum* (family *Pucciniaceae*). The three genera differ in morphology, life cycle, symptomology, and host range. Phylogenetic evidence obtained from the analysis of ITS sequence data shows that all three are in a distinct lineage within the family *Coleosporiaceae* (Scholler et al. 2022). Based on phylogenetic inferences from analysis of LSU, SSU, and cytochrome c oxidase (*co3*) datasets, *Pucciniastrum arcticum* var. *americanum* had been transferred to *Thekopsora americana* (Farl.) Aime & McTaggart, in *Pucciniastraceae* by Aime & McTaggart (2021). The evidence of Scholler et al. (2022), clearly places *Aculeastrum* in *Coleosporiaceae* (*Melampsorineae*, *Pucciniales*, *Pucciniomycetes*).

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Note 801 *Neokamalomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neokamalomyces Sanjay & Raghv. Singh

Yadav et al. (2022) introduced *Neokamalomyces*, the monotypic genus, with the type species *Neokamalomyces indicus* Sanjay, in *Mycosphaerellaceae*, *Dothideomycetes*. This species was described as a plant pathogen on the living leaves of *Ficus benghalensis* in India (Index Fungorum 2022). Phylogenetic analysis of combined ITS, LSU, and *rpb2* sequence data, placed *Neokamalomyces indicus* in *Mycosphaerellaceae* where it clustered sister to *Parapallidocercospora colombiensis* Videira & Corus and *Parapallidocercospora thailandica* Videira & Crous. *Neokamalomyces* can be distinguished by pycnidial conidiomata with a central ostiolum, epigenous colonies, hyaline, shorter conidiophores that are reduced to compactly aggregated conidiogenous cells and hyaline to pale olivaceous conidia (Yadav et al. 2022). Therefore *Neokamalomyces* is regarded as a distinct genus, even though it is not supported as such phylogenetically. This genus resembles *Septoria* in morphology and is characterized by sympodially proliferating conidiogenous cells and cylindrical, olivaceous curved, 0–4-septate conidia. The sexual morph is still unknown (Yadav et al. 2022).

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Note 802 *Anthostomella*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Anthostomella Sacc.

Saccardo (1875) introduced *Anthostomella* with three species *A. limitata* Sacc *A. tomicoides* Sacc., and *A. perfidiosa* Sacc, without designating a type. Different studies have accepted *A. limitata* (Eriksson 1966) or *A. tomicoides* (Francis 1975, Lu and Hyde 2000) as the generic type, emphasizing the generic description provided by Saccardo (1875). Eriksson (1966) interpreted Saccardo's (1875) description and prioritized the non-appendiculate over the appendiculate ascospores. Only *A. limitata* has non-appendiculate ascospores from the original three collections and is accepted as the generic type (Eriksson 1966). Francis (1975) argued that the original generic description is based on both appendiculate and non-appendiculate ascospore morphologies, and the lack of a clypeus in *A. limitata* is not compatible with *Anthostomella*. However, *A. limitata* has a dark clypeus (Lu and Hyde 2000). Following Lu and Hyde (2000) with the lectotype of *A. tomicoides*, Daranagama et al. (2015) accepted *A. tomicoides* as the generic type. Furthermore, Daranagama et al. (2015) provided a reference specimen for appendiculate ascospore-bearing *A. formosa*, and the clade was accepted as *Anthostomella sensu stricto*. Samarakoon et al. (2022) revised the phylogeny with the addition of newly generated sequences and amendments to the morphological descriptions and showed that anthostomella-like taxa form distinct clades from the *Xylariaceae*. Morphologies similar to those of *A. limitata* have been found in the "*Anthostomella helicofissa* Daranag clade." In addition, the previously accepted *Anthostomella sensu stricto* clade is therefore uncertain (Daranagama et al. 2015). However, some of the taxa, previously identified as anthostomella-like taxa, are now accepted in different families as having polyphyletic characters (e.g., *Entosordaria* Speg, *Occultitheca* Rogers & Y.M. Ju, *Pyriformiascoma* Daranag, and *Spirodecospora* Lu). As a result, recent phylogenies clearly show that *Anthostomella* species form distinct clades apart from *Xylariaceae*, but within the order *Xylariales*. Future research will necessitate the designation of the *Anthostomella* type species, using morphology and phylogeny to determine the exact generic placement and higher rank of the genus.

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Note 803 *Atrozythia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Atrozythia J.K. Mitch., Quijada, Garrido-Ben. & Pfister

This genus was erected by Mitch et al. (2021) to accommodate the new species *Atrozythia klamathica* Mitch.& Quijada Quijada, Garrido-Ben.& Pfister and a new combination *Atrozythia lignicola* (Sigler) Mitch, Garrido-Ben. & Pfister, within *Zythiaceae Sareomycetes*. *Atrozythia klamathica* which is a sexual morph was described as a type species, isolated on the resin of *Chamaecyparis lawsoniana* in California, and *Atrozythia lignicola* (= *Arthrographis lignicola* Sigler), the asexual morph, was considered a second species in this genus, isolated on the wood chips and bark of *Coniferae* in Canada. (Mitchell et al. 2021). Based on phylogenetic analyses of ITS, LSU, and SSU sequence data, *Atrozythia* forms a distinct clade and was separated from other aligned genera in *Sareomycetes* such as *Sarea* Fr and *Zythia* Fr. The sexual state, *Atrozythia klamathica*, produced apothecial ascomata which are erumpent from the resin. They have discoid to cupulate, black to dark greyish brown subsessile to short stipitate apothecia, with or without light white to light blue grey coatings. Pruina are hyaline, ectal and medullary. Excipulum delimited by a narrow dark brown pigmented layer. Asci are cylindric-clavate, arising from a perforated crozier, multi-spored, covered with an amyloid gel layer. Ascus dehiscence is rostrate, the apex is hemispherical with an apical chamber. Ascospores are intensely amyloid, globose to subglobose, hyaline with one eccentric medium grey lipid guttule. Paraphyses are embedded cylindrical in a hyaline gel layer, with tiny yellow grey lipid guttules. The uninflated to medium clavate, terminal cell is covered by a yellowish brown amorphous exudate (Mitchell et al. 2021). The asexual state is hyphomycetous which produce arthroconidia, featured by lemon-yellow to olive-green colonies with diffusing brown pigment, narrow, hyaline, and branched conidiophores, cylindrical conidia that are yellow, truncate, with smooth walls (Sigler & Carmichael 1983) This genus is similar to *Zythia* and *Sarea*, but *Zythia* differs from *Atrozythia* in having orange ascomata, orange and abundant lipid guttules in the paraphyses, and there is no brown pigmented layer between the ectal and medullary excipulum. *Sarea* differs from *Atrozythia* in having white to light blue grey pruina, branched, or anastomosing paraphyses (Mitchell et al. 2021).

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Note 804 *Albicollum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Albicollum Voglmayr, J. Fourn., Tello & Jaklitsch

Albicollum was erected by Voglmayr et al. (2022) to accommodate *Albicollum vincensii* (G. Arnaud) Voglmayr, J. Fourn., Tello & Jaklitsch (= *Anthostoma vincensii* G. Arnaud) as a type species. Based on phylogenetic analysis of combined SSU–ITS–LSU–*rpb2*–*tub2* sequences and morphological characters, *Albicollum* was placed in *Xylariaceae*, *Xylariales*, and *Sordariomycetes* as a distinct genus (Voglmayr et al. 2022). *Albllum vincensii* was collected on dead branches of various deciduous shrubs and trees, and widely distributed in Central and Southern Europe. All other species in this genus were reported as saprobes from the marine habitat. *Albicollum* is characterized by immersed ascomata and a collar of white pseudo-stromatic tissues surrounding the ostioles, this genus is significantly different from other genera of *Xylariaceae* by its white color of pseudo-stromatic issues surrounding the extreme to project black ostiolar necks and merged and solid to aggregated perithecia. The other accepted species within this genus include *Albicollum canicolle* (Karst.) Voglmayr (≡ *Amphisphaeria* canicollis Karst.), *A. chionostomum* (Speg.) Voglmayr (≡ *Anthostoma chionostomum* Speg.), *A. fleischhakii* (Auersw.) Voglmayr (≡ *Sordaria fleischhakii* Auersw.), *Albicollum longisporum* Voglmayr, *Albicollum novomexicanum* Voglmayr, and *Albicollum berberidicola* Voglmayr. Asexual morphs of *Albicollum* on the natural substrate were observed.

Reference

Voglmayr H, Tello S, Jaklitsch WM, Friebes G et al. 2022 – About spirals and pores: *Xylariaceae* with remarkable germ loci. Persoonia 49, 58–98.

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Note 805 *Aunstrupia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aunstrupia W.P. Wu & Y.Z. Diao

Aunstrupia was introduced by Wu & Diao (2022) as a monotypic genus to accommodate *Aunstrupia nodipes* (Penz. & Sacc) Wu & Diao. The type species was previously known as *Helminthosporium nodipes* Penz. & Sacc. It was isolated, as a saprobe on rotten petioles of *Palmae* in Indonesia. Phylogenetic analysis based on combined ITS and LSU sequence data showed that *Aunstrupia* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*. *Aunstrupia* is characterized by macronematous, mononematous, simple, smooth, septate, dark brown conidiophores, with percurrent, integrated, terminal, dark brown conidiogenous cells. It produces solitary, acrogenous, septate, obclavate, rostrate, brown to dark brown conidia (Wu & Diao 2022). *Penzigomyces* is similar to *Sporidesmium* Link in having percurrently proliferated conidiophores and euseptate conidia, but its phylogenetic distinctiveness is evident (Wu & Diao 2022). The sexual morph is unknown in this genus (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116 (1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 806 *Aciculadictyochaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aciculadictyochaeta W.P. Wu & Y.Z. Diao

Aciculadictyochaeta was established by Wu & Diao (2022) to accommodate *Aciculadictyochaeta luquillensis* Wu & Diao (= *Chaetosphaeria luquillensis* Fernández & Huhndorf) as a type species. It was isolated as a saprobe from decorticated log in Puerto Rico. *Aciculadictyochaeta aciculate* Wu & Diao (=*Dictyochaeta aciculata* Silva & Gusmo), was also isolated as a saprobe from petiole submerged in freshwater in Piauí State, Brazil. Based on combined ITS and LSU sequence data, *Aciculadictyochaeta* forms a distinct clade from *Chaetosphaeria* and *Dictyochaeta* and was placed in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022). *Aciculadictyochaeta* is characterized by ovoid, dark brown, separate, superficial to semi-immersed ascomata. Paraphyses are sparse, simple, and septate. Asci are unitunicate with short stalks, cylindric clavate, with a thin apical cap, with 8 ascospores that are arranged irregularly. Ascospores are hyaline, fusiform, usually one-septate, sometimes two or three-septate, covered with a gelatinous sheath.

The asexual morph of this genus has sterile setae, short conidiophores in the group, terminal phialidic conidiogenous cells with conspicuous collarette, and hyaline, septate, acicular conidia with a rounded base that forms in slimy mass (Wu & Diao 2022). *Aciculadictyochaeta* is similar to *Dictyochaeta* Speg, but differs by having septate and acicular conidia (Wu & Diao 2022). Only the asexual morph of *Aciculadictyochaeta aciculata* was reported (Wu & Diao 2022). Both sexual and asexual morphs of *Aciculadictyochaeta luquillensis* have been described (Wu& Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 807 *Bergerella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bergerella Diederich & Lawrey

Lawrey et al. (2020) established the monotypic genus *Bergerella* to accommodate *Bergerella atrofusca* Diederich & Lawrey as the type. The phylogenetic analyses based on LSU or ITS both showed the distinct position of this genus in *Hydnaceae* (Lawrey et al. 2020). The authors did not provide general morphological character of the genus when compared to other lichenized taxa in *Cantharellales*. Only descriptions for the type species, *Bergerella atrofusca*, were provided. *Bergerella atrofusca* is mainly characterized by the extremely small, dark reddish brown and shiny bulbils that develop superficially as a virulent pathogen on the thallus of Physcia species. The asexual morph is unknown. The type species is lichenicolous and known from two alpine localities in Austria, but is perhaps more widespread in the Alps as the host species are common there. It is known from thalli of *Physcia aipolia* and *P. stellaris*, in shaded, cool, and humid conditions on a young *Larix* near a river and on dead *Salix*. More species are expected to further exam the monophyly of this genus (Lawrey et al. 2020).

Reference

Lawrey JD, Sikaroodi M, Gillevet PM, Diederich P. 2020 – A new species of bulbil-forming lichenicolous fungi represents an isolated clade in the *Cantharellales*. The Bryologist 123(2), 155–162.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera**)

Note 808 *Bryoclavula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bryoclavula H. Masumoto & Y. Degawa

This monotypic genus was introduced based on the new species *Bryoclavula phycophila* H. Masumoto & Y. Degawa. It was found on unidentified senescent bryophytes growing on a moist rock surface, in the temperate zone in Japan (Masumoto & Degawa 2020). The phylogenetic analysis based on LSU showed its phylogenetic position in the CHS (Ecologically diverse lineage that contains ectomycorrhizal fungi) assemblage of *Cantharellales* (*Agaricomycetes*, *Basidiomycota* and revealed this genus is clearly distinct from the other aligned genera (Masumoto and Degawa 2020). The familial position of this genus is uncertain (Masumoto & Degawa 2020). The authors did not provide general morphological characters of the genus when compared to other lichenized taxa in *Cantharellales* (Masumoto & Degawa 2020). Only descriptions for the type species are provided. The type species formed on unidentified senescent bryophytes growing on a moist rock surface were gelatinous, bright green, amorphous, undifferentiated, and composed of spherical photobiont cells loosely surrounded by mycobiont hyphae, not developed to form a globular thallus like *Multiclavula* species. The mycelia were consistently associated with green algae present on the surface of the bryophytes, indicating lichenization of this species. The asexual morph is unknown. More species are expected to further examine the monophyly of this genus.

Reference

Masumoto H, Degawa Y. 2020 – *Bryoclavula phycophila* gen. et sp. nov. belonging to a novel lichenized lineage in *Cantharellales* (*Basidiomycota*). Mycological Progress 19(7), 705–714.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Kevin D Hyde & Rekhani Hansika Perera & Maryam T. Noorabdi**)

Note 809 *Austroporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Austroporia B.K. Cui & Shun Liu

Liu et al. (2023d) introduced *Austroporia* as a monotypic genus with *Austroporia stratosa* (J.E. Wright & J.R. Deschamps) B.K. Cui & Shun Liu as the type species. The new combination, *Austroporia stratosa* was erected to accommodate *Poria stratosa* J.E. Wright & J.R. Deschamps and *Amyloporia stratosa* (J.E. Wright & J.R. Deschamps) Rajchenb, Gorjón & Pildain. Based on phylogenetic analysis of combined ITS, LSU, SSU, *tef1-α*, *rpb1*, and *rpb2* sequence data this genus was placed in *Adustoporiaceae*, *Polyporales*. This genus grew on a fallen trunk of *Eucalyptus* sp in Tasmania (Australia) and causes a brown rot. *Austroporia* is characterized by resupinate, hard corky, perennial basidiocarps, and white to cream to greyish brown pore surface. The hyphal system is dimitic and basidiospores are cylindrical to slightly allantoid. Cystidia are absent, and cystidioles are present. Phylogenetically, the specimens of *Austroporia* formed a well-supported clade comprising *Adustoporia*, *Amyloporia*, *Lentoporia*, and *Resinoporia*. It is separated from *Adustoporia* by having annual and thin basidiocarps with a pale brown larger pore surface when fresh; *Amyloporia* and *Lentoporia* differs by having amyloid skeletal hyphae; *Resinoporia* differs by its skeletal hyphae dissolving in KOH, abundant resinous matter in the subiculum and tubes, and cylindrical to oblong-ellipsoid basidiospores; and *Rhodonia* differs by its monomitic hyphal system (Liu et al. 2023d). *Poria stratosa* was described in 1972 from Argentina growing on the fallen trunk of *Nothofagus dombeyi*. Rajchenberg et al. (2011) cited this species as *Amyloporia stratosa* from Argentina and Tasmania (Australia), and in the last locality, growing on *Eucalyptus obliqua*. *Austroporia* is a genus not validly published, because the type of the species was not mentioned (Article 40.1 of Shenzhen Code, 2018). Besides, the authors cited as basionym to *Amyloporia stratosa* (J.E. Wright & J.R. Deschamps) Rajchenb., Gorjon & Pildain, instead of *Poria stratosa* J.E. Wright & J.R. Deschamps, so the name of the species is invalid following the article 41.5 of the *International Code of Nomenclature for algae, fungi, and plants* (Shenzhen Code, 2018).

References

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Rajchenberg M, Gorjon SP, Pildain MB. 2011 – The phylogenetic disposition of *Antrodia* s.l. (*Polyporales*, *Basidiomycota*) from Patagonia Argentina. Australian Systematic Botany 24, 111–120.

Entry by Ricardo Valenzuela, Laboratorio de Micología, Departamento de Botánica, Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 810 *Austropostia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Austropostia B.K. Cui & Shun Liu

Liu et al. (2023d) introduced *Austropostia* to accommodate *A. pelliculosa* (Berk.) B.K. Cui & Shun Liu as the type species and five other species were also reported in this genus. They grow on the fallen trunk of *Eucalyptus* sp. and *Nothofagus cunninghamii*, causing brown rot. Based on analysis of combined ITS, LSU, SSU, *tef1-α*, *rpb1*, and *rpb2* sequence data, *Austropostia* was placed in *Postiaceae*, *Polyporales*. This genus was named because of its resemble *Postia* and its distribution in Australia, *Austropostia* is characterized by pileate, fleshy or corky, annual and polyporoid basidiomata, with a monomitic hyphal system. Basidiospores are oblong to ellipsoid, hyaline and thin- to thick-walled. Cystidia are absent and cystidioles are present. Phylogenetically the species of this genus formed a well-supported distant clade from others related genera of the family *Postiaceae* and *Postia sensu stricto*. *Austropostia* is clearly separated from *Amaropostia*, *Calcipostia*, *Cyanosporus*, *Cystidiopostia* and *Postia*. *Amaropostia* is different from *Austropostia* in having small pores and cylindrical basidiospores. *Calcipostia* is distinguished from *Austropostia* by the short cylindrical to oblong basidiospores. *Cyanosporus* is different from *Austropostia* by the blue-tinted basidiocarps and basidiospores are narrow, allantoid to cylindrical. Unlike *Austropostia*, *Cystidiopostia* has resupinate basidiocarps and *Postia* has allantoid to cylindrical basidiospores. *Polyporus pelliculosus* Berk.was described from Tasmania (Australia) on dead logs and the roots of trees. Buchanan and Hood (1992) reported *Postia pelliculosa* (Berk.) Rajchenb. from New Zealand growing on *Nothofagus fusca* and *N. truncata*. *Austropostia* is a genus not validly published, because the type of the species was not mentioned (Article 40.1 of Shenzhen Code, 2018). Besides, the authors cited *Postia pelliculosa* (Berk.) Rajchenb., instead of *Polyporus pelliculosus* Berk. as basionym, so the name of the species is invalid following the article 41.5 of the International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code, 2018) Liu et al. (2023d).

References

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Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Ricardo Valenzuela, Laboratorio de Micología, Departamento de Botánica, Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional.

(Edited by **Kevin D. Hyde & Maryam T. Noorabadi**)

Note 811 ***Britzelmayria***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Britzelmayria D.Wächter. & A. Melzer

Wächter & Melzer (2020) introduced *Britzelmayria* to accommodate *Britzelmayria supernula* (Britzelm.) D. Wächter & Melzer (= *Agaricus supernulus* Britzelm.) as type species, and *Britzelmayria multipedata* (Peck) D. Wätcher &. Melzer (= *Psathyra multipedata* Peck) within *Psathyrellaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*. Phylogenetic analyses based on ITS, LSU, *tef1-α*, and *tub2* sequences indicated its phylogenetic position within *Psathyrellaceae* where it is sister with high support to a highly supported clade including the genera *Tulosesus*, *Narcissea*, and *Coprinellus*. This is a saprotrophic agaricoid, terricolous genus. Compared with the other genera of *Psathyrellaceae*, species of this genus are distinguished by usually forming small to very large clusters of basidiomes, long pseudorrhiza, and green deposits on the hymenial cystidia. To date, the genus comprises only two species, the type species, and *B. multipedata*. The asexual morph in this genus is unknown (Wächter & Melzer 2020).

Reference

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19, 1151–1265.

Entry by Alfredo Vizzini, Department of Life Sciences and Systems Biology, University of Torino, Viale P.A. Mattioli 25, I-10125, Torino, Italy

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 812 ***Hausknechtia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hausknechtia D. Wächt. &. Melzer

Hausknechtia was erected as a monospecific genus by Wächter & Melzer (2020) to accommodate *Hausknechtia floriformis* (Hauskn.) D. Wächt. & Melzer (= *Galerella floriformis* Hauskn.) as type species. within *Psathyrellaceae*, *Agaricales*, *Agaricomycetes*. *Hausknechtia* is an agaricoid genus, saprotrophic, terrestrial occurring on sandy soil. Phylogenetic analyses based on ITS, LSU, *tef1-α*, and *tub2* sequences indicated its phylogenetic position within *Psathyrellaceae* where it is sister with high support to the genus *Candolleomyces* (Wächt. & Melzer 2020). Compared with the other genera of *Psathyrellaceae*, *Hausknechtia* it is distinguished by the combination of the young strikingly sulcate pileus, the margin splitting radially, deliquescent lamellae, and the absence of pleuro- and cheilocystidia. The asexual morph in this genus is unknown (Wächter & Melzer 2020). Recently, the genus was emended by Nie et al. (2022) for encompassing *Hausknechtia leucosticta* (Pat.) Tkalčec, Yan, Nie & Pradeep (= *Coprinus leucostictus* Pat.) from Asia.

References

Nie C, Wang S-N, Tkalˇcec Z, Yan J-Q et al. 2022 – *Coprinus leucostictus* rediscovered after a century, epitypified, and its generic position in *Hausknechtia* resolved by multigene phylogenetic analysis of *Psathyrellaceae*. Diversity 14, 699.

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19, 1151–1265.

Entry by Alfredo Vizzini, Department of Life Sciences and Systems Biology, University of Torino, Viale P.A. Mattioli 25, I-10125, Torino, Italy

(Edited by **Kevin D. Hyde & Maryam T. Noorabadi**)

Note 813 *Jugisporipsathyra*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Jugisporipsathyra J.Q. Yan, Y.G. Fan & S.N. Wang

Wang et al. (2022) introduced *Jugisporipsathyra* (as *Iugisporipsathyra*) as a monospecific genus based on *Jugisporipsathyra reticulopilea* J.Q. Yan, Y.G. Fan & S.N. Wang as type species. *Jugisporipsathyra reticulopilea* was isolated as a saprobe on roadside red soil, associated with *Angiospermae* in China. This genus was placed in *Psathyrellaceae*, *Agaricales*. Phylogenetic analyses based on ITS, LSU, and *tub2* sequences indicated its phylogenetic position within *Psathyrellaceae* where it forms an independent evolutive line with no apparent affinity with the other genera. Compared with the other genera of *Psathyrellaceae*, *Jugisporipsathyra* can be distinguished by the unique combination of lack of veil and pleurocystidia and presence of ornamented spores with ridges or rarely verrucose, with an obvious suprahilar plage. The asexual morph is unknown in this genus.

Reference

Wang SN, Fan YG, Yan JQ. 2022 – *Iugisporipsathyra reticulopilea* gen. et sp. nov. (*Agaricales*, *Psathyrellaceae*) from tropical China produces unique ridge-ornamented spores with an obvious suprahilar plage. MycoKeys 90, 147–162.

Entry by Alfredo Vizzini, Department of Life Sciences and Systems Biology, University of Torino, Viale P.A. Mattioli 25, I-10125, Torino, Italy

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 814 ***Heteropsathyrella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heteropsathyrella T. Bau & J.Q. Yan

Bau & Yan (2021a) introduced *Heteropsathyrella* as a monospecific genus based on *Heteropsathyrella macrocystidia* T. Bau & J.Q. Yan as type species. *Heteropsathyrella macrocystidia* was isolated as a saprobe on rotten wood in mixed forests of larch and birch in China. This is an agaricoid genus that was placed in *Psathyrellaceae*, *Agaricales*. Phylogenetic analyses based on ITS, LSU, *tef1-α*, and *tub2* sequences indicated its phylogenetic position within *Psathyrellaceae* where it is sister, with high support, to a not fully supported clade including the genera *Cystoagaricus*, *Kauffmania*, and *Typhrasa*. Compared with the other genera of *Psathyrellaceae*, species of this genus can be distinguished by: psathyrelloid basidiomata, adnexed non-deliquescent lamellae, and monomorphic basidia; *pseudoparaphyses* are abundant; the pileipellis is composed of saccate to subglobose cells covered by a one-cell deep layer of periclinal hyphae which are covered by scattered and irregular deposits dissolving in 5% KOH. The asexual morph is unknown in this genus.

Reference

Bau T, Yan JQ. 2021a – A new genus and four new species in the /*Psathyrella* s.l. clade from China. MycoKeys 80, 115–131.

Entry by Alfredo Vizzini, Department of Life Sciences and Systems Biology, University of Torino, Viale P.A. Mattioli 25, I-10125, Torino, Italy

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 815 ***Candolleomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Candolleomyces D. Wächt. & A. Melzer

Wächter & Melzer (2020) introduced *Candolleomyces* based on *Candolleomyces candolleanus* (Fr.) D. Wächt. & A. Melzer, as the type species. *Candolleomyces candolleanus* (= *Agaricus candolleanus* Fr.) originally was isolated as a saprobe on soil, associated with *Fagus*. This genus was placed in *Psathyrellaceae*, *Agaricales*. This is a saprotrophic agaricoid genus, terrestrial, lignicolous, and rarely fimicolous. Phylogenetic analyses based on ITS, LSU, *tef1-α*, and *tub2* sequences indicated its phylogenetic position within *Psathyrellaceae* where it is the sister with high support to the genus *Hausknechtia*. Compared with other genera of *Psathyrellaceae*, species of this genus are distinguished by the absence of pleurocystidia, and a veil fibrillose, scaly, or granulose, often very fugacious, consisting of chains of subcylindrical cells, with slightly thickened walls and brownish pigment, usually mixed with slightly thick-walled spherocytes. *Candolleomyces* is characterized by medium-sized spores that are pale to medium-dark, germ pore is central, but often not visible. According to the research of Wächter & Melzer (2020), *Candolleomyces* may be more speciose than previously thought and better delimitation of species boundaries is needed. Although controversies still exist regarding some species boundaries, the number of new taxa is steadily increasing. This continuous discovery of new taxa with clear boundaries deepens the understanding of the species in this genus. Twenty-six species have been assigned to *Candolleomyces* by Wächter & Melzer (2020). Recently, nine new species have been described from Asia (Büttner et al. 2020, Bau & Yan 2021b, Asif et al. 2022, Bhunjun et al. 2022, Zhou et al. 2022, Haqnawaz et al. 2023, Nayana & Pradeep 2023) and one from Italy (Passalacqua & Sicoli 2023). The asexual morph is unknown in this genus (Wächter & Melzer 2020).

References

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Bau T, Yan JQ. 2021b – Two new rare species of *Candolleomyces* with pale spores from China. MycoKeys 80, 149–161.

Bhunjun CS, Niskanen T, Suwannarach N, Wannathes N et al. 2022 – The numbers of fungi: are the most speciose genera truly diverse?. Fungal Diversity 114, 387–462.

Büttner E, Karich A, Nghi DH, Lange M et al. 2020 – *Candolleomyces eurysporus*, a new *Psathyrellaceae* (*Agaricales*) species from the tropical Cúc Phương National Park, Vietnam. Österreichische Zeitschrift für Pilzkunde 28, 79–92.

Haqnawaz M, Niazi AR, Khalid AN. 2023 – A study on the genus *Candolleomyces* (*Agaricales*: *Psathyrellaceae*) from Punjab, Pakistan. BMC Microbiology 23(1), 1–8.

Nayana PK, Pradeep CK. 2023 – A new species of *Candolleomyces* (*Psathyrellaceae*, *Agaricales*) from Western Ghats, India. Phytotaxa 606(1), 63–72.

Passalacqua NG, Sicoli G. 2023 – Nomenclatural novelties. Index Fungorum 544, 1.

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon-rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19, 1151–1265.

Zhou H, Cheng GQ, Sun XM, Cheng RY et al. 2022 – Three new species of *Candolleomyces* (*Agaricomycetes*, *Agaricales*, *Psathyrellaceae*) from the Yanshan Mountains in China. MycoKeys 88, 109–121.

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(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 816 *Ericiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ericiomyces Karpov & Reñé

Karpov et al. (2021) introduced *Ericiomyces* as a monotypic genus based on *Ericiomyces syringoforeus* Karpov & Reñé as the type species. *Ericiomyces syringoforeus* was isolated as a parasite on *Kryptoperidinium foliaceum*, from brackish water in Finland. This genus was placed in *Ericiomycetaceae*, *Rhizophydiales*. *Ericiomyces* Karpov & Reñé is well-separated from other genera in the *Rhizophydiales* based on light microscopic morphology, ultrastructure, and analysis of SSU, LSU, and ITS sequence data. Molecular analyses placed the genus on a long branch sister to the *Globomycetaceae* in the *Rhizophydiales*. *Ericiomyces* is the only genus in the family *Ericiomycetaceae* (Karpov et al. 2021). The type habitat is a shallow coastal embayment with a salinity of 6-7 %. *E. syringoforeus* grew in dual culture with its dinoflagellate host. Important morphological features include a swollen haustorium inside the host rather than rhizoids and the development of the sporangium from the side of the zoospore cyst. The cyst enlarges only slightly and remains basal (referred to by the authors as a papilla) on the spine-covered sporangium. Zoospore discharge takes place through a single, inoperculate pore. Visible by transmission electron microscopy and unique to this genus are a penetration device called a "syringe", and a "funnel" that connected the external spiny, inoperculate sporangium to the haustorium inside the algal cell. The ultrastructure of zoospores revealed typical characteristics for a member of the *Rhizophydiales*.

Reference

Karpov SA, Reñé A, Vishnyakov AE, Seto K et al. 2021– Parasitoid chytridiomycete *Ericiomyces syringoforeus* gen. et sp. nov. has unique cellular structures to infect the host. Mycological Progress 20, 95– 109.

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(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 817 ***Desertiserpentica***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Desertiserpentica Maharachch., Wanas. & Al-Sadi

Desertiserpentica was introduced by Maharachchikumbura et al. (2021b) as a monotypic genus to accommodate *Desertiserpentica hydei* as the type species. Based on phylogenetic analyses of combined LSU, SSU, ITS, *rpb2*, and *tef1-α* sequences, this genus was placed in *Lophiostomataceae*, *Pleosporales* (Wijayawardene et al. 2021b, Maharachchikumbura et al. 2021b). The type species has been reported as a saprobe on dead wood in Oman (Maharachchikumbura et al. 2021b). *Desertiserpentica* is known for its hyphomycetous asexual morph, which is characterized by macronematous, mononematous, simple, cylindrical, olive-green to brown, septate conidiophores that are unbranched. Conidia are pale to brown, acrogenous, solitary, flexuous, and distoseptate. Conidiogenous cells are monoblastic, integrated, terminal, cylindrical or doliiform, determinate and brown. The sexual morph of *Desertiserpentica* is unknown (Maharachchikumbura et al. 2021b).

References

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Wijayawardene NN, Hyde KD, Dai DQ, Sánchez-Garcí M et al. 2021b – Outline of Fungi and fungus-like taxa. Mycosphere 13(1), 53–453.

Entry by Yong-Zhong Lu, School of Food and Pharmaceutical Engineering, Guizhou Institute of Technology, Guiyang, China.

(Edited by **Kevin D. Hyde and Maryam T. Noorabadi**)

Note 818 ***Distobactrodesmium***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Distobactrodesmium Z. Niu, K. Zhang & R.F. Castañeda

Distobactrodesmium was introduced by Niu et al. (2021) as a monotypic genus to accommodate an atypical *Bactrodesmium* Cooke species, *Bactrodesmium* rahmii M.B. Ellis. This was excluded from *Bactrodesmium* by Réblová et al. (2020b) based on a narrower delimitation from *Bactrodesmium* based on its euseptate conidia and lack of sequence data. *Distobactrodesmium rahmii* (= *Bactrodesmium rahmii* M.B. Ellis), the type species, has been reported as a saprobe on *Picea* species in Canada and Switzerland (Niu et al. 2021). *Distobactrodesmium* is characterized by sporodochial conidiomata, macronematous, mononematous, cylindrical, hyaline or sub-hyaline, simple or branched conidiophores, monoblastic, integrated or discrete conidiogenous cells, and obovoid to clavate, brown to dark brown, distoseptate conidia (Niu et al. 2021). The sexual morph has not been observed in this genus. Due to unavailable sequence data of *Distobactrodesmium*, its systematic position needs to be further determined.

References

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Note 819 *Nothopucciniastrum*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nothopucciniastrum P. Zhao & L. Cai

Based on analysis of ITS and LSU sequence data, Zhao et al. (2022b) introduced *Nothopucciniastrum* to accommodate *N. tiliae* (Miyabe) P. Zhao & L. Cai (≡ *Pucciniastrum tiliae* Miyabe) as the type. Nine other species of *Nothopucciniastrum* were previously included within *Pucciniastrum*. *Nothopucciniastrum tiliae* was described as a rust pathogen on the leaves of *Tilia cordata* var. *japonica (≡ T. japonica*) and *T. miqueliana* from Japan (Miyabe in Hiratsuka 1897). The other nine species were transferred from *Pucciniastrum* and they were originally described in Japan, found on a variety of host plants. *Nothopucciniastrum* is autoecious and known to produce spermogonia, aecia, uredinia and telia on a broad range of host plants within the families *Actinidiaceae*, *Clethraceae*, *Cornaceae*, *Fagaceae*, *Malvaceae*, *Sapindaceae*, *Styracaceae*, *Theaceae*, *Urticaceae* and *Viburnaceae*. The genus is characterized by group 1 (type 2 and 3) spermogonia, peridermium-type or milesia-type aecia, milesia-type uredinia with well-developed ostiolar cells, and subepidermal telia that are one spore deep and consist of laterally adherent, aseptate or multiseptate teliospores. Previous studies have shown that the resolution of some phylogenetic lineages of rust fungi remains poor, especially for *Pucciniastrum* and the *Pucciniastraceae* (Aime & McTaggart 2021). Phylogenetic evidence from the analysis of ITS and LSU sequence data by Zhao et al. (2022b) showed that *Pucciniastrum* is polyphyletic and formed a well-supported clade containing ten species, was defined as the new genus. Consequently, Zhao et al. (2022b) clearly places *Nothopucciniastrum* in the newly described family *Nothopucciniastraceae* (*Melampsorineae*, *Pucciniales*, *Pucciniomycetes*, *Basidiomycota*). Unfortunately, because Zhao et al. (2022b) failed to provide registration numbers issued by a recognized repository for *Nothopucciniastrum* and for the new combinations made within this genus, all the new names are invalid (Turland et al. 2018).

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Note 820 *Pseudothozetella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudothozetella W.P. Wu & Y.Z. Diao

Based on analysis of combined ITS and LSU sequence data, Wu & Diao (2022) introduced the monotypic genus *Pseudothozetella* to accommodate *Pseudothozetella lunata* W.P. Wu & Y.Z. Diao, as the type. *Pseudothozetella lunata* was found as a saprobe on dead leaves of an unidentified tree in a terrestrial habitat in China. *Pseudothozetella* is known only from its asexual state and is characterized by dark brown sporodochia with a white slimy spore mass, cylindrical phialidic conidiogenous cells, and hyaline, aseptate, falcate or lunate conidia. The phylogenetic evidence obtained from the analysis of ITS and LSU sequence data shows that *Pseudothozetella* and *Eucalyptostromiella* form separate lineages within a well-supported clade as sister genera (Wu & Diao 2022). *Eucalyptostromiella* differs from *Pseudothozetella* by having fresh-yellow coloured sporodochia with fresh-yellow slimy spore mass, and flask-shaped phialidic conidiogenous cells. The taxonomic placement of *Pseudothozetella* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

Reference

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Note 821 *Pseudocerradoa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocerradoa M. Ebinghaus & Dianese

Based on analysis of a combined dataset of LSU, SSU, and *co3* gene regions, Ebinghaus et al. (2022) introduced *Pseudocerradoa* to accommodate *P. paullula* (Syd. & P. Syd.) Ebinghaus & Dianese (≡ *Puccinia paullula* Syd. & P. Syd.) and *P. rhaphidophorae* (Syd.) M. Ebinghaus & Dianese (≡ *Puccinia rhaphidophorae* Syd.). *Pseudocerradoa paullula* is the type species of the genus and was originally described as a rust pathogen on leaves of *Amorphophallus* sp. from the Philippines (Sydow & Sydow 1913), while *P. rhaphidophorae* was described on leaves of *Rhaphidophora merrillii* (= *Epipremnum pinnatum*) in the Philippines (Sydow & Petrak 1928). *Pseudocerradoa paullula* is autoecious and produces uredinia and telia on species of *Araceae*. The genus is characterized by uredinia and telia sporogenous cells which always remain confined to the stomatal cavity, whereas in the phylogenetically related *Cerradoa*, they emerge from the stomata. In addition, *Cerradoa* infects palms (*Arecaceae*). Based on phylogenetic inferences from analysis of LSU, SSU, and *co3* datasets, *Pseudocerradoa* is in a well-supported clade and sister to the rust genus *Cerradoa* (Ebinghaus et al. 2022). The evidence of Ebinghaus et al. (2022) clearly places *Pseudocerradoa* in the family *Pucciniaceae*, *Uredinineae*, *Pucciniales*, *Pucciniomycetes*, *Pucciniomycotina*, and *Basidiomycota*.

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Note 822 *Oligostoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Oligostoma Voglmayr, J. Fourn. & Jaklitsch

Oligostoma was introduced by Voglmayr et al. (2022) as a monospecific genus, with its type species *O. insidiosum* (P. Crouan & H. Crouan) Voglmayr, J. Fourn. & Jaklitsch (≡ *Valsa insidiosa*). The sexual morph of the genus is characterized by erumpent, inconspicuous stromata with a black leathery clypeus and central to slightly eccentric ostiolar openings; whitish to brownish hyphal entostroma; pseudoparenchymatous peridium; copious, hyphal, thin-walled paraphyses; cylindrical, short stipitate asci with 8 uniseriate, obliquely overlapping ascospores and a plug-like, euamyloid apical ring with a flattened apex and a sharp subapical rim, blue in Melzer's reagent; inequilaterally ellipsoid to nearly citriform, olivaceous brown to dark brown ascospores with rounded ends, a conspicuous sigmoid germ slit on the ventral side, a thin slimy sheath and a small basal cellular appendage. Asymmetrical ascospore sheaths can be found in similar inconspicuous xylarialean anthostomella-like taxa such as *Anthocanalis sparti*, *Anthostomella formosa* var. *taxi*, and *An. triangularis* (Lu and Hyde 2000, Daranagama et al. 2015). The asexual morph was not found on the natural substrate. Voglmayr et al. (2022) provided fresh collections of *Oligostoma insidiosum* from Austria (on dead corticated fallen branches of *Acer pseudoplatanus*, *Fagus sylvatica*, *Ostrya carpinifolia*, and *Tilia* sp.), France (on a corticated twig of *F. sylvatica*), Germany (on a dead branches of *A. pseudoplatanus*), Slovenia (on a corticated twig of *F. sylvatica*), and Switzerland (on a dead corticated fallen twigs of *F. sylvatica*). Based on SSU–ITS–LSU–*rpb2*–*tub2* phylogeny by Voglmayr et al. (2022), *Oligostoma* clustered with *Leptomassaria* with 100% ML and 100% MP statistical support in *Xylariaceae sensu stricto* with shared morphology. However, *Oligostoma* is distinct from *Leptomassaria* in having differences in stromatal morphology and ascospore shape (Voglmayr et al. 2022). The taxonomic placement of *Oligostoma* is in *Xylariaceae*, *Xylariales*, *Xylariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 823 *Pseudoceratocladium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoceratocladium Hern. -Restr. & Crous

Hernández-Restrepo et al. (2022) introduced *Pseudoceratocladium* to accommodate *P. polysetosum* (J. Mena et al.) Hern-Restr. & Crous (≡ *C. polysetosum*), which was described on the bark of an unidentified tree from Spain (Mena-Portales et al. 2011). The asexual morph of the genus has simple, septate, brown, smooth primary setae, paler towards the ends, arising from the superficial hyphae and verrucose at the tip; simple, septate, brown, smooth secondary setae, paler toward the ends, originating from the climbing fertile hyphae and projected more or less at right-angles along primary setae and verrucose at the tip; discrete, lateral from fertile hyphae, polyblastic, sympodial and percurrent, ampulliform or lageniform, subhyaline to pale brown, smooth conidiogenous cells; solitary, dry, conidia forming clusters around the apex of the conidiogenous cells, aseptate, cylindrical or fusiform with rounded ends, mostly straight or slightly curved, hyaline, smooth-walled (Mena-Portales et al. 2011). No sexual morphs of the genus are described. *Pseudocircinotrichum* and *Neogyrothrix* are sister clades for *Ceratocladium* based on phylogenetic analysis using ITS, LSU, and *rpb2* sequence data. The taxonomic placement of *Pseudoceratocladium* is in *Gyrotrichaceae*, *Xylariales*, *Xylariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 824 *Pseudocircinotrichum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocircinotrichum Hern. -Restr. & Crous

Pseudocircinotrichum was introduced by Hernández-Restrepo et al. (2022) as a monospecific genus, with its type *P. papakurae* (S. Hughes & Piroz.) Hern. -Restr. & Crous (≡ *Circinotrichum papakurae*). The genus is characterized by branched and anastomosed, smooth-walled, septate, subhyaline to pale olivaceous hyphae; simple, erect, straight, smooth, thick-walled setae, dark brown near the base, paler above, gradually tapering to an acutely pointed apex; with relatively few, scattered, obclavate to lageniform, thin-walled, subhyaline conidiogenous cells arising laterally from the superficial hyphae; and cylindrical to fusoid, straight or slightly curved, base subulate and apex bluntly corniform, hyaline conidia adhering together to form a whitish pellicle at the base of setae (Hughes & Pirozynski 1971, Hernández-Restrepo et al. 2022). No sexual morphs are recorded. *Pseudocircinotrichum papakurae* was described from decaying leaves of *Beilschmiedia taraire* (New Zealand), on rotten leaf (Brazil), and on leaf of *Theobromae cacao* (Cuba) (Hernández-Restrepo et al. 2022). *Xenoanthostomella* and *Pseudoceratocladium* are sister clades for *Pseudocircinotrichum* based on phylogenetic analysis using ITS, LSU, and *rpb2* sequence data provided. The taxonomic placement of *Pseudoceratocladium* is in *Gyrotrichaceae*, *Xylariales*, *Xylariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 825 *Gomphocantharellus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gomphocantharellus L. Fan, Y.Y. Xu, Zhu L.Yang & S. P. Jian

Xu et al. (2022c) introduced the monotypic genus *Gomphocantharellus* to accommodate *G. cylindrosporus* L. Fan, Y.Y. Xu, Zhu L.Yang & S.P. Jian, as the type species, based on three collections from coniferous forests on a mountain in Shanxi Province in North China. This taxon resembles the species of *Cantharellus* due to its pink-colored, cantharelloid sporomes with strongly lamellate hymenophores, but is distinguished by a white spore-print and smooth-walled, cylindrical to allantoid basidiospores. This lineage is phylogenetically placed within *Gomphales* forming a sister position to a clade comprising *Clavariadelphus*, *Hydnocristella*, *Kavinia*, *Beenakia*, and *Lentaria*. This placement is confirmed based on molecular phylogenetic analysis of concatenated partial sequences of the mtSSU and *atp6* conducted by Xu et al. (2022c). No familial classification has been proposed. The taxonomic placement of *Gomphocantharellus* is in *Gomphales*, *Phallomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

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Note 826 *Hydropodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hydropodia Vizzini & Consiglio

Hydropodia was introduced by Consiglio et al. (2021) to accommodate *H. subalpina* (Höhn.) Vizzini, Consiglio & M. Marchetti as the type. This is a monospecific agaricoid genus, saprotrophic, lignicolous on ± buried, found on wood of deciduous trees, typically *Fagus*. According to the phylogenetic analysis based on ITS and LSU sequences, *H. subalpina* is not related to *Hydropus* Kühner ex Singer *s. stricto*, which corresponds to the clade including the type species *Hy. fuliginarius* (Batsch) Singer. Instead, it is sister to the Porotheleum clade, including *Porotheleum* Fr., *Pulverulina* Matheny & K.W. Hughes and *Pseudohydropus* Vizzini & Consiglio (Consiglio et al. 2021, Vizzini et al. 2022). *Hydropodia* is distinguished by a collybioid habit, a stipe with pseudorhiza, cylindrical to allantoid inamyloid basidiospores, and a pileipellis as an ixocutis with abundant, clavate pileocystidia, which do not form an almost continuous layer. The asexual morph is unknown. It occurs in Europe (Consiglio et al. 2021) and Turkey (Kaygusuz et al., 2020). The taxonomic placement of *Hydropodia* is in *Porotheleaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 827 *Pseudohydropus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudohydropus Vizzini & Consiglio

Pseudohydropus was introduced by Consiglio et al. (2021) to accommodate *P. floccipes* (Fr.) Vizzini & Consiglio as the type. This is an agaricoid genus, saprotrophic, lignicolous, found on ± buried wood. Currently, four species of *Pseudohydropus* have been described by Consiglio et al. (2021) worldwide. Phylogenetic analyses based on ITS and LSU sequences indicated its phylogenetic position within *Porotheleaceae* as sister to a clade consisting of *Porotheleum* Fr. and *Pulverulina* Matheny & K.W. Hughes. Compared with the other genera within *Porotheleaceae*, species of *Pseudohydropus* are distinguished by their mycenoid habit, globose to largely ellipsoid, inamyloid basidiospores, presence of hymenial cystidia (cheilo- and pleurocystidia), caulocystidia and pileocystidia, and a pileipellis as xero- to ixocutis with abundant, clavate pileocystidia. *Hydropus* Kühner ex Singer *s. stricto*, typified with *H. fuliginarius* (Batsch) Singer differs mainly in the amyloid basidiospores, and absence of pleurocystidia (Kühner 1938, Singer 1982, Robich 1992, Hausknecht et al. 1997, Esteve-Raventós et al. 2002, Vizzini et al. 2022). The asexual morph is unknown. The taxonomic placement of *Pseudohydropus* is in *Porotheleaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

References

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Note 828 ***Incumbomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Incumbomyces Y. Quan, D. Shi, S.A. Ahmed, Al-Hatmi & de Hoog

Quan et al. (2021) described *Incumbomyces* to accommodate *I. delicatus* Y. Quan, D. Shi, S.A. Ahmed, Al-Hatmi & de Hoog as the type including *I. lentus*. Although most species of *Trichomeriaceae* are colonizers of inert surfaces, the species of *Incumbomyces* were isolated as probable inhabitants of carton ant nests in Thailand by Voglmayr et al. (2011). Fungal hyphae are abundantly present in the walls of ant nests and galleries in the canopy of tropical rainforests. A possible role of these black fungi in the carton is to enhance the firmness of ant nests and tunnels. The key morphological characters of the genus are slow-growing and melanized thallus. The hyphae are dense, with regular septation and numerous anastomoses. Specialized conidia are absent. The sexual state is unknown. The taxonomic placement of *Incumbomyces* is in *Trichomeriaceae*, *Chaetothyriales*, *Chaetothyriomycetidae, Eurotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 829 ***Flectospora***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Flectospora Réblová & Hern. -Restr.

Based on the phylogenetic analysis of combined ITS and LSU sequence data, Réblová et al. (2021c) introduced *Flectospora* to accommodate two species. The type species of this genus, *Flectospora laminata* Réblová & Hern. -Restr. was reported as a saprobe on decaying wood, known only in Thailand (Réblová et al. 2021c). The other *Flectospora* sp. was collected from decaying wood in New Zealand, also presumably as a saprobe (Réblová et al. 2021c). *Flectospora* *laminata* was initially considered the chloridium-like anamorph of *Chaetosphaeria hispida* (Réblová et al. 2003). However, the holotype of *Ch. hispida* has been transferred to the new genus *Flectospora* as *F. laminata* due to phylogenetic arguments and a critical evaluation of teleomorphic and anamorphic characteristics (Réblová et al. 2021c). *Flectospora* was named referring to the curved conidia and characterized by ascomycetes with phialidic dematiaceous hyphomycete anamorphs with macronematous, simple conidiophores and hyaline, ellipsoidal to obovoid, aseptate, slightly curved conidia accumulating in slimy heads. The teleomorphs have glabrous perithecial ascomata, unitunicate asci, paraphyses, and hyaline, septate ascospores. The taxonomic placement of *Flectospora* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

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Note 830 *Harringtonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Harringtonia Z.W. de Beer & Procter

Based on the phylogenetic analysis of combined ITS, LSU, *tef1-α*, and *rpb2* sequence data, *Harringtonia* was removed from *Raffaelea* as the *R. lauricola* complex and described as a new genus by de Beer et al. (2022) accommodating three species, i.e., *H. aguacate* (Simmons et al.) M. Procter & Z.W. de Beer, *H. brunnea* (L.R. Batra) M. Procter & Z.W. de Beer, and *H. lauricola* (T.C. Harr. et al.) Z.W. de Beer & M. Procter. Araújo et al. (2022b) introduced four new species of *Harringtonia* and currently contains seven species (Index Fungorum 2023). *Harringtonia* species are associated with ambrosia beetles. The genus is typified by *Harringtonia lauricola* which is carried by the beetles and causes a vascular wilt disease in redbay, avocado, and other North American members of the *Lauraceae* family (Araújo et al. 2022b). *Harringtonia* is known only from its asexual state, and is characterized by its single or aggregated sporodochia, hyaline, macronematous, semi-macronematous, mononematous conidiophores and hyaline, 1-celled, oblong to ellipsoidal, obovoid conidia (de Beer et al. 2022). The taxonomic placement of *Harringtonia* is in *Ophiostomatales*, *Sordariomycetidae, Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

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(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 831 *Berkcurtia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Berkcurtia Robledo & Campi

Based on morphological and phylogenetic analysis (ITS, LSU, and *tef1-α*), Campi et al. (2022) introduced the monotypic genus *Berkcurtia* Robledo & Campi to accommodate *B. persicina* (Berk & M.A. Curtis) Robledo & Campi (≡ *Laetiporus persicinus* [Berk. & M.A. Curtis] Gilb.). *Berkcurtia persicina* restricted to the USA. Later, *L. persicinus* was trasferred to *Kusaghiporia* J. Hussein, S. Tibell & Tibuhwa as *K. persicina* (Berk. & M.A. Curtis) C.A. Paez, Kraisit. & M.E. Sm. (Paez et al. 2023). Whereas Paez et al. (2023) emphasize those morphological similarities between *Laetiporus persicinus* and *Kusaghiporia* indicate that they are congeneric, Campi et al. (2022) pointed that *Berkcurtia* can be distinguished based on differences on bruising in the hymenophore and hyphal system. Furthermore, *Berkcurtia* as characterized by Campi et al. (2022) presents a clear morphological circumscription, as the huge central to eccentrically stipitate brown to dark brown basidiomata arising from the ground with the pore surface staining blackish-brown when bruised. The hyphal system is trimitic, generative and thick-walled. Basidia are clavate and 4-sterigmate with ovoid and hyaline basidiospores. Cystidia and conidia are lacking. The taxonomic placement of *Berkcurtia* is in *Laetiporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

References

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Note 832 *Furtadomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Furtadomyces Leonardo-Silva, Cotrim & Xavier-Santos

Based on morphological and phylogenetic analysis (ITS and LSU), Leonardo-Silva et al. (2022) established a new name *Furtadomyces* to replace *Furtadoa* Costa-Rezende, Robledo & Drechsler-Santos, encompassing *Furtadomyces sumptuosus*, *F. biseptatus* and *F. brasiliensis*. Later, *F. corneri* and *F. trichodermatum* were combined in the genus (Peres et al. 2023). The genus is typified by *F. biseptatus* (Costa-Rezende, Drechsler-Santos & Reck) Leonardo-Silva, Cotrim & Xavier-Santos. *Furtadomyces* currently includes five species, all from the Neotropics. The species of the genus occur on soil and are usually found attached to buried angiosperm roots. *Furtadomyces* is characterized by stipitate basidiomata, soft when fresh, a dull and glabrous to strigose pilear surface, a dimitic hyphal system with a monomitic context composed of both clamped and simple-septate generative hyphae, and dimitic trama of tubes, composed of clamped generative hyphae and arboriform skeletal hyphae, and "amaurodermoid" basidiospores (Costa-Rezende et al. 2017, Leonardo-Silva et al. 2022, Peres et al. 2023). The taxonomic placement of *Furtadomyces* is in *Ganodermataceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

References

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Leonardo-Silva L, Cotrim CF, Xavier-Santos S. 2022 – *Furtadomyces* nom. nov. (*Ganodermataceae*, *Basidiomycota*) with description of *F. sumptuosus*, a new species of ganodermatoid fungi from Brazil. Mycological Progress 21(3), 1–2.

Peres RS, Bittencourt F, Robledo GL, Drechsler-Santos ER et al. 2023 – Filling gaps in the phylogeny of *Amauroderma* s. lat. (*Polyporales*, *Ganodermataceae*). South African Journal of Botany 155, 140–53.

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Note 833 *Paramycocentrospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramycocentrospora Bakhshi & U. Braun

Paramycocentrospora was established by Bakhshi & Braun (2022a) to accommodate *P. acericola* Bakhshi & U. Braun. The generic type, *P. acericola* was reported on seedlings of *Acer velutinum* (*Sapindaceae*) in Iran. This plant pathogenic, foliicolous taxon is characterized by having continuous to septate, straight, subcylindrical, flexuous conidiophores; polyblastic, sympodial conidiogenous cells; and hyaline, euseptate, obclavate-acicular, often curved conidia with a conspicuous raised rim. The sexual morph of *P. acericola* has not been reported. *Paramycocentrospora* clustered in a highly stable clade, distinct from all other genera in the family *Dothidotthiaceae*, based on the phylogenetic analysis of combined LSU and ITS sequence data (Bakhshi and Braun 2022). The taxonomic placement of *Paramycocentrospora* is in *Dothidotthiaceae*, *Dothideales*, *Dothideomycetidae*, *Dothideomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Bakhshi M, Braun U. 2022a – *Acericercospora hyrcanica* gen. et sp. nov. (*Mycosphaerellaceae*) and *Paramycocentrospora acericola* gen. et sp. nov. (*Dothidotthiaceae*) on maple trees in Hyrcanian forests. Mycological Progress 21(8), 71.

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Note 834 *Unguispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Unguispora T. Ri & Degawa

Unguispora was introduced by Ri et al. (2022) to accommodate a novel *kickxellalean* species, *U. rhaphidophoridarum* T. Ri & Degawa as the type, isolated from the excrement of cave crickets, *Diestrammena japanica* and *D. elegantissima* (*Rhaphidophoridae*) in Japan. Phylogenetic analysis of SSU and LSU sequence data indicated that *Unguispora* is distinct from all known kickxellalean genera and placed it next to the genus *Linderina*. The single species of *Unguispora* is a dimorphic taxon, which has a yeast-like form inside the gut of the insect host and a filamentous form outside of the host. Sporangiophores of *Unguispora* are simple or branched, septate with median pores and plugs. Sporocladia are septate, giving rise to lateral sterile filiform appendages, with basal cells bearing three sterile corniform appendages, and terminal cells bearing one sterile corniform appendage. Pseudophialides are lageniform, each producing a single hyaline, cylindrical, one-spored sporangiolum. Sporangiola are immersed in liquid at maturity are ornamented terminally by claw-like minute denticles arranged in transverse rows repeated several times lengthwise. Sporangiospores germinate basally through the production of yeast-like cells ("secondary spores") under anaerobic conditions. Secondary spores germinate by the production of asexual hyphae under aerobic conditions. Zygospores have not been observed. *Unguispora* differs from other kickxellalean species by the formation of corniform appendages on the basal and terminal sporocladial cells and filiform lateral appendages of sporocladia, as well as the claw-like ornamentation of sporangiola (Ri et al. 2022). The taxonomic placement of *Unguispora* is in *Kickxellaceae*, *Kickxellales*, *Kickxellomycetes*, *Kickxellomycotina*, and *Mucoromycota*.

Reference

Ri T, Suyama M, Takashima Y, Seto K, Degawa Y 2022 – A new genus *Unguispora* in *Kickxellales* shows an intermediate lifestyle between saprobic and gut-inhabiting fungi. Mycologia 114(6), 934–946.

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Note 835 *Aklioshbomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aklioshbomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Aklioshbomyces was established by Hanafy et al. (2020) to accommodate *A. papillarum* Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff, Elshahed, and N.H. Youssef as the type species, based on morphology and phylogenetic analysis with ITS and LSU (D1-D2) sequence data. The genus is currently monospecific (*A. papillarum*) that was isolated from fecal samples of white tailed deer in Oklahoma, USA. Phylogenetic analysis based on ITS1, D1/D2 LSU, and *rpb1*, along with phylogenomic analysis, confirms its position as a distinct genus, with no clear affiliation to any of the four *Neocallimastigales* families (Hanfey et al. 2023). The life cycle of *Aklioshbomyces* involves the production and release of motile spores (zoospores) from sporangia. These zoospores encyst, germinate, and develop into a thallus structure, anchoring the formation of new sporangia. *Aklioshbomyces* spores are monoflagellate. Sporangia are pleomorphic with ovoid, globose, obpyriform, and ellipsoid, papillated with one or two papillae, thought to facilitate zoospore release. Sporangiophores are unbranched, with lengths varying widely from a few microns to 230 µm. The genus exhibits monocentric thallus development, and filamentous rhizoidal growth pattern. The taxonomic placement of *Aklioshbomyces* is in *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycotina*, and *Neocallimastigomycota*.

References

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Hanafy RA, Wang Y, Stajich J, Youssef NH et al. 2023 – Phylogenomic analysis of the *Neocallimastigomycota*: Proposal of *Caecomycetaceae* fam. nov., *Piromycetaceae* fam. nov., and emended description of the families *Neocallimastigaceae* and *Anaeromycetaceae*. International Journal of Systematic and Evolutionary Microbiology 73, 5735.

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Note 836 *Agriosomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Agriosomyces Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, 513 G.W. Griff, Elshahed, and N.H. Youssef

Agriosomyces was established by Hanafy et al. (2020) to accommodate *A. longus* Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff, Elshahed, and N.H. Youssef as the type species, based on morphology and phylogenetic analysis with ITS and D1-D2 LSU sequence data. The genus is currently monospecific (*A. longus*), that was isolated from fecal samples of a wild mouflon sheep and Boer Goat in 2020. Phylogenetic analysis based on the ITS1 and LSU (D1-D2) demonstrated its position as a distinct lineage within *Neocallimastigales* (Hanafy et al. 2023). However, its phylogenetic affinity to other genera is unstable and highly dependent on the phylogenetic markers. The lack of additional marker genes beyond ITS and D1/D2 LSU, as well as the lack of genome sequence or transcriptomic datasets, hinders subsequent phylogenomic analysis and prevents its classification with any of the four recently proposed families *Neocallimastigales* (Hanfey et al. 2023). The life cycle of *Agriosomyces* involves the production and release of motile spores (zoospores) from sporangia. These zoospores encyst, germinate, and develop into a thallus structure, anchoring the formation of new sporangia. *Agriosomyces* spores are monoflagellate and are characterized by extremely long flagellum (hence the species epithet *longus*). Sporangia are very homogenous and display no pleomorphism. The genus is characterized by monocentric thallus development, and filamentous rhizoidal growth pattern. The taxonomic placement of *Agriosomyces* is in *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycotina*, and *Neocallimastigomycota*.

References

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Note 837 ***Capellomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Capellomyces Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, 513 G.W. Griff, Elshahed, and N.H. Youssef

Capellomyces was established by Hanafy et al. (2020) to accommodate *C. foraminis* Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff, Elshahed, and N.H. Youssef as the type species, based on morphology and phylogenetic analysis with ITS and D1-D2 LSU sequence data. The genus currently has two species including *C. foraminis*, isolated from fecal samples of a Boer goat, Texas, USA, and *C. elongatus*, isolated from fecal samples of a domesticated but forest grazing goat in Kerala, India. Phylogenetic analysis based on ITS1, D1/D2 LSU, and *rpb1*, along with phylogenomic analysis places *Capellomyces* in *Anaeromycetaceae* (Hanfey et al. 2023). The life cycle of *Capellomyces* involves the production and release of motile spores (zoospores) from sporangia (Hanafy et al. 2020). These zoospores encyst, germinate, and develop into a thallus structure, anchoring the formation of new sporangia. *Capellomyces* spores are monoflagellate and sporangia are pleomorphic. Sporangiophores in *C. foraminis* are unbranched and shorter, in contrast to the extremely long and multisporangiate thalli of *C. elongatus*. The genus exhibits monocentric thallus development and filamentous rhizoidal growth pattern. The taxonomic placement of *Capellomyces* is in *Anaeromycetaceae*, *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycotina*, and *Neocallimastigomycota*.

References

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Note 838 ***Khoyollomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Khoyollomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Khoyollomyces was established by Hanafy et al. (2020) to accommodate *K. ramosus* Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff, Elshahed, and N.H. Youssef as the type species, based on morphology and phylogenetic analysis with ITS and D1-D2 LSU sequence data. The genus is currently monospecific (*K. ramosus*), that was isolated from fecal samples of horses and zebras in the states of Oklahoma and Texas, USA, 2020. The life cycle of *Khoyollomyces* involves the production and release of motile spores (zoospores) from sporangia and is obligate anaerobic. These zoospores encyst, germinate, and develop into a thallus structure, anchoring the formation of new sporangia. *Khoyollomyces* spores are monoflagellate and sporangia are pleomorphic, but most are either subglobose or ellipsoid. The majority of *Khoyollomyces* sporangiophores are branched and bear two to four sporangia. The genus is characterized by monocentric thallus development, and filamentous rhizoidal growth pattern. The lack of additional species beyond *K. ramosus* precluded proposing a new family to accommodate the genus. Consequently, it is currently designated as "genus incertae sedis" in *Neocallimastigales* (Hanfey et al. 2023). The taxonomic placement of *Khoyollomyces* is in *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycotina*, and *Neocallimastigomycota*.

References

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Hanafy RA, Wang Y, Stajich J, Youssef NH et al. 2023 – Phylogenomic analysis of the *Neocallimastigomycota*: Proposal of *Caecomycetaceae* fam. nov., *Piromycetaceae* fam. nov., and emended description of the families *Neocallimastigaceae* and *Anaeromycetaceae*. International Journal of Systematic and Evolutionary Microbiology 73, 5735.

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Note 839 ***Limtongozyma***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Limtongozyma Boontham, Angchuan, Boonmak & Srisuk

Boontham et al. (2020) proposed *Limtongozyma* to accommodate *L. siamensis* Boontham, Angchuan, Boonmak & Srisuk based on morphology and phylogenetic analysis with ITS, LSU, and SSU sequence data. Boontham et al. (2021) validated the genus and rectified several errors in the original publication. According to Boontham et al. (2021), the genus is typified by *Limtongozyma cylindracea* (Koichi Yamada & Machida ex S.A. Mey. & Yarrow) Boontham, Angchuan, Boonmak & Srisuk. Based on barcode sequence data (ITS and LSU rRNA gene D1/D2 the species is assigned to *Debaryomycetaceae* (*Saccharomycetales*, *Saccharomycetes* and *Ascomycota*). This genus is placed in *Pichiomycetes*, *Serinales*. However, a confident placement of the genus within the family remains uncertain. An affinity with *Babjevaella* is possible. The description reassigned *Candida cylindracea* Koichi Yamada & Machida ex S.A. Mey. & Yarrow, a close relative to the genus, but neglected the inclusion of *Candida pseudocylindracea* F.Y. Bai & Chen Wang bis, which also belongs to the same clade. GenBank deposits indicate that the three described species are part of a complex with fuzzy boundaries. Species of the genus are of interest because of their ability to produce lipolytic enzymes, but caution is required in interpreting the literature due to the confusion in the nomenclature of some strains, especially those mislabeled as *Candida rugosa* (Lachance et al. 2011). The type species was reported to exhibit several differences from *L. cylindracea*, such as the utilization of nitrate, a result that awaits independent confirmation. Ascospores was not observed. Yeast cells are divided by multilateral budding and pseudohyphae are produced.

References

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Note 840 *Brahmaculus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Brahmaculus P.R. Johnst

Brahmaculus was introduced by Johnst et al. (2021) to accommodate *B. moonlighticus* P.R. Johnst. as the type species. This genus was assigned to *Chlorociboriaceae* based on phylogenetic analysis of combined LSU, ITS, mcm7, *rpb1*, and *rpb2* sequence data. *Brahmaculus* is characterized by stipitate apothecia; stipe is apically branched, each branch giving rise to a apothecial cup, with yellow rhizomorphs at the base; receptacle and stipe densely covered by short hairs; hairs septate, straight, cylindrical, thin-walled, with light brown intracellular pigment, externally densely packed with yellowish substance, encrusting material dissolved in KOH+ Melzer's reagent. The hymenium is typically divided into smaller segments, with areas comprising asci and paraphyses separated by clumps of hair-like elements. The excipulum comprises cylindrical cells arranged parallel to the surface, cells mostly long-cylindrical, but sometimes with outermost 1-2 layers of cells short and broad-cylindrical, cell walls slightly thickened, hyaline, cells near base of hairs with pale brown vacuolar pigment. Asci are apically thickened, amyloid pore extending through the wall, fading near the inside and especially towards the outside of the wall, 8-spored, with croziers at base. Paraphyses are simple or tapering to apex, with similar length as asci. Ascospores are oblong-elliptic, aseptate, and hyaline. The asexual morphs are not reported. Four species of *Brahmaculus* form a well-supported clade which sister to *Chlorociboria aeruginella* and *C. halonata*, making the latter genus paraphyletic. Ecologically, *Brahmaculus* is distinguished from *Chlorociboria* in having the rhizomorphs which appear to be associated with soil of *Nothofagaceae* as possible endophytes or parasites. The majority of *Chlorociboria* species develop green pigment on their substrates, while this characteristic has not observed in species of *Brahmaculus* (Johnston et al. 2021). The taxonomic placement of *Brahmaculus* is in *Chlorociboriaceae*, *Helotiales*, *Leotiomycetidae*, *Leotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Johnston PR, Park D, Smith ME, Mujic AB et al. 2021 – *Brahmaculus* gen. nov.(*Leotiomycetes*, *Chlorociboriaceae*). MycoKeys 80, 19.

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Note 841 *Rhizophydites*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rhizophydites M. Krings & C.J. Harper

Rhizophydites is a monotypic genus established by Krings et al. (2021) to accommodate *R. matryoshkae* M**.** Krings & C.J**.** Harper as the type species, based on the morphological characteristics**.** *Rhizophydites matryoshkae* was isolated from the Rhynie chert (Early Devonian) of Aberdeenshire, Scotland. The original generic diagnosis is as follows, simple eucarpic fossil, monocentric thalli; epibiotic zoosporangia, variable in size and shape, much less than 40 mm in diameter, with one or several discharge openings, inoperculate; endobiotic rhizoidal system, arising from a single site on the zoosporangium; subsporangial swelling giving off one or two rhizoidal axes may be present; thalli occur singly or in planar assemblages, sometimes also in multiples extending from a common site on substrate or in clusters comprising individuals in different phases of development, some growing from substrate and others from adjacent zoosporangia; new zoosporangia may develop in- side the old zoosporangia. The taxonomic placement of *Rhizophydites* is in *Rhizophydiaceae*, *Rhizophydiales*, *Rhizophydiomycetes*, and *Chytridiomycota*.

Reference

Krings M, Serbet SM, Harper CJ. 2021 – *Rhizophydites matryoshkae* gen. et sp. nov. (Fossil *Chytridiomycota*) on spores of the early land plant *Horneophyton lignieri* from the Lower Devonian Rhynie Chert. International Journal of Plant Sciences 182(2), 109–122.

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Note 842 *Atlantiporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Atlantiporus Drechsler-Santos & Robledo

Atlantiporus was introduced by Campi et al. (2022) to accommodate *Atlantiporus squalidus* (R.M. Pires, Motato-Vásquez & Gugliotta) Azevedo-Oliveira, Drechsler-Santos & Robledo as a mono type species based on macro-microscopical characters and phylogenetic analyses of ITS and LSU sequence data. *Atlantiporus squalidus* have been reported only in Brazil on dead or dead parts of living angiosperms. *Atlantiporus* is characterized by the broadly attached, and pale resupinate basidiomata, with slight imbricate pilei. Margin is irregular. Pores are round and decurrent. Tubes are concolorous with pore surface, dissepiments entire, thin to slightly thick. Hyphal system is dimitic. Basidia are clavate, hyaline, and 4-sterigmated. Basidiospores are ellipsoid to broadly ellipsoid, hyaline, smooth, slightly thick-walled, and inamyloid. *Laetiporus* differs from *Altlantiporus* in having binding hyphae that dissolves in KOH and unbranched skeletal hyphae restricted to the trama. The taxonomic placement of *Atlantiporus* is in *Laetiporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Campi MG, Azevedo-Olivera C, Costa-Rezende D, Maubet Cano Y et al. 2022 – What are the *Laetiporus* species present in southern South America Lilloa 59, 193–218.

Entry by Sugantha Gunaseelan, Centre for Advanced Studies in Botany, University of Madras, Guindy Campus, Chennai-25, Tamil Nadu, India

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Note 843 *Aurantipostia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aurantipostia B.K. Cui & Shun Liu

Aurantipostia was erected by Liu et al. (2023d) to accommodate *Aurantipostia macrospora* B.K. Cui & Shun Liu as a mono type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*, and *rpb2* sequence data. *Aurantipostia* was isolated from on dead part of the living of *Eucalyptus* sp. in Australia. Microscopically, *Aurantipostia* is characterized by monomitic hyphal system with clamped generative hyphae, absence of cystidia, presence of cystidioles, and smooth, thin-walled, hyaline, oblong ellipsoid, acyanophilic, inamyloid and non-dextrinoid basidiospores, and causing brown rot in the host. *Aurantipostia* formed a well-resolved clade to the related genera *Nothofagiporus* and *Ptychogaster*. and distinct from *Postia* s.s. *Aurantipostia* significantly differs from the other related genera, by having flabelliform to irregular pileus, pale-buff to apricot orange pileal surface, corky cream coloured context and cream to orange-yellow pores surface. The taxonomic placement of *Aurantipostia* is in *Postiaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown–rot fungi within the *polyporales*. Fungal Diversity 118(1), 1–94.

Entry by Sugantha Gunaseelan, Centre for Advanced Studies in Botany, University of Madras, Guindy Campus, Chennai-25, Tamil Nadu, India

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Note 844 *Nigrocarnea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nigrocarnea P. Sparre & Læssøe

Index Fungorum number: IF843080

In the study of van de Peppel et al. (2021), a species of *Tephrocybe* Donk having internal conidia in its context of pileus was recovered in a subclade within a termitomycetoid clade in the family *Lyophyllaceae*. Later, this species has been introduced as a separate genus, *Nigrocarnea* with *N. radicata* P. Sparre & Læssøe as its type species based on a combined study of morphology and phylogeny with nrITS, nrLSU, and *tef1-α* sequence data (van de Peppel et al. 2022). The name "Nigrocarnea" refers to the black context of the pileus and has been reported from the subtropical forests dominated by *Quercus* and *Castanopsis* sp. in Xieng Khouang Province, Laos (van de Peppel et al. 2022). This monotypic genus might remind of *Tephrocybe rancida* (Fr.) Donk because of its similar stature and alike long pseudorrhiza. However, the prominent black pileus context with single or chains of smooth, thick-walled, pale to greyish brown arthroconidia and the absence of clamp connections in any tissue in *Nigrocarnea* make it quite distinct from *T. rancida* (van de Peppel et al. 2022, 2021). The type species *N. radicata* has a typical broad umbo to sub-conical shaped and pruinose surfaced pileus which on maturity turns planoconvex with shallow depression (van de Peppel et al. 2022). The stipe is usually solitary or sometimes joined in pairs, has eccentric or central attachment, pruinose and fibrillose surface, and is much paler than the pileus (van de Peppel et al. 2022). Forked, crowded, and lead greyish lamellae with paler edges are characteristic of *N. radicata* (van de Peppel et al. 2022). The members of this genus have a faint rancid odor and taste (van de Peppel et al. 2022). The basidiospores are ellipsoid and have a smooth surface and parallel arrangement of lamellar hyphae (van de Peppel et al. 2022). *Nigrocarnea radicata* has a cutis type of pileipellis with its hyphae pigmented and weakly encrusted (van de Peppel et al. 2022). Hymenial cystidia, pileocystidia, and caulocystidia are completely absent (van de Peppel et al. 2022). In the molecular analysis by van de Peppel et al. 2022, another genus, *Blastosporella zonata* T.J. Baroni & Franco-Mol. is found to be closely related to *N. radicata*. Both species are also alike as they have conidia in their pileus context and possess pseudorrhiza (van de Peppel et al. 2022). However, the arthroconidia in the pileus context of *N. radicata* completely differ from the ornamented blastoconidia on the surface of the pileipellis of *B. zonata* (van de Peppel et al. 2022). The habitat difference (paleotropics in *N. radicata* and neotropics in *B. zonata*) also make the two species quite distinct from each other (van de Peppel et al. 2022). To date, only one species of *Nigrocarnea*, *N. radicata* has been reported from Lous (van de Peppel et al. 2022).

References

Van de Peppel LJ, Nieuwenhuis M, Auxier B, Grum-Grzhimaylo AA et al. 2021 – Ancestral predisposition toward a domesticated lifestyle in the termite-cultivated fungus *Termitomyces*. Current Biology 31(19), 4413–4421.

Van de Peppel LJ, Aime MC, Læssøe T, Pedersen OS et al. 2022 – Four new genera and six new species of lyophylloid agarics (*Agaricales*, *Basidiomycota*) from three different continents. Mycological Progress 21(10), 85.

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Note 845 *Phaeotephrocybe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phaeotephrocybe T.J. Baroni, T.W. Kuyper & van de Peppel

Phaeotephrocybe, a monotypic species was erected by van de Peppel et al. (2022) to accommodate *P. leucophylla* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU and *tef1-α* sequence data. The type species was obtained from soil in Belize. It is characterized by very short and clavate basidia, elliptical or narrowly elliptical and smooth basidiospores, without clamp connections and arthroconidia, and with crowded and hyaline cheilocystidia. *Phaeotephrocybe leucophylla* is a neotropical species that is similar in general appearance compared to the European/North American *Tephrocybe rancida* but differs most notably in the color of the pileus, stipe and lamellae (van de Peppel et al. 2022). The taxonomic placement of *Phaeotephrocybe* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Van de Peppel LJ, Aime MC, Læssøe T, Pedersen OS et al. 2022 – Four new genera and six new species of lyophylloid agarics (*Agaricales*, *Basidiomycota*) from three different continents. Mycological Progress 21(10), 85.

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Note 846 *Praearthromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Praearthromyces T.J. Baroni, T.W. Kuyper & van de Peppel

Praearthromyces was proposed by van de Peppel et al. (2022) to accommodate *P. corneri* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU and *tef1-α* sequence data. The type species was isolated from the dead wood and soil in Malaysia. *Praearthromyces griseus* is the other accepted species in the genus. *Praearthromyces* species are characterized by tephrocyboid or collybioid or mycenoid habit with narrow, densely crowded lamellae, thin, deeply rooting pseudorhiza, no clamp connections, cheilocystidia variously shaped and mostly lacking internal pigments or resinous materials. Phylogenetically *Praearthromyces* is distinct based on the molecular profile of combined ITS, LSU and *tef1-α* sequences (van de Peppel et al. 2022). The taxonomic placement of *Praearthromyces* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Van de Peppel LJ, Aime MC, Læssøe T, Pedersen OS et al. 2022 – Four new genera and six new species of lyophylloid agarics (*Agaricales*, *Basidiomycota*) from three different continents. Mycological Progress 21(10), 85.

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Note 847 *Neoherpotrichiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoherpotrichiella Spetik, Eichmeier, Mahamedi & Berraf-Tebball.

Neoherpotrichiella was erected by Crous et al. (2022a) to accommodate *N. juglandicola* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *tub2* and *tef1-α* sequence data. *Neoherpotrichiella juglandicola* was associated with the wood of *Juglans regia* (*Juglandaceae*) as a saprophyte in terrestrial habitats in Boleradice, Czech Republic. The genus is characterized by brown, smooth, 1–4-septate conidiophores with intercalary and terminal phialides, ampulliform to broadly ellipsoid conidiogenous cells in clusters of 2–3 or solitary, and hyaline, aseptate conidia with dimorphic, ellipsoidal and subcylindrical conidia. Sexual morph was not determined. *Neoherpotrichiella* resembles *Exophiala* and *Thysanorea*. In addition, *Neoherpotrichiella* is phylogenetically distinct from both genera and represents a new distinct clade in *Herpotrichiellaceae* (Crous et al. 2022a). The taxonomic placement of *Neoherpotrichiella* is in *Herpotrichiellaceae*, *Chaetothyriales*, *Eurotiomycetes*, and *Ascomycota*.

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48(1), 261–371.

Entry by Qing Tian, School of Life Science and Technology, Center for Informational Biology, University of Electronic Science and Technology of China, Chengdu 611731, People's Republic of China

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Note 848 *Valentiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Valentiella J.D.P. Bezerra, H.M.C. Navarro, J.H. Almeida, C.R. Félix & M.F. Landell

Valentiella was introduced by Bezerra et al. (2022) to accommodate *V. maceioensis* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Valentiella maceioensis* was isolated from healthy leaves of *Canistrum improcerum* and *Aechmea muricata* (*Bromeliaceae*) as endophytes in terrestrial habitats in the Atlantic Forest in northeastern Brazil, and a saprobe from carton galleries of an ant-plant association in terrestrial habitats in Costa Rica (Nepel et al. 2014). *Valentiella* is characterized by black yeast-like characters with torulose hyphae, straight or slightly flexuous, septate conidiophores and chains of brown to dark brown fusoid-ellipsoid cells, fusoid-ellipsoid, 0–1-septate, brown to dark brown conidiogenous cells with apical scars at the apex, and ellipsoid, subglobose to globose, light brown to brown conidia. Phylogenetically, *V. maceioensis* was clustered with *Chaetothyriales* sp., and formed a sister group with *Fonsecaea*. Morphology of *V. maceioensis* resembles some *Fonsecaea* species. However, species of *Fonsecaea* are described by sympodial conidiogenesis and conidia arranged in short chains, mainly without budding cells (Najafzadeh 2011). The taxonomic placement of *Valentiella* is in *Herpotrichiellaceae*, *Chaetothyriales*, *Chaetothyriomycetidae*, *Eurotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

Bezerra JD, Navarro HM, Almeida JH, Félix CR et al. 2022 – *Valentiella maceioensis* gen. et sp. nov. (*Herpotrichiellaceae*, *Chaetothyriales*), a new black yeast-like fungus isolated from bromeliads in Brazil. Mycological Progress 21(2), 30.

Nepel M, Voglmayr H, Schönenberger J, Mayer VE. 2014 – High diversity and low specificity of chaetothyrialean fungi in carton galleries in a neotropical ant-plant association. PLoS One 9(11), e112756.

Entry by Qing Tian, School of Life Science and Technology, Center for Informational Biology, University of Electronic Science and Technology of China, Chengdu 611731, People's Republic of China

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Note 849 *Montanitestudina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Montanitestudina Maharachch., Wanas. & Al-Sadi

Montanitestudina was introduced by Maharachchikumbura et al. (2021b) as a monotypic genus to accommodate the type species *M. hydei*, based on morphological characteristics and phylogenetic analysis of combined SSU, LSU, ITS, *rpb*2 and *tef1-α* sequence data. *Montanitestudina hydei* was found on the dead wood of an undetermined host in Oman. This genus forms a distinct lineage within *Testudinaceae*. The genus is characterized by coriaceous, black, globose to subglobose ascomata scattered or gregarious beneath the host periderm or on decorticated wood. The central ostiole is irregular and a pore-like opening is available. Pseudoparaphyses are septate and cellular, while asci are 8-spored, bitunicate, cylindrical to cylindric-clavate, with a distinct pedicel and apically rounded with an ocular chamber. Ascospores are uniseriate, ellipsoid, oblong to fusoid, brown, and muriform, with or without a mucilaginous sheath. Asexual structures are not observed. Maharachchikumbura et al. (2021b) mentioned that the asci and ascospores of *Montanitestudina* resemble some of the species in *Camarosporidiella*, *Cucurbitaria*, *Fenestella*, *Hawksworthiana*, *Neocucurbitaria*, *Pseudostrickeria*, *Sporormurispora*, and *Uzbekistanica*. However, *Montanitestudina* is phylogenetically distinct from those genera and closely related to *Lepidosphaeria*. The taxonomic placement of *Montanitestudina* is in *Testudinaceae*, *Dothideomycetes*, and *Ascomycota*.

Reference

Maharachchikumbura SSN, Wanasinghe DN, Cheewangkoon, R, Abdullah M. Al-Sadi. 2021b – Uncovering the hidden taxonomic diversity of fungi in Oman. Fungal Diversity 106, 229–268.

Entry by Sinang Hongsanan, Guangdong Provincial Key Laboratory for Plant Epigenetics, Shenzhen Key Laboratory of Microbial Genetic Engineering, College of Life Science and Oceanography, Shenzhen University, Shenzhen 518060, China

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Note 850 *Melanostictus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Melanostictus Samarak. & K.D. Hyde

Melanostictus was introduced by Samarakoon et al. (2022) to accommodate *M. longiostiolatus* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *rpb*2, *tub*2,*tef1-α*, and SSU sequence data. This genus consists of two species viz. *M. longiostiolatus* and *M. thailandicus*. *Melanostictus* was discovered from dead branches in Thailand. This genus was characterized by solitary or aggregated, immersed black and globose ascomata with centric ostiole, and periphysate ostiole canal. Peridium wall consisted of several cell layers of *textura angularis*. Septate paraphyses can be observed and asci are 8-spored, unitunicate, and clavate with a long pedicel and a minute apical ring. Ascospores are hyaline overlapped, and aseptate. Asexual morph is not reported for this genus (Samarakoon et al. 2022). Based on phylogenetic evidence, *Halodiatrype* and *Pedumispora* clustered sister to *Melanostictus* but distant group in morphology. The taxonomic placement of *Melanostictus* is in *Diatrypaceae*, *Xylariales*, *Sordariomycetes*, and *Ascomycota*.

Reference

Samarakoon MC, Hyde KD, Maharachchikumbura SS, Stadler M et al. 2022 – Taxonomy, phylogeny, molecular dating and ancestral state reconstruction of *Xylariomycetidae* (*Sordariomycetes*). Fungal Diversity 112(1), 1–88.

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Note 851 *Tubulicolla*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tubulicolla Réblová & Hern. -Restr

Tubulicolla was introduced by Réblová et al. (2021d) to accommodate *T. cylindrospora* (≡ *Codinaea cylindrospora*) as the type species, based on morphological characteristics and phylogenetic analysis of ITS, SSU, LSU, and *rpb2* sequence data. *Tubulicolla microcylindrospora* and *T. stipiticolla* are the other accepted species in the genus (Wu & Diao 2022). *Tubulicolla* species have been reported as saprobes from dead plant materials in Brazil, the Caribbean, China, Cuba, Malaysia, and the USA. *Tubulicolla* is characterized by dark brown to black, effuse and hairy colonies on the natural substrate. Mycelium is composed of subhyaline to pale brown hyphae.

Setae and conidiophores arise from stromata. Setae are dark brown, becoming pale brown towards the apex, unbranched, straight and cylindrical. Conidiophores are brown and arise in groups around the setae. Conidiogenous cells are phialidic, clavate to lageniform, and terminal. Collarettes are funnel-shaped and hyaline. Conidia are subcylindrical to cylindrical, straight or slightly curved, and smooth. *Tubulicolla* resembles *Dictyochaeta*, but differs in conidia size and shape with sterile setae. Sexual morph was not determined. The taxonomic placement of *Tubulicolla* is in *Vermiculariopsiellaceae*, *Vermiculariopsiellales*, *Sordariomycetes*, and *Ascomycota*.

References

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Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116, 1–546.

Entry by Pranami D. Abeywickrama, Institute of Plant Protection, Beijing Academy of Agriculture &Forestry Sciences, Beijing 100097, P.R China.

(Edited by **Kevin D. Hyde**, **Maryam T. Noorabadi** & **Subodini N. Wijesinghe**) Published online 2 April 2024

Note 852 *Pseudodeightoniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodeightoniella S.K. Verma, Sanj. Yadav & Raghv. Singh

Pseudodeightoniella was described by Verma et al. (2022) to accommodate *P. indica* as the type species based only on morphology and no sequence data were available. The type species was collected from leaf spots of *Medicago polymorpha* in India. *Pseudodeightoniella indica* is an anamorphic taxon characterized by prosenchymatous to pseudoparenchymatous and erumpent stromata. Conidiophores are fasciculate, straight to slightly flexuous, undulate to spiral/helicoid, unbranched, and septate. Conidiogenous cells are integrated and terminal, enteroblastic, and mono to polytretic. The scars are thickened, darkened, and circular with a central pore. Conidial secession is schizolytic. Conidia are solitary, obpyriform to cuneiform, apical cell globose, and basal cell funnel-shaped. The morphology of *Pseudodeightoniella* resembles *Polythrincium* (Verma et al. 2022, Wolf 1935). The taxonomic placement of *Pseudodeightoniella* is uncertain in *Pezizomycotina* and *Ascomycota*.

References

Verma SK, Yadav S, Singh R, Chaurasia B et al. 2022 – *Pseudodeightoniella indica* gen. and sp. nov., a hyphomycete from India. Mycotaxon 136 (4), 769–778.

Wolf FA. 1935 – Morphology of *Polythrincium*, causing sooty blotch of clover, Mycologia, 27 (1), 58–73.

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Note 853 *Vesiculophora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Vesiculophora J.S. Monteiro & R.F. Castañeda, in Monteiro et al.

Monteiro et al. (2022) established *Vesiculophora* to accommodate *V. diversiseptata* as the type species, based on the morphology. No sequence data are available for phylogenetic analyses. This anamorphic taxon is saprobic and reported from decaying wood of an unidentified dicotyledonous plant in Pará, Brazil. *Vesiculophora* is characterized by macronematous, mononematous, branched conidiophores with unilateral and apical vesicles. Conidiogenous cells are monoblastic, integrated, determinate, and cylindrical. Conidiogenous loci are flattened and schizolytic in conidial secession. Conidia are phragmosporous, 1-euseptate at the base, and distoseptate at the rest of the body. Sexual morph was not determined. *Vesiculophora* differs from anamorphic *Ascotricha* spp. and *Sporidesmiella* spp. in the characteristics of conidiophores, conidiogenous cells and conidia. The taxonomic placement of *Vesiculophora* is in *Melanommataceae*, *Pleosporales*, *Dothideomycetes*, and *Ascomycota*.

Reference

Monteiro JS, Sotão HMP, Santos Ferreira MCd, Rodrigues FdJ et al. 2022 – *Vesiculophora diversiseptata* gen. & sp. nov. and *Anapleurothecium clavatum* & *Podosporium simile* spp. nov. from the Brazilian Amazon. Mycotaxon 137 (2), 227–237.

Entry by De-Wei Li, The Connecticut Agricultural Experiment Station Valley Laboratory, Windsor, CT 06095, USA

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Note 854 *Brachydictyochaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Brachydictyochaeta W.P. Wu & Y.Z. Diao

Brachydictyochaeta was introduced by Wu & Diao (2022) to accommodate *B. bulliformis* as the type species, based on morphological characters and phylogenetic analyses of combined ITS and LSU sequence data. It comprises two taxa viz. *B. antillana* and *B. bulliformis*, which have been reported as saprobes on dead leaves, wood and fruits of various plant species in America and Asia. *Brachydictyochaeta* can be distinguished from *Dictyochaeta* by the production of setae and setiform conidiophores with a sterile, swollen apex and lateral monophialides (Réblová et al. 2021b, Wu & Diao 2022). The two species of *Brachydictyochaeta* are very similar, with 1-celled, hyaline, falcate conidia, but their ITS sequences differ in 16 positions (Wu & Diao 2022). The sexual morph was not determined. *Neotainosphaeria* and *Kionochaeta* form a sister clade with *Brachydictyochaeta* based on phylogenetic analysis. The taxonomic placement of *Brachydictyochaeta* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

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Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 855 *Curvichaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Curvichaeta W.P. Wu & Y.Z. Diao

Curvichaeta was erected by Wu & Diao (2022) as a monotypic genus to accommodate *C. curvispora*. The type species was originally described as *Chaetosphaeria curvispora* by Réblová et al. (2004), but a phylogenetic reconstruction based on ITS and LSU sequence data revealed that it represents a lineage distinct from *Chaetosphaeria* s. str. (Wu & Diao 2022). *Curvichaeta curvispora* has been reported as a saprobe from decorticated wood in New Zealand. It is characterized by setose, papillate, black perithecia with fusiform, hyaline, 3-septate ascospores and macronematous, brown, simple conidiophores bearing a terminal, integrated, phialidic conidiogenous cell, which produces ellipsoidal to clavate, hyaline, smooth-walled, 0–1-septate conidia. According to Wu & Diao (2022), sterile, brown setae with a swollen apex are produced in culture, and their presence would distinguish *Curvichaeta* from similar genera, such as *Dictyochaeta*, *Flectospora*, and *Phialoturbella*. The taxonomic placement of *Curvichaeta* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

References

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Note 856 *Calceisporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calceisporiella W.P. Wu & Y.Z. Diao

Calceisporiella, a monotypic genus, was introduced by Wu & Diao (2022) based on morphological characters and phylogenetic analyses of combined ITS and LSU sequence data. The type species, *Calceisporiella sinensis* was isolated from dead branches of an unidentified tree in China. This genus produces percurrently proliferating, macronematous, simple, dark brown, thick-walled conidiophores with integrated, terminal, verruculose monophialidic conidiogenous cells with an inconspicuous collarette. Conidia are subglobose to ellipsoidal, 1-celled, hyaline, and thick-walled show one setula inserted laterally at each end. *Codinaea* and *Calceispora* resemble *Calceisporiella*. In contrast to *Calceisporiella*, the conidiogenous cells of *Codinaea* are smooth-walled, mono- or polyphialidic and possess conspicuous collarettes. Also, the conidia of *Codinaea* spp. are predominantly falcate to lunate and, in the rare cases where they are more or less globose, they show multiple setulae over the conidia (Réblová et al. 2021b, Wu & Diao 2022). In addition, *Calceispora* produces conidiogenous cells similar to those of *Calceisporiella*, but the conidia show cellular appendages instead of setulae (Sutton 1993, Wang et al. 2017). The sexual morph in this genus has not been recorded. The taxonomic placement of *Calceisporiella* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

References

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Note 857 *Paramarasmius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramarasmius Antonín & Kolařík

Paramarasmius was introduced by Antonín et al. (2023) to accommodate *P. palmivorus* as the type species based on morphological characteristics and phylogenetic analyses of ITS and LSU sequence data. *Paramarasmius mesosporus* is the other species accepted in the genus. *Paramarasmius palmivorus* was found on living or dead monocots in coastal sandy dunes in wide climates from tropical to subtropical and temperate areas. The context of *P. mesosporus* has no special smell. Basidiomata are single or in groups with convex or conical-convex pileus. Basidiospores are smooth, thin-walled, and ellipsoid to subglobose. Basidioles are clavate to cylindrical with clavate cheilocystidia. Stipitipellis are hyaline, smooth and cylindrical. Caulocystidia are adpressed to erect and narrowly clavate. *Paramarasmius* differs from other related genera (*Marasmius*, *Crinipellis Chaetocalathus*, and *Moniliphthora*) by forming the cutis pileipellis without setiform dextrinoid hairs. The taxonomic placement of *Paramarasmius* is in *Marasmiaceae*, *Agaricales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Antonín V, Hosaka K, Kolařík M. 2023 – Taxonomy and phylogeny of *Paramarasmius* gen. nov. and *Paramarasmius mesosporus*, a worldwide distributed fungus with a strict ecological niche, Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology 157(2), 286–293.

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Note 858 *Polyrhizophydium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polyrhizophydium Longcore & D.R. Simmons

Polyrhizophydium was introduced by Simmons et al. (2021) as a monotypic genus and accommodates *P. stewartii* as the type species. The placement of the taxa is based on morphological characteristics and phylogenetic analysis of SSU and LSU sequence data. *Polyrhizophydium* was isolated from moribund leaves of *Eriocaulon aquaticum*, a submersed plant from the shoreline of Williams Pond in Maine, USA. This genus is characterized by consistently long and inoperculate discharge papillae, emerging from the zoosporangia. The zoosporangium develops directly from uneven, and intercalary swellings along the rhizomycelium. This genus bears a slight resemblance to *Zopfochytrium*, in having long discharge papillae, however it differs from *Z. polystomum* by the production of rhizomycelium via indeterminate polycentric growth with no central zoosporangium. In pure culture (on agar medium) of *Z. polystomum*, the majority of the profuse rhizomycelium emerge from enlarged, spherical and intercalary zoosporangia. Furthermore, the production of zoospores from axenic culture in an agar medium was not observed in *Polyrhizophydium* while *Z. polystomum* releases an abundant number of spores. *Polyrhizophydium* formed a sister clade with *Batrachochytrium* and *Homolaphlyctis* based on phylogenetic analysis of 18S and 28S sequence data. Both *Polyrhizophydium* and *Homolaphlyctis* are incertae sedis genera awaiting the assignment of a taxonomic family (Simmons et al. 2021). The current taxonomic placement of *Polyrhizophydium* is in *Rhizophydiales*, *Rhizophydiomycetes*, *Chytridiomycotina*, and *Chytridiomycota*.

Reference

Simmons DR, Longcore JE, James TY. 2021 – *Polyrhizophydium stewartii*, the first known rhizomycelial genus and species in the *Rhizophydiales*, is closely related to *Batrachochytrium*. Mycologia 113(3), 684–690.

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Note 859 *Guizhoumyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Guizhoumyces Wei, T.P & Y.L. Jiang

Guizhoumyces was introduced by Wei et al. (2022c) to accommodate *G. aciculaea* as the type species, based on morphological characteristics and phylogenetic analysis of combined ITS, LSU, *rpb2*, *tef1-α*, and *tub2* sequence data. *Guizhoumyces aciculaea* was collected from the soil and leaf litter in China. Based on the multi-gene phylogenetic analysis, *Guizhoumyces* formed a monophyletic lineage sister to *Veronaeopsis* within *Sympoventuriaceae*, and closely related to *Bellamyces*, *Helicopsis*, *Sympoventuria*, *Troposporella*, and *Pseudosigmoidea*. Also, *Guizhoumyces* shares some morphological characteristics with *Pseudosigmoidea* and *Sigmoidea*. Conidiophores are simple, branched and subcylindrical, with polyphialidic and integrated conidiogenous cells. Conidia are enteroblastic, and acicular to obclavate or cylindrical. Chlamydospores were not seen and the sexual morph is unknown. The taxonomic placement of *Guizhoumyces* is in *Sympoventuriaceae*, *Venturiales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Wei TP, Zhang H, Zeng XY, Crous PW et al. 2022c – Re-evaluation of *Sympoventuriaceae*. Persoonia 48(1), 219–260.

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Note 860 *Pewenomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pewenomyces F. Balocchi, I. Barnes & M.J. Wingfield

Balocchi et al. (2021) introduced *Pewenomyces* with the type species *P. kutranfy*, based on morphological characteristics and phylogenetic analysis of ITS, SSU and LSU sequence data. *Pewenomyces kutranfy* was isolated from a canker pathogenic symptom on branches of *Araucaria* *araucana* in Chile. Balocchi et al. (2022b) accepted *P. kalosus*, *P. lalenivora*, and *P. tapulicola* within *Pewenomyces* based on multi-gene phylogenetic analysis of ITS SSU, LSU, *rpb2*, *tef1-α*, *tub1*, and *tub2* sequence data. *Pewenomycesis* is characterized by gregarious, black ascomata, spathulate, ovoid to ellipsoid asci, and globose to subglobose, reddish-brown, verrucose ascospores. Spermogonia are gregarious, black, globose or piriform. Spermatia are oblong, ovoid or reniform, aseptate, hyaline and smooth. *Pewenomycesis* shares ascomatal characteristics with *Caliciopsis*, and *Hypsotheca* but they differ in dimensions (Balocchi et al. 2021). However, *Caliciopsis* can be distinguished from *Hypsotheca* in having the stipe under the ascigerous swelling. The presence of a stipe has emerged as a common feature of *Caliciopsis*, *Hypsotheca* and *Pewenomyces*, which separates these three genera from the others in *Coryneliaceae* (Balocchi et al. 2021). The taxonomic placement of *Pewenomyces* is in *Coryneliaceae*, *Coryneliales*, *Eurotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 861 *Paraxerochrysium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paraxerochrysium Crous & Decock

Paraxerochrysium was introduced by Crous et al. (2021e) with the type species *P. coryli* within *Aspergillaceae*, based on morphological characteristics and phylogenetic analysis of LSU sequence data. *Paraxerochrysium coryli* has been reported as a saprobe on dry nuts of *Corylus avellana* in Belgium. The genus is characterized by hyaline, septate, smooth-walled, branched hyphae; and spherical, guttulate, smooth-walled chlamydoconidia. *Paraxerochrysium* shares similar morphological characteristics with *Xerochrysium* by having solitary or short chains of chlamydoconidia, However, *Paraxerochrysium* differs from *Xerochrysium* in lack of aleuroconidium. Both *Paraxerochrysium* and *Xerochrysium* are known only for their asexual morphs (Crous et al. 2021e). The taxonomic placement of *Paraxerochrysium* is in *Aspergillaceae*, *Eurotiales*, *Eurotiomycetes*, *Pezizomycotina*, and *Ascomycota*. A multigene phylogenetic analysis of *Aspergillaceae* based on benzoic acid synthase A (*benA*), *rpb2*, ITS and LSU showed that *Paraxerochrysium coryli* resolves as a unique species inside *Xerochrysium*. *Paraxerochrysium* is thus synonymised with *Xerochrysium* (Visagie et al. 2024b)

References

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Note 862 ***Parahelicomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parahelicomyces Goh

Parahelicomyces was established by Hsieh et al. (2021) to accommodate *P. talbotii* (≡ *Helicosporium talbotii*) as the type species, based on morphology and phylogenetic analysis of ITS sequence data. *Parahelicomyces* species have been reported from both terrestrial and freshwater ecosystems in China, Japan, Mexico, South Africa, and Thailand. The sexual morph of *Parahelicomyces* is characterized by superficial, subglobose, clavate to obovate, coriaceous, ostiolate ascomata seated on a subiculum, and bitunicate, cylindrical, pedicellate, apically rounded asci with fusiform, multi-septate, hyaline, smooth-walled ascospores, while the asexual morph of this genus having macronematous, branched, septate conidiophores with mono- to polyblastic, integrated, intercalary or terminal, determinate or sympodial, denticulate conidiogenous cells that produce acropleurogenous, helicoid, multi-septate, hyaline to pale brown conidia (Tian et al. 2022b). Based on multi-locus phylogenetic analysis of ITS, LSU, *rpb2*, and *tef1-α*, *Parahelicomyces* formed a sister clade with *Helicotruncatum* (Tian et al. 2022b). The taxonomic placement of *Parahelicomyces* is in *Tubeufiaceae*, *Tubeufiales*, *Dothideomycetes*, and *Ascomycota*.

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Note 863 ***Pseudoantrodia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoantrodia B.K. Cui, Yuan Y. Chen & Shun Liu

Pseudoantrodia was proposed by Liu et al. (2023d) to accommodate *P. monomitica* as a monotype species based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *rpb*2, and *tef1-α* sequence data. The type species was isolated from the stump of *Pinus* sp. in China. It comprises annual and resupinate basidiocarps, white to cream and chalky subiculum, and concolorous tubes. The hyphal system is monomitic and generative hyphae are clamped. Cystidia are absent and cystidioles are present. Basidiospores are cylindrical to ellipsoidal, hyaline and smooth. *Pseudoantrodia* differs from *Antrodia* s.s. by having a monomitic hyphal system and smaller basidiospores (Liu et al. 2023d). The taxonomic placement of *Pseudoantrodia* is in *Fomitopsidaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

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Note 864 *Pseudofomitopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudofomitopsis B.K. Cui & Shun Liu

Pseudofomitopsis was proposed by Liu et al. (2023d) to accommodate *P. microcarpa* as a monotype species based on morphological characteristics and phylogenetic analysis of ITS, LSU, nSSU, mtSSU, and *tef1-α* sequence data. The type species was isolated from a fallen angiosperm trunk in Vietnam. It comprises annual and pileate basidiocarps and cream to olivaceous pore surface. The hyphal system is dimitic and generative hyphae are clamped. Cystidia are absent and cystidioles are present. Basidiospores are ellipsoid, hyaline and smooth. *Fomitopsis* s.s. differs from *Pseudofomitopsis* by its white to tan or pinkish pore surface with mostly small and regular pores, and a dimitic to trimitic hyphal system (Liu et al. 2023d). The taxonomic placement of *Pseudofomitopsis* is in *Fomitopsidaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

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Note 865 *Neoamphisphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoamphisphaeria Samarak. & K.D. Hyde

Neoamphisphaeria was established by Samarakoon et al. (2022) to accommodate *N. hyalinospora* as the type species, based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb2*, *tub2*, and *tef1-α* sequence data. *Neoamphisphaeria hyalinospora* has been reported as a saprobe isolated from dead twigs in the terrestrial habitat of Thailand. In the genus, ascomata are immersed, slightly raised, and solitary. Ostioles are centric, and filled with white amorphous tissues. Paraphyses are long, septate, and branched. Asci are 8-spored, unitunicate and cylindrical, while ascospores are uniseriate, hyaline, ellipsoidal, initially aseptate and becoming 1-septate at maturity. The asexual morph was not determined. *Neoamphisphaeria hyalinospora* resembles *Amphisphaeria* taxa with immersed ascomata, a brown peridium, long hyaline paraphyses, cylindrical asci and 2-celled ascospores. *Neoamphisphaeria* is sister to *Appendicospora* based on the phylogenetic analysis of ITS, LSU, *rpb2*, *tub2*, and *tef1-α* sequence data, and is distant from *Amphisphaeria*. The taxonomic placement of *Neoamphisphaeria* is in *Appendicosporaceae*, *Amphisphaeriales*, *Xylariomycetidae*, *Sordariomycetes*, and *Ascomycota*.

Reference

Samarakoon MC, Hyde KD, Maharachchikumbura SS, Stadler M et al. 2022 – Taxonomy, phylogeny, molecular dating and ancestral state reconstruction of *Xylariomycetidae* (*Sordariomycetes*). Fungal Diversity 112(1), 1–88.

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Note 866 *Pseudophialocephala*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudophialocephala M.S. Calabon, E.B.G. Jones & K.D. Hyde

Pseudophialocephala was introduced by Manawasinghe et al. (2022) to accommodate *P. cuneata* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. Conidiophores of *Pseudophialocephala* are determinate, macronematous, scattered, and solitary. Penicillate heads are composed of 1–3 series of thin-walled metulae. Conidiogenous cells are monophialidic, and hyaline to pale brown. Conidia are acrogenous, 0-1-septate, hyaline, and ellipsoidal. Sexual morph was not determined. *Chloridium* formed a sister clade with *Pseudophialocephala* based on phylogenetic analysis. The taxonomic placement of *Pseudophialocephala* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, and *Ascomycota*.

Reference

Manawasinghe IS, Calabon MS, Jones EBG, Zhang YX et al. 2022 – Mycosphere notes 345–386. Mycosphere 13(1), 454–557.

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Note 867 *Pseudokeissleriella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudokeissleriella Jian K. Liu

Pseudokeissleriella was introduced by Yang et al. (2022) to accommodate *P. bambusicola* as the type species, based on morphological characteristics and phylogenetic analysis of SSU, ITS, LSU, and *tef1-α* sequence data. *Pseudokeissleriella* was collected from dead culms of Bamboo in China. *Pseudokeissleriella* is known only from the sexual morph and is characterized by immersed to erumpent, subglobose, dark brown to black, ostiolate ascomata, cylindrical to cylindric-clavate asci with the ocular chamber, and bi-seriate, fusiform hyaline, septate, guttulate ascospores with or without sheath (Yang et al. 2022e). *Pseudokeissleriella* resembles *Katumotoa* by its immersed, subglobose ascomata, but differs by fusiform ascospores tapering to subobtuse ends, with a swollen upper cell near the median septum and with mucilaginous sheath. In contrast, *Katumotoa* species consist of apiosporous ascospores with distinctive elongated bipolar mucilaginous sheath (Yang et al. 2022e). The ascospores of *Pseudokeissleriella* are similar to *Keissleriella*, however *Keissleriella* have brown or black setae inside or around the ostiole (Liu et al. 2015a, Tibpromma et al. 2017, Jiang et al. 2019). Phylogenetic analysis based on combined SSU, ITS, LSU and *tef1-α* sequence data showed that *Pseudokeissleriella* formed a sister clade with *Katumotoa* and

Neoophiosphaerella. The taxonomic placement of *Pseudokeissleriella* is in *Lentitheciaceae*, *Pleosporales*, *Dothideomycetes*, and *Ascomycota*.

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Note 868 *Phaeodischloridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Phaeodischloridium W.P. Wu & Y.Z. Diao

Phaeodischloridium was introduced by Wu & Diao (2022) to accommodate *P. inaequiseptatum* as the type species, based on morphological characteristics and phylogenetic analysis. *Phaeodischloridium* has been reported as saprobes on dead plant materials in China and Japan. *Phaeodischloridium inaequiseptatum* comprises superficial, brown to dark brown colonies; solitary, erect, unbranched, pigmented conidiophores; integrated, terminal, cylindrical, lageniform conidiogenous cells lacking a conspicuous collarette; and solitary, cylindrical to cylindric-clavate, septate, light brown to dark brown conidia which accumulating in slimy brown masses at the apices. The asexual morph is undetermined. Phylogenetic analysis based on ITS and LSU sequence data of a synonymized *Chaetosphaeria aquatica* was used to present the taxonomic placement of *Phaeodischloridium* in *Chaetosphaeriaceae*. Also, *Catenularia* formed a sister clade with *Phaeodischloridium*. The taxonomic placement of *Phaeodischloridium* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 869 *Gulielmina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Gulielmina García-Cunch., J.C. Zamora & Lado

Gulielmina was introduced by García-Cunchillos et al. (2022) to accommodate *Gulielmina vermicularis* (Schwein.) García-Cunch., J.C. Zamora & Lado as the type species based on the morphological characteristics and phylogenetic analysis. This genus comprises three species, viz. *G. megaspora*, *G. patagonica* and *G. vermicularis*, previously included in the genus *Perichaena*. García-Cunchillos et al. (2022) described that sporophores are plasmodiocarpics and dehiscence is irregular. Capillitium tubules are ornamented with cylindrical protuberances and are without uniform diameter. In addition, the spores are ornamented with bacula elements. The taxonomic placement of *Gulielmina* is in *Trichiaceae*, *Trichiales*, *Lucisporomycetidae*, *Myxomycetes*, *Eumycetozoa*, *Evosea*, *Amoebozoa* and *Amorphaea*.

Reference

García-Cunchillos I, Zamora JC, Ryberg M, Lado C. 2022 – Phylogeny and evolution of morphological structures in a highly diverse lineage of fruiting-body-forming amoebae, order *Trichiales* (*Myxomycetes*, *Amoebozoa*). Molecular Phylogenetics and Evolution. 177(107609), 1–20.

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Note 870 *Phaeonawawia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phaeonawawia Goh

Phaeonawawia was introduced by Goh et al. (2021) to accommodate *Phaeonawawia diplocladielloidea* Goh, J.H. Ou & C.H. Kuo. as the type species based on the morphological characteristics and phylogenetic analysis of ITS sequence data. *Phaeonawawia* was found on submerged wood in a freshwater stream in Malaysia (Goh et al. 2021). *Phaeonawawia diplocladielloidea* is characterized by superficial, effuse with brown to dark colonies, rudimentary conidiophores, short-stalked, bulbose or urceolate conidiogenous cells, and tetrahedral to obpyramidal, olivaceous to light brown, versicoloured, multi-euseptate, staurosporous conidia with bear hyaline filiform appendages. Sexual morph has not been observed (Goh et al. 2021). *Phaeonawawia* has similar morphological features to *Diplocladiella* but it differs by having distinct brown, short-stalked, bulbose, doliiform to urceolate conidiogenous cells (Lee et al. 1998). *Catenularia* and *Craspedodidymum* formed a sister clade with *Phaeonawawia* based on the phylogenetic analysis. The taxonomic placement of *Phaeonawawia* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*.

References

Goh TK, Ou JH, Kuo CH. 2021 – *Phaeonawawia*, a novel chaetosphaeriaceous anamorph from submerged wood in Malaysia. Mycological Progress 20, 227–245.
Lee OHK, Goh TK, Hyde KD. 1998 – *Diplocladiella* aquatica, a new hyphomycete from Brunei. Fungal Diversity 1, 165

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Note 871 *Joblinomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Joblinomyces Hanafy, Vikram B. Lanjekar, Prashant K. Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Joblinomyces was introduced by Hanafy et al. (2020) to accommodate *J. apicalis* as the type species based on morphological characteristics and phylogenetic analysis with ITS and LSU (D1-D2) sequence data. *Joblinomyces* was isolated from the feces of a domesticated goat (*Capra aegagrus hircus*). *Joblinomyces* is an obligate and anaerobic genus characterized by a monocentric thallus, globose monoflagellated, occasionally biflagellated and triflagellated zoospores, endogenous and exogenous sporangia of varying shapes and sizes. *Joblinomyces* is phylogenetically closely related to *Buwchfawromyces* (Hanafy et al. 2020). The taxonomic placement of *Joblinomyces* is in *Neocallimasticaceae*, *Neocallimastigales*, *Neocallimastigomycetes*, and *Neocallimastigomycota*.

Reference

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM et al. 2020 – Seven new *Neocallimastigomycota* genera from wild, zoo-housed, and domesticated herbivores greatly expand the taxonomic diversity of the phylum. Mycologia 112(6), 1212–1239.

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Note 872 *Polonospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polonospora Błaszk., Niezgoda, B.T. Goto, Magurno

Based on the analyses of SSU,-ITS, LSU, and *rpb1* sequence data and morphological characters, Błaszkowski et al. (2021b) introduced the species originally described as *Acaulospora polonica* to the new genus *Polonospora* in the family *Polonosporaceae*, order *Archaeosporales*. The type species, *Polonospora polonica* (Błaszk.) Błaszk., Niezgoda, B.T. Goto, Magurno, forms hypogeous single acaulosporoid glomerospores directly on the neck of a sporiferous saccule. This species produces white to hyaline, usually globose to subglobose spores with three spore walls (Błaszkowski et al. 2021b). *Polonospora polonica* was found associated with roots of plants growing in gardens, dunes, forests, and highly contaminated sites (Gai et al. 2006, Błaszkowski 2012).

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Blaszkowski J, Niezgoda P, Meller E, Milczarski P et al. 2021b – New taxa in *Glomeromycota*: *Polonosporaceae* fam. nov., *Polonospora* gen. nov., and *P. polonica* comb. nov. Mycological Progress 20, 941–951.

Gai JP, Christie P, Feng G, Li XL 2006 – Twenty years of research on biodiversity and distribution of arbuscular mycorrhizal fungi in China: a review. Mycorrhiza 16(4), 229–239.

Entry by M Erdoğdu, Department of Landscape Architects, Faculty of Agriculture, Kırşehir Ahi Evran University, Kırşehir, Turkey
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Note 873 *Tahromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tahromyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

Tahromyces was established by Hanafy et al. (2020) to accommodate *T. munnarensis* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU (D1-D2) sequence data. *Tahromyces* is an obligate and anaerobic genus isolated from the feces of a Nilgiri Tahr (*Nilgiritragus hylocrius*), a mountain goat indigenous to India. *Tahromyces* is characterized by a monocentric thallus, globose monoflagellated or rarely biflagellated and triflagellated zoospores, endogenous and exogenous sporangia of varying shapes and sizes. This genus is phylogenetically closely related to *Buwchfawromyces* and *Joblinomyces* (Hanafy et al. 2020). The taxonomic placement of *Tahromyces* is in *Neocallimastigaceae*, *Neocallimastigales*, *Neocallimastigomycetes*, and *Neocallimastigomycota*.

Reference

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM et al. 2020 – Seven new *Neocallimastigomycota* genera from wild, zoo-housed, and domesticated herbivores greatly expand the taxonomic diversity of the phylum. Mycologia 112(6), 1212–1239.

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Note 874 *Pseudohepatospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudohepatospora J. Bojko, D.C. Behringer, K.S. Bateman, G.D. Stentiford & K.F. Clark

Pseudohepatospora was established by Bojko et al. (2023) to accommodate *P. borealis* as the type species, based on ultrastructural, developmental, pathological and phylogenetic information/analyses. *Pseudohepatospora borealis*, a microsporidian parasite, was isolated from the hepatopancreas of *Cancer borealis*, a brachyuran crap on the north eastern coast of the USA and south eastern coast of Canada. The type species is characterized by undergoing merogony and sporogony in direct contact with the host cytoplasm. The spores are unikaryotic and include 4–5 coils of the polar filament. The polaroplast is bilaminar, with electron dense and electron lucent layers. The spores are ovoid (Bojko et al. 2023). The taxonomic placement of *Pseudohepatospora* is in *Hepatosporidae*, *Enterocytozoonida*, *Terresporidia*, *Microsporidia* and *Rozellomycota*.

Reference

Bojko J, Behringer DC, Bateman KS, Stentiford GD et al. 2023 – *Pseudohepatospora borealis* n. gen. n. sp. (*Microsporidia*: *Enterocytozoonida*): A microsporidian pathogen of the Jonah crab (*Cancer borealis*). Journal of Invertebrate Pathology 197, 1–8.

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Note 875 *Daedalella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Daedalella B.K. Cui & Shun Liu

Daedalella was established by Liu et al. (2023d) to accommodate *D. micropora* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, nSSU, mtSSU, *tef1-α*, and *rpb*2 sequence data. *Daedalella* was isolated from the angiosperm trunk in Malaysia. This genus is characterized by annual pileate, corky basidiomata that are cream to buff in all parts, with a glabrous pileal surface and round to angular pores. Microscopically, it has a dimitic hyphal system with clamped generative hyphae and skeletal hyphae IKI^{-}, CB^{-}. Basidiospores are oblong-ellipsoid, hyaline, thin-walled, smooth, IKI^{-}, and CB^{-}. *Daedalella* forms a monophyletic lineage with a sister relationship to *Daedalea* species based on the phylogenetic analysis (Liu et al. 2023d). The taxonomic placement of *Pseudoantrodia* is in *Fomitopsidaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Gerardo L. Robledo, Investigador Independiente CONICET, Facultad de Ciencias Agropecuarias,Universidad Nacionalde Córdoba, Córdoba, Argentina.
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Note 876 *Phaeochloridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phaeochloridium W.P. Wu & Y.Z. Diao

Phaeochloridium was erected by Wu & Diao (2022) to accommodate *P. geniculatum* (≡ *Phialophora geniculata*) as the type species, based on morphological characteristics and phylogenetic analysis of ITS sequence data. *Phaeochloridium gamsii* and *P. phaeosporum* are the other accepted species in the genus. *Phaeochloridium geniculatum* was collected on dead plant materials in China, Suriname and the USA. Conidiophores are unbranched, macronematous, and septate. Conidiogenous cells are phialidic, integrated, and subcylindrical. Collarettes are funnel-shaped. Conidia are oblong, aseptate and ellipsoid. Sexual morph was undetermined. Other genera that share similar morphological characteristics with *Phaeochloridium* include *Phialophora*, *Chloridium* and *Phaeoacremonium*, but they are placed in different families based on phylogenetic analysis. The taxonomic placement of *Phaeochloridium* is in *Plectosphaerellaceae*, *Glomerellales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina* and *Ascomycota*.

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116, 1–546.

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Note 877 *Parastenospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parastenospora Crous

Parastenospora was established by Crous et al. (2022a) to accommodate *P. pini* based on morphological characteristics and phylogenetic analysis of ITS, LSU, *tub2* and *rpb2* sequence data. *Parastenospora* was isolated from dead twigs of *Pinus sylvestris* in the Netherlands. In the genus, conidiophores are mostly solitary and hyaline, and occur terminally on hyphae. Conidiogenous cells are subcylindrical, hyaline and smooth, while conidia are solitary, hyaline and obclavate. Their sexual morph is undetermined. *Parastenospora* resembles *Condylospora* and *Stenospora*. However, the main character that demarcates *Parastenospora* from *Stenospora* is the hilum. *Stenospora* exhibits thickened scars and hila (Braun et al. 2013) while the hila in *Parastenospora* are not dark and remain unthickened. In addition, *Stenospora* is parasitic while *Parastenospora* was reported as a saprobe on dead twigs. *Parastenospora* is classified as *Incertae sedis* in *Pleosporales*, *Dothideomycetes*, *Pezizomycotina* and *Ascomycota*.

References

Braun U, Nakashima C, Crous PW. 2013 – Cercosporoid fungi (*Mycosphaerellaceae*) 1. Species on other fungi, *Pteridophyta* and *Gymnospermae*. IMA Fungus 4, 265–345.

Crous P, Boers J, Holdom D, Osieck ER et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48, 261–371.

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Note 878 *Paracosmospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paracosmospora Crous & Boers

Crous et al. (2022a) introduced the monotypic, lichenicolous genus *Paracosmospora* to accommodate *P. physciae*, based on morphology and phylogeny of ITS, LSU and *tef1-α* sequence data. Crous et al. (2022a) accepted *Paracosmospora* in *Hypocreales incertae sedis*. *Paracosmospora* exhibits the hyphomycetous asexual morph with solitary conidiophores mostly aggregated in clusters forming sporodochia. Conidiophores are subcylindrical, erect to wavy, branched or unbranched, 1–2-septate, hyaline and smooth-walled. Conidiogenous cells are terminal or intercalary, subcylindrical, hyaline, smooth-walled and with a periclinal thickening at the apex. Conidia are solitary, guttulate, subcylindrical, with an obtuse to somewhat flattened apex and a base tapering to truncate scar. Conidia are medianly 1-septate, straight, hyaline and smooth-walled. The sexual morph has not been described in this genus (Crous et al. 2022a). *Paracosmospora* is distinct from *Pseudocosmospora* by having acremonium-like to verticillium-like asexual morphs. The taxonomic placement of *Paracosmospora* is in *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48, 261–371.

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Note 879 *Pseudodiploosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodiploosporaceae Jing Z. Sun, X.Z. Liu & H.W. Liu

Pseudodiploosporaceae was introduced by Sun et al. (2023) to accommodate *Pseudodiploospora* as the type genus, based on morphological characteristics and phylogenetic analysis of SSU, ITS, LSU, *tef1-α*, and *rpb*2 sequence data. *Pseudodiploosporaceae* consists of two genera, *Pseudodiploospora* and *Zelopaecilomyces*. Members of *Pseudodiploosporaceae* are saprobic or fungicolous. *Hypocreaceae* forms a sister group with *Pseudodiploösporeaceae* in the phylogenetic analysis and molecular clock evidence based on SSU, ITS, LSU, *tef1-α*, and *rpb*2 sequence data (Sun et al. 2023). *Pseudodiploosporaceae* is characterized by micronematous to macronematous, mononematous, penicillate conidiophores and sympodial, acropetal, basipetal and hyaline conidiogenous cells. Conidia are cylindrical, ellipsoidal, limoniform, solitary or catenate and, arranged in simple or branched chains. Ramoconidia are cylindrical or fusiform, aseptate or septate with truncate base and terminal scars. The sexual morph is undetermined (Sun et al. 2023). The taxonomic placement of *Pseudodiploosporaceae* is in *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Sun J, Yu S, Lu Y, Liu H et al. 2023 – Proposal of a new family *Pseudodiploösporeaceae* fam. nov. (*Hypocreales*) based on phylogeny of *Diploöspora longispora* and *Paecilomyces penicillatus*. Mycology 14(1), 60–73.

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Note 880 *Pseudodiploospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodiploospora Jing Z. Sun, X.Z. Liu & H.W. Liu

Pseudodiploospora was described by Sun et al. (2023) to accommodate *P. longispora* as the type species, based on morphological characteristics and phylogenetic analysis of SSU, ITS, LSU, *tef1-α*, and *rpb2* sequence data. *Pseudodiploospora longispora* was isolated from the dead basidioma of *Auricularia* in Cuba. This genus consists of four species viz. *P. cubensis*, *P. longispora*, *P. fungicola*, and *P. zinnia*. These species are saprobic or fungicolous. In the phylogenetic analysis of SSU, ITS, LSU, *tef1-α*, and *rpb2* sequence data, *Pseudodiploospora* and *Zelopaecilomyces* formed a sister clade (Sun et al. 2023). The asexual morph of the genus is characterized by micronematous to macronematous, aseptate or septate conidiophores and sympodial, acropetal, hyaline conidiogenous cells. Conidia are cylindrical, ellipsoidal, fusiform, catenate, arranged in simple or branched chains, and hyaline. *Pseudodiploospora* also forms cylindrical or fusiform, hyaline ramoconidia with truncate base and terminal scars. The sexual morph was undetermined (Sun et al. 2023). The taxonomic placement of *Pseudodiploospora* is in *Pseudodiploosporaceae*, *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Sun J, Yu S, Lu Y, Liu H et al. 2023 – Proposal of a new family *Pseudodiploösporeaceae* fam. nov. (*Hypocreales*) based on phylogeny of *Diploöspora longispora* and *Paecilomyces penicillatus*. Mycology 14(1), 60–73.

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Note 881 *Neoacrodictys*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoacrodictys J.W. Xia & X.G. Zhang

Neoacrodictys was first introduced by Xia et al. (2022) as a monotypic genus, which is typified by *Neoacrodictys elegans* J.W. Xia & X.G. Zhang. It is characterized by darkly pigmented turbinate to obpyriform muriform conidia produced from monoblastic integrated terminal conidiogenous cells on macronematous unbranched conidiophores. It is saprobic and isolated from dead branches of an unidentified broad-leaf tree in the tropical forest in Jianfengling National Forest Park (18.70°N, 108.87°E) on Hainan Island, China. Only an anamorph of *N. elegans* was found in the study. The phylogenetic analysis using LSU showed that *N. elegans* is not closely related to *Acrodictys*, *Junewangia*, and *Rhexoacrodictys* but is closely related to '*Melaspilea*' *lekae* (Xia et al. 2022). Based on morphological characters and phylogenetic analysis using LSU, *Neoacrodictys* was placed in *Kirschsteiniotheliaceae*, *Kirschsteiniotheliales* and *Dothideomycetes*. It is necessary to conduct further phylogenetic analyses using multiple-locus sequences for the morphologically and phylogenetically related genera in the future.

Reference

Xia JW, Mu TC, Zhang ZX, Li Z et al. 2022 – *Neoacrodictys elegans* gen. & sp. nov. from Hainan Province, China. Mycotaxon 137, 63–71.

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Note 882 *Teratospermopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Teratospermopsis Jian Ma, X.G. Zhang & R.F. Castañeda

Teratospermopsis was introduced by Xu et al. (2021) as a new genus to accommodate *Teratospermopsis protuberata* (R.F. Castañeda) Jian Ma, X.G. Zhang & R.F. Castañeda (=

Chaetendophragmia protuberata R.F. Castañeda) as the type species based on its morphological characters. The genus was characterized by its determinate or percurrent proliferating conidiophores, monoblastic, integrated, terminal, annellidic conidiogenous cells; conidia are obclavate, acrogenous, solitary, euseptate with an apical cell that has a filiform appendage and a basal cell with a lateral appendage, and schizolytic secession. This genus and its type species were reported from fallen leaves of *Bauhinia cumanensis* in Cuba (Castañeda-Ruiz 1985). This genus was described based on its morphology. *Teratospermopsis protuberata* is a new combination and monotypic genus that differs from *Chaetendophragmia* and *Teratosperma* by its schizolytic conidial with lateral appendage. Sequence data are not available for phylogenetic analyses. The taxonomic placement of *Teratospermopsis* is *incertae sedis* in *Pezizomycotina*, *Ascomycota*. The type species is saprobic.

References

Castañeda-Ruíz RF. 1985 – *Deuteromycotina* de Cuba. Hyphomycetes III. Instituto de Investigaciones Fundamentales en Agricultura Tropical "Alejandro de Humboldt", Habana, Cuba. 42.

Xu Z-H, Qiu L, Zhang X-G, Castañeda-Ruíz RF et al. 2021 – *Teratospermopsis* gen. nov. for *Chaetendophragmia protuberata*, with a taxonomic review of *Teratosperma*. Mycotaxon 136, 85–95.

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Note 883 *Oxenbollia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Oxenbollia W.P. Wu & Y.Z. Diao

Oxenbollia was recently established by Wu and Diao (2022) to accommodate *Oxenbollia lunatospora* which is a saprobe on rotten wood of an unidentified plant from China. The genus is characterized by macronematous, mononematous, simple, septate, unbranched conidiophores, terminal monophialidic conidiogenous cells with funnel-shaped collarette, and lunate, aseptate conidia with simple setulae. Wu and Diao (2022) showed that *Oxenbollia* clustered with *Phialogeniculata* and *Flectospora* but in a distinct lineage. *Oxenbollia* can be distinguished from *Phialogeniculata* and *Flectospora* by the absence of setae, unbranched conidiophores, terminal, monophialidic conidiogenous cells with funnel-shaped collarette, and lunate, aseptate conidia with simple setulae (Réblová et al. 2021c, Wu and Diao 2022) therefore, a new genus *Oxenbollia* was introduced to accommodate *O. lunatospora*. Currently, only the type species *O. lunatospora* is accepted in the genus as monotypic. Based on the morphological characteristics and molecular investigations with ITS and LSU, this genus was placed in *Chaetosphaeriaceae*, *Chaetosphaeriales*, and *Sordariomycetes*.

References

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Réblová M, Nekvindová J, Hernández-Restrepo M. 2021c – Reflections on *Menisporopsis, Multiguttulispora* and *Tainosphaeria* using molecular and morphological Data. Journal of Fungi 7(6), 438.

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Note 884 *Paracodinaea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paracodinaea W.P. Wu & Y.Z. Diao

Paracodinaea was introduced by Wu and Diao (2022) as a saprobic species *Paracodinaea japonica*, collected from China and Japan. The genus is characterized by macronematous, solitary or aggregated, dark brown conidiophores. Conidiophores are thick-wall in the lower part, becoming paler and thin-walled towards the apex. Septate, smooth with terminal, monophialidic, integrated, sympodial conidiogenous cells. Conidia are allantoidal, curved, aseptate, hyaline, smooth with an unbranched with setula at both ends (Wu and Diao 2022). Wu and Diao (2022) introduced the genus mainly based on phylogenetic analysis. *Paracodinaea* is hard to distinguish from *Codinaeella* and *Tainosphaeria*, but it is phylogenetically distinct. Phylogenetic analysis conducted by Wu and Diao (2022) showed that *Paracodinaea* formed an independent lineage that was distinct from *Tainosphaeria* and related genera. Currently, only *P*. *japonica* is accepted in the genus. Based on the morphological characteristics and molecular investigation with ITS, this genus was placed in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*.

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 885 *Paraproliferophorum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paraproliferophorum Crous

Paraproliferophorum was introduced by Crous et al. (2022a) with a single species *Paraproliferophorum hyphaenes*. It is an endophyte, collected on living leaves of *Hyphaene* sp. from South Africa. The genus is characterized by solitary, olivaceous brown to medium brown conidiophores, unbranched or branched above, septate, and finely verruculose. Conidiogenous cell are terminal and intercalary. Conidia are fusoid, tapering to truncate ends, one septate, olivaceous brown, smooth-walled. Crous et al. (2022a) showed that *Paraproliferophorum* is phylogenetically related to *Proliferophorum*. However, *Paraproliferophorum* is different from *Proliferophorum* in having terminal and intercalary clusters of subdenticulate conidiogenous, and form ramoconidia that give rise to secondary conidia with slightly thickened hila. In addition, the conidiophores of *Pa*. *hyphaenes* do not proliferate percurrently. So, they introduced a new genus to accommodate *Pa*. *hyphaenes*. Based on the morphological characteristics and molecular investigation with ITS, *Paraproliferophorum* is placed in *incertae sedis* within *Diaporthomycetidae* as a monotypic genus.

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48(1), 261–371.

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Note 886 *Megacoelomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Megacoelomyces Dianese, Guterres, M.D.M. Santos & G.F. Sepúlveda

dos Santos et al. (2021) introduced *Megacoelomyces* as a monotypic genus, to accommodate *M. sanchezi* as the type species, based on morphology and analysis of combined ITS and LSU sequence data. *Megacoelomyces sanchezi* was collected on trichomes of living leaves of *Myrcia fenzliana* (*Myrtaceae*) in Brazil (dos Santos et al. 2021). *Megacoelomyces* is known only from its asexual state and is characterized by a large, superficial, barely setose pycnidial conidiomata situated on a loose, trichome-associated subiculum. *Megacoelomyces* resembles *Callistospora* (*Ascomycota incertae sedis*), *Orphanocoela* (*Pezizomycotina incertae sedis*) and *Urohendersoniella* (*Pezizomycotina incertae sedis*) in having pycnidial, dematiaceous coelomycetous morph with appendiculate, phragmosporous, or distoseptate conidia, but the phylogenetic evidence obtained from the analysis of ITS and LSU sequence data show it as a distinct lineage (dos Santos et al. 2021). Based on morphology and phylogenetic evidence, *Megacoelomyces* is a well-supported epiphytic genus in *Phaeosphaeriaceae*, *Pleosporales*, and *Dothideomycetes*

Reference

Dos Santos MDDM, Guterres DC, Sepúlveda-Chavera GF, Souza ESDC et al. 2021 – New genus of trichomatous coelomycete on *Myrcia fenzliana* from the Brazilian Cerrado. Mycologia 113(1), 231–244.

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Note 887 *Neoacervuloseptoria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoacervuloseptoria Raghv. Singh & Sanjay Yadav

Neoacervuloseptoria was introduced by Yadav et al. (2023b) as a monotypic genus, typified with *Neoacervuloseptoria fraxini* (Crous & Bulgakov) Raghv. Singh & Sanjay Yadav. The sexual morph in this genus is absent. *Neoacervuloseptoria* was characterized by its pycnidial conidiomata. Conidiophores reduced to conidiogenous cells, conidiogenous cells subcylindrical to ampulliform, colorless, smooth, proliferating percurrently and sympodially at the apex, Conidia are septate, solitary, subcylindrical, colorless, smooth, straight to curved, apex subobtuse, base truncate with basal marginal frill. This genus differs from the genus *Acervuloseptoria* by its pycnidial conidiomata opening via central ostioles (Yadav et al. 2023b). *Neoacervuloseptoria fraxini* did not show morphological similarity with *Acervuloseptoria ziziphicola*. The monotypic genus *Acervuloseptoria* is a sister clade for *Acervuloseptoria* and *Neocercosporella*. However, Yadav et al. (2023b) did not compare the morphological differences between *Neoacervuloseptoria* and *Neocercosporella*. *Neoacervuloseptoria* was reported to be phytopathogenic causing leaf spots of *Fraxinus pennsylvanica* in the Rostov region, Russia (Crous et al. 2020c). However, Koch's postulates have not been conducted. Based on morphological characters and phylogenetic analyses using ITS, LSU, and *rpb2* the taxonomic placement of *Neoacervuloseptoria* is in *Mycosphaerellaceae*, *Mycosphaerellales*, *Dothideomycetes*.

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Note 888 *Neocercosporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neocercosporella Sanjay Yadav & Raghv. Singh

Neocercosporella was introduced by Yadav et al. (2023b) as a monotypic genus. This genus is typified with *Neocercosporella peristrophes* (Syd.) Sanjay Yadav & Raghv. Singh. The sexual morph is absent. *Neocercosporella* was characterized by its stromata substomatal or subcuticular to erumpent, conidiophores are fasciculate, erect to procumbent, septate, smooth, unbranched, rarely branched, straight to slightly curved, geniculate at the tip. Conidiogenous cells are integrated, terminal and intercalary, polyblastic, sympodial, conidiogenous loci slightly protuberant, thickened and darkened, loci conical having a very small rim-like depression on the top encircling a small flat protuberant- like structure; conidia singly, rarely catenate, euseptate, mostly colorless, rarely light olivaceous, obclavate to obclavate-cylindrical, straight to curved, smooth, thin-walled. *Neocercosporella* and *Acervuloseptoria* are sister clades. *Neocercosporella* differs from *Acervuloseptoria* by its hyphomycetous nature, while the latter is coelomycetous (Yadav et al. 2023b). The taxon was suggested to be pathogenic causing leaf spots of *Peristrophe bicalyculata* (Retz.) Nees in India. However, Koch's postulates have not been conducted. Based on morphological characteristics and phylogenetic analyses using ITS, LSU, and *rpb2*, the taxonomic placement of *Neocercosporella* is in *Mycosphaerellaceae*, *Mycosphaerellales*, *Dothideomycetes*.

Reference

Yadav S, Singh R, Verma SK, Singh G et al. 2023b – Addition of three new lineages in *Mycosphaerellaceae*: *Neoacervuloseptoria* gen. nov., *Neocercosporella* gen. nov. and *Neoramulariopsis* gen. nov. Mycological Progress 22(4), 26.

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Note 889 *Neoramulariopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoramulariopsis Raghv. Singh & Kushwaha

Neoramulariopsis was established by Yadav et al. (2023b) to accommodate *Neoramulariopsis unguis-cati* (Speg.) Raghv. Singh & Kushwaha as the type species. *Neoramulariopsis* is characterized by its immersed to erumpent stromata and central ostiole ascomata. Asci are bitunicate, colorless, obovoid, stipitate. Ascospores are septate, guttulate. Anamorphic state: conidiophores arising from hyphae or stromata, colorless, simple or branched, straight to flexuous or geniculate, septate, smooth, thin-walled. Conidiogenous cells are colorless, subcylindrical to geniculate-sinuous, with one to multiple conidiogenous loci. Conidia are colorless, smooth, singly or in branched chains, ramoconidia, intercalary and terminal, conidia are aseptate or septate. *Neoramulariopsis* is phylogenetically related to *Ramulariopsis*. The latter differs from *Neoramulariopsis* by its branched conidiophores with conidiogenous cells in terminal, intercalary, and pleurogenous structures (Yadav et al. 2023b). However, this character appears not to be sufficient to differentiate the two genera, since *Neoramulariopsis* has both simple or branched conidiophores. *Neoramulariopsis*. *unguis-cati* is phytopathogenic causing leaf spots of *Dolichandra unguis-cati* (L.) L.G. Lohmann. This genus has two species and distributed in Argentina, Brazil, Paraguay, Rwanda, and South Africa, and the other species, *Neoramulariopsis catenulata* (Videira & Crous) Raghv. Singh & Kushwaha, is a phytopathogen causing leaf spots of *Phaseolus vulgaris* (Colmán et al. 2020, Crous et al. 2014a, da Silva et al. 2012, Videira et al. 2016, Yadav et al. 2023b). Based on morphological characters of both teleomorphic and anamorphic states and phylogenetic analyses using ITS, LSU, and *rpb2*. The taxonomic placement of *Neoramulariopsis* is in *Mycosphaerellaceae*, *Mycosphaerellales*, *Dothideomycetes*.

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Videira SIR, Groenewald JZ, Braun U, Shin HD et al. 2016 – All that glitters is not *Ramularia*. Studies in Mycology 83(1), 49–163.

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Note 890 *Leptosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leptosphaeria Ces. & De Not.

Leptosphaeria Ces. & De Not. (1863), a sexually typified genus, was introduced by Cesati & De Notaris (1863) with *Leptosphaeria doliolum* (Pers.) Ces. & De Not. (Basionym: *Sphaeria doliolum* Pers. 1800) as the type species. In morphology-based traditional taxonomy, species of *Phoma* have been regarded as the asexual morph of several sexually typified genera, including *Leptosphaeria* (van der Aa et al. 1990, Boerema 1997). De Gruyter et al. (2013), however, restricted the genus *Phoma s. str.* to *Didymellaceae* and resurrected the genus *Plenodomus* Preuss (type: *Plenodomus rabenhorstii* Preuss 1851) to accommodate the phoma-like taxa classified in *Leptosphaeriaceae*. In the same publication several names in *Leptosphaeria* and *Phoma* were transferred to *Plenodomus* that were not congeneric with their type species, i.e. *L. doliolum* and *Phoma herbarum*, respectively.

Leptosphaeria maculans Ces. & De Not. is an important pathogen of a wide range of hosts (Schäfer & Wöstemeyer 1992, Reddy et al. 1998, Williams & Fitt 1999) and was introduced by Cesati & De Notaris concurrent with the generic name. *Phoma lingam* (Tode) Desm. (1849) was referred to as the asexual morph of *Leptosphaeria maculans* (Sutton 1980, Schäfer & Wöstemeyer 1992, de Gruyter et al. 2009, Aveskamp et al. 2010). Reddy et al. (1998) showed that *Phoma lingam* and *P*. *wasabiae* are phylogenetically distinct from *Phoma s*. *str*. but related to *Plenodomus*. De Gruyter et al. (2009) also emphasized the species of *Phoma* in *Phoma* sect. *Plenodomus* need further revision. A subsequent study by de Gruyter et al. (2013) confirmed the findings of Reddy et al. (1998) and transferred *Leptosphaeria maculans* (= *Phoma lingam*) to *Plenodomus s*. *str*. based on DNA sequence analyses as a synonym of *Plenodomus lingam* (Tode) Höhn. (Von Höhnel 1911), thus, the correct name should be *Plenodomus lingam*. In Google Scholar, *Leptosphaeria maculans* has 16,400 hits while *Plenodomus lingam* has only 294 hits. Hence, it is essential to adopt the widely used name *Leptosphaeria maculans*, over *Plenodomus lingam*, for the stability of nomenclature and the name in use in plant pathology. The taxonomic placement of *Leptosphaeria* is in *Leptosphaeriaceae*, *Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 891 ***Obliquiminima***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Obliquiminima W. Dong, H. Zhang & K.D. Hyde

Obliquiminima was introduced by Dong et al. (2021) as a monotypic genus to accommodate *O. hyalina* W. Dong, H. Zhang & K.D. Hyde as the type species. This species is a saprobe collected on submerged wood from freshwater habitats. *Obliquiminima* is characterized by superficial, ellipsoidal to subglobose, black, coriaceous, ostiolate ascomata with a lateral neck, unitunicate, obclavate, sessile asci with a small, refractive apical ring and oval, narrowly ellipsoidal, aseptate, guttulate, hyaline ascospores with a thin gelatinous sheath (Dong et al. 2021). The asexual morph is unknown in *Obliquiminima*., Based on morphological characteristics and phylogenetic analyses using ITS, SSU, LSU, and *rpb2* *Obliquiminima* is placed in *Cancellidiaceae*, *Cancellidiales*, and *Sordariomycetes*. *Cancellidium* is sister clade for *Obliquiminima*, but no sexual morphs are reported in *Cancellidium* and this genus is known only by asexual morphs (Hyde et al. 2021a), thus the morphology between these two genera cannot be compared, but phylogenetically they are distinct (Dong et al. 2021). Further fresh collections are required to better understand the morphology of this family.

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Note 892 ***Neodiluviicola***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neodiluviicola W. Dong & H. Zhang

Neodiluviicola was introduced by Dong et al. (2021) to accommodate *N. aquatica* which was previously placed in *Diluviicola*. Dong et al. (2021) showed that *N. aquatica* W. Dong, H. Zhang & K.D. Hyde is phylogenetically distant from *D. capensis* and formed a basal branch to *Cataractispora* and *Pseudoproboscispora*. Thus, they introduced a new genus *Neodiluviicola* to accommodate this species based on morphological characteristics and phylogenetic analysis using ITS, SSU, LSU, and *rpb2*. *Neodiluviicola* is characterized by semi-immersed to superficial, subglobose or ellipsoidal, black ascomata with a lateral, short neck, unitunicate, clavate to subcylindrical asci with a distinct, refractive, wedge-shaped apical ring and fusiform, aseptate or occasionally 1-septate, hyaline ascospores with bipolar filamentous appendages. The asexual morph is undetermined (Dong et al. 2021). The taxonomic placement of *Neodiluviicola* is in *Pseudoproboscisporaceae*, *Atractosporales*, *Sordariomycetes*. Only *N. aquatica* is accepted in the genus and it is a saprobe collected on submerged wood freshwater habitats (Zhang et al. 2017, Dong et al. 2021).

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Note 893 *Pseudophaeocytostroma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudophaeocytostroma Monkai & Phookamsak

Pseudophaeocytostroma was introduced by Monkai et al. (2022) as a monotypic genus. *Pseudophaeocytostroma* is typified by *P. bambusicola* Monkai & Phookamsak. collected on dead culms of *Bambusoideae* in Yunnan Province, China. *Pseudophaeocytostroma* is phylogenetically close to *Massariothea*, *Phaeocytostroma*, *Pustulomyces*, and *Stenocarpella*. However, *Pseudophaeocytostroma* is different from *Phaeocytostroma* by oblong to ellipsoid conidia, while *Phaeocytostroma* has ellipsoid to fusiform or pyriform conidia (Sutton 1980, Monkai et al. 2022). Even though *Pseudophaeocytostroma* and *Massariothea* share many similar characteristics, *Massariothea* has distoseptate conidia while *Pseudophaeocytostroma* has aseptate, oblong to ellipsoid conidia (Thambugala et al. 2017b). *Pseudophaeocytostroma* differs from *Stenocarpella* in having broadly filiform, septate, unbranched, paraphyses obtuse at the apex, with small granules and 3-septate conidia at maturity (Sutton 1980, Lamprecht et al. 2011, Monkai et al. 2022). *Pustulomyces* can be distinguished from *Pseudophaeocytostroma* by pustule-like conidiomata and fusiform or sigmoid conidia (Dai et al. 2014, Monkai et al. 2022). Based on morphological characters of both teleomorphic and anamorphic states and phylogenetic analyses using ITS, LSU, and *tef1-α*. The taxonomic placement of *Pseudophaeocytostroma* is in *Pseudoproboscisporaceae*, *Atractosporales*, *Sordariomycetes*.

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Note 894 *Micromelanconis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Micromelanconis C.M. Tian & N. Jiang

Micromelanconis was introduced by Jiang et al (2021) with *M. kaihuiae* C.M. Tian & N. Jiang as the type species. This monotypic genus is the third genus of *Pseudomelanconidaceae* and it is clearly distinguished from other genera *viz*. *Pseudomelanconis* C.M. Tian & X.L. Fan and *Neopseudomelanconis* C.M. Tian & N. Jiang, in this family by having melanconis-like conidiomata, pale brown, multiguttulate, aseptate conidia with hyaline sheath (Fan et al. 2018, Jiang et al. 2018, Jiang et al. 2021). However, conidia of this genus from the natural substrate are ellipsoid, and sporulated cultures on PDA produce the long dumbbell-shaped conidia (Jiang et al. 2021). The distinct phylogenetic placement of *Micromelanconis* within the family was proven based on the combined ITS, LSU, *tef1-α* and *rpb2* (Jiang et al. 2021). Some genera of diaporthalean families such as *Coryneaceae*, *Cryphonectriaceae*, *Erythrogloeaceae* and *Gnomoniaceae* are restricted to specific host plants (Voglmayr et al. 2012, Jaklitsch and Voglmayr 2019, Roux et al. 2020, Wang et al. 2020, Yang et al. 2020). Species of *Pseudomelanconidaceae* inhabit *Carya* sp. (*Juglandaceae*), and *Castanea* sp. (*Fagaceae*) (Fan et al. 2018a, Jiang et al. 2021). All the species in this family are discovered in China, as saprobes on tree branches. The taxonomic placement of *Micromelanconis* is in *Pseudomelanconidaceae*, *Diaporthales*, *Sordariomycetes*.

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Note 895 *Rhodoantrodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rhodoantrodia B.K. Cui, Y.Y. Chen & Shun Liu

Based on morphological characters and combined sequence analyses of ITS, LSU, SSU, mtSSU, *tef1-α*, and *rpb2*, Lui et al. (2023) proposed the genus *Rhodoantrodia* to accommodate *Antrodia sensu lato* species. Two species are accepted in *Rhodoantrodia* involving *Rhodoantrodia tropica* (B.K. Cui) B.K. Cui, Y.Y. Chen & Shun Liu (= *Antrodia tropica* B.K. Cui) previously reported from Hainan Province, China (Cui 2013) and *R. yunnanensis* (M.L. Han & Q. An) B.K. Cui & Shun Liu (= *Antrodia yunnanensis* M.L. Han & Q. An) reported from Yunnan Province, China (Han et al. 2020). Phylogenetically, *Rhodoantrodia* is unique and distinct from *Antrodia sensu stricto* clade but nested with other brown rot fungi such as *Buglossoporus*, *Cartilosoma*, *Dentiporus*, *Fragifomes*, *Melanoporia*, *Neoantrodia*, *Neolentiporus*, *Niveoporofomes*, *Rhodofomes*, *Rubeliofomes* and *Subantrodia* (Cui 2013, Han et al. 2020, Lui et al. 2023). *Rhodoantrodia* significantly differs from *Antrodia sensu stricto* by annual, resupinate, soft corky to corky light basidiomata. The pore surface light purple, violaceous to pinkish buff, with angular pores, tubes concolorous with pore surface. Hyphal system; dimitic, generative hyphae clamped, skeletal hyphae dominant, IKI−, CB−. Cystidia and cystidioles absent. Basidiospores thin-walled, smooth, cylindrical to subfusiform. The taxonomic placement of *Rhodoantrodia* is in *Fomitopsidaceae*, *Polyporales*, and *Agaricomycetes*.

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Note 896 *Tenuipostia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tenuipostia B.K. Cui & Shun Liu,

Tenuipostia was proposed by Liu et al. (2023d) as a monotypic genus. Based on the combined sequence analyses of ITS, LSU, SSU, mtSSU, *tef1-α*, *rpb2*, and morphological characters, this genus formed a distinct lineage from *Postia sensu stricto* and the type species *T. dissecta* (Cooke) B.K. Cui & Shun Liu (≡ *Tyromyces floriformis* (Quel.) Bond. & Sing.) has been accepted under this genus. *Tyromyces floriformis* previously reported from Argentina and Chile then was placed in the genus *Postia* as *P. dissecta* (Cooke) Rajchenb. (Rajchenberg, 1983, 1987). Huckfeldt and Schmidt (2017) based on phylogenetic analysis of ITS sequences placed *P. dissecta* under the genus *Oligoporus*. However, *P. dissecta* formed a separate linage away from *Oligoporus* clade (Shen et al. 2019). Phylogenetically, *Tenuipostia* is distinct from the *Postia sensu stricto* clade and nested closely with the genus *Austropostia*. *Tenuipostia* is characterized by its annual pileate basidiocarps. The pileal surface clay-buff to dirty light brown. The pore surface is white to buff. Contex is white, corky to slightly fragile. Tubes are concolorous with pore surface, fragile. The hyphal system; monomitic, generative hyphae clamped, IKI−, CB−. Cystidia are absent, cystidioles present. Basidiospores oblong to ellipsoid, colorless, thin to slightly thick, smooth, IKI−, CB−. Only one species has been accepted for *Tenuipostia* that reported from Argentina, Australia and Chile. The taxonomic placement of *Tenuipostia* is in *Postiaceae*, *Polyporales*, and *Agaricomycetes*.

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Note 897 *Crittendenia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crittendenia Diederich, Millanes, M. Westb., Etayo, J.C. Zamora & Wedin

Crittendenia was introduced by Millanes et al. (2021) and typified by *Crittendenia coppinsii* Diederich, Millanes, M. Westb., Etayo, J.C. Zamora & Wedin. It was isolated from *Parmelia glabratula* in the UK. Morphological characteristics and phylogenetic analysis based on SSU, LSU, and ITS gene regions placed this genus in an uncertain position in *Agaricostilbomycetes*, *Pucciniomycotina Basidiomycota*, and showed the lichenicolous members of *Chionosphaera* form a monophyletic group in the *Pucciniomycotina*, distant from *Chionosphaera* and outside the *Chionosphaeraceae*. The new genus *Crittendenia* was described to accommodate these lichen-inhabiting species. *Crittendenia* is different from *Chionosphaera* and is predominantly a lichen-dwelling genus in *Agaricostilbales* (*Pucciniomycotina*). *Chionosphaera coppinsii* Diederich and *C. lichenicola* Diederich are two known species that grow on lichen hosts (Millanes et al, 2021). *Crittendenia* is characterized by apical, tubular, aseptate, thin-walled basidia, with basal clamps that form 4–7 spores discharged passively in groups. Basidiomata on lichens, stipitate-capitate, synnemata-like, fleshy waxy, pale, slightly translucent. The capitulum is slightly too strongly differentiated and enlarged, the sterigmata fall after the spore is detached. Basidiospores are hyaline, aspartate, ovoid to fusiform, with a small basal apiculus, often indistinct, without obligate discharge, often released in clusters of 4-7 spores together. Basidiospores are probably able to germinate by budding. The asexual morph is unknown in this genus (Millanes et al, 2021).

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Note 898 *Parasporendocladia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parasporendocladia W.P. Wu & Y.Z. Diao

Parasporendocladia was introduced by Wu & Diao (2022) to accommodate *Sporendocladia bactrospora*. The type species, *Parasporendocladia bactrospora* W.P. Wu & Y.Z. Diao was first introduced as *Phialocephala bactrospora* (Kendrick 1961), then later reclassified as *Sporendocladia bactrospora* based only on conidial development, but without molecular data (Wingfield et al. 1987). Later, the phylogenetic analysis of ITS, SSU, and LSU sequences showed that *S. bactrospora* belongs to *Microascales* (*Hypocreomycetidae*, *Sordariomycetes*), while the type species of *Phialocephala*, *P. dimorphospora* belongs to *Helotiales* (*Leotiomycetidae*, *Leotiomycetes*) (Grünig et al. 2002, Jacobs et al. 2003). On the other hand, the type species of *Sporendocladia*, *S. fomusa*, belongs to *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*) (Wu & Diao 2022). Based on molecular data, *S. bactrospora* was distinct from species of *Phialocephala* and *Sporendocladia*, thus the genus *Parasporendocladia* was introduced (Wu & Diao 2022). It is difficult to distinguish *Parasporendocladia* from *Phialocephala* and *Sporendocladia* (Wu & Diao 2022). *Parasporendocladia* has conidiophores that are solitary to aggregated, erect or flexuous, branched at the apex, septate, brown, and smooth (Wu & Diao 2022). The conidiogenesis cells are holoblastic and the conidia are cylindrical, hyaline, aseptate, smooth, truncate at both ends and extruded in long chains (Wu & Diao 2022). *Parasporendocladia bactrospora* (≡ *Phialocephala bactrospora*) was first isolated as a saprobe from *Populus trichocarpa* (Kendrick 1961). Although the species has been reported as a saprobe on dead material of *Clushia melchiorii* in Brazil and *Fagus sylvatica* in Czechoslovakia (Barbosa et al. 2007, Kubatova 1992), some studies have reported it as a plant pathogen associated with wounds on native broadleaved trees in Norway (Roux et al. 2014) and canker and dieback of *Juglans regia* in Iran (Sohrabi & Mohammadi 2023).

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Note 899 *Qarounispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Qarounispora Nourel-Din, Abdel-Aziz & Abdel-Wahab

Qarounispora was declared a new genus in the family *Halosphaeriaceae* based on morphology and multi-gene analysis of LSU, SSU and ITS sequences (Nourel-Din et al. 2022). The type species, *Qarounispora grandiappendiculata* Nourel-Din, Abdel-Aziz & Abdel-Wahab was isolated as a saprobe on decaying submerged wood in the Qaroun Lake in Egypt, where the genus name was based (Nourel-Din et al. 2022). This genus formed a distinct separate clade in the family *Halosphaeriaceae* together with *Nimbospora* (Nourel-Din et al. 2022). *Qarounispora* has hyaline to yellow-orange, ellipsoidal to broadly ellipsoidal ascospores with only one equatorial appendage (Nourel-Din et al. 2022). It has yellow to orange-brown ascomata that are globose to subglobose, and catenophyses developing from the pseudoparenchyma. The asci are thin-walled, unitunicate, eight-spored, clavate, or broadly ellipsoid (Nourel-Din et al. 2022). These characteristics differ from *Nimbospora* species which have ascospores with enlarged sheaths and fibrillar equatorial appendages (Koch 1982). Five genera of *Halosphaeriaceae* have one polar appendage similar to *Qarounispora*. These are *Moana*, *Oceanitis*, *Okeanomyces*, *Ophiodeira* and *Tirispora*. Based on multi-gene analysis of LSU, SSU, and ITS regions, *Qarounispora* is in a well-supported clade that is clearly separate from these other genera (Nourel-Din et al. 2022). Also, morphological differences in ascomata, asci, and ascospores separated *Qarounispora* with these similar genera.

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Note 900 *Safagamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Safagamyces Bakhit & Abdel-Wahab

Safagamyces was introduced by Bakhit & Abdel-Wahab (2022) based on morphology and phylogenetic analysis of SSU and LSU sequences. Due to differences in morphology and its position in the phylogenetic tree, *Safagamyces* was segregated as a new genus. The name is based on Safaga City, Egypt where the holotype was collected. The type species, *Safagamyces marinus* Bakhit & Abdel-Wahab, was isolated from decaying stems of *Phragmites australis*, a mangrove along the Red Sea (Bakhit & Abdel-Wahab 2022). To date, there is only one species described in this genus. *Safagamyces* formed a basal branch to three marine genera *Cucurbitinus*, *Cirrenalia* and

Pseudolignicola in the family *Halosphaeriaceae*. *Safagamyces*, *Cucurbitinus* and *Cirrenalia* are similar in having conidia that are constricted at the base, which gradually become larger and darkly pigmented from base to apex (Meyers & Moore 1960, Liu et al. 2020a). However, *Safagamyces* is distinct by its conidia that are branched, variable in shape, septate, and strongly constricted at the septa (Bakhit & Abdel-Wahab 2022). Conidiogenesis cells are holoblastic with sympodial conidial proliferation. In addition, species of this genus have micronematous, smooth, hyaline conidiophores (Bakhit & Abdel-Wahab 2022). The taxonomic placement of *Safagamyces* is in *Halosphaeriaceae*, *Microascales* and *Sordariomycetes*.

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Note 901 *Crittendeniaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Crittendeniaceae Millanes, Diederich & Wedin

Crittendeniaceae was introduced by Diederich et al. (2022a) to accommodate *Crittendenia*, a lichenicolous genus. *Crittendeniaceae* is distinguished from *Chionosphaeraceae* by a basal clamp in the basidia and lichenicolous habitat. *Crittendenia* was typified with *Crittendenia coppinsii* (P. Roberts) Diederich, M. Westb., Millanes & Wedin. This genus includes 16 species. In this genus, basidiomata are formed in aggregated small groups to entire thalli with stipe relatively robust in which its thallus is brownish and translucent. The stipe has a thick wall with septa. Basidia are subcylindrical and produce ellipsoid to elongate ellipsoid basidiospores. Phylogenetic analyses using ITS and LSU sequences indicated that *Crittendeniaceae* was distinct from other families in the *Agaricostilbomycetes*. The taxonomic placement of the family is in *Agaricostilbales* and *Agaricostilbomycetes*.

Reference

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Note 902 *Paravamsapriya*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paravamsapriya Samarak. & K.D. Hyde

Paravamsapriya was introduced by Samarakoon et al. (2022) as a monotypic genus, This genus is typified by *Paravamsapriya ostiolata* Samarak. & K.D. Hyde. *Paravamsapriya* was reported as a saprobe on a dead culm of bamboo (*Poaceae*)and on the leaflet and rachides of *Nypa fruticans* in Thailand (Samarakoon et al. 2022, Zhang et al. 2024b). *Paravamsapriya* is only known from its sexual morph. It is characterized by immersed, solitary, scattered, ascomata with a depressed yellowish-brown ring covering a clypeus-like black margin around the ostiolar opening; centric ostioles and periphysate ostiolar canal. The peridium is multi-layered. Paraphyses are long and septate. Asci are 8-spored, unitunicate, cylindrical, and short pedicellate. Ascospores are uniseriate or overlapping uniseriate, hyaline, ellipsoidal to fusiform, aseptate, lacking germ slits. The asexual morph is unknown. *Paravamsapriya* is similar to *Arecomyces*, *Capsulospora* and *Sabalicola*, but is distinct in ascomata, ostioles, asci, J- apical ring and ascospores (Hyde 1995, Hyde 1996a, Hyde 1996b; Fröhlich & Hyde 2000). The phylogenetic analysis of ITS, LSU, *rpb2*, *tub2*, and *tef1-α* sequence datasets showed *Paravamsapriya* forms a distinct basal clade in *Vamsapriyaceae*, and the taxonomic placement of *Paravamsapriya* is in *Vamsapriyaceae*, *Xylariales*, *Sordariomycetes*. The other accepted species in *Paravamsapriya* is *P. nypae* (K.D. Hyde, J. Fröhl. & Joanne E. Taylor) S.N. Zhang & K.D. Hyde which introduced by Zhang et al. (2024b).

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Note 903 *Nigropunctata*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nigropunctata Samarak. & K.D. Hyde

Nigropunctata was established by Samarakoon et al. (2022) with *Nigropunctata bambusicola* Samarak. & K.D. Hyde as the type species. *Nigropunctata bambusicola* was found on the dead culm of bamboo (*Poaceae*) as a saprobe in Thailand. Only the sexual morph is known in this genus (Samarakoon et al. 2022). *Nigropunctata* is characterized by immersed ascomata,in cross-section globose to subglobose, with centric or eccentric ostioles, a periphysate ostiolar canal covered with a black, thick clypeus, and yellow to brown ectostroma and long, filamentous, septate, rarely branched, numerous, paraphyses, constricted at septa. Asci are 8-spored, unitunicate, cylindrical, short pedicellate, apically rounded with a discoid, or inverted, hat-shaped ring and embedded in a gelatinous matrix. Ascospores are uniseriate or overlapping uniseriate, unicellular, brown to dark brown, cylindrical to broadly ellipsoidal, oblong, guttulate, aseptate, covered with a thick mucilaginous sheath or sheath lacking, with or without a straight, germ slit on the ventral side, across the entire spore length. Asexual morph is undetermined. *Nigropunctata* is similar to *Anthostomella*, however, it can be distinguished from *Anthostomella* in having immersed ascomata with a thick clypeus, white or yellow ectostroma, short pedicel, apically rounded asci with J+, discoid or inverted, hat-shaped, apical ring and broadly ellipsoidal, aseptate, ascospores with a germ slit. Phylogenetic evidence also supports *Nigropunctata* as distinct from *Anthostomella* and placed independently in *Xylariales*. The other accepted species in *Nigropunctata* are *N. complanata* R. Sugita & Kaz. Tanaka, *N. hydei* Samarak, *N. khalidii* Y.P. Wu & Q.R. Li, *N. nigrocircularis* Samarak. & K.D. Hyde, *N. saccata* Samarak and *N. thailandica* Samarak. & K.D. Hyde (Samarakoon et al. 2022, 2023, Li et al. 2024b, Sugita et al. 2024). Based on the evidence of combined ITS, LSU, *rpb2*, *tub2*, and *tef1-α* sequence data and the distinct morphological characters the taxonomic placement of *Nigropunctata* is in *Pallidoperidiaceae*, *Xylariales*, *Sordariomycetes* (Sugita et al. 2024).

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Note 904 *Eriomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eriomycetaceae Huanraluek & K.D. Hyde

Zhang et al. (2023a) resurrected *Eriomycetaceae* as a separate family within *Monoblastiales* based on morphological and phylogenetic analysis. Nine non-lichenized genera (*Eriomyces*, *Funbolia*, *Haudseptoria*, *Heleiosa*, *Karstiomycetes*, *Italiofungus*, *Neoheleiosa*, *Phellinocrescentia* and *Pseudopassalora*) were listed in *Eriomycetaceae*, while six lichenized genera (*Acrocordia*, *Anisomeridium*, *Caprettia*, *Megalotremis*, *Monoblastia* and *Trypetheliopsis*) were listed under *Monoblastiaceae*. Zhang et al. (2023a) Ascomycetes from karst landscapes of Guizhou Province, China.

Reference

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Note 905 *Tyroliella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tyroliella Telagathoti, Probst & Peintner

Tyroliella was introduced by Telagathoti et al. (2022). This genus is typified by *Tyroliella animus-liberi* Telagathoti, M. Probst & Peintner. The etymology of *Tyroliella* corresponds to the original location in which the genus was isolated (Tyrol). This genus has high similarity to *Mortierella*. According to the phylogenetic analysis, *Necromortierella dichotoma* is the closest relative of *Tyroliella*. The genus is characterized by branched or unbranched sporangiophores, round, smooth-walled sporangia without columella, cylindrical sporangiospores, and chlamydospores with typical hyphal appendages. *Tyroliella* includes two species namely *Tyroliella animus-liberi* and *T. pseudozygospora* (W. Gams & Carreiro) Telagathoti, M. Probst & Peintner. Both these species were isolated from alpine and subalpine habitats (calcareous or silicaceous soil with *Pinus cembra*, *Salix retusa*, *S. herbacea*, and *Bistorta vivipara* vegetation) in Austria. *Tyroliella pseudozygospora* can be differentiated from *T. animus-liberi* by the much longer, basitonously branched sporangiophores, cluster-forming chlamydospores, and the garlic-like odor of the colonies. The taxonomic placement of *Tyroliella* is in *Mortierellaceae*, *Mortierellales*, *Mortierellomycetes* based on molecular investigations with ITS and *rpb1* sequences.

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Note 906 *Cancellidiales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cancellidiales K.D. Hyde & Hongsanan

Cancellidiales was introduced by Hyde et al. (2021) as the monotypic order in *Diaporthomycetidae* to accommodate *Cancellidiaceae* K.D. Hyde & Hongsanan, based on phylogenetic analysis with ITS, LSU, SSU, *tef1-α* and *rpb2* sequence data. Species of this family are saprobes on wood and twigs in freshwater habitats. *Cancellidiales* species are characterized by large, fattened, fan-shaped conidia with many parallel columns of cells and internal chains of subhyaline, globose to fusiform cells (Cai et al. 2006, Seifert & Gams 2011). *Cancellidiaceae* is typified by *Cancellidium* Tubaki and this genus is typified by *Cancellidium applanatum* Tubaki. *Cancellidium* includes six modern species *C. applanatum*, *C. atrobrunneum*, *C. cinereum*, *C. griseonigrum*, *C. pinicola, and C. thailandense* and one fossil-species *C. intergranifer* (Dong et al. 2021, Hyde et al. 2021a, Worobiec et al. 2024).These species are different from each other in conidia size, shape and color in addition to phylogenetic analysis. The distinctive conidial morphology is important in dispersal in flowing streams. They formed scattered, effuse, black, glistening colonies on natural substrates. Mycelium is mostly immersed, comprising branched, septate, hyaline to pale brown, smooth- and thin-walled hyphae. Conidiophores are semi-macronematous to macronematous, mononematous, septate, cylindrical, pale brown to yellowish brown, smooth-, thick-walled, sometimes developed from assimilative hypha. Conidiogenous cells are monoblastic, integrated, terminal and pale brown to yellowish brown. Conidia are acrogenous, holoblastic, solitary, dry, fattened, obovate or ellipsoidal, fan-shaped, mostly with a truncated head, composed of many parallel, septate columns arranged in lines radiating from conidial base, olivaceous to greyish green, shiny, internally contain chains of subhyaline, small moniliform cells. The sexual morph is not known.

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Note 907 *Barbatosphaeriales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Barbatosphaeriales K.D. Hyde & Hongsanan

Zhang et al. (2017) introduced the family *Barbatosphaeriaceae* to accommodate species of *Barbatosphaeria*, *Ceratostomella*, and *Xylomelasma*, and this family was characterized by dark, long-necked, astromatic ascomata, clavate or cylindrical-clavate asci, and mostly ellipsoidal ascospores. The asexual morph of *Barbatosphaeriaceae* was reported as *Ramichloridium* sp. or *Sporothrix* sp. *Barbatosphaeriaceae* was placed in the *Diaporthomycetidae* families *incertae sedis* (Hyde et al. 2020b). However, Hyde et al. (2021a) showed that *Barbatosphaeriaceae* formed a distinct clade within the *Diaporthomycetidae* with a stem age of 177 MYA, which falls within the order range (Hyde et al. 2017a). Therefore, the monotypic order *Barbatosphaeriales* was introduced to accommodate *Barbatosphaeriaceae* H. Zhang, K.D. Hyde & Maharachch with morphology and phylogenetic analysis of LSU, SSU, *tef1-α*, and *rpb2* sequences (Hyde et al. 2021a). This family was only typified by *Barbatosphaeria* Réblová. Three genera *Barbatosphaeria*, *Ceratostomella*, and *Xylomelasma* are similar in morphology and can be distinguished with size and color changes in ascomata and ascospores in addition to phylogenetic analysis.Species in *Barbatosphaeriales* are saprobes on decaying wood or plant materials and they reported from China (Yunnan), the Czech Republic, France, Great Britain, Italy, New Zealand, the Czech Republic, and the USA (Illinois, Virginia) (Index Fungorum 2023). The taxonomic placement for *Barbatosphaeriales* is in *Diaporthomycetidae*, *Sordariomycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 908 *Phialemoniopsaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Phialemoniopsaceae K.D. Hyde & Hongsanan

Phialemoniopsis was introduced by Perdomo et al. (2013) with *Phialemoniopsis ocularis* as the type species. Currently, this genus has eight species (Perdomo et al. 2013, Tsang et al. 2014, Su et al. 2016b, Alvarez et al. 2021). Species in this genus were reported from various habitats, such as air, industrial and freshwater, plant materials, sewage, soil, and as endophytes (Gams and McGinnis 1983, Crane et al. 1996, Halleen et al. 2007, Perdomo et al. 2013, Tsang et al. 2014, Su et al. 2016b). They have been recorded as human pathogens from toenails, sinuses, foot wounds, and eyes of humans (Tsang et al. 2014, Alvarez et al. 2021). This genus was placed in *Sordariomycetes*, genera *incertae sedis* (Perdomo et al. 2013). The divergence time estimates in Hyde et al. (2021a) indicated that *Phialemoniopsis* has diverged approximately 59 MYA, which accords with the range for families (Hyde et al. 2017a). Therefore, Hyde et al. (2021a) introduced the family *Phialemoniopsaceae* based on morphology and phylogenetic analysis with LSU and *tef1-α* to accommodate the genus *Phialemoniopsis* Perdomo, Dania García, Gené, Cano & Guarro. In the asexual morph, sporulation from conidiophores is solitary with simple or slightly branched. Conidiogenous cells are monophialidic, discrete, terminal or lateral. Conidia are one-celled with ellipsoidal, allantoid to obovoid. Chlamydospores are observed sometimes. The sexual morph is unknown.

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Note 909 ***Cancellidiaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cancellidiaceae K.D. Hyde & Hongsanan

Cancellidiaceae was introduced by Hyde et al. (2021a) as the monotypic family based on the morphology and phylogenetic analysis of ITS, LSU, SSU, *tef1-α* and *rpb2* sequences to accommodate *Cancellidium* Tubaki. Based on phylogenetic and molecular clock analyses *Cancellidium* was typified by *Cancellidium applanatum* Tubaki. The type species is saprobic on decaying submerged wood in freshwater. *Cancellidium* includes six modern species *C. applanatum*, *C. atrobrunneum*, *C. cinereum*, *C. griseonigrum*, *C. pinicola*, and *C. thailandense* and one fossil-species *C. intergraniferum* (Dong et al. 2021, Hyde et al. 2021a, Worobiec et al. 2024). These species are different from each other in conidia size, shape, and colour in addition to phylogenetic analysis. *Cancellidiaceae* species are characterized by large, fattened, fan-shaped conidia with many parallel columns of cells and internally contain chains of subhyaline, globose to fusiform cells (Cai et al. 2006, Seifert & Gams 2011). They formed scattered, effuse, black, glistening colonies on natural substrates. Mycelium is mostly immersed, comprising branched, septate, hyaline to pale brown, smooth- and thin-walled hyphae. Conidiophores are semi-macronematous to macronematous, mononematous, septate, cylindrical, pale brown to yellowish brown, smooth-, thick-walled, sometimes developed from assimilative hypha. Conidiogenous cells are monoblastic, integrated, terminal, pale brown to yellowish brown. Conidia are acrogenous, holoblastic, solitary, dry, fattened, obovate or ellipsoidal, fan-shaped, mostly with a truncated head, composed of many parallel, septate columns arranged in lines radiating from the conidial base, olivaceous to greyish green, shiny, internally contain chains of subhyaline, small moniliform cells. The sexual morph is not known.

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Note 910 *Aenigmatomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aenigmatomyces R.F. Castañeda & W.B. Kendr.

Aenigmatomyces was established by Castañeda-Ruiz & Kendrick (1993) based on the morphology of the genus. This genus is typified by *Aenigmatomyces ampullisporus* R.F. Castañeda & W.B. Kendr. It was characterized by sporophores differentiated, upright or ascending, flexuous, fertile distal portion closely septate, unbranched (rarely branched), smooth, colorless; sporogenous cells are monoblastic, intercalary and terminal, barrel-shaped or short-cylindrical, developing one lateral outgrowth, needle-like, spores solitary, ampulliform, smooth and colorless, uniform in size. The genus has three key diagnostic characteristics: 1) an apical beak with a sharp tip, 2) a narrow isthmus about 1/3 of the way down the spore, 3) a broader, ellipsoidal spore body toward the base. Its holotype was reported to be parasitic on hyphae and oogonia of *Pythium* on decaying leaf from Alternate Lookout Trail, Algonquin Park, Ontario, Canada, and other specimens were collected from fungal hyphae on dead leaf of *Myrica gale* L. on Spruce Bog Trail in the same park, but attempts to isolate it failed (Castañeda-Ruiz and Kendrick 1993). Degawa (2002) collected this fungus several times in Hakone, Japan, and reported that this fungus parasitized the spermatophore of Collembola (springtails). Castañeda-Ruiz and Kendrick (1993) could not assign this genus to any phylum. According to Species Fungorum (http://www.speciesfungorum.org/) and MycoBank (http://www.mycobank.org/), *Aenigmatomyces* is *incertae sedis* in *Dothideomycetidae*, *Dothideomycetes*, *Pezizomycotina*). However, Degawa (2002) stated that he observed zygospores of *Aenigmatomyces* and suggested that *Aenigmatomyces* probably belonged to *Cochlonemataceae*, *Zoopagales*, *Zoopagomycota*. Degawa (2002) opinion was shared by Seifert et al. (2011) and Benny et al. (2014). Since no culture and sequence data are available, the taxonomic placement of this genus remains unsolved. collecting more samples at the type locality should be carried out to isolate this fungus for phylogenetic studies so that the mystery of this unusual fungus can be solved. At present, *Aenigmatomyces* remains monotypic.

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Note 911 *Neocryptosphaerella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neocryptosphaerella S.K. Huang & K.D. Hyde

Neocrytosphaerella was introduced by Huang et al. (2021) to accommodate *N. celata* (Mugambi & Huhndorf) S.K. Huang & K.D. Hyde as as the type species and *N. globosa* (Mugambi

& Huhndorf) S.K. Huang & K.D. Hyde. These two species were collected from decaying wood in Kenya and differing in the size of ascospores (Mugambi & Huhndorf 2010). This genus is characterized by turbinate ascomata with a central, conical Quellkörper, polysporous asci, and hyaline, allantoid to cylindrical ascospores. The asexual morph is unknown (Mugambi & Huhndorf 2010, Huang et al. 2021). Quellkörper is a mucilaginous mass of thick-walled cells as conical structure within the cupulate or collapsed ascoma (Kirk et al. 2008, Huang et al. 2021). Initially, Mugambi & Huhndorf (2010) placed these two species in *Cryptosphaerella* (*Scortechiniaceae*) based on multi-spored asci, sequence data of LSU, *tef1-α*, and *rpb2*. Other *Cryptosphaerella* species have neither Quellkörper in the ascoma, nor available sequence data (Saccardo 1882a, Huang et al. 2021). Later, Quellkörper was confirmed as a unique character in *Scortechiniaceae*, thus, Huang et al. (2021) transferred *Cryptosphaerella* in *Sordariomycetes* genera *incertae sedis*. They also found that the *Neocrytosphaerella* clade is a sister to *Biciliospora*, *Coronophorella*, *Pseudocryptosphaerella*, *Scortechiniella*, and *Scortechiniellopsis* in *Scortechiniaceae* based on multi-gene analysis with LSU, *tef1-α*, and *rpb2* sequence data (Huang et al. 2021). So far, these two species have not been reported to be re-collected.

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Note 912 *Pseudocryptosphaerella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudocryptosphaerella S.K. Huang & K.D. Hyde

Pseudocryptosphaerella was introduced by Huang et al. (2021) to accommodate *P. costaricensis* (Mugambi & Huhndorf) S.K. Huang & K.D. Hyde, *P. cylindriformis* (Mugambi & Huhndorf) S.K. Huang & K.D. Hyde, *P. elliptica* (Mugambi & Huhndorf) S.K. Huang & K.D. Hyde and *P. malindiensis* (Mugambi & Huhndorf) S.K. Huang & K.D. Hyde. This genus is typified by *Pseudocryptosphaerella elliptica*. Initially, Mugambi & Huhndorf (2010) introduced these four species as members of *Cryptosphaerella* (*Scortechiniaceae*). However, *Cryptosphaerella* was removed from *Scortechiniaceae* due to the lack of an important Quellkörper in ascoma (Huang et al. 2021). These four species are characterized by tuberculate ascomata, sitting in a subiculum, with a central, conical Quellkörper, lacking ostioles in the ascomata, polysporous asci, and hyaline, ellipsoidal cylindrical to broadly fusiform ascospores (Mugambi & Huhndorf 2010, Huang et al. 2021). The asexual morph is unknown (Mugambi & Huhndorf 2010). The genus is sister to *Neocrytosphaerella*, *Biciliospora*, *Scortechiniella*, and *Scortechiniellopsis* in *Scortechiniaceae* based on multi-gene analysis with LSU, *tef1-α*, and *rpb2* sequence data (Mugambi & Huhndorf 2010, Huang et al. 2021). Thus, Huang et al. (2021) established *Pseudocryptosphaerella* in *Scortechiniaceae* for these four species. There have not been re-collected since they were collected on decaying wood in Kenya. The species of this genus are saprobic on wood.

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Note 913 *Schizotheciaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schizotheciaceae Y. Marin & Stchigel

Marin-Felix et al. (2020) established the family *Schizotheciaceae* raising *Schizothecium* as its type genus, which is typified by *S. fimicola* Corda. However, Huang et al. (2021) erroneously changed its name to *Neoschizotheciaceae* based on Wang et al. (2019). Wang et al. (2019) designated an incorrect epitype for *Schizothecium fimicola* and therefore, based on morphology and phylogenetic affiliation of this epitype, Huang et al. (2021) considered the younger name *Schizothecium* as a synonym of *Podospora*. Thus, the new genus *Neoschizothecium* was introduced with *N. curvisporum* S.K. Huang & K.D. Hyde as its type species to accommodate species of *Schizothecium* that distantly grouped from the *Podosporaceae* (Huang et al. 2021). Then, a new family *Neoschizotheciaceae* was introduced for species in *Schizotheciaceae* and *Neoschizothecium* was designated as the type genus (Huang et al. 2021). However, *Podospora* and *Schizothecium* have two distinct type specimens representing two different type species for each genus (Lundqvist 1972, Ament-Velásquez et al. 2020, Vogan et al. 2021). This segregation was clarified based on morphology (Lundqvist 1972) and molecular data (Cai et al. 2005). Wang et al. (2019) did not notice the conserved type of *Podospora*, *P. fimiseda* (Ces. & De Not.) Niessl. (≡ *Sordaria fimiseda*) and incorrectly cited *Schizothecium fimicola* as type species. Further, Wang et al. (2019) designated an epitype specimen (CBS H-24048) for *Schizothecium fimicola*, but morphologically and genetically this epitype represents *Podospora fimiseda*. Thus, the type species of *Schizothecium* should be conserved as *S. fimicola* and then, *Podospora* and *Schizothecium* are not synonyms as Huang et al. (2021) thought. Thus, *Neoschizotheciaceae* is invalid as it is a superfluous synonym of *Schizotheciaceae* (Marin-Felix & Miller 2022).

Schizotheciaceae includes 12 genera *viz*., *Apodus*, *Cercophora*, *Echria*, *Immersiella*, *Jugulospora*, *Lundqvistomyces*, *Morinagamyces*, *Pseudoechria*, *Pseudoschizothecium*, *Rinaldiella*, *Schizothecium* and *Zygopleurage* based on phylogenetic analysis with ITS, LSU, *rpb2*, and *tub2* sequence data and it is characterized by ostiolate ascomata, cylindrical to clavate asci and ellipsoidal ascospores, sometimes with long or short cylindrical or lash-like gelatinous appendages (Marin-Felix et al. 2020). *Schizotheciaceae* species, such as *Schizothecium aloides*, *S. glutinans* and *S. vesticola*, have been reported mainly from dung (Cai et al. 2005). Some species have been collected from soil, e.g. *Jugulospora antarctica* and *J. rotula*, and as saprobes on dead plant parts, e.g. *Cercophora caudata*, *Echria gigantospora*, and *Immersiella immersa* (Mirza and Cain 1969, Marin-Felix et al. 2020). The taxonomic placement of *Schizotheciaceae* is in *Sordariales*, *Sordariomycetes*.

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Note 914 *Schizothecium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schizothecium Corda

Schizothecium was introduced and typified by *S. fimicola* Corda, which has membranaceous ascomata and ascospores with agglutinated hairs (Corda 1838). Later *Schizothecium* and its type species were erroneously synonymized under *Podospora* (Cesati 1856). Lundqvist (1972) resurrected *Schizothecium* discussing its nomenclatural legitimacy and recognized 17 species. Lundqvist (1972) also discussed the phenotypic uniqueness of *Schizothecium* and suggested that the perithecia adorned with swollen agglutinated hairs or prominent protruding peridial cells are characteristic of *Schizothecium*. Kirk et al. (2001) treated *Schizothecium* as a synonym of *Podospora* based on their morphological similarity of asci and ascospores. However, ascomatal morphology is a better taxonomic predictor than ascospore morphology within *Sordariales* (Miller and Huhndorf 2005). As the perithecial morphologies of *Schizothecium* species are prominent and easily recognizable, Cai et al. (2005) resuscitated *Schizothecium* as a valid genus in *Sordariales*. The combined gene analysis of ITS, LSU, and *tub2* by Cai et al. (2005) showed that *Schizothecium* species form a well-supported, monophyletic clade and this phylogenetic stability of *Schizothecium* was confirmed in later studies (Marin-Felix et al. 2020, Huang et al. 2021). The type material of *Schizothecium fimicola* has been lost and the illustration in the protologue was designated as the lectotype of *S. fimicola* (Wang et al. 2019a). Wang et al. (2019) also designated an epitype for *Schizothecium fimicola* with strain CBS 482.64 as the ex-epitype culture. However, morphologically and phylogenetically this epitype fits to *Podospora fimiseda* not to lectotype of *S. fimicola*. Thus, the synonymization of *Schizothecium fimicola* under *Podospora fimiseda* is not correct. Therefore, the introduction of a new generic name *Neoschizothecium* by Huang et al. (2021) for *Schizothecium* species, which was performed based on the epitypification error done by Wang et al. (2019), was also not correct. Marin-Felix and Miller (2022) resurrected the generic name *Schizothecium* explaining the taxonomic and nomenclatural mistakes made by Wang et al. (2019) and Huang et al. (2021). The taxonomic placement of *Schizothecium* is in *Schizotheciaceae*, *Sordariales*, and *Sordariomycetes*.

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Schizothecium Corda

Schizothecium was introduced and typified by *S. fimicola* Corda, which has membranaceous ascomata and ascospores with agglutinated hairs. Later *Schizothecium* and its type species were erroneously synonymized under *Podospora* (Cesati 1856). Lundqvist (1972) resurrected *Schizothecium* discussing its nomenclatural legitimacy and recognized 17 species. Lundqvist (1972) also discussed the phenotypic uniqueness of *Schizothecium* and suggested that the perithecia adorned with swollen agglutinated hairs or prominent protruding peridial cells are characteristic of *Schizothecium*. Kirk et al. (2001) treated *Schizothecium* as a synonym of *Podospora* based on their morphological similarity of asci and ascospores. However, ascomatal morphology is a better taxonomic predictor than ascospore morphology within *Sordariales* (Miller & Huhndorf 2005). As the perithecial morphologies of *Schizothecium* species are prominent and easily recognizable, Cai et al. (2005) resuscitated *Schizothecium* as a valid genus in *Sordariales*. The combined gene analysis of ITS, LSU, and *tub2* by Cai et al. (2005) showed that *Schizothecium* species form a well-supported, monophyletic clade and this phylogenetic stability of *Schizothecium* was confirmed in later studies (Marin-Felix et al. 2020, Huang et al. 2021). The type material of *Schizothecium fimicola* has been lost and the illustration in the protologue was designated as the lectotype of *S. fimicola* (Wang et al. 2019a). Wang et al. (2019) also designated an epitype for *Schizothecium fimicola* with strain CBS 482.64 as the ex-epitype culture. However, morphologically and phylogenetically this epitype fits to *Podospora fimiseda* not to lectotype of *S. fimicola*. Thus, the synonymization of *Schizothecium fimicola* under *Podospora fimiseda* is not correct. Therefore, the introduction of a new generic name *Neoschizothecium* by Huang et al. (2021) for *Schizothecium* species, which was performed based on the epitypification error done by Wang et al. (2019), was also not correct. Marin-Felix & Miller (2022) resurrected the generic name *Schizothecium* explaining the taxonomic and nomenclatural mistakes made by Wang et al. (2019) and Huang et al.

(2021). The taxonomic placement of *Schizothecium* is in *Schizotheciaceae*, *Sordariales*, and *Sordariomycetes*.

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Cesati V. 1856 – Botanische Zeitung 14, 426–429. Corda ACI. 1838 – Icones Fungorum Hucusque Cognitorum 2, 1–43.

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Kirk PM, Cannon PF, David JC, Stalpers JA. – 2001 Ainsworth and Bisby's Dictionary of the Fungi. 9th edn. CABI International University Press, Wallingford, UK.

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Note 915 ***Rhamphoriales***

Web-links: Index Fungorum, Facesoffungi, MycoBank,GenBank

Rhamphoriales K.D. Hyde & Hongsanan

Rhamphoriaceae Réblová was established by Réblová et al. (2018) to accommodate the type genus *Rhamphoria* with two other genera, *viz*. *Rhamphoriopsis* and *Rhodoveronaea*. This family was placed in *Diaporthomycetidae*. *Rhamphoriaceae* shared a sister clade with *Sporidesmiaceae* (Réblová et al. 2018, Luo et al. 2019, Hyde et al. 2020b). However, *Rhamphoriaceae* is distinguished from *Sporidesmiaceae* in the sexual morph, by the two-layered peridium and hyaline or brown, ellipsoidal, obovoid, clavate, fusiform to fusiform-clavate ascospores, lacking mucilaginous sheaths or appendages, whereas, *Sporidesmiaceae* has three-layered peridium and hyaline, fusiform ascospores with a thin sheath. In the asexual morph, *Rhamphoriaceae* differs from *Sporidesmiaceae* by the polyblastic to monoblastic, denticulate conidiogenous cells and ellipsoidal to obovoid, aseptate or septate, hyaline, or brown conidia, while *Sporidesmiaceae* has monoblastic, percurrently and terminal conidiogenous cells and brown, obclavate conidia, subobtuse at apex, truncate at base, with transversely euseptate or distoseptate (Réblová et al. 2018, Yang et al. 2018, Luo et al. 2019, Hyde et al. 2020b). Divergence time estimates showed that the stem age of *Rhamphoriaceae* is 133 MYA, and this falls within the range of orders (Hyde et al. 2017a). Therefore, Hyde et al. (2021a) introduced the order *Rhamphoriales* K.D. Hyde & Hongsanan for *Rhamphoriaceae* based on the phylogeny with LSU, SSU, and *rpb2* data sequence and morphological characters. In the sexual morph, ascomata are perithecium that comprise 8-spored asci with cylindrical or cylindrical-clavate. Ascospores are hyaline or brown with ellipsoidal to fusiform-clavate. In the asexual morph, conidiophores are macronematous or semi-macronematous with holoblastic conidiogenous cells. Conidia are hyaline or brown and differ from aseptate to septate. Species in this order were reported from Argentina, Australia, Belgium, China (Guizhou Yunnan), Denmark, France, Germany, Great Britain, Netherlands, and the USA (New Jersey). They are saprobes on dead branches especially on *Acer pseudoplatanus*, *Bertia moriformis*, *Buxus sempervirens*, *Crataegus oxyacantha*, *Escallonia serrata*, *Eucalyptus viminalis*, *Evernia prunastri*, and *Quercus* species (Index Fungorum 2023).

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Note 916 ***Pyrisporaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pyrisporaceae C.M. Tian & N. Jiang

Pyrisporaceae was introduced by Jiang et al. (2021) based on the molecular investigation with ITS, *rpb2*, and *tef1-α* sequence data to typify a pathogenic genus *Pyrispora* C.M. Tian & N. Jiang. This genus is saprobic or pathogenic of *Castanea mollissima* leaves. *Pyrispora* is typified by *Pyrispora castaneae* C.M. Tian & N. Jiang. In the sexual morph, ascomata are semi-immersed and aggregated with cylindrical to clavate asci that have 8-spored, aseptate ascospores which are straight to slightly curved. In the asexual morph, conidiomata are pycnidia with globose to subglobose shapes in which conidiophores are reduced to conidiogenous cells. Conidia are aseptate, and hyaline with ellipsoidal to multiguttulate. This family is sister to *Apoharknessiaceae* (Jiang et al. 2021). However, *Pyrisporaceae* is different from *Apoharknessiaceae* in having asci with a distinct apical ring, conidiogenous cells with a pyriform base, and a long neck. Species in this family were reported from Brazil (São Paulo), India (Maharashtra), Malaysia (Sabah), Mauritius, Paraguay, Philippines, and Taiwan Island on leaves of *Achatocarpus* sp., *Celastrus paniculatus*, *Dendrocalamus latiflorus*, *Dalbergia* sp., *Eucalyptus robusta*, *Eucalyptus pellita*, *Eugenia aurata*, *Ficus disticha*, *Leguminosae* sp., *Machaerium lanatum*, *Myrtaceae*, *Phyllostachys makinoi*, and *Zanthoxylum* sp. The taxonomic placement for *Pyrisporaceae* is in *Diaporthales*, *Sordariomycetes*.

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Note 917 ***Homortomycetales***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Homortomycetales Maharachch. & Wanas. The family

Homortomycetaceae was introduced by Thambugala et al. (2017a) as a monotypic family in *Homortomycetales*. This family includes two species, the type species *Homortomyces combreti* Crous & M.J. Wingf. and the second species *H. tamaricis* Wijayaw., Camporesi & K.D. Hyde. This monotypic family is phylogenetically close to *Botryosphaeriales*, *Catinellales*, and *Holmiella* (Thambugala et al. 2017a, Hongsanan et al. 2020b, Maharachchikumbura et al. 2021b). However, *Homortomycetaceae* is distinct from these taxa by its clearly distinct uniloculate, thin-walled ascomata and 3-septate, pigmented ascospores and distoseptate conidia (Crous et al. 2012, Phillips et al. 2013b, Thambugala et al. 2017a). Therefore, Maharachchikumbura et al. (2021b) introduced *Homortomycetales* to accommodate *Homortomycetaceae* based on morphology and phylogeny based on SSU, ITS, LSU, *rpb2* and *tef1-α* sequence data. In the sexual morph, ascomata are scattered, immersed to erumpent which 2–8-spored asci, and are bitunicate and cylindrical-clavate. Ascospores are uni to bi-seriate. In the asexual morph, conidiomata are pycnidia with conidiophores reduced to conidiogenous cells or with one supporting cell. Conidia change from ellipsoid to subcylindrical. The order *Homortomycetales* has a stem age of 97 million years (Maharachchikumbura et al. 2021b). The species of *Homortomycetales* are associated with leaf spots or saprobic on dead twigs or branches in terrestrial habitats in Oman.

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Note 918 ***Holmiellales***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Holmiellales Maharachch. & Wanas.

Holmiellales was introduced by Maharachchikumbura et al. (2021b) based on SSU, ITS, LSU, *rpb2*, and *tef1-α* sequence data for the monotypic family *Holmiellaceae* and it represents a lineage of saprobic fungi that was previously placed in the monotypic order *Patellariales*. The type family is *Holmiellaceae* Maharachch. & Wanas. In the asexual morph, conidiomata are pycnidia and superficial or immersed in culture. Conidiophores are branched, hyaline, and septate. Conidiogenous cells are integrated and hyaline. Conidia are straight to curved. Chlamydospores may be produced. Species of *Holmiellales* have apothecial ascomata which are initially enclosed in host parenchyma and subsequently crack open to become finally exposed through a wide, irregular hymenium. The apothecial ascomata in *Holmiellales* clearly distinguish this order and other closely related orders *Botryosphaeriales*, *Homortomycetales*, and *Catinellales*. The order *Holmiellales* has a stem age of 97 million years (Liu et al. 2017a) and has the same common ancestor with the orders *Homortomycetales* and *Catinellales*. The species of this order are saprobic, especially on dead wood in terrestrial habitats in Oman.

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Note 919 *Holmiellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Holmiellaceae Maharachch. & Wanas.

Holmiella was erected by Petrini et al. (1979) to accommodate *Holmiella sabina* (De Not.) Petrini, Samuels & E. Müll. (≡ *Triblidium sabinum* De Not.) as the type genus. Currently, this genus comprises four species (Species Fungorum 2023). Members of *Holmiella* are endophytes or saprobes in needles and wood of *Juniperus* species (Holm & Holm 1977, Kutorga & Hawksworth 1997, Eriksson 2014, Pem et al. 2018). In the asexual morph, conidiomata are pycnidia and superficial or immersed in cultures. Conidiophores are branched, hyaline, and septate. Conidiogenous cells are integrated and hyaline. Conidia are straight to curved. Chlamydospores may be present. Ascomata are apothecial with solitary and superficial formations. The hamathecium is filamentous, branched, and septate with 8 spores in the asci. Ascospores are 2–3-seriate and 1-septate. *Holmiella* was earlier placed in *Patellariaceae*. The phylogenetic analysis based on SSU, ITS, LSU, *rpb2*, and *tef1-α* sequence data by Maharachchikumbura et al. (2021b) revealed that *Holmiella* is closely related to *Botryosphaeriales*, *Catinellales*, and *Homortomycetaceae* disproving earlier placement in *Patellariaceae* (Yacharoen et al. 2015, Pem et al. 2018). *Holmiella* species formed a sister clade to the monotypic order *Catinellales* and divergence time estimates revealed that *Holmiella* species, therefore, represent a distinct family and order. Thus, the family *Holmiellaceae* was introduced for *Holmiella* species.

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Note 920 *Endoraeciaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Endoraeciaceae P. Zhao & L. Cai

Endoraeciaceae was introduced by Zhao et al. (2021a) based on analysis of ITS, LSU and SSU sequence data to accommodate *Endoraecium* Hodges & D.E. Gardner. Hodges & Gardner (1984) established the genus *Endoraecium* for rust fungi on *Acacia* spp. in Australia. Subsequently, Cummins & Hiratsuka (2003) placed the genus in *Pileolariaceae*. *Endoraecium* was typified by *Endoraecium acaciae* Hodges & D.E. Gardner. Previous phylogenetic studies (McTaggart et al. 2015, Zhao et al. 2020, Aime & McTaggart 2021), found *Endoraecium* to be phylogenetically distant from the type genus *Pileolaria*. *Endoraecium* also differs in the morphology of teliospores from other genera in *Pileolariaceae*, in the shape of spermogonia and the morphology of telia and teliospores (Cummins & Hiratsuka 2003). *Endoraeciaceae* is an autoecious monotypic family that produces spermogonia, aecia, uredinia, and telia on *Acacia* spp. (family *Fabaceae*). The genus is characterized by group VI (type 5) spermogonia, uredo-type aecia, with aeciospores borne singly on a pedicel, germ pores scattered, uredo-type uredinia with the urediniospores similar to the aeciospores. The teliospores are pedicellate and aseptate with unique reticulate to foveolate ornamentation. The evidence of Zhao et al. (2021a) clearly establishes the newly described family *Endoraeciaceae* with taxonomic placement in *Raveneliineae*, *Pucciniales*, and *Pucciniomycetes*.

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Note 921 *Neophysopellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neophysopellaceae P. Zhao & L. Cai, in Zhao et al.

Neophysopellaceae was introduced by Zhao et al. (2021a) based on analysis of ITS, LSU and SSU sequence data to accommodate *Neophysopella* Jing X. Ji & Kakish as the type genus. Ji et al. (2019) showed that species of *Phakopsora* were separated into two phylogenetically distant groups and established the genus *Neophysopella* for one of these groups with *N. ampelopsidis* (Dietel & P. Syd.) Jing X. Ji & Kakish. (≡ *Phakopsora ampelopsidis* Dietel & P. Syd.) as the type species. A further eight species were transferred to *Neophysopella*. Previous phylogenetic studies had confirmed the distinction of *Neophysopella* from *Phakopsora* and other genera in *Phakopsoraceae* and *Pucciniales* (Zhao et al. 2020, Aime & McTaggart 2021). *Neophysopella* also differs from other genera in *Phakopsoraceae* in the morphology of uredinia, telia and teliospores. *Neophysopellaceae* is a heteroecious monotypic family that produces spermogonia, aecia, uredinia and telia. The genus is characterized by group VI (type 7) spermogonia, aecidium-type aecia with well-developed peridia and catenate aeciospores, physopella-type uredinia with peripheral, incurved and dorsally thick-walled paraphyses. The telia comprise crusts of laterally adherent teliospores two or more cells deep; teliospores are catenate, aseptate, composed of 2–5 layers, with an obscure apical germ pore. The evidence of Zhao et al. (2021a) clearly establishes the newly described family *Neophysopellaceae* with taxonomic placement in *Raveneliineae*, *Pucciniales* and *Pucciniomycetes*.

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Note 922 *Uromycladiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Uromycladiaceae P. Zhao & L. Cai, in Zhao et al.

Uromycladiaceae was introduced by Zhao et al. (2021a) based on analysis of ITS, LSU and SSU sequence data to accommodate *Uromycladium* McAlpine as the type genus. McAlpine (1905) established the genus *Uromycladium* for rust fungi on *Acacia* spp. in Australia. Subsequently, Cummins & Hiratsuka (2003) placed the genus in *Pileolariaceae*. Previous phylogenetic studies (Zhao et al. 2020, Aime & McTaggart 2021) found *Uromycladium* to be phylogenetically distant from *Pileolaria*, the type genus of *Pileolariaceae*. *Uromycladium* also differs in morphology of teliospores from other genera in *Pileolariaceae*, in the shape of spermogonia and morphology of telia and teliospores (Cummins & Hiratsuka 2003, Doungsa-ard et al. 2018). *Uromycladiaceae* is an autoecious monotypic family that produces spermogonia, aecia, uredinia and telia on a restricted range of plants within family *Fabaceae* (*Acacia* spp., *Paraserianthes* spp.). The genus is characterized by group VI (type 5) spermogonia, uredo-type aecia, with aeciospores borne singly on a pedicel, uredo-type uredinia with the urediniospores similar to the aeciospores. The teliospores are aseptate, with 1–3 borne on a usually branched and septate pedicel that often bears a sterile vesicle. Basidia are external. The evidence of Zhao et al. (2021a) clearly establishes the newly described family *Uromycladiaceae* with taxonomic placement in *Raveneliineae*, *Pucciniales*, and *Pucciniomycetes*.

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Note 923 *Mycena*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycena (Pers.) Roussel

Mycena, typified by *M. galericulata* (Scop.) Gray, is a polyphyletic genus, containing poroid and lamellate mushrooms, predominantly saprobic and distributed worldwide. The genus has 24 names related and several subgeneric classification systems, based on morphological evidence resulting in four subgenera, 58 sections and 10 subsections recorded in Index fungorum. The sections *Amparoina* T. Bau & Q. Na, *Calodontes*, Fr. ex Berk.) Quél., *Fragilipedes* (Fr.) Quél., *Sacchariferae* Kühner ex Singer and *Supinae* Konrad & Maubl. were phylogenetically recognized with base in ITS, LSU and mtSSU sequences (Na & Bau 2019). New species have been described based on the morphology and ITS, LSU, mtSSU, *tef-1α*, *rpb1* and *rpb2* regions (e.g. Cooper 2014, Na & Bau 2018, Cortés-Pérez et al. 2019, Chang et al. 2020, Oliveira et al. 2021, Na et al. 2022, Zhang, et al. 2024). In the NCBI GenBank, 89958 sequences are related to the name *Mycena*, whilst 34 species had their genome sequenced. Research utilizing *Mycena* genomes has offered new insights about the evolution of fungal bioluminescence, as well as understanding its adaptability and lifestyles (Harder et al. 2024). *Mycena* harbors the most diversity of bioluminescent representatives, with 65 species reported up until now (Lu et al. 2024b). The taxonomic placement of *Mycena* is in *Mycenaceae*, *Mycenineae*, *Agaricales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 924 *Franziozymales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Franziozymales Q.M. Wang, Begerow & M. Groenew.

Multigene analyses (Li et al. 2022e) demonstrated that Strain XZ4C4, isolated from a leaf of bamboo from Tibet, represents a new species and genus, *Franziozyma bambusicola* Q.M. Wang, D. Begerow, M. Groenew. (as '*bambusoicola*'), among the exobasidiomycetous fungi. Based on analyses of a six loci dataset (ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α*), it was shown that this species belongs to a distinct clade separate from *Golubeviales*. For the accommodation of this genus in the *Exobasidiomycetes*, a new family, *Franziozymaceae*, and order, *Franziozymales*, were introduced (Li et al. 2022e). The order *Franziozymales* consists of a monotypic family and genus. Colonies are butyrous, cream, soft or tough, usually glabrous, or sometimes pubescent, shiny or dull, ridged, and with an eroded margin; hyphae are formed; chlamydospores occur intercalarily or terminally and are single; ballistoconidia are produced; sexual reproduction is not known (Li et al. 2022e). The type species was isolated from a leaf of bamboo from Tibet, China.

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Li YY, Wang MM, Groenewald M, Li AH et al. 2022e – Proposal of two new combinations, twenty new species, four new genera, one new family, and one new order for the anamorphic basidiomycetous yeast species in *Ustilaginomycotina*. Frontiers in Microbiology 12(no. 777338), 23.

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Note 925 ***Franziozymaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Franziozymaceae Q.M. Wang, Begerow & M. Groenew.

Franziozymaceae was introduced by Li et al. (2022e) as a monotypic family to accommodate *Franziozyma* Q.M. Wang, D. Begerow, M. Groenew. Multigene analyses demonstrated that Strain XZ4C4, isolated from a leaf of bamboo from Tibet (China), represents a new genus and new species, *Franziozyma bambusicola* Q.M. Wang et al. (as '*bambusoicola*'), among the exobasidiomycetous fungi. Based on phylogenic analyses of six loci dataset (ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α*) this genus was placed in a distinct clade separate from *Golubeviaceae* Q.M. Wang et al. For the accommodation of this genus in the *Exobasidiomycetes*, a new family, *Franziozymaceae*, was introduced (Li et al. 2022e). *Franziozymaceae* consists of a monotypic genus. Colonies are butyrous, cream, soft or tough, usually glabrous, or sometimes pubescent, shiny or dull, ridged, and with an eroded margin; hyphae are formed; chlamydospores occur intercalarily or terminally and are single; ballistoconidia are produced; sexual reproduction is not known (Li et al. 2022e). The taxonomic placement for *Franziozymaceae* is in *Franziozymales* and *Exobasidiomycetes*.

Reference

Li YY, Wang MM, Groenewald M, Li AH et al. 2022e – Proposal of two new combinations, twenty new species, four new genera, one new family, and one new order for the anamorphic basidiomycetous yeast species in *Ustilaginomycotina*. Frontiers in Microbiology 12(777338), 23.

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Note 926 ***Daohugouthallaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Daohugouthallaceae X.L. Wei, D. Ren & J.C. Wei

Wang et al. (2010) described a thalloid organism with possible lichen affinity from the Jiulongshan Formation (Callovian-Oxfordian boundary interval, latest Middle Jurassic deposits) exposed near Daohugou village, Shantou Township, Ningcheng County, Inner Mongolia, northeastern China and placed it under a new genus *Daohugouthallus*. The thallus comprises elongate primary axes from which extend lateral and terminal branches that fork once to repeatedly. Extending from all branches are filiform appendages that closely resemble the cilia of certain extant lichens. Some branch tips appear ruptured and covered by minute irregularities, and appear similar to lichen soralia. Specimens of *D. ciliiferus* are associated with a small seed cone and also found growing on an unidentified gymnosperm branch providing direct evidence to consider *D. ciliiferus* as the oldest known epiphytic lichen. Fang et al. (2020) corroborated the lichen affinity of *Daohugouthallus ciliiferus*.

Based on the results from the geometric morphometric analysis (GMA) and molecular clock assessments, Wei, Ren & Wei in Yang et al. (2023d), introduced a new monogeneric family *Daohugouthallaceae* and proposed the following diagnosis: "Thallus corticolous, foliose to subfruticose, lobes irregularly branching, lateral black cilia and lobules present. Fungal hyphae thin, photobiont cells small globose, simple." Based on new Jurassic (165 Mya) fossil of *Daohugouthallus ciliiferus*, Yang et al. (2023d) demonstrated the hitherto oldest known macrolichen inhabited a gymnosperm branch by applying energy dispersive X-ray spectroscopy and DNA to complementarily verify lichen affinity of *D. ciliiferus* and quantitatively assess the potential relationships with extant lichenized lineages, providing new approaches for study of this lichen adpression fossil. The fossil record and molecular clock studies indicate that gymnosperms diverged around 315 Mya, whereas conifers originated approximately 300 Mya and diversified 190–160 Mya in the Early to Middle Jurassic into the various families recognized today. Therefore, macrolichens may have played a role in Jurassic gymnosperm-dominated forest ecosystems comparable to extant macrolichens in present-day forests. The presence of an epiphytic macrolichen already in the Jurassic indicates that lichens and perhaps other epiphytes may already have contributed to the ecological complexity of paleo-forest ecosystems Diagnostic features, such as hamathecium, ascus, and ascospore structure, are not known from this fossil, which makes it difficult to establish relationships between fossil and extant lichens, including when taking fossils as calibration points in molecular dating analyses. Type genus for this family is *Daohugouthallus* Wang, Krings & Taylor and also *D. ciliiferus* Wang, Krings & Taylor considered as type species. The substrate for this fungi was an unidentified gymnosperm branch. The Jurassic macrolichen, however, is most similar to foliose *Parmeliaceae* (Phylum: *Ascomycota*, Class: *Lecanoromycetes*).

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Note 927 *Cuphophylloideae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Cuphophylloideae Z.M. He. & Zhu L. Yang

Lodge et al. (2014) studied the relationship among the members of the family *Hygrophoraceae* Lotsy based on extensive phylogenetic estimation and classified the family into three subfamilies: *Hygrophoroideae* E. Larss., Lodge, Vizzini, Norvell & S.A. Redhead, *Hygrocyboideae* Padamsee & Lodge, *Lichenomphalioideae* Lücking & Redhead, and a Cuphophylloid clade. The genera *Cuphophyllus* (Donk) Bon, *Ampulloclitocybe* Redhead, Lutzoni, Moncalvo & Vilgalys, and *Cantharocybe* H.E. Bigelow & A.H. Sm. are the basal of *Hygrophoraceae* with quite weak phylogenetic support (He & Yang 2021). The Cuphophylloid grade formed the base of these genera (Lodge et al. 2014). As a consequence, the proper systematic position of these genera has been dubious and unresolved (He & Yang 2021). In 2021, a new genus from this family, *Spodocybe* Z.M. He & Zhu L. Yang along with two of its new species *S. rugosiceps* Z.M. He & Zhu L. Yang and *S. bispora* Z.M. He & Zhu L. Yang were established with the help of morphology and multigene (ITS, LSU, *rpb1*, *rpb2*, *tef1-α*, *atp6*) phylogeny and formed a monophyletic clade with *Ampulloclitocybe*, *Cantharocybe*, and *Cuphophyllus* and sister clade with rest of the members of the family with strong phylogenetic support (He & Yang 2021). Based on these observations, the new subfamily *Cuphophylloideae* Z.M. He & Zhu L. Yang was erected to accommodate the genera *Spodocybe*, *Ampulloclitocybe*, *Cantharocybe*, and *Cuphophyllus* (He & Yang 2021). The members of this subfamily have characteristic clitocyboid basidiome without any veil. The shape of the pileus is convex to funnel with decurrent lamellae (He & Yang 2021). The basidiospores are thin-walled, subglobose to ellipsoid, and inamyloid (He & Yang 2021). The nature of the pileipellis is generally cutis but can be ixocutis o trichoderm. The arrangement of the lamellar trama hyphae can be bidirectional or interwoven (He & Yang 2021). Clamp connections are observed in all the genera of *Cuphophylloideae*. Also, this subfamily was typified by *Cuphophyllus* (Donk) Bon. (He & Yang 2021). Usually, the representatives of this subfamily are saprophytic and grow in a caespitose or gregarious manner on the soil. Mostly they have been reported from the tropical to temperate regions (He & Yang 2021).

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Note 928 *Asproinocybaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Asproinocybaceae T. Bau & G.F. Mou

The similar tricholomatoid habit and pinkish, subdistant lamellae result in *Asproinocybe* R. Heim and *Tricholosporum* Guzmán to look similar (Heim 1969, Guzmán 1975, Guzmán et al. 1990, 2004, Angelini et al. 2014, Xu et al. 2018, Lebel et al. 2020). The only feature that could distinguish these two genera is the shape of their basidiospores; nodulose or tuberculate in *Asproinocybe* and cruciform in *Tricholosporum* (Mou & Bau 2021). However, the segregation of these two genera and their taxonomic placement was always dubious (Mou & Bau 2021). Various taxonomists have placed *Asproinocybe* and *Tricholosporum* in the family *Tricholomataceae* R. Heim based on their morphological features for quite a long time (Heim 1969, Guzmán 1975, Guzmán et al. 1990, 2004, Angelini et al. 2014, Xu et al. 2018, Lebel et al. 2020, Mou & Bau 2021). Though no specific family was assigned to *Asproinocybe* during its establishment, Heinemann (1977), Guzmán et al. (2004), and Lebel et al. (2020) placed it under *Tricholomataceae* (Mou & Bau 2021). However, the first attempt at phylogenetic analysis retrieved *Tricholosporum* within another family, *Entolomataceae* based on ITS region and within *Tricholomataceae* based on LSU sequence data (Heaton & Kropp 2013). Later, more extensive multi-gene phylogeny based on LSU, SSU, and *rpb2* sequences showed the closeness of *Tricholosporum* with the clade containing members of *Entolomataceae*, *Lyophyllaceae*, *Collybia*, and the callistosporoid groups but the relationship had weak phylogenetic support (Angelini et al. 2017, Mou & Bau 2021). The relation between *Asproinocybe* and *Tricholosporum* could also not be resolved by means of one marker-based phylogeny (Mou & Bau 2021). Thus, to resolve such problems and the need for proper systematic positioning of these two genera, the family *Asproinocybaceae* was erected by Mou & Bau (2021) by comprehensive sampling and combining ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α* marker-based phylogeny. The type genus is *Asproinocybe* and the representatives of this family are found on soils of the forests of broad-leaf trees (Mou & Bau 2021). Generally, the basidiomata of the members of this family are violaceous with purplish to lilac-vinaceous colour tones (Mou & Bau 2021). The pileus shape is mostly convex to hemispherical becoming plane to depress at maturity with occasionally the presence of an umbo. The surface is distinctively fibrillose to velvety and smooth. The context is whitish but turns greyish to yellowish on exposure. The lamellae attachment varies from adnexed to adnate to sinuate, emarginate, or free (Mou & Bau 2021). The lamellae of this family are usually of violet tones but turn reddish or brownish on bruising. The stipe is typically fistulose-hollow, violaceous in colour with the surface of flocculose or pruinose. *Asproinocybaceae* has inamyloid, thin-walled, basidiospores with usually having large oil-drop. The cystidia at the lamellar edge and face vary in shape but generally are thin-walled with occasional greyish violet pigment (Mou & Bau 2021). The hyphal arrangement of the pileipellis is generally cutis with interwoven, smooth-to-incrusted hyphae. Clamp connections may or may not be found but the laticifers are present in all the species of this family. The type genus, *Asproinocybe* R. Heim, that was typified by *Asproinocybe lactifera* R. Heim, has a central pileus with the hyphae of the pileipellis having incrustations and the unbranched apices of the cystidia which make it quite distinct. The other genus of this family, *Tricholosporum*, that was typified by *Tricholosporum goniospermum* (Bres.) Guzmán ex T.J. Baroni, is characterized by a central pileus with no significant colour spots, cyanophilous basidiospores, and the cystidia sometimes are pigmented (Mou & Bau 2021). The species of *Asproinocybe* are mostly found in tropical forests while that of *Tricholosporum* are quite widespread (Kirk et al. 2008). The taxonomic placement of this family is in *Agaricales* and *Agaricomycetes*.

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Note 929 *Malbrancheaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Malbrancheaceae Kandemir & de Hoog

Malbrancheaceae was introduced by Kandemir et al. (2022) to accommodate species previously described in the genus *Auxarthron* but currently classified in *Malbranchea*. These species were previously considered in *Onygneaceae* however, based on multilocus (LSU, ITS, *tub2*, *rp60S*, *tef1-α*, *tef3*, *rpb1*, and *rpb2*) sequence data, they form a statistically supported monophyletic group which is found to be distant from the type species of *Onygenaceae*. The genus *Auxarthron* (i.e. *A. conjugatum*) has been reported to form a malbranchea-like asexual morph, and *M. albolutea* produces a sexual morph related to *Auxarthron* (Sigler and Carmichael 1976). In addition, *M. filamentosa* phylogenetically clustered with *Auxarthron*. Rodríguez-Andrade et al. (2021) followed the historical priority principle (Saccardo 1882b, Orr et al. 1963, Turland et al. 2018) and proposed to synonymize the sexual morph genus *Auxarthron* with the asexual morph genus *Malbranchea* according to the analysis of the concatenated ITS and LSU sequences. Currently, only one genus *Malbranchea* were accepted accordingly in *Malbrancheaceae* (Rodríguez-Andrade et al. 2021, Kandemir et al. 2022). This genus is typified with *Malbranchea pulchella* Sacc. & Penz that was collected as a saprobe on wet paper in France.

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Note 930 *Malbranchea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Malbranchea Sacc.

Saccardo (1882b) established *Malbranchea* with the type species *M. pulchella* which is associated with wet paper or cardboard as a saprobe in terrestrial habitats in Normandy, France (Saccardo 1882b). Currently, 40 species are accepted in *Malbranchea* (Index Fungorum 2023). The majority of *Malbranchea* cause animal and human infections (Sigler & Carmichael 1976, Benda & Corey 1994, Lyskova 2007, Salar & Aneja 2007, Govind et al. 2017, Durdu et al. 2019, Rodríguez-Andrade et al. 2021, Kandemir et al. 2022). Based on the analysis of multigene (LSU, ITS, *tub*, *rp60S*, *tef1-α*, *tef3*, *rpb1*, and *rpb2*) sequence data this genus forms a clade separate from *Onygenaceae* and was accommodated in the new family *Malbrancheaceae*; (Kandemir et al. 2022). This genus is characterized by alternate, hyaline arthroconidia produced in the curved branches from the vegetative hyphae. The sexual morph genus *Auxarthron* (originally classified in *Onygenaceae*, *Onygenales*) has reddish brown, appendaged gymnothecial ascomata, 8-spored, globose, prototunicate asci with globose or oblate, reticulate ascospores (Solé et al. 2002). It initially has a close relationship with the asexual genus *Malbranchea*, i.e., *A. conjugatum* has a malbranchea-like asexual morph, and *M. albolutea* produces a sexual morph similar to *Auxarthron* (Sigler & Carmichael 1976). In addition, *M. filamentosa* has been reported and connected with *Auxarthron* according to molecular evidence and similar ascomata produced by *Auxarthron* (Sigler et al. 2002a). Thus, *Auxarthron* has been connected with the asexual morph and is accepted as a synonym of *Malbranchea* according to molecular data and the principle of priority (Turland et al. 2018, Rodríguez-Andrade et al. 2021, Kandemir et al. 2022). Species with enteroarthric conidia are generally classified under *Malbranchea* in the order *Onygenales* (Kandemir et al. 2022). Malbranchea-like species are also present in the genus *Arachnomyces* (*A. glareosus*, *A. kanei*, *A. nodosetosus*, *A. peruvianus*) and *Spiromastigoides* (*S. albida*) which have been also implicated in animal and human infections (Malloch & Cain 1970, Guarro et al. 1993, Gibas et al. 2004, Stuchlík et al. 2011, Järv 2015, Brasch et al. 2017, Stchigel et al. 2017, Sun et al. 2019).

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Note 931 *Neogymnomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neogymnomycetaceae Kandemir & de Hoog

Kandemir et al. (2022) established the family *Neogymnomycetaceae* to accommodate several keratinophilic genera which mainly isolated from dung and soil based on a stable phylogenetic analysis with a combined eight loci (LSU, ITS, *tub*, *rp60S*, *tef1-α*, *tef3*, *rpb1* and *rpb2*) sequences. *Neogymnomyces* was designated to be the generic type. Currently, six genera were accepted, viz. *Auxarthronopsis*, *Canomyces*, *Currahmyces*, *Neogymnomyces* and *Renispora* (Orr 1970, Sigler et al. 1979, Sharma et al. 2013, Sharma & Shouche 2020, Kandemir et al. 2022). In addition, the genera *Canomyces* and *Auxarthronopsis* have been found to be associated with plant debris in Karst Cave in China (Zhang et al. 2021b). Since the family *Neogymnomycetaceae* was defined based on a stable phylogenetic analysis and similar ecological habitats, several species, i.e., *Amauroascus purpureus*, *A. volatilis-patellus*, *Chrysosporium speluncarum*, and *Nannizziopsis mirabilis* have converged with this clade, requiring further research on nomenclature (Kandemir et al. 2022). *Chlamydosauromyces punctatus* which was isolated from the skin of a lizard in the USA (Sigler et al. 2002b) clustered with *Neogymnomyces* species with a high support value, and according to the keratinophilic habitat and gymnothecial ascomata, but different characters of ascospores (Doveri et al. 2012), Kandemir et al. (2022) synonymized *C. punctatus* with *Neogymnomyces demonbreunii*.

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Note 932 *Neogymnomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neogymnomyces G.F. Orr

The sexual morph species *Gymnoascus demonbreunii* has been connected with the asexual morph *Histoplasma capsulatum* initially (Ajello & Chen 1967), while there is little evidence that has a taxonomic relationship with *H. capsulatum* (Orr 1970). Considering *G. demonbreunii* could not be linked to any asexual fungus and comparing the morphological differences with other species in *Gymnoascus*, Orr (1970) established a new genus to accommodate a new genus *Neogymnomyces*. The genus was typified with *Neogymnomyces demonbreunii* (Ajello & S.L. Cheng) G.F. Orr. This species was associated with soil, especially that of avain and chiropteran habitats, as a saprobe in terrestrial habitats in Illinois, USA (Ajello & Chen 1967). It is characterized by spherical, yellowish ascocarps, hyaline, sinuous, anastomosed peridial hyphae with free ends forming simple or branched apical blunt ends, rounded and swollen appendages, globose or obovate asci and ovoid or elliptical, yellowish or golden ascospores (Ajello & Chen 1967, Orr 1970, Kandemir et al. 2022). *Neogymnomyces* resembles *Arachniotus* and *Pseudoarachniotus* in having ascospores with similar color and shape. While species in *Arachniotus* have snow-white to yellowish-white gymnothecia without appendages, peridial elements similar to the vegetative hyphae and completely encasing the asci in a fragile membrane and ovoid to spherical asci. *Pseudoarachniotus* was described as lacking discrete ascocarps or forming spherical ascal clusters (Schroeter 1893, Kuehn 1955, Orr et al. 1977). In addition, *Neogymnomyces* is phylogenetically distinct from both genera, and based on multilocus (LSU, ITS, *tub*, *rp60S*, *tef1-α*, *tef3*, *rpb1*, and *rpb2*) sequence data represents a new distinct clade with the genera *Auxarthronopsis*, *Canomyces*, *Currahmyces*, and *Renispora* in a newly introduced family *Neogymnomycetaceae* (Kandemir et al. 2022).

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Note 933 ***Astathelohaniidae***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Astathelohaniidae C.E. Stratton, L.S. Reisinger, D.C. Behringer & J. Bojko. Stratton et al. (2022) introduced this family to accommodate a novel microsporidian genus, *Astathelohania* C.E. Stratton, L.S. Reisinger, D.C. Behringer & J. Bojko. This family is typified by the genus *Astathelohania* Stratton, Reisinger, Behringer, Bojko and the species *Astathelohania virili* Stratton, Reisinger, Behringer, Bojko. *Astathelohania* has been reported as freshwater parasitic species of crayfish which are phylogenetically distinct from the marine crayfish parasitic genus, *Thelohania*. Historically, *Thelohania* species have been recognized as parasites of crayfish, but Stratton et al. (2022) confirmed that freshwater *Thelohania* species show a distinct phylogenetic lineage. *Astathelohania* are genetically different from other known microsporidian genera with SSU rRNA gene sequence. Currently, *Astathelohaniidae* comprises four species (Index Fungorum 2023). Stratton et al. (2022), further carried out pathological and histological studies to confirm the pathogenicity and the impact on crayfish tissues respectively. The members of this family are binucleate and uninucleate, and parasites within sporophorous vesicles in freshwater hosts. The shapes of spores are ellipsoidal, oval, or pear-shaped. The taxonomic placement of this family is in *Opisthosporidia* and *Rozellomycota* and the order is undetermined.

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Note 934 ***Chionasteraceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Chionasteraceae N.A.T. Irwin, C.S. Twynstra, V. Mathur & P.J. Keeling

Chionasteraceae was introduced by Irwin et al. (2021) that is typified by *Chionaster nivalis* (K. Bohlin) Wille, a unicellular, fungus, that is frequently observed in snow accommodated in the class *Tremellomycetes*, based on ITS and LSU (D1-D2) region of the large subunit ribosomal RNA gene. *Chionaster* was described and identified based on radiating arms (3 to 5) and a central condensed cell (i.e., an aplanospore) associated with the lack of higher-level classifications in fungi. Moreover, *Chionaster nivalis* showed a distinct phylogenetic lineage in *Tremellomycetes* thus introducing *Chionasterales* and *Chionasteraceae* (Irwin et al. 2021). Besides, Irwin et al. (2021) confirmed that *Chionaster nivalis* and *Chionasterales* 'are globally distributed and probably psychrophilic, as they appear to be limited to the high alpine and arctic regions. These results highlight the unexplored diversity that exists within these extreme habitats and emphasize the utility of single-cell approaches in characterizing these complex algal-dominated communities. The taxonomic placement of this family is in *Chionasterales*, *Tremellomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

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Note 935 ***Chionasterales***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Chionasterales N.A.T. Irwin, C.S. Twynstra, V. Mathur & P.J. Keeling

Chionasterales was introduced by Irwin et al. (2021) and was typified by the family *Chionasteraceae* N. A. T. Irwin, C. S. Twynstra, V. Mathur, P. J. Keeling and *Chionaster nivalis* (K. Bohlin) Wille. This unicellular, fungus, that is frequently observed in snow and is accommodated in the class *Tremellomycetes*, based on ITS and LSU (D1-D2) region of the large subunit ribosomal RNA gene. *Chionaster* was described and identified based on radiating arms (3 to 5) and a central condensed cell (i.e., an aplanospore) associated with the lack of higher-level classifications in fungi. Moreover, *Chionaster nivalis* showed a distinct phylogenetic lineage in *Tremellomycetes* thus introducing *Chionasterales* and *Chionasteraceae* (Irwin et al. 2021). Besides, Irwin et al. (2021) confirmed that *Chionaster nivalis* and *Chionasterales* 'are globally distributed and probably psychrophilic, as they appear to be limited to the high alpine and arctic regions. These results highlight the unexplored diversity that exists within these extreme habitats and emphasize the utility of single-cell approaches in characterizing these complex algal-dominated communities. The taxonomic placement of this order is in *Tremellomycetes*, *Agaricomycotina* and *Basidiomycota*.

Reference

Irwin NAT, Twynstra CS, Mathur V, Keeling PJ. 2021 – The molecular phylogeny of *Chionaster nivalis* reveals a novel order of psychrophilic and globally distributed *Tremellomycetes* (*Fungi*, *Basidiomycota*). PLoS ONE 16(3), e0247594.

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Note 936 ***Ericiomycetaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ericiomycetaceae Karpov & Reñé

Karpov et al. (2021) introduced the family *Ericiomycetaceae* to accommodate *Ericiomyces* Karpov & Reñé as a monotypic genus. This genus is typified with *Ericiomyces syringoforeus* Karpov & Reñé, collected as a parasite on *Kryptoperidinium foliaceum* host from brackish water in the northern Baltic Sea, Finland. Phylogenic analysis based on rDNA sequence data revealed a distinct phylogenetic lineage in *Rhizophydiales*, *Chytridiomycota* so a new family *Ericiomycetaceae* was introduced. *Ericiomyces* was characterized by an encysted zoospore containing a special structure called a syringe, which probably paralyzes a host. The developing zoosporangium is covered by short, spiny protrusions along the entirety of its surface. Both traits are reflected in the species and generic etymology. The sporangium formed as a lateral outgrowth from the encysted zoospore. Zoospores have kinetosomes with anterior microtublar roots associated with a short basal fibrillar plate, ribosomal core ramified and crossed by endoplasmic reticulum.

Reference

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Note 937 *Miraculales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Miraculales Buaya & Thines

Buaya et al. (2021) introduced this order to accommodate the *Miraculaceae* family and *Miracula* Buaya, Hanic & Thines genus, a taxon belonging to *Oomycota*. The order was typified by *Miracula helgolandica* Buaya, Hanic & Thines which was identified based on morphology and molecular characters with partial SSU sequences (Buaya et al. 2017). The order comprises only one genus which was reported in the thallus of Bacillariophyta. Buaya & Thines (2020a, b) used the term *Miraculales* in their study however, they did not provide a description or designate the type. Hence, *Miraculales* 2020 is invalid (Art. 39.1, Shenzhen). The thallus contains members of the Bacillariophyta and are holocarpic, simple, subglobose to limoniform with thin-walled and evanescent features. The germ tube is short and often observed with a thickened base. Zoospores are biflagellate and they immediately disperse after release. Resting spores are not known. The taxonomic placement of *Miraculales* is in *Saprolegniidae*, *Peronosporea*, *Oomycota*, and *Chromista*.

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Note 938 *Sanchytriomycota*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sanchytriomycota Galindo, López-García, Torruella, Karpov & Moreira

Galindo et al. (2021) introduced this phylum to accommodate sanchytrids which are obligate parasites of freshwater algae. The members of *Sanchytriomycota* are superficially resemble the taxa in *Chytridiomycetes*. Currently, the phylum *Sanchytriomycota* comprises a single class (*Sanchytriomycetes*), an order (*Sanchytriales*), a family (*Sanchytriaceae*) and two monotypic genera *viz*., *Sanchytrium* (Type: *Sanchytrium tribonematis* Karpov & Aleoshin 2017 *fide* Karpov et al. 2017) and *Amoeboradix* Karpov, López-García, Mamkaeva & Moreira (2017) (Type species: *Amoeboradix gromovii* Karpov, López-García, Mamkaeva & Moreira 2017 *fide* Karpov et al. 2018). Based on whole-genome amplification (WGA) and phylogenomic analysis, *Blastocladiomycota* is a sister clade for *Sanchytriomycota* (Galindo et al. 2021)

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Note 939 *Neopetractis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neopetractis Ertz

Based on phylogenetic analyses using combined LSU, *rpb2* and SSU sequence data, Ertz et al. (2021) introduced *Neopetractis* (*Gyalectaceae*) to accommodate *N. luetkemuelleri* (Zahlbr.) Ertz (type species) and *N. nodispora* (Orange) Ertz previously belonging to *Petractis* Fr. (Orange 2009). In the phylogenetic tree two *Neopetractis* species formed a lineage close to the genus *Ramonia* Stizenb. and are distantly related to *Petractis sensu stricto*. (= *P. clausa* (Hoffm.) Kremp.). *Neopetractis* differs from *Petractis* in having a trentepohlioid photobiont and from *Gyalecta sensu* *lato* in having ascospores with a thick gelatinous sheath. The phylogenetically sister *Ramonia* differs from both *Neopetractis* and *Petractis* notably in having periphysoids and polysporous asci. *Neopetractis* as currently understood is a small genus of calcicolous lichens with an endolithic or semi-epilithic, thallus, immersed apothecia, at first perithecioid, finally with a slightly to rather widely expanded disc, thin, colourless or yellowish exciple with angular, isodiametric to oblong cells, colourless hymenium, thin, colourless hypothecium, 8-spored asci with hyaline, ellipsoid, 3–5-transversally septate to submuriform ascospores.

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Note 940 *Verrucariopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Verrucariopsis Gueidan, Monnat & Cl. Roux

The genus *Verrucariopsis* was established by Gueidan et al. (2022) to accommodate *V. suaedae* as the type species that grows on the stems of *Suaeda vera* collected from the coast of Brittany and Loire-Atlantique in France. The genus is characterized by a crustose thallus with green algae (*Chlorophyta*), perithecioid globous semi-immersed ascomata, an excipulum covering the upper half of the ascomata, a hamathecium consisting of periphyses and short pseudoparaphyses of type b (follow Roux & Triebel 1994), a hymenium with J+ (orange-red) coloration, bitunicate 8-spored asci, and aseptate, hyaline, globous ascospores. Conidiomata are pycnidioid, multi-chambered with short bacilliform conidia. Based on the analysis of multigene (LSU, SSU, and *rpb1*) sequence data, Gueidan et al. (2022) demonstrated that the genus *Verrucariopsis* forms a well-supported clade and includes two species, *V. suaedae* and *V. halophila*. The genus exhibits a sister relationship to the marine lichen genera *Mastodia* and *Wahlenbergiella*, as well as to the single sequence of *Verrucaria halizoa* and several *Verrucaria* specimens with uncertain identification. The taxonomic placement of *Verrucariopsis* is within *Verrucariaceae* (*Verrucariales*, *Eurotiomycetes*).

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Note 941 *Claviradulomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Claviradulomycetaceae L.L. Duarte, D.M. Macedo & R.W. Barreto

Based on the Bayesian inference analysis of the LSU and *rpb*2 region, Duarte et al. (2021), introduced *Claviradulomycetaceae* (*Ostopales* Nannf.) for species of *Claviradulomyces* P.R. Johnst., D.C. Park, H.C. Evans, R.W. Barreto & D.J. Soares, the genus of apothecial fungi growing on abnormal, hypertrophied and spongy lenticels of plants belonging to distantly related families (*Anacardiaceae*, *Annonaceae*, *Asteraceae*, *Bignoniaceae*, *Erythroxylaceae*, *Fabaceae*, and *Salicaceae*) in Africa (Ghana and Ivory Coast) and South America (Brazil). *Claviradulomyces* is the only genus in this new family. *Claviradulomyces* might be ubiquitous but overlooked because of its cryptic nature. The typical structures of the asexual morph of *Claviradulomycetaceae* are black pycnidia with rostrate ostioles containing fusoid-filiform hyaline conidia. Apothecia (when present) are sessile, containing clavate-muricate paraphyses and unitunicate asci with eight subcylindrical filiform ascospores.

Reference

Duarte LL, Macedo DM, Barreto RW. 2021 – Cryptic but ubiquitous**:** *Claviradulomyceae* fam. nov. with five novel species of the lenticel fungus *Claviradulomyces* from Brazil**.** Cryptogamie, Mycologie 42(7), 121–135**.**

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Note 942 *Nesothele*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nesothele Orange

Based on analysis of combined ITS, LSU and SSU sequence data, Orange & Chhetri (2022) established the genus *Nesothele* with the type species *Nesothele succedens* (= *Polyblastia succedens*) to accommodate the distinct group of *Staurothele sensu lato*. *Nesothele* is characterized by crustose to squamulose superficial thallus, hyaline, muriform ascospores, 4–8 per ascus and by photobiont cells present in the hymenium. Orange & Chhetri (2022) showed that *Nesothele* formed a well-supported clade of *Verrucariaceae* and demonstrate the sister relationship to *Staurothele sensu stricto*, which is characterized by mainly epilithic thallus, 2-spored asci and colourless to usually brown ascospores. However, this sister relationship did not obtain significant support from maximum likelihood analyses provided by the authors. Currently, the genus includes five species worldwide and is placed within *Verrucariaceae* (*Verrucariales*, *Eurotiomycetes*).

Reference

Orange A, Chhetri S. 2022 – *Verrucariaceae* from Nepal. The Lichenologist 54(3-4), 139–174.

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Note 943 *Xyloelixia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Xyloelixia S.Y. Kondr.

Xyloelixia was established for the former '*Xylographa*' *isidiosa* group in the same family *Xylographaceae* and was proposed by Kondratyuk et al. (2022). A phylogenetic tree of combined maximum likelihood and Bayesian analyses based on ITS, LSU and SSU sequences were constructed, in which *Xylographa disseminata*, *Xylographa isidiosa*, and an uncertain, but species similar to *Xylographa disseminata* but reported as *Xylographa vitiligo*, formed a well-supported separate clade within the family *Xylographaceae*. This clade was labeled as '*Xyloelixia*', a sister group to the clade consisting of *Xylographa sensu stricto* and *X. bjoerkii*. *Xyloelixia* comprised four species including *Xyloelixia constricta*, *X. disseminata*, type species *X. isidiosa*, and *X. septentrionalis*, whereas *X. septentrionalis* lacks molecular data (Kondratyuk et al. 2022). The taxa are reported as lignicolous fungi on dead and wood from Atlantic coastal plain of eastern North America, Australia and North America. The genus shows similar morphological characteristics to *Xylographa*, but differs in well-developed thallus being mostly isidiate, radiating outwards ascomata, confriesiic, friesiic and fatty acids as lichen substances with long, nearly fusiform ascospores (Kondratyuk et al. 2022). The taxonomic placement of *Xylographa* is in *Xylographaceae, Baeomycetales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Kondratyuk SY, Lőkös L, Kondratiuk AS, Kärnefelt I et al. 2022 – Contributions to molecular phylogeny of lichens 3. New monophyletic branches of the *Trapeliaceae* and *Xylariaceae*. Acta Botanica Hungarica 64(1–2), 1–39.

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Note 944 *Kleopowiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Kleopowiella S.Y. Kondr.

Kleopowiella was introduced by Kondratyuk et al. (2022) for the former '*Trapelia*' *placodioides* group. The genus comprised three taxa namely *Kleopowiella bisorediata*, generic type *K. placodioides* and *K. thieleana* and show similar characteristics to *Trapelia sensu stricto*. However, differs in usually two types to numerous soralia, very rare apothecia, yellow pigments, filiform and mostly strongly curved conidia. The taxa are reported on granite and ironstone, flushed or poorly drained bedrock, soil in shrub-steppe and stones from Australia, Northern Hemisphere and North America. *Kleopowiella placodioides* and *K. thieleana* were nested together in the ITS-based phylogenetic tree constructed by Orange (2018). Further, *K. thieleana* was assumed as a fertile, non-sorediate morph of *K. placodioides*. However, wider geographical sampling with additional gene sequences are required to resolve this (Orange 2018). *Kleopowiella* formed a monophyletic clade within *Trapeliaceae* based on combined ntITS, nrLSU and mtSSU sequences. However, several strains of *K. placodioides* (=*T. placodioides*) including KY797799, KY797810, KY797818, and KU672619 assumed to belong to *Kleopowiella thieleana* based on SSU analysis and the genus formed a sister clade to *Gallowayiopsis* in the SSU analysis. The taxonomic placement of *Kleopowiella* is in *Trapeliaceae*, *Baeomycetales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 945 *Kudratovia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Kudratovia S.Y. Kondr., Lőkös & Hur

Kudratovia was established based on combined ITS and SSU sequence data by Kondratyuk et al. (2021). The genus comprised eight species with *Kudratovia straussii* S. Y. Kondr., L. Lőkös et J.-S. Hur as the type and reported mostly on calcareous rocks, mosses, plant remnants and rarely on Ca-containing soil. Apothecia are lecanorine and ascospores of Bicincta- or Physcia-types sometimes with elongated hyaline ends. Conidia are bacilliform. The taxa are distributed in arctic and alpine ecosystems of the Northern Hemisphere, Asia and Eurasia in both sexual and asexual states. The genus was proposed for former '*Rinodina*' *straussii* group that showed similar morphological characters, but differs from the genus in the presence of *Bicincta*- or *Physcia*-types of ascospores, thallus containing zeorin, variolaric acid and unknown fatty acid. The genus positioned within *Phaeophyscia sensu lato* subclade based on combined ITS and SSU but formed a sister clade to the *Oxnerella* and the *Rinodinella sensu lato* subclades based on ITS sequence data (Kondratyuk et al. 2021). The species *Kudratovia roscida* and *K. luridata* were formerly included in *Rinodina* were recovered separately but sister to *Phaeophyscia ciliata* in the previous phylogenetic study conducted by Nadyeina et al. (2010). '*Rinodina*' *teicholyta* –'*Rinodina*' *alba* also recovered in the sister position to *Kudratovia* based on ITS sequence data. However, *Rinodina*' *alba* was assigned to *Helmutiopsis* based on combined ITS and SSU sequence data whereas '*Rinodina*' *teicholyta* has refrained to transfer to *Kudratovia* due to the presence of *Mischoblastia*- or *Pachysporaria*-types of ascospores, wider conidia (to 1.5 µm wide), absence of lichen substances, and distribution in Eurasia, North Africa and New Zealand. The taxonomic placement of *Kudratovia* is in *Physciaceae*, *Caliciales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 946 *Trapegintarasia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Trapegintarasia S. Y. Kondr.

Kondratyuk et al. (2022) introduced this genus to accommodate two species, *Trapelia lilacea* and *T. tristis* that were recovered in a monophyletic clade in the phylogenetic analyses carried out based on ITS, LSU and SSU sequences. *Trapegintarasia* was typified by *T. lilacea* S. Y. Kondr. The authors also combined a third species into the genus, *Trapelia antarctica*, without further discussion, and which is not included in the phylogenetic tree provided in their work. The phylogenetic relationships of this lineage with other groups of the family *Trapeliaceae* were not resolved. The species combined into this new genus are only known from the southern hemisphere. *T. lilacea* is restricted to Tasmania, *T. tristis* is only known from the Falkland Islands, and *T. antarctica* is only known from Dronning Maud Land in Continental Antarctica. Although all species are saxicolous, *T. lilacea* prefers large boulders at mid to high altitudes in forest gaps (Kantvilas & Elix 2007), and *T. tristis* occurs at low altitudes on rocks next to streams, in the intermittently flooded zone (Orange 2018). In addition, *T. antarctica* may grow on sand in addition to rock (Ertz et al. 2014). These species share numerous characters with other *Trapelia* species, such as the angiocarpic ontogeny of the ascomata, the very poorly developed prosoplectenchymatous excipulum, the relatively large and vacuolate ascospores, and the filiform conidia. According to Kondratyuk et al. (2022), they differ from the rest of the group by having hyascic acid or related metabolites, smaller apothecia, the sometimes thickened paraphyses at the apex, and by forming a separate supported clade in their phylogeny. Hyascic acid (in minor amounts) and 5-methylhyascisic acid (major) are present in *T. lilacea* (Kantvilas & Elix 2007) and *T. antarctica* (Ertz et al. 2014) but not in *T. tristis*, which contains only gyrophoric acid (Orange 2018). In addition, hiascic acid and derivates are commonly present in other *Trapelia* species (Orange 2018), so the presence of this secondary metabolite cannot be used as a diagnostic character for the genus. As for the paraphyses, *T. antarctica* and *T. tristis* have widened apices (Ertz et al. 2014, Orange 2018) but not *T. lilacea* (Kantvilas & Elix 2007) so it cannot be considered a synapomorphy either. Thus, only the small size of the apothecia could be considered a shared character, although *T. antarctica* shows apothecia up to 1 mm in diam. However, this trait is known to vary across *Trapelia* (Orange 2018) and *Trapeliaceae* in general (Schneider et al. 2016). In summary, there is currently no evidence to support this genus as a different taxon. The taxonomic placement of *Trapegintarasia* is in *Trapeliaceae*, *Baeomycetales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 947 *Trapejamesia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Trapejamesia S. Y. Kondr.

Kondratyuk et al. (2022) introduced this genus to accommodate two species, *Trapelia corticola* and *Placynthiella hurii*. Both were recovered as sister species in a phylogeny based on a combination of ITS, LSU and SSU sequences, although for *P. hurii* only ITS sequences (not available in the GenBank) were used. *Trapejamesia* was typified by *T. corticola* S.Y. Kondr. The relationships between this clade and the rest of *Trapeliacae* remain unresolved. The two species differ considerably, whereas *T. corticola* is an epiphytic, usually sterile, sorediate crustose species occurring in temperate and boreal forests in both hemispheres (Coppins & James 1984), *P. hurii* was described as sterile composed of more or less bullated squamules occurring on soil in crevices or more rarely on rock in South Korea, rarely producing soredia (although the diagnosis states that it lacks such a reproductive strategy) (Kondratyuk et al. 2017). Both species have lecanoric and gyrophoric acids as secondary metabolites, and in addition, *T. corticola* also has 5-O-methylhiascic acid. The diagnosis of the genus seems to be based only on *T. corticola*, as the generic diagnostic features were the presence of bark or wood, small ascospores, and paraphyses with swollen apices, all characters not shared by *P. hurii*. Both ascospore size and paraphyses shape are characters that vary in *Trapelia* (Orange 2018), so apart from the substrate there are no solid features to separate this clade from *Trapelia* and further studies with additional molecular markers should be carried out before accepting this genus. The taxonomic placement of *Trapejamesia* is in *Trapeliaceae*, *Baeomycetales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 948 *Kurokawia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Kurokawia S.Y. Kondr., Lőkös & Hur

The genus *Kurokawia* was established with *Kurokawia isidiata* S.Y. Kondr., Lőkös & Huras as the type species based on combined ITS and SSU sequences (Kondratyuk et al. 2021). The taxa were previously assigned to *Anaptychia* and formed a sister clade in the phylogenetic analysis (Kondratyuk et al. 2021). Apothecia are lecanorine with 8-spored asci that contain dark brown ascospores 1-septate with minute spines or ridges. Conidia are bacilliform to widely bacilliform and colourless, and 3–5 × 1–1.5 µm. The members are reported on bark, especially on wayside trees, hard coastal rock, turf, and soil, also are distributed in East Asia, Mediterranean Europe, North Africa, North America and Northern Hemisphere. The genus showed similar characteristics to *Anaptychia*, but differs in the presence of foliose and closely attached thallus, dull olive green, when moist, upper surface, well-developed lower cortex, simple, rarely branched (brush-like) rhizines, shorter ascospores, wider conidia and lack of pale grey white lateral cilia and tomentum on the upper surface. Hollinger et al. (2022) also combined *Anaptychia pseudoroemeri* under *Kurokawia* on the basis of smooth upper cortex, well-developed lower cortex and mostly simple rhizines. The taxonomic placement of *Kurokawia* is in *Physciaceae*, *Caliciales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 949 ***Andina***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Andina Wilk, Pabijan & Lücking.

Andina was introduced by Wilk et al. (2021) based on phylogenetic analyses that was typified by *Andina citrinoides* Wilk & Lücking. The genus shows similar morphological characteristics to *Flavoplaca citrina* in areolate,ørediate, and yellow to yellow-orange thallus, but differs in smaller soredia (20–50 µm in diam) and initially circular soredia. The asexual morph of the genus is unknown. The genus further differs from *Flavoplaca citrina* in the distribution and was reported from Bolivia and Chile, whereas on siliceous rocks in rocky slopes, the latter was found in the Northern Hemisphere, mainly in Europe. The genus formed a distinct clade with a long stem branch together with *Sirenophila* and *Elixjohnia* in the ITS, LSU, and SSU phylogenetic analyses (Wilk et al. 2021). However, *Andina* has been subsequently synonymized under *Wilketalia* due to a homonym that was already available for mosses (Kondratyuk & Mosyakin 2022). The taxonomic placement of *Andina* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina and Ascomycota*.

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Note 950 *Aridoplaca*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aridoplaca Wilk, Pabijan & Lücking.

A saxicolous monotypic lichenized genus *Aridoplaca* was introduced by Wilk et al. (2021) to accommodate *Aridoplaca peltata*. This genus was reported from Bolivia and Peru. The genus formed a distinct clade in the phylogenetic analyses conducted based on molecular analysis with ITS, SSU, and LSU sequence data. The genus belongs to the subfamily *Teloschistoideae* and shares similar morphological characteristics to *Xanthopeltis rupicola* in minutely umbilicate to peltate thallus that was nested within Xanthorioideae (Arup et al. 2013, Wilk et al. 2021). However, *Aridoplaca* differs from *Xanthopeltis rupicola* in having a smaller thallus, peltate squamules forming small rosettes, and polarilocular, straight, ellipsoid ascospores (Wilk et al. 2021). The species with similar epithet *Caloplaca peltata* also shares similar thallus morphology to *Aridoplaca* but differs in the presence of pruinose, flat to slightly concave squamules with slightly upturned margins, sessile apothecia which usually solitary on the single squamules.The sexual morph of the genus is characterized by saxicolous, squamulose-peltate, orange-red thallus, abundant, crowded, erumpent apothecia with the red disk, thalline cortex, parathecium, paraplectenchymatous hypothecium, polarilocular, ellipsoid and medium-sized ascospores with medium thick septa. The asexual morph produces pycnidia that are abundant and completely immersed (Wilk et al. 2021). The taxonomic placement of *Aridoplaca* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 951 *Cinnabaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cinnabaria Wilk, Pabijan & Lücking.

A saxicolous monotypic genus *Cinnabaria* was described from Bolivia to accommodate *Cinnabaria boliviana* Wilk & Lücking. The genus formed a distinct clade in the phylogenetic analyses conducted based on ITS, LSU, and SSU with low statistical support. *Cinnabaria* is characterized by a thallus with areolate, sublobate margin, pale yellow-orange, abundant, immersed apothecia with the red disk, polarilocular ascospores that are medium-sized with a thin septum, colorless crystals present inside of the thallus and apothecia and pycnidia are completely immersed or not (Wilk et al. 2021). The genus shows similar morphological features to species of the "*Caloplaca*" *cinnabarina* group, especially "*Caloplaca*" *montisfracti* and "*Caloplaca*" *rubelliana*. However, it differs from "*Caloplaca*" *cinnabarina* in the presence of yellowish and distinctly larger thallus, with thicker thalline cortex and larger apothecia and ascospores. Further, *Cinnabaria* differs from "*Caloplaca*" *rubelliana* in the presence of gray-orange to orange, thin thallus that lacks lobules at the margins, and a gray prothallus (Wetmore & Kärnefelt 1999, Kondratyuk et al. 2007, Wilk et al. 2021). The taxonomic placement of *Cinnabaria* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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(Edited by **Kevin D. Hyde & Maryam T. Noorabadi**)

Note 952 *Cryptocaliciales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryptocaliciales M. Prieto, Etayo & Olariaga

Cryptocaliciales was introduced to accommodate a single family *Cryptocaliciaceae* Etayo, Olariaga and M. Prieto in the subclass *Cryptocaliciomycetidae* based on morphological characters and molecular analysis with ITS, LSU, SSU, *mcm7*, *rpb1* and *rpb2* sequence data. *Cryptocaliciomycetidae* formed a sister clade with *Eurotiomycetidae* and *Coryneliomycetidae*. The species of *Cryptocaliciomycetidae* differ from those of *Eurotiomycetidae* in having apothecia with a hamathecium and hemiamyloid asci and separate clade with phylogenetic analysis. *Cryptocaliciaceae* is typified by *Cryptocalicium* Etayo, Olariaga and M. Prieto and this genus is monotypic with the species *Cryptocalicium blascoi* Etayo, Olariaga and M. Prieto. The order comprises the tiny calicioid taxa and was reported from Spain on the inner side of loose bark strips of *Cupressaceae* (*Cupressus*, *Juniperus*). Therefore, it is likely to have been overlooked and to have a considerably wider distribution (Prieto et al. 2021). Ascomata are apothecioid and stalked, and produce a mazaedium. The hymenium has septate sterile protruding elements. Asci are clavate and bitunicate which have a long pedicel with evanescent walls. Ascospores are globose to subglobose and pale brown. The taxonomic placement of this order is in *Cryptocaliciomycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 953 *Cryptocaliciomycetidae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryptocaliciomycetidae M. Prieto, Etayo & Olariaga

Cryptocaliciomycetidae was established for a single order (*Cryptocaliciales*), a family (*Cryptocaliciaceae*). The family *Cryptocaliciaceae* is typified by *Cryptocalicium* Etayo, Olariaga & M. Prieto and this genus is monotypic with the species *Cryptocalicium blascoi* Etayo, Olariaga and M. Prieto. The subclass formed a distinct clade in the phylogenetic analysis conducted for 7-locus data set (ITS, LSU, SSU, mcm7, *rpb1* and *rpb2*) and was sister to the *Eurotiomycetidae*, and formed a supported clade together with *Coryneliomycetidae*. The subclass further showed the open ascomata as a common ancestor together with *Chaetothyriomycetidae*, *Eurotiomycetidae* and *Coryneliomycetidae* in the ancestral character analysis (Prieto et al. 2021). The taxonomic placement of *Cryptocaliciomycetidae* is in *Lecanoromycetes*, *Pezizomycotina*, and *Ascomycota*.

Reference

Prieto M, Etayo J, Olariaga I. 2021 – A new lineage of mazaediate fungi in the *Eurotiomycetes, Cryptocaliciomycetidae* subclass. nov, based on the new species *Cryptocalicium blascoi* and the revision of the ascoma evolution. Mycological Progress 20(7), 889–904.

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Note 954 *Iqbalia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Iqbalia Fayyaz, Afshan & S.Y. Kondr.

The monotypic genus *Iqbalia* was introduced to accommodate a rock-inhabiting lichenized species, *Iqbalia kashmirensis*. *Iqbalia* was reported from Pakistan and has similar characteristics to the Australian genus *Nevilleiella* in having brownish yellow to orange thalli and pustule-like formations on the thallus surface. *Iqbalia* differs in having discrete rather than aggregated areoles, in lacking schizidia-like formations, a wide septum in ascospores when mounted in water and presence of variolaric acid and ecology (on calcareous rocks vs. on soil in desert conditions) (Kondratyuk et al. 2015b). The genus formed a distinct phylogenetic lineage in *Teloschistaceae* based on ITS, LSU and SSU sequence data, but was close to *Kaernefia*, *Nevilleiella*, *Stellarangia* and between the *Filsoniana-Stellarangia* subclade (Kondratyuk et al. 2015b). In *Iqbalia* apothecia are biatorine to zeorine and associated with teloschistes-type asci with 8-spored ascospores. The taxonomic placement of *Iqbalia* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina*, and *Ascomycota*.

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(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 955 *Jejulea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Jejulea J.P. Halda, J.J. Woo & Hur

Jejulea was established by Halda et al. (2022) for a single species *Jejulea byssolomoides* J.P. Halda, J.J. Woo & Hur. The genus was reported from Korea on shaded volcanic rocks. The species shows a close association with *Byssoloma leucoblepharum*, *B. subdiscordans*, *B. marginatum*, and *B. palmularis* in the phylogenetic analyses based on ITS and SSU sequence data. Further *Jejulea* shows morphological similarity to *Byssoloma* in the white byssoid margin of apothecia and septate ascospores, but differs in different ascus types and in having a true exciple of palisade plectenchyma. *Jejulea* is mainly distinguished by a saxicolous thallus and having a larger and wide and 3–5 septate ascospores (Halda et al. 2022). The taxonomic placement of *Jejulea* is in *Pilocarpaceae*, *Lecanorales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 956 *Jenniferia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Jenniferia Mongkols., Noisrip. & Tasan.

The pathogenic genus *Jenniferia* was established for two novel species, *J. griseocinerea* and *J. thomisidarum* and *J. cinerea* comb. nov. that was previously placed in *Hevansia*. *Jenniferia* is typified by *J. thomisidarum* Mongkols., Noisrip. & Tasan. The taxa were found on spiders from Thailand. *Jejulea* formed a strong monophyletic clade within *Cordycipitaceae* based on a combined ITS, LSU, *tef1-α*, *rpb1* and *rpb2* sequence dataset. *Jenniferia* is strongly supported as a monophyletic clade with the presence of perithecia and ascospores. The asexual morph has been reported in all three species and they share similar characteristics in producing grey mycelium covering the spider and multiple cylindrical synnemata from all parts of the host. The sexual morph was reported in *J. griseocinerea* and *J. thomisidarum* and produced aggregated superficial perithecia forming a cushion with septate part-spores alternately connected with thread-like structures that are not reported in the allied genera of *Cordycipitaceae* (Mongkolsamrit et al. 2022). The taxonomic placement of *Jenniferia* is in *Cordycipitaceae*, *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 957 *Sinuicella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sinuicella D.F. Stone, McCune & Miądl.

Sinuicella was introduced as a monotypic genus to accommodate *S. denisonii* D.F. Stone, McCune & Miądl. as the type species based on distinct phylogenetic, morphological and ecological characteristics (Stone et al. 2021). The species showed a similar superficial appearance to *Leptogidium* thalli such as dichotomously branching thalli and interlocking cells forming the nearly smooth cortex (Muggia et al. 2011). At the microscopic level, the species exhibited similarity to *Leptogidium contortum* in a *Nostoc*-containing cyanolichen with cortical cells shaped like jigsaw puzzle pieces but differs in the habitat as the species of *Sinuicella* was reported on the soil and the latter occurs on trees in the USA. The species differs from other similar species such as *L. contortum* and *L. dendriscum* in the presence of a c*Nostoc* photobiont and the latter showed *Rhizonema* as a photobiont (Lücking et al. 2009, Cornejo et al. 2016). The genus formed a strong monophyletic clade between *Solorina* and *Peltigera* within *Peltigeraceae* in the combined multigene phylogenetic analysis based on ITS, SSU and LSU sequence data. The placement was further supported in the morphological characters including the pronounced hemiangiocarpous development of the apothecia (Henssen 1981), and the presence of the peltigera-type ascus apex (Honegger 1978, Bellemère & Letrouit-Galinou 1981), strong amyloid ring and ascospores morphology. Pycnidia were not observed (Stone et al. 2021). The taxonomic placement of *Sinuicella* is in *Peltigeraceae*, *Peltigerales*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 958 *Villophora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Villophora Søchting, Arup & Frödén

Arup et al. (2013) established the genus *Villophora* (subfamily *Teloschistoidea*e) to accommodate *Villophora isidioclada* Søchting, Arup & Frödén which was originally placed in *Caloplaca*. Kondratyuk et al. (2015c) combined *Placodium microphyllinum* under *Villophora*. Wilk et al. (2021) transferred *Tayloriellina erythrosticta* to *Villophora* based on SSU sequences that showed a non-*Teloschistaceae* origin. Both *Tayloriellina erythrosticta* and *Villophora microphyllina* were also sister species in the three locus phylogenetic analyses. Thus, these two genera were assumed to belong to the same genus, either *Villophora* or *Tayloriellina* and subsequently *Villophora microphyllina* was transferred to *Tayloriellina*. Søchting et al. (2021) added five new *Villophora* species including *V. darwiniana*, *V. onas*, *V. patagonica*, *V. rimicola* and *V. wallaceana* and the authors transferred *Raesaeneniana maulensis* to *Villophora maulensis* based on SSU sequences. The taxa are reported as lichenicolous or saxicolous lichens on rock, wood, or tree bark and are distributed in Antarctica, Australia, North America and South America with the highest diversity found in the Southern Hemisphere (Søchting et al. 2021). The members are characterized by a crustose to microfruticose thallus, consisting of squamules or granules that can be appressed and flattened but are often more or less vertical, isidioid with blastidia or soredia. Apothecia are often rare, zeorine, occasionally with an isidiate thalline margin, a teloschistes-type, with 8-spored asci, polar bilocular ascospores, with chlorococcoid algae as the photobiont and lacking pycnidia (Søchting et al. 2021). The taxonomic placement of *Villophora* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 959 *Wilketalia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Wilketalia S.Y. Kondr.

Wilketalia (*Teloschistaceae*, *Teloschistales*) was established by Kondratyuk & Mosyakin (2022) to accommodate *Wilketalia citrinoides* as the type species, which was originally introduced in *Andina*. *Andina* was established by Wilk et al. (2021) based on morpho-molecular evidence for a South American lichenized species. *Andina* Jiménez & Cano (*Pottiaceae*, Bryophyta) was described in 2012 by Jiménez & Cano (2012) for a moss and the genus name was later replaced with the name *Andinella* by the same authors (Jiménez & Cano 2020). *Andinia* Luer was established to accommodate two species namely *Andinia dielsii* and *A. pensilis* (Luer 2000) and the genus presently comprises 75 species (Jiménez et al. 2021). The names *Andinia* and *Andina* differ in just one letter and can be treated as confusingly similar names, defined in the Glossary of the ICN (Turland et al. 2018). However, *Andina* (Jiménez & Cano 2012), and *Andina* (Wilk et al. 2021) are full homonyms and *Andina* (Wilk et al. 2021) became illegitimate because "it is spelt exactly like a name based on a different type that was previously and validly published for a taxon at the same rank" (Turland et al. 2018). However, the species name is valid and legitimate but incorrect according to the Art. 55.1 of the ICN: "A name of a species or subdivision of a genus may be legitimate even if its epithet was originally placed under an illegitimate generic name". Therefore, *Wilketalia* was established and dedicated to Karina Wilk and her colleagues who authored the new genus *Andina*. The taxonomic placement of *Wilketalia* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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Note 960 *Cryptocaliciaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryptocaliciaceae Etayo, Olariaga & M. Prieto

Cryptocaliciaceae was introduced to accommodate a monotypic, saprotrophic inoperculate ascomycete genus *Cryptocalicium* and the type species *Cryptocalicium blascoi* based on morphology and molecular analysis of combined ITS, LSU, SSU, *mcm7*, *rpb1* and *rpb2* sequence data. The species grow on the underside of bark strips of *Cupressaceae* (Prieto et al. 2021). The genus shows distinct morphological features with other calicioid fungi in having a mazaedium, clavate hemi amyloid asci, hamathecial filaments and dark violet pigmented granules that turn blue-green in KOH. The sexual morph produces apothecia that are stalked and which are light ochre (4A6) to greyish green (1D2). The hymenium comprises septate, sterile protruding elements, clavate, bitunicate asci with evanescent walls and a long pedicel with an amyloid reaction after a KOH + IKI treatment. Ascospores are globose to subglobose, simple, pale brown, thick-walled and have passive dispersal. The asexual morph observed in colonies on MEA are superficial, effuse, convex to obtusely conical, initially even, later wrinkled-cerebriform, cauliflower-like, cream white, tomentose which produce first pyriform then subglobose and hyaline conidia. The phylogenetic placement of the family was recovered as a sister to *Eurotiomycetidae* with high statistical support (Prieto et al. 2021). The taxonomic placement of *Cryptocaliciaceae* is in *Cryptocaliciomycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi)**

Note 961 *Gilbertaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gilbertaria M. Svensson & Fryday

Gilbertaria is the first crustose lichenized genus that was recently established by Svensson & Fryday (2022). The genus accommodates four species including *G. contristans*, *G. holomeloides*, *G. astrapeana*, and *G. squalescens* in which *G. contristans* M. Svensson & Fryday is the type species. Among these species, *G. contristans*, *G. holomeloides*, and *G. squalescens* were initially placed in the genus *Lecidea*. *Lecidea* was introduced at the beginning of lichenological history (Acharius 1803) and accommodated the majority of the known lecideoid species. Lecideoid lichen-forming fungi are a large and heterogeneous group of crustose lichens. The taxa were characterized by apothecia without symbiotic algal cells in the apothecial margin. In the later classification, crustose lichens with hyaline ascospores, a green, non-trentepohlia algal symbiont and lacking algal cells in the apothecial margin were assigned in different genera based on the ascospores (*Lecidea* for 1-celled; *Catillaria* for 2-celled; *Bacidia* for 3 or more transverse septa; *Rhizocarpon* for muriform). Due to the disproportionate importance placed on thalline morphology, species with similar morphology were placed in different genera and subsequently, different families. For example, species with a squamulose thallus were placed in *Lecidea* if one celled and *Toninia* if the ascospores are septate. Fries (1874), included *Catillaria sphaeralis*, *Lecidea dufourii*, and *Thalloidima rimulosum* as synonyms of *Toninia* (= *Lecidea*) *squalescens*. Zahlbruckner (1921–1940) accepted four species in three different genera: *Catillaria contristans* (including *Lecidea holomeloides*), *C. sphaeralis* (including *L. dufourii*), *Toninia squalescens* (including *Thalloidima rimulosum*) and *Lecidea hypocyanea*. The nomenclature confusion of *Catillaria contristans* and *Toninia squalescens* remained unresolved with a lack of typification. Andersen & Ekman (2005) studied the phylogenetic placement of *Catillaria contristans* and found the close phylogenetic relationship to *Micarea peliocarpa*. However, the sequence of *Catillaria contristans* obtained was from *Micarea oreina* and was later identified as *Protomicarea limosa* (Ekman et al. 2008). Svensson & Fryday (2022) studied these species based on seven loci (ITS, LSU, SSU, *mcm7*, *rpb1* and *rpb2*) phylogenetic analyses and found a monophyletic clade with high statistical support in the family *Sphaerophoraceae*. The taxa are characterized by crustose growth form, 1-septate ascospores, thick paraphyses and asci of the Biatora-type. Conidiomata were not observed by Svensson & Fryday (2022). All *Gilbertaria* species are primarily alpine and grow on dead or dying bryophytes on rock walls or in areas of late snowline. The taxonomic placement of *Gilbertaria* is in *Sphaerophoraceae*, *Lecanorales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 962 *Brownlielloideae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Brownlielloideae S.Y. Kondr., Kärnefelt, Elix & A. Thell

The subfamily *Brownlielloideae* was established to accommodate eight genera namely *Brownliella*, *Lazarenkoella*, *Marchantiana*, *Raesaeneniana*, *Streimanniella*, *Tarasginia*, *Tayloriella* and *Thelliana* based on the phylogenetic analyses (Kondratyuk et al. 2015a). The subfamily was named after the type genus *Brownliella* S.Y. Kondr., Kärnefelt, Elix, A. Thell & Hur and the members were mainly reported from the Southern and Northern hemispheres (Kondratyuk et al. 2015a). The family formed a clade outside *Teloschistaceae* based on the recent phylogenetic analyses conducted by Wilk et al. (2021) based on a subset of DNA. The taxa of *Brownlielloideae* dispersed among all the subfamilies mostly within *Teloschistoideae* but also within *Caloplacoideae* and *Xanthorioideae* in the phylogenetic analyses and the generic type *Brownliella* itself nested within *Teloschistoideae* (Wilk et al. 2021). The DNA sequence data used in the establishment of the subfamily was found to have "chimeric" DNA data set whereas concatenated dataset contained ITS and LSU loci from the lichen mycobiont, but SSU from a fungal contaminant (Vondrák et al. 2018, Llewellyn 2019, Wilk et al. 2021). Thus, *Brownlielloideae* was synonymized under *Teloschistoideae* (Wilk et al. 2021). The taxonomic placement of this subfamily *Teloschistoideae* is in *Teloschistaceae*, *Teloschistales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina* and *Ascomycota*.

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(Edited by Kevin D. Hyde & Maryam T. Noorabadi)

Note 963 *Neoaraneomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoaraneomyces W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang

Neoaraneomyces was introduced by Chen et al. (2022c) as a monotypic genus to accommodate *Neoaraneomyces araneicola* W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang. as the type species. The type species occurred underneath a rock in Qiannan Buyi and Miao Autonomous Prefecture, Guizhou, China (Chen et al. 2022c). A phylogenetic tree using combined ITS, LSU, *rpb2* and *tef1-α* sequence data placed *Neoaraneomyces* in *Clavicipitaceae* where it constituted a distinct clade remote from other genera of this family. *Neoaraneomyces* comprises a single species that produces a paecilomyces-like asexual morph on the spider host. *Neoaraneomyces* separates from *Gibellua* by its paecilomyces-like conidiogenous structures and grouped or solitary phialides and fusiform to ellipsoid conidia. The sexual morph of *Neoaraneomyces* is unknown. The taxonomic placement *Neoaraneomyces* is in *Clavicipitaceae*, *Hypocreales*, *Sordariomycetes*, *Ascomycota*.

Reference

Chen WH, Liang JD, Ren XX, Zhao JH et al. 2022c – Phylogenetic, ecological and morphological characteristics reveal two new spider-associated genera in *Clavicipitaceae*. MycoKeys 91, 49–66.

Entry by De-Ping Wei, The Engineering Research Center of Southwest Bio-Pharmaceutical Resources, Ministry of Education, Guizhou University, Guiyang, Guizhou Province 550025, China.

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Note 964 *Neohormodochis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neohormodochis D.P. Wei & K.D. Hyde.

Neohormodochis was introduced by Wei et al. (2022b) to accommodate a monotypic genus with *N. septispora* D. P. Wei & K. D. Hyde selected as the type species. *N. septispora* was a saprobe with it asexual morph occurring on dead twig from Kunming City, Yunnan Province, China. Molecular analysis based on concatenated sequences of LSU, SSU, ITS and *rpb2* regions supported that *Neohormodochis* form a sister clade to *Hormodochies*, while it can be separated from the latter in the white-pruinose conidiomata, crystalline conidiomatal wall, hyaline, holobalstic conidiogenous cells and hyaline, ellipsoidal, dominantly 1-septate, slightly curved conidia (Wei et al. 2022b). The sexual morph of *Neohormodochis* genus is unknown. The taxonomic placement of *Neohormodochis* is in *Stictidaceae*, *Ostropales*, *Lecanoromycetes* and *Ascomycota*.

Reference

Wei DP, Gentekaki E, Wanasinghe DN, Hyde KD et al. 2022b – *Neohormodochis septispora* gen. et sp. nov.(*Stictidaceae)* from Yunnan Province, China. Phytotaxa 573(2), 247–261.

Entry by De-Ping Wei, The Engineering Research Center of Southwest Bio-Pharmaceutical Resources, Ministry of Education, Guizhou University, Guiyang, Guizhou Province 550025, China.

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Note 965 *Niveomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Niveomyces J.P.M. Araújo & C. de Bekker

Niveomyces was introduced by Araújo et al. (2022a) to accommodate a single species, *Niveomyces coronatus* J.P.M.Araújo & C. de Bekker. The type species was hyperparasitic on *Ophiocordyceps camponoti-floridani*, a ubiquitous entomopathogen of the ant *Camponotus floridanus* in Florida, USA. The sequencing and functional annotation of genome have been performed for *Niveomyces coronatus* (Araújo et al. 2022a). A phylogenetic tree based on combined SSU, LSU, *tef1-α*, *rpb1* and *rpb2* sequences revealed that *Niveomyces* formed a unique, distinctive and relatively long-branched clade within *Cordycipitaceae* and is sister to *Pesudogibellula*. *Niveomyces* was featured with white to pale yellow mycelia that covered its fungal host entirely, multiple, erected, spiky, unbranched synnemata which were encompassed with a layer of conidiogenous cells. The conidiogenous cells are polyblastic, enlongate cylindrical, with crowded denticles on the apical part from which globose to ovoid conidia develop. *Niveomyces coronatus* often grow in proximity to *Torrubiellomyces zombiae* which is also hyperparasitic on *Ophiocordyceps camponoti-floridani*. The sexual morph of *Niveomyces* is unknown. The taxonomic placement of *Niveomyces* is in *Cordycipitaceae*, *Hypocreales*, *Sordariomycetes*, *Ascomycota*.

Reference

Araújo JP, Lebert BM, Vermeulen S, Brachmann A et al. 2022a – Masters of the manipulator: two new hypocrealean genera, *Niveomyces* (*Cordycipitaceae*) and *Torrubiellomyces* (*Ophiocordycipitaceae*), parasitic on the zombie ant fungus *Ophiocordyceps camponoti-floridani*. Persoonia 49, 171–194.

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Note 966 *Parahevansia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parahevansia Mongkolsamrit & Noisripoom

Parahevansia is a monotypic genus which was introduced by Mongkolsamrit et al. (2022). Its type species *Parahevansia koratensis* Mongkolsamrit & Noisripoom was initially described as *Akanthomyces koratensis* by Hywel-Jones (1996) and later it was transferred to *Hevansia* by Kepler et al. (2017). Previously, the treatise of *Parahevansia koratensis* was solely based on morphological characterization. Mongkolsamrit et al. (2022) determined its phylogenetic placement based on the affiliation of the holotype (NHJ 666.01) and an unpublished collection (NHK 2662). The phylogenetic analysis of ITS, LSU, *tef1-α*, *rpb1* and *rpb2* sequence data showed that *P. koratensis* forms a distinct clade that was distantly related neither to *Akanthomyces* nor to *Hevansia* (Mongkolsamrit et al. 2022). *Parahevansia* is a monophyletic clade and clustered with *Cordyceps* and *Beauveria* genera. *Parahevansia* produce an akanthomyces-like asexual morph on spider hosts in Thailand (Hywel-Jones 1996). The sexual morph of *Parahevansia* is unknown. The taxonomic placement of *Parahevansia* is in *Cordycipitaceae*, *Hypocreales*, *Sordariomycetes* and *Ascomycota*.

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Note 967 *Polystromomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polystromomyces Mongkolsamrit, Noisripoom, Sakolrak & Himaman

Based on morphological comparison and phylogenetic analyses, *Polystromomyces* was established under *Cordycipitaceae* to accommodate *Polystromomyces araneae* Mongkolsamrit, Noisripoom, Sakolrak & Himaman by Mongkolsamrit et al. (2022) as monotypic genus. This species was found attached to a spider egg on the underside of a dicot leaf in northern Thailand (Mongkolsamrit et al. 2022). Multiple stipes with fertile heads at the apex, filiform and easily breakable ascospores in the sexual morph, and microcycle conidiation in the asexual morph distinguish this genus from others (Mongkolsamrit et al. 2022). *Polystromomyces* formed the basal branch of *Hevansia* in the phylogenetic tree based on the combined five-loci genes (ITS, LSU, *tef1-α*, *rpb1*, and *rpb2*), and they shared the same ecological habitat (Mongkolsamrit et al. 2022). The shape of the stipes distinguishes it from *Hevansia* (Kepler et al. 2017, Mongkolsamrit et al. 2022). The taxonomic placement of *Polystromomyces* is in *Cordycipitaceae*, *Hypocreales*, *Sordariomycetes* and *Ascomycota*.

References

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Note 968 *Pseudometarhizium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudometarhizium W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang

Chen et al. (2022c) introduced *Pseudometarhizium* as a new *Metarhizium*-like genus with two entomopathogenic species (*P. araneogenum* and *P. lepidopterorum*) based on morphology, phylogenetic, and ecological analyses. These two species were parasitic on spiders and *Lepidoptera* pupa, respectively (Chen et al. 2022c). *Pseudometarhizium* is typified by *Pseudometarhizium araneogenum* W.H. Chen, Y.F. Han, J.D. Liang & Z.Q. Liang. Furthermore, based on molecular phylogenetic analyses of the combined datasets (ITS+LSU+*rpb2*+*tef1-α*) (Chen et al. 2022c), *Pseudometarhizium* and *Metarhiziopsis* were closely related. However, compared to *Metarhiziopsis*, *Pseudometarhizium* has a paecilomyces-like structure and lacks sporodochia (Chen et al. 2022c). The sexual morph not observed in *Pseudometarhizium*. The taxonomic placement of *Pseudometarhizium* is in *Clavicipitaceae*, *Hypocreales*, *Sordariomycetes* and *Ascomycota*.

Reference

Chen WH, Liang JD, Ren XX, Zhao JH et al. 2022c – Phylogenetic, ecological and morphological characteristics reveal two new spider-associated genera in *Clavicipitaceae*. MycoKeys 91, 49–66.

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Note 969 *Pleurocordyceps*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pleurocordyceps Y.J. Yao, Y.H. Wang, S. Ban, W.J. Wang, Yi Li, Ke Wang & P.M. Kirk

Wang et al. (2021) introduced *Pleurocordyceps* under *Polycephalomycetaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate ten entomopathogenic species based on morphology and phylogenetic analyses (Chen et al. 1984, Wang et al. 2021, Xiao et al. 2023). This genus was typified by *Pleurocordyceps sinensis* (Q.T. Chen, S.R. Xiao & Z.Y. Shi) W.J. Wang, X.L. Wang, Y. Li, S.R. Xiao & Y.J. Due to its lateral fertile pulvinate stromata near the tip of the sexual morph and its two types of phialides and conidia in the asexual morph, *Pleurocordyceps* differs from other similar genera (Wang et al. 2021, Xiao et al. 2023). Commonly reported associations with *Pleurocordyceps* include one fungus genus (*Ophiocordyceps*) and six insect orders (*Coleoptera*, *Hymenoptera*, *Hemiptera*, *Lepidoptera*, *Orthoptera*, and *Homoptera*) (Xiao et al. 2023). With 16 accepted species, *Pleurocordyceps* is the most diverse genus in the family *Polycephalomycetaceae* (Wang et al. 2021, Xiao et al. 2023). Molecular analyses of the multi-locus dataset (ITS, SSU, LSU, *tef1-α*, *rpb1*, and *rpb2*) have confirmed that the genus belongs to a monophyletic clade that is basal to the *Polycephalomycetaceae* (Wang et al. 2021). Future research could focus on amassing additional samples to describe the diversity of polycephalomyces-like fungi (Xiao et al. 2023).

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Note 970 *Torrubiellomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Torrubiellomyces J.P.M. Araújo & C. de Bekker

Araújo et al. (2022a) proposed *Torrubiellomyces* as a new *torrubiella*-like genus under *Ophiocordycipitaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate a zombie-ant species (*Torrubiellomyces zombiae*) which was isolated from an American forest (Araújo et. al., 2022a). *Torrubiellomyces* was typified by *Torrubiellomyces zombiae* J.P.M. Araújo & C. de Bekker and is monotypic. *Torrubiellomyces* is distinguished from neighboring genera by the presence of solitary or clusters of brown to black superficial perithecia directly on the fungal host tissue of the sexual morph; one type of conidiogenous cell and conidia in the asexual morph; and a distinctive ecological aspect. The asexual morph was not observed (Araújo et al. 2022a). Molecular analyses of the combined five-loci gene sequence dataset (SSU, LSU, *tef1-α*, *rpb1*, and *rpb2*) confirmed that *Torrubiellomyces* belongs to a single clade (Araújo et al. 2022a).

Reference

Araújo JPM, Lebert BM, Vermeulen S et al. 2022a – Masters of the manipulator: two new hypocrealean general, *Niveomyces* (*Cordycipitaceae*) and *Torrubiellomyces* (*Ophiocordycipitaceae*), parasitic on the zombie ant fungus *Ophiocordyceps camponoti-floridani*. Persoonia 49, 171–194.

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Note 971 *Polonosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polonosporaceae Błaszk., Niezgoda, B.T. Goto, Magurno

Polonosporaceae with the generic type *Polonospora* and the species *P. polonica* was introduced into *Glomeromycota* based on phylogenetic analyses of sequences of the SSU, ITS, LSU, and *rpb1* of the species originally described as *Acaulospora polonica* (Błaszkowski et al. 2021b). The analyses placed *Polonosporaceae* in a clade sister to *Archaeosporaceae* and *Ambisporaceae* in the order *Archaeosporales* and showed that *Polonosporaceae* contains still undescribed genera. The main morphological feature distinguishing members of *Polonosporaceae*, *Archaeosporaceae* and *Ambisporaceae* is the number of spore walls. *Polonospora polonica* has a worldwide distribution and was found in tropical and temperate regions as associated with roots of several hosts.

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Note 972 *Effusomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Effusomyces Yue Li, Nakasone & S.H. He

The genus *Effusomyces* Yue Li, Nakasone & S.H. He belongs to the family *Cystostereaceae* (*Agaricales*, *Basidiomycota*). This monotypic genus type is *Effusomyces thailandicus* Yue Li, Nakasone & S.H. He. Based on ribosomal ITS and LSU sequence data Li et al. (2022d) proposed the genus *Effusomyces* which is phylogenetically distinct from its sister genus *Crustomyces*. It grows on dead bamboo or angiosperm branches and has only been reported from Thailand. The basidiomes are annual, resupinate, widely effuse and inseparable from the substrate. The hymenophore is smooth, pale yellow or greyish yellow, with a monomitic hyphal system and clamped generative hyphae. The distinctive characteristics of this genus are the small basidia producing very large, thin-walled basidiospores and the absence of gloeocystidia, which most members of *Cystosteraceae* possess. They also have very inconspicuous hyphidia that are easily overlooked.

Reference

Li Y, Nakasone KK, Chen CC, Zhao CL et al. 2022d – Taxonomy and phylogeny of *Cystostereaceae* (*Agaricales*, *Basidiomycota*): A new genus, five new species, and three new combinations. Journal of Fungi 8(11), 1229.

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Note 973 *Spiririma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spiririma Voglmayr, J. Fourn., Tello & Jaklitsch

Based on morphological characteristics and phylogenetic analysis of combined ITS, LSU, *rpb2* and *tub2* sequence data, Voglmayr et al. (2022) introduced *Spiririma* as a monotypic genus to accommodate *Spiririma gaudefroyi* Voglmayr, J. Fourn., Tello & Jaklitsch as the type species. It was previously identified as *Rosellinia gaudefroyi* which is detailed by Voglmayr et al. (2022). *Spiririma* has been inconsistent and unclear due to a lack of detailed descriptions and illustrations of its ascomatal characters. Various species have been confused with *Spiririma*. Voglmayr et al. (2022) re-collected the specimens identified as *S. gaudefroyi* from the trunk base of *Quercus pubescens* in France and the bark of the living trunk of *Quercus ilex* in Spain and designated a lectotype and epitype, respectively. *Spiririma* is known only from its sexual morph, and is characterized by ascomata with a coarsely papillate ostiole beneath a black clypeus, covered by a thin white pellicle, brown, ellipsoid ascospores with a spirally coiling germ slit and small bipolar secondary appendages. The asexual morph was not observed on the natural substrate (Voglmayr et al. 2022). *Spiririma gaudefroyi* resembles *Anthostomella lamiacearum* by having a spirally coiling germ slit. The phylogenetic evidence obtained from the analysis of ITS, LSU, *rpb2* and *tub2* sequence data supports it as a distinct lineage (Voglmayr et al. 2022). The taxonomic placement of *Spiririma* is in *Induratiaceae*, *Xylariales*, *Sordariomycetes*, *Ascomycota* (Voglmayr et al. 2022).

Reference

Voglmayr H, Tello S, Jaklitsch WM, Friebes G et al. 2022 – About spirals and pores: *Xylariaceae* with remarkable germ loci. Persoonia 49, 58–98.

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(Edited by **Kevin D. Hyde**, **Mingkwan Doilom** & **Maryam T. Noorabadi**)

Note 974 *Neogyrothrix*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neogyrothrix Hern - Restr. & Crous

Hernández-Restrepo et al. (2022) established the monotypic genus *Neogyrothrix* with *N. oleae* (Crous) Hern-Restr. & Crous, as the type species in *Gyrothrixaceae*, *Sordariales*, *Sordariomycetes* based on the morphological similarity with *Gyrothrix* and phylogenetic analysis of ITS, LSU and *rpb2* sequence data. Previously *Neogyrothrix* was described as *Gyrothrix* with *Gyrothrix oleae* in *Gyrothrix* genera *incertae sedis*, *Xylariales*, *Sordariomycetes* based on its branched setae and phylogenetic analysis of combined ITS and LSU sequence data (Crous et al. 2019b). It was isolated from leaves of *Olea capensis* subsp. *macrocarpa* (*Oleaceae*) and *Diospyros whyteana* (*Ebenaceae*) in South Africa (Crous et al. 2019b). *Neogyrothrix* is characterized by brown, erect, multiseptate, subcylindrical conidiomata, tapering towards the apex, with verruculose to warty setae, with spirally curved apex, bulbous base, and curved lateral branches, and hyaline, smooth, aseptate, fusoid, inequilateral conidia with eccentric and truncate hilum at the base. It resembles *Gyrothrix* in having branched setae. However, the phylogenetic evidence obtained from the analysis of ITS, LSU and *rpb2* sequence data shown it as a distinct lineage (Hernández-Restrepo et al. 2022).

References

Crous PW, Wingfield MJ, Lombard L, Roets F, et al. 2019b – Fungal Planet description sheets: 951–1041. Persoonia 43, 223–425.

Hernández-Restrepo M, Decock CA, Costa MM, Crous PW. 2022 – Phylogeny and taxonomy of *Circinotrichum, Gyrothrix, Vermiculariopsiella* and other setose *hyphomycetes*. Persoonia 49, 99–135.

Entry by Yanxia Li, Innovative Institute for Plant Health/ Key Laboratory of Green Prevention and Control on Fruits and Vegetables in South China, Ministry of Agriculture and Rural Affairs, Zhongkai University of Agriculture and Engineering, Guangzhou, 510225, China.

(Edited by **Mingkwan Doilom**, **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 975 *Lunatochaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lunatochaeta W.P. Wu & Y.Z. Diao

Lunatochaeta was introduced by Wu & Diao (2022) to accommodate *Lunatochaeta shenzhenense* W.P. Wu & Y.Z. Diao as a monotypic species based on morphology and phylogeny. This species was isolated as saprobe on dead leaves of broad leaf tree in China. *Lunatochaeta* is similar to *Dictyochaeta* and *Brachydictyochaeta* by the presence of setae, conidiophores, conidiogenous cells, collarettes and aseptate conidia. *Lunatochaeta* differs from *Brachydictyochaeta* in the absence of lateral phialides and the apex of setae are not swollen. Maximum likelihood analysis of combined ITS and LSU sequence data showed that *Lunatochaeta* formed a separate clade with *Dictyochaeta* and *Brachydictyochaeta*. The sexual morph in *Lunatochaeta* is unknown. The taxonomic placement of *Lunatochaeta* is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*.

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116 (1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 976 *Kylindrochaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kylindrochaeta W.P. Wu & Y.Z. Diao

Kylindrochaeta was established by Wu & Diao (2022) for *Kylindrochaeta lignomollis* W.P. Wu & Y.Z. Diao based on morphology and phylogeny. *Chaetosphaeria lignomollis* F.A. Fernández & Huhndorf is a synonym of *Kylindrochaeta lignomollis*. The taxon was isolated as a saprobe on decorticated wood in Costa Rica and Puerto Rico. This monotypic genus has cylindrical-fusiform, hyaline to subhyaline, 7-septate ascospores, simple conidiophores, with mono- or poly-phialidic, sympodial conidiogenous cells, and produces hyaline, cylindrical, multiseptate, asetulate conidia (Wu & Diao 2022). This genus differs from other genera of *Chaetosphaeriaceae* with multi-septate and cylindrical to fusiform ascospores in that the conidia of the asexual morph have no setulae. Maximum likelihood analysis based on combined ITS and LSU sequence data showed that *Kylindrochaeta* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes*. One species is accepted in this genus and both sexual and asexual morphs were reported (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 977 *Kionochaetiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kionochaetiella W.P. Wu & Y.Z. Diao

Kionochaetiella, a kionochaeta-like species, was established by Wu & Diao (2022) as a monotype genus to accommodate *Kionochaetiella ivoriensis* (Rambelli & Lunghini) W.P. Wu & Y.Z. Diao based on morphology and phylogeny. *Chaetopsina ivoriensis* Rambelli & Lunghini, Gior is synonym of *Kionochaetiella ivoriensis*. The taxon was isolated as a saprobe from bark of trees in Italy. This genus differs from *Kionochaeta* in the morphology of fertile region and shape of conidia (Wu & Diao 2022). The sexual morph was not observed. Maximum likelihood analysis based on combined ITS sequence data showed that *Kionochaetiella* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 978 *Fusichloridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fusichloridium W.P. Wu & Y.Z. Diao

Fusichloridium was introduced by Wu & Diao (2022) to accommodate *Fusichloridium fusiformis* W.P. Wu & Y.Z. Diao based on morphology and phylogeny. *Chaetosphaeria fusiformis*

W. Gams & Hol. Jech is as synonym for *Fusichloridium fusiformis*. The asexual morph is similar to *Chloridium*, but differs in producing both long setiform and short conidiophores, and fusiform conidia which are slightly constricted in the middle (Wu & Diao 2022). Maximum likelihood analysis of combined ITS and LSU sequence data showed that *Fusichloridium* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022). One species is accepted and both sexual and asexual morphs have been described (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 979 *Falholtia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Falholtia W.P. Wu & Y.Z. Diao

Falholtia, a stanjehughesia-like genus, was established by Wu & Diao (2022) to accommodate *Falholtia kaohsiungensis* W.P. Wu & Y.Z. Diao, based on morphology and phylogeny. *Stanjehughesia kaohsiungensis* S.Y. Hsieh, Goh & C.H. Kuo is a synonym of *F. kaohsiungensis*. *Falholtia kaohsiungensis* was collected on decaying branches in China and is a saprobe. This monotypic genus has cylindrical and septate conidiophores in clusters or synnemata, monoblastic, integrated and determinate conidiogenous cells, and dark brown, obclavate-rostrate, euseptate conidia, which differs from *Stanjehughesia* (Wu & Diao 2022). Maximum likelihood analysis of combined ITS and LSU sequence data showed that *Falholtia* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022). The genus is monotypic and only the asexual morph was reported (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 - Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1-546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 980 *Eucalyptostromiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eucalyptostromiella W.P. Wu & Y.Z. Diao

Eucalyptostromiella was introduced by Wu & Diao (2022) for *Eucalyptostromiella beijingensis* W.P. Wu & Y.Z. Diao based on morphology and phylogeny. The fungus was collected on dead kernels of *Quercus* sp. in China. This monotypic genus is characterized by fresh-yellow sporodochia, flask-shaped, phialidic conidiogenous cells, and hyaline, aseptate, falcate or lunate conidia in slimy and fresh-yellow masses (Wu & Diao 2022). *Eucalyptostromiella* is similar to *Eucalyptostroma*, but differs by having flask-shaped conidiogenous cells with a bulbous basal part and a tubular upper part, and lunate or falcate conidia with acute ends (Wu & Diao 2022). Maximum likelihood analysis based on combined ITS and LSU sequence data showed that

Eucalyptostromiella formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022). The genus is monotypic and only asexual morph was reported (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

Entry by Chuan-Gen Lin, Center of Excellence in Fungal Research, Mae Fah Luang University, Muang, Chiang Rai, Thailand.

(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 981 *Ejnerjensenia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ejnerjensenia W.P. Wu & Y.Z. Diao

Ejnerjensenia was established by Wu & Diao (2022) to accommodate *Ejnerjensenia myriocarpa* (Fr.) W.P. Wu & Y.Z. Diao and *E. pygmaea* (P. Karst.) W.P. Wu & Y.Z. Diao based on morphology and phylogeny. This genus has hyaline, cylindrical, uniseptate ascospores, cylindrical, dark brown, septate conidiophores, terminal monophialidic conidiogenous cells with cup-shaped collarettes and hyaline, aseptate, short cuneate or dacryoid conidia (Wu & Diao 2022), which differs it from other related genera. The fungus was isolated as a saprobe on dead material of plants and has broad worldwide distribution. Maximum likelihood analysis of combined ITS and LSU sequence data showed that *Ejnerjensenia* formed a separate clade within *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Sordariomycetes* (Wu & Diao 2022). Two species are accepted and both sexual and asexual morphs have been described (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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(Edited by **Kevin D. Hyde** & **Maryam T. Noorabadi**)

Note 982 *Nothofagiporus*

Web-links: Index Fungurum, Facesoffungi, MycoBank, GenBank

Nothofagiporus B.K. Cui & Shun Liu

Nothofagiporus, a monotypic genus, was introduced by Liu et al. (2023d) to accommodate *N. venatus* as the type species, based on morphology and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. *Nothofagiporus* was isolated from a fallen branch of *Nothofagus cunninghamii* in Australia and it is causing a brown rot. The genus is characterized by annual pileate basidiomata, with abundant strands of dark vinaceous to blackish hairs on the pilear surface. The pore surface is white to buff with angular pores. Context is white and tubes are concolorous with pore surface. The hyphal system is monomitic and generative hyphae clamped. Cystidia are absent and cystidioles are present. Basidiospores are allantoid, hyaline, thin- to slightly thick-walled, and smooth. Phylogenetically, *Nothofagiporus* is closely related to *Aurantipostia*, *Cyanosporus*, and *Postia* but differs from them by minor macromorphological characteristics. The taxonomic placement of *Nothofagiporus* is in *Postiaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

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Note 983 *Pirozynskiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pirozynskiomyces Hern. Restr. & Crous

Pirozynskiomyces was established by Hernández-Restrepo et al. (2022) to accommodate *P. brasiliensis* as the type species and *P. sinensis* based on morphology and phylogenetic analysis of ITS, LSU, and *rpb2* sequence data. *Pirozynskiomyces brasiliensis* was collected from a rotten leaf in Brazil, whereas *P. sinensis* was found on dead foliage of *Camellia cuspidata* in China (Hernández-Restrepo et al. 2022). *Pirozynskiomyces* is characterized by simple or branched, septate setae that produce falcate, hyaline conidia with an obtuse base and apex with cellular appendage. Conidiophores reduce to conidiogenous cells which are solitary or gregarious at the base of setae. The sexual morph is not seen. *Coniocessia* forms a sister clade with *Pirozynskiomyces* based on the phylogenetic analysis. The taxonomic placement of *Pirozynskiomyces* is in *Coniocessiaceae*, *Xylariales*, *Xylariomycetidae*, *Sordariomycetes*, and *Ascomycota*.

Reference

Hernández-Restrepo M, Decock CA, Costa MM, Crous PW. 2022 – Phylogeny and taxonomy of *Circinotrichum, Gyrothrix, Vermiculariopsiella* and other setose *hyphomycetes*. Persoonia 49, 99–135.

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Note 984 *Acericercospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Acericercospora M. Bakhshi

Acericercospora is a monotypic hyphomycetous genus which was typified by *Acericercospora hyrcanica* M. Bakhshi based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Acericercospora hyrcanica* is associated with leaf spot symptoms on maple trees (*Acer cappadocicum* and *A. velutinum*) in Iran (Bakhshi & Braun 2022a). The genus is characterized by immersed, rarely external mycelium, substomatal to intraepidermal, weakly developed, hyaline to pale olivaceous stromata. Conidiophores are fasciculate, aseptate, unbranched, subhyaline to pale olivaceous, smooth, subcylindrical to cone-shaped, wider at the base, with uni- to multilocal, sympodial conidiogenous cells and conspicuous, thickened, darkened, somewhat refractive loci. Conidia are solitary or catenate, in unbranched chains, hyaline, smooth, cylindrical, subcylindrical to obclavate-cylindrical, straight to slightly curved, euseptate, and pluriseptate. The sexual morph was not observed. *Miura* and *Sphaerulina* formed a sister clade with *Acericercospora* based on phylogenetic analysis. *Acericercospora* has similar conidiophores and conidia than *Cercospora* and *Neocercospora* (Bakhshi et al. 2015, Bakhshi & Braun 2022a). However, *Acericercospora* can be distinguished from *Cercospora* and *Neocercospora* by having weakly developed, hyaline to pale olivaceous stromata and subhyaline to pale olivaceous conidiophores. The taxonomic placement of *Acericercospora* is in *Mycosphaerellaceae*, *Mycosphaerellales*, *Dothideomycetidae*, *Dothideomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

Bakhshi M, Arzanlou M, Babai-Ahari A, Groenewald JZ et al. 2015 – Is morphology in *Cercospora* a reliable reflection of generic affinity? Phytotaxa 213, 22–34.

Bakhshi M, Braun U. 2022a – *Acericercospora hyrcanica* gen. et sp. nov. *(Mycosphaerellaceae)* and *Paramycocentrospora acericola* gen. et sp. nov. *(Dothidotthiaceae)* on maple trees in Hyrcanian forests. Mycological Progress 21, 1–15.

Entry by Mounes Bakhshi, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, UK
(Edited by **Kevin D Hyde** & **Maryam T. Noorabadi**)

Note 985 *Acaromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Acaromyces Boekhout, Scorzetti, Gerson & Sztejnberg ex Denchev & T. Denchev

Acaromyces is a mite-associated fungi asexual genus which is typified by *Acaromyces ingoldii* Boekhout, Scorzetti, Gerson & Sztejnberg ex Denchev & T. Denchev. *Acaromyces ingoldii* was isolated from the citrus rust mites on grape fruit (*Citrus paradisi*) leaves in Israel (Boekhout et al. 2003). This genus is characterized by an anamorphic state with septate hyphae, usually with a contracted cytoplasm. The cells separated from each other. Sterigmatoid protuberances often arise near the septa, giving rise to chains of fusiform blastoconidia. The mycelium is arial with blastoconidia giving the colony a somewhat velvety-pruinose appearance (Boekhout et al. 2003). In the LSU rDNA, phylogenetic analysis of *Exobasidiomycetidae*, *Acaromyces* is a sister to *Coniodictyum* (Boekhout et al. 2003). Furthermore, most other genera of the *Exobasidiomycetidae* have sexual morphs and mainly occur as plant pathogens (Begerow et al. 2002), whereas *Acaromyces* is an asexual genus known from mites (insect associated). However, because Boekhout et al. (2003) mistakenly designated two culture collection centeres that conserved the type strain, it was not until Denchev & Denchev (2021) that they verified the validity of the genus name and type species name (Denchev & Denchev 2021). The taxonomic placement of *Acaromyces* is in *Cryptobasidiaceae*, *Exobasidiales*, *Exobasidiomycetidae*, *Exobasidiomycetes*, *Ustilaginomycotina*, and *Basidiomycota*. Phylogenetic analyses revealed that strains of *Acaromyces ingoldii* grouped together with *Laurobasidium hachijoense* (Somrithipol et al. 2018), and *Acaromyces* was considered a synonym of *Laurobasidium*.

References

Begerow D, Bauer R, Oberwinkler F. 2002 – The *Exobasidiales*: an evolutionary hypothesis. Mycological Progress 1, 187–199.

Boekhout T, Theelen B, Houbraken J, Robert V et al. 2003 – Novel anamorphic mite-associated fungi belonging to the *Ustilaginomycetes*: *Meira geulakonigii* gen. nov., sp. nov., *Meira argovae* sp. nov. and *Acaromyces ingoldii* gen. nov., sp. nov. International Journal of Systematic and Evolutionary Microbiology 53(5), 1655–1664.

Denchev CM, Denchev TT. 2021 – Validation of the generic names *Meira* and *Acaromyces* and nineteen species names of basidiomycetous yeasts. Mycobiota 11, 1–10.

Somrithipol S, Jones EG, Sommai S, Suetrong S, et al. 2018 – *Laurobasidiaceae* fam. nov. (*Exobasidiales, Basidiomycota*), a new family for fungi causing galls with aerial root-like outgrowths, with a new record from Thailand of *Laurobasidium hachijoense* on a new host, *Cinnamomum subavenium*. Phytotaxa 347, 150–164.

Entry by Yinru Xiong, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai, Thailand; School of Science, Mae Fah Luang University, Chiang Rai, Thailand; Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, China

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Note 986 *Australocybe*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Australocybe T.J. Baroni, N. Fechner & van de Peppel

The monotypic genera *Australocybe* was described by van de Peppel et al. (2022) and typified by *Australocybe olivacea* T.J. Baroni, N. Fechner & L.J.J. van de Peppel based on the morphological characteristics and phylogenetic analysis of ITS, LSU, and *tef1-α* sequence data. *Australocybe* is distributed in Australia. This genus can be found on various substrates in sandy soil, rooting in soil on different hosts such as *Allocasuarina*, *Eucalyptus pilularis*, other *Eucalyptus* species, and *Leptospermum* (van de Peppel et al. 2022). *Australocybe* is characterized by broadly conical-convex surfaces that become plane with dark fuscous brown pileus. Basidiocarp is olive-grey, deep fuscous brown colour. Lamellae are olive to olive-grey and yellowish grey, adnexed, dense, rarely forked, and have an even edge. Stipe is concolorous, pale greenish golden-olive or greyish yellow. Basidiospores are elliptical, round, and smooth, with slightly congophilous walls. Basidia are narrowly clavate, 4-sterigmate, and have large cyanophilic bodies. The taxonomic placement of *Australocybe* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Van de Peppel LJ, Aime MC, Læssøe T, Pedersen OS et al. 2022 – Four new genera and six new species of lyophylloid agarics (*Agaricales, Basidiomycota*) from three different continents. Mycological Progress 21, 85.

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Published online 5 April 2024

Note 987 *Allotrechispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Allotrechispora L.W. Zhou & S.L. Liu

Allotrechispora was introduced by Liu et al. (2022e) to accommodate *Allotrechispora gatesiae* L.W. Zhou, S.L. Liu & T.W, as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, and *rpb2* sequence data. The type species was isolated from fallen trunk of *Atherosperma moschatum* in Australia. This genus has three species including *A. daweishanensis*, *A. gatesiae*, and *A. xantha*. This genus generally occurs as annual, resupinate, cream to cinnamon-buff, corticioid, thin and soft basidiomes, and loosely attached to the substrates. Hymenophore is white to cinnamon-buff when fresh, smooth to tuberculate, and cracked with age. Hyphal system is monomitic, generative hyphae with clamp connections, absence of isodiametric subhymenial hyphae, hyaline and thin-walled. Basidiospores are ellipsoid to ellipsoid, or oblong shape, hyaline with thin-walled, smooth, inamyloid, indextrinoid, and acyanophilous. Basidia are subcylindrical to subclavate, with four sterigmata, hyaline, thin-walled, and occurred clamp connection. Cystidia are absent. Phylogenetically *Fibrodontia* is closest genus to *Allotrechispora*. The taxonomic placement of *Allotrechispora* is in *Allotrechisporaceae*, *Allotrechisporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Liu SL, He SH, Wang XW, May TW et al. 2022e – *Trechisporales* emended with a segregation of *Sistotremastrales* ord. nov. (*Basidiomycota*). Mycosphere 13(1), 862–954.

Entry by Thatsanee Luangharn, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai 57100, Thailand

(Edited by **Maryam T. Noorabadi** & **Kevin D. Hyde**)

Note 988 *Allophlebia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Allophlebia C.R.S. de Lira, Gibertoni & K.H. Larss.

Allophlebia, a monotypic genus, was established to accommodate *Allophlebia ludoviciana* (Burt) C.R.S. de Lira & K.H. Larss. based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data (Lira et al. 2022). The type species is a saprobe on decaying wood in the USA. In the type species, basidiomata are resupinate, effused, adnate, ceraceous and pale yellow to deep orange. The hymenophores are smooth to warted. The hyphal system is monomitic. Clamp connections are present. Basidiospores are ellipsoidid, smooth, hyaline, inamyloid, non-dextrinoid and acyanophilous. Basidia are narrowly clavate with 4 sterigmata. There are two types of hyaline cystidia, which are thin-walled narrowly obclavate to ventricose leptocystidia and thick-walled cylindrical metuloid cystidia with encrusted and hyaline crystals (Nakasone et al. 1982, Lira et al. 2022). *Phlebia subochracea* is the most similar to *A. ludoviciana* by having yellow orange basidiomata, but it is different by wider basidiospores and lacking metudoids (Nakasone et al. 1982). The taxonomic placement of *Allophlebia* is in *Meruliaceae*, *Polyporales*, *Agaricomycetes*, *Basidiomycota*.

References

Nakasone KK, Burdsall HH, Noll LA. 1982 – Species of *Phlebia* section *Leptocystidiophlebia* (*Aphyllophorales*, *Corticiaceae*) in North America. Mycotaxon 14(1), 3–12.
Lira CRS, Chikowski RS, de Lima VX, Gibertoni TB et al. 2022 – *Allophlebia*, a new genus to accommodate *Phlebia ludoviciana* (*Agaricomycetes*, *Polyporales*). Mycological Progress 21, 1–11.

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(Edited by **Kevin D Hyde** & **Maryam T. Noorabadi**)

Note 989 *Coprotaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Coprotaceae U. Lindem. & Van Vooren

Van Vooren (2021) established *Coprotaceae* with *Coprotus* Korf & Kimbr. as the type genus and *Coprotus sexdecimsporus* (P. Crouan & H. Crouan) Kimbr. & Korf as the type species. *Coprotaceae* species are usually collected from the dung of herbivores and omnivorous animals, and rarely from soil, duff, or rotten leaves (Kušan et al. 2018). They are found in eastern and southwestern Asia, Europe, and the USA (Kušan et al. 2018). *Coprotaceae* is characterized by glabrous and sessile apothecia, mostly bent to uncinate paraphyses with numerous refractive bodies at the live state, operculate, 8- to 256-spored, inamyloid asci, and uni- or irregularly biseriate, and ellipsoid ascospores with De Bary bubbles at dry conditions. The phylogenetic evidence of multi-loci analyses shows this family in an independent lineage sister to *Ascodesmidaceae* (Lindemann et al. 2019, Van Vooren 2021). The taxonomic placement of *Coprotaceae* is in *Pezizales*, *Pezizomycetidae*, *Pezizomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 990 *Cylindrohyalosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Cylindrohyalosporaceae Tennakoon, C.H. Kuo, Hongsanan & K.D. Hyde

Cylindrohyalosporaceae was introduced by Tennakoon et al. (2021b) to accommodate *Cylindrohyalospora* Tennakoon, C.H. Kuo, Hongsanan & K.D. Hyde as a monotypic genus based on the morphological characteristics and phylogenetic analysis of LSU sequence data. The type species, *Cylindrohyalospora fici* Tennakoon, C.H. Kuo & K.D. Hyde, isolated from the upper surface decaying leaves of *Ficus septica* in Taiwan Island. The sexual morph has not been observed. Pycnothyria is superficial, scattered, and rounded to oval. Conidiogenous cells are evanescent. Conidia are unicellular, hyaline, and smooth-walled. *Cylindrohyalosporaceae* formed a clade with *Melaspileellaceae* based on LSU analyses (Tennakoon et al. 2021b) and formed a clade with *Brunneofissuraceae* based on LSU sequence data (Marasinghe et al. 2022a). *Asterinales* are epifoliar taxa which present superficial mycelium forming a network on host surfaces with a star-like opening to the thyriothecium (Hongsanan et al. 2014). *Cylindrohyalosporaceae* was segregated based on its distinct pycnothyria characters. *Brunneofissuraceae* have a star-like opening thyriothecium while *Melaspileellaceae* have small rounded superficial ascomata on bark or stem (Ertz & Diederich 2015). Based on the study of Marasinghe et al. (2022a), the taxonomic placement of *Cylindrohyalosporaceae* is in *Asterinales*, *Dothideomycetes*, and *Ascomycota*.

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Note 991 *Cylindrohyalospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cylindrohyalospora Tennakoon, C.H. Kuo, Hongsanan & K.D. Hyde

Cylindrohyalospora was erected by Tennakoon et al. (2021b) to accommodate *Cylindrohyalospora fici* Tennakoon, C.H. Kuo & K.D. Hyde as the type species based on the morphological characteristics and phylogenetic analysis of LSU sequence data. The type species was isolated from the upper surface decaying leaves of *Ficus septica* in Taiwan Island. The sexual morph has not been observed. Pycnothyria are superficial, scattered, and rounded to oval. Conidiogenous cells are evanescent. Conidia are unicellular, hyaline, and smooth-walled. The monophyletic clade of *Cylindrohyalospora* formed a sister clade with *Melaspileellaceae* (*Melaspileella proximella*) (Tennakoon et al. 2021b) and formed a clade with *Brunneofissuraceae* based on LSU sequence data (Marasinghe et al. 2022a). Based on the study of Marasinghe et al. (2022a), the taxonomic placement of *Cylindrohyalospora* is in *Cylindrohyalosporaceae*, *Asterinales*, *Dothideomycetes*, and *Ascomycota*.

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Note 992 *Paradictyocheirospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paradictyocheirospora Rajeshk., R. K. Verma, Boonmee, K. D. Hyde, Chandrasiri & Wijayaw

The monotypic genus *Paradictyocheirospora* was recently erected by Rajeshkumar et al. (2021) with *P. tectonae* as the type which was found associated with the bark of *Tectona grandis* from India. Multi-gene phylogenetic analysis of ITS, LSU and *tef1-α* sequence data showed that *Paradictyocheirospora tectonae* formed a distinct lineage basal to *Dictyocheirospora* and

Digitodesmium. *Paradictyocheirospora* is similar to *Dictyocheirospora* in having cheiroid, digitate, with or without complanate conidia (Boonmee et al. 2016, Rajeshkumar et al. 2021). However, *Paradictyocheirospora tectonae* can be distinguished from *Dictyocheirospora* in having sporodochial conidiomata with micronematous conidiophores, 3–6 compactly arranged rows of light to dark pigmented cells with non-complanate conidia with globose, bubble-like, hyaline appendages at the base (Boonmee et al. 2016, Hyde et al. 2020b). *Digitodesmium* differs from *Paradictyocheirospora tectonae* in having punctiform, sporodochial conidiomata and acrogenous, euseptate, cheiroid, digitate conidia with an apical gelatinous cap (Kirk 1981, Boonmee et al. 2016, Hyde et al. 2020b). Therefore, a new genus, *Paradictyocheirospora* was introduced to accommodate *P. tectonae* based on morphological characters and phylogenetic analysis. However, Rajeshkumar et al. (2021) did not include all the species of *Digitodesmium* in their phylogenetic analyses. Shen et al. (2022) showed that *Digitodesmium* is polyphyletic and formed two distinct clades within *Dictyosporiaceae*, where *Paradictyocheirospora tectonae* clustered with *Digitodesmium chiangmaiense* and *D. polybrachiatum* in a monophyletic clade. The members within these clades were reported as saprobic on dead wood submerged in a stream or from terrestrial habitats (Hyde et al. 2019). Thus, *Paradictyocheirospora* needs further revision as to whether it should be placed under *Digitodesmium* or not. However, there are also problems with the classification of *Digitodesmium*, as the type species, *D. elegans* lacks sequence data in the GenBank and the genus is polyphyletic within the *Dictyosporiaceae*. Therefore, further analysis is required to solve this taxonomic problem.

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Note 993 *Hagnosaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hagnosaceae D. Magyar and Z. Merényi

The monotypic family *Hagnosaceae* was introduced by Magyar et al. (2022) in *Sordariales* to accommodate the genus *Hagnosa* D. Magyar & Z. Merényi. Phylogenetic analysis showed that

Hagnosa forms a districted clade within *Sordariales*. Based on molecular phylogeny and morphology Magyar et al. (2022) introduced *Hagnosaceae* as a new family, characterized by dark brown to black, ovoid, globose to subglobose, tomentose, superficial perithecial ascomata without a stroma, and muriform, brown ascospores which are not constricted at the septa. The asexual morph has not been observed. One species, *H. longicapillata* is known so far from *Hagnosaceae*, specimens are isolated mostly from indoor habitats (under old parquet). The taxonomic placement of *Hagnosaceae* is in *Sordariomycetidae*, *Sordariomycetes*, *Ascomycota*. It is presently invalid.

Reference

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Note 994, ***Favolus***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Favolus Fr.

Favolus, typified by *F. brasiliensis* (Fr.) Fr., is a monophyletic genus of white-rot polypores that is widely distributed in tropical and subtropical regions worldwide. It is characterized by laterally attached, fleshy to flexible basidiomata with mostly angular and radially elongated pores, with occasionally round or irregularly elongated pores (Sotome et al. 2013, Palacio et al. 2021). The genus currently comprises approximately 70 legitimate names, of which 20 species were recognized in the most recent taxonomic revision, based on type studies, morphological features, and multigene phylogenetic analyses (Zabin et al. 2024). Key morphological characters, including the pileal surface structure, the hymenophore morphology, and the average basidiospore size, have proven to be the most informative and variable traits in the genus (Zabin et al. 2024). However, the considerable variability and occasional overlap among species highlight the need for additional data—such as mating compatibility tests, molecular studies, and insights into its physiology and ecology, which are still poorly explored. The diversity of the genus in Africa, Asia, and Oceania is in need of reinvestigation in modern taxonomic studies. A critical reexamination of type specimens of earlier legitimate taxa that have been underrepresented in modern taxonomic studies or treated as synonyms under broad morphological concepts prior to the advent of molecular tools, is strongly encouraged for future research in the genus. The taxonomic placement of *Favolus* is in *Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

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Note 995 *Barbatosphaeriales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Barbatosphaeriales K.D. Hyde & Hongsanan

Barbatosphaeriaceae was introduced by Zhang et al. (2017) to accommodate three genera, *Barbatosphaeria*, *Ceratostomella* and *Xylomelasma*, as they share similar characteristics, such as dark, long-necked, astromatic ascomata, clavate or cylindrical-clavate asci and mostly ellipsoidal ascospores. In addition, Conidiophores are cylindrical to flask- or irregularly-shaped, and brown or hyaline. Conidiogenous cells are polyblastic, and integrated, terminal. Conidia are unicellular and hyaline. Hyde et al. (2020b) placed *Barbatosphaeriaceae* in *Diaporthomycetidae* families *incertae sedis* based on phylogenetic analysis. Hyde et al. (2021a) raised *Barbatosphaeriaceae* to order status based on phylogenetic analysis coupled with divergent time estimation. *Barbatosphaeria* Réblová, as the type genus, is an astromatic perithecial ascomycete introduced for a single species *Barbatosphaeria barbirostris* (Dufour) Réblová (Réblová 2007). The members of this order are saprobic on decaying wood or plant material. The taxonomic placement of *Barbatosphaeriales* is in *Diaporthomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 996 *Andomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Andomyces Chuaseehar., Sri-indr. & Somrith

The genus *Andomyces* was described by Sri-Indrasutdhi et al. (2022) to classify the species *A. coronatus* Chuaseehar., Sri-indr. & Somrith, which was identified based on morphological evidence. It is noteworthy that the establishment of this genus was primarily based on unique morphological data, with a lack of cultural characters and molecular evidence (Sri-Indrasutdhi et al. 2022). Specimens of *Andomyces* with *A. coronatus* designated as the type were found as saprobes on unidentified decaying wood submerged in freshwater in Thailand. This genus is monotypic, only recognized by its asexual state. Distinctive features include micronematous conidiophores; globose to subglobose, discrete conidiogenous cells; schizolytic conidial secession; and didymosporous, distoseptate, smooth conidia. The black conidia produced by this genus bear resemblance to those in genera such as *Conioscypha*, *Fuscosporella*, *Parafuscosporella* and *Vanakripa*. However, *Andomyces* is distinguished by its distoseptate conidia, while the aforementioned genera possess euseptate conidia. *Andomyces* is similar to *Acrophragmis*, *Polyschema*, and *Torula*, given the production of dark brown to black colonies, superficial or immersed pale brown to brown mycelia, and darkened conidia (Sri-Indrasutdhi et al. 2022). Nevertheless, they are different in terms of conidiophores, conidiogenous cells, and distoseptate conidia. The taxonomic placement of *Andomyces* is in *incertae sedis* within *Pezizomycotina* (Index Fungorum 2023).

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Note 997 *Aquatisphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aquatisphaeria W.L. Li, N.G. Liu & Jian K. Liu

Li et al. (2021b) introduced the genus *Aquatisphaeria* based on a combined analysis of LSU, ITS, and SSU sequence data and morphological characteristics. The type species, *Aquatisphaeria thailandica* W.L. Li, D.F. Bao & Jian K. Liu, was isolated from submerged decaying wood in a freshwater habitat in Thailand, where it functions as a saprobe. It exhibits distinctive characteristics such as branched, septate, sub-hyaline to light brown mycelium; macronematous or mononematous, cylindrical, septate, unbranched conidiophores; monoblastic, integrated, terminal conidiogenous cells with a truncate apex; and acrogenous, muriform, subglobose or turbinate, olive green to dark brown conidia with cylindrical appendages. The sexual morph of *Aquatisphaeria* was not observed (Li et al. 2021b). *Aquatisphaeria* can be differentiated from certain genera in *Tetraplosphaeriaceae*, such as *Pseudotetraploa*, *Quadricrura*, *Tetraploa*, and *Triplosphaeria*, primarily due to the presence of conidiophores. Phylogenetically, *Aquatisphaeria* is closely related to *Ernakulamia* and *Shrungabeeja*, as inferred from the study by Li et al. (2021b). However, morphological differences separate *Ernakulamia* (with monotretic conidiogenous cells) (Delgado et al. 2017), and *Shrungabeeja* (with longer conidiophores) (Zhang et al. 2009a, Dong et al. 2020b) from *Aquatisphaeria*. The taxonomic placement of *Aquatisphaeria* is in *Tetraplosphaeriaceae*, *Pleosporales*, *Dothideomycetes*, *Ascomycota*.

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Note 998 *Quasiphlebia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Quasiphlebia C.C. Chen & Sheng H. Wu

Quasiphlebia was introduced by Chen et al. (2021a) to accommodate *Quasiphlebia densa* C.C. Chen & Sheng H. Wu as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb1*, *rpb2* and *tef1-α* sequence data. *Quasiphlebia* is a wood-inhabiting corticioid genus that causes a white-rot of angiosperm wood in Taiwan Island. *Quasiphlebia* is characterized by a resupinate basidiome with smooth to tuberculate hymenial surface, a monomitic hyphal system with clamped hyphae, thick-walled subicular hyphae, scattered cubic and pyramidal crystals, cylindrical leptocystidia, clavate to narrowly clavate basidia, and ellipsoid basidiospores. Results showed its sister relationship with *Geliporus* and '*Hyphodermella*' *poroides*, but did not receive support either by bootstrap or posterior probabilities. The taxonomic placement of *Quasiphlebia* is in *Phanerochaetaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 999 *Spiralomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spiralomyces Crous & Jurjević

Spiralomyces was introduced by Tan et al. (2022) with the type species, *Spiralomyces*. *americanus*. The type species was isolated from office air in USA (Tan et al. 2022). *Spiralomyces* is quite similar to *Laocoon* in having brown conidia spirally twisted, but warty, not branched, and with thickened scars and hila (Videira et al. 2017). *Spiralomyces* is phylogenetically related to *Coniosporium uncinatum* based on ITS sequence data. However, it is a foliicolous or rock-inhabiting species with torulose, irregular branched hyphae with sub-spherical cells (De Leo et al. 1999). Tan et al. (2022) placed this genus in *Asterinales*, *incertae sedis* based on LSU, ITS and SSU sequence data. However, the placement of *Spiralomyces* in *Asterinales* need to confirm with additional molecular data due to its distinct morphology comparing other taxa of this order.

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Note 1000 *Trachydermella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Trachydermella B.K. Cui & Y.F. Sun

Trachydermella was established by Sun et al. (2022a) to accommodate *Trachydermella tsunodae* (Yasuda ex Lloyd) B.K. Cui & Y.F. Sun as a mono type species based on the morphological characteristics and phylogenetic analyses with ITS sequence data. The type species was isolated from the dead tree of *Litsea cubeb* in China. Basidiomata are annual, sessile, and soft when it is fresh. Basidiospores are ellipsoid to ovoid and truncate. The hyphal system is trimitic and generative hyphae are unbranched. *Trachydermella* districts from other genera by its sessile basidiomata, pileal surface, and watery context. The taxonomic placement of *Trachydermella* is in *Ganodermataceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 1001 *Endoradiciella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Endoradiciella G. Delgado & Maciá-Vicente

Endoradiciella was introduced by Crous et al. (2022a) to accommodate *Endoradiciella communis* G. Delgado & Maciá-Vicente as a monotypic genus based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was an endophyte isolated from roots of *Microthlaspi perfoliatum* (*Brassicaceae*) in France. *Endoradiciella* species with their sterile mycelia are characterized by hyphae frequently forming densely clustered cords, intercalary or terminal, thin-walled cells resembling chlamydospores, and needle-shaped crystal bundles on the hyphae. Molecularly, *Endoradiciella* differs from its closest *Chalara clidemiae* species by their unique ITS and LSU sequences. The taxonomic placement of *Endoradiciella* is in *Pezizellaceae Helotiales*, *Leotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 1002 ***Nevesoporus***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nevesoporus A.C. Magnago & T.W. Henkel

Nevesoporus was established by Magnago et al. (2022) to accommodate *Nevesoporus nigrostipitatus* A.C. as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. Another species is *Nevesoporus exiguus* (T.W. Henkel) A.C. Magnago & T.W. Henkel. *Nevesoporus nigrostipitatus* has been found in Brazil's Atlantic Forest in association with host trees *Coccoloba* and *Guapira*. The basidiomata of this genus are of small stature and epigeous. The poroid hymenophore is usually off-white, turning pinkish on maturity, and varies from becoming blackish or remaining unchanged on bruising. The pores are angular but near the stipe, the hymenium can be occasionally sub-lamellate. The trama in hymenium ranges from phylloporoid to subboletoid. The stipe surface varies from subvelutinous to glabrous. The spore print is usually reddish brown (Magnago et al. 2022). The type species differs from the similar-looking *Tylopilus nigripes* by its pileus of pinkish brown, no reaction in the colour of the hymenophore on bruising and much shorter, ellipsoidal basidiospores. The taxonomic placement of *Nevesoporus* is in *Boletaceae*, *Boletales*, *Agaricomycetes*, *Basidiomycota*.

Reference

Magnago AC, Alves-Silva G, Henkel TW, da Silveira RMB. 2022 – New genera, species, and combinations of *Boletaceae* from Brazil and Guyana. Mycologia 114(3), 607–625.

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(Edited by **Maryam T. Noorabadi** & **Kevin D. Hyde**)

Note 1003 ***Paxilloboletus***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paxilloboletus Furneaux, De Kesel & F.K. Khan

Paxilloboletus was established by Badou et al. (2022) to accommodate *Paxilloboletus africanus* Badou, De Kesel & Yorou as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* sequence data. Another species is *Paxilloboletus latisporus* De Kesel, Furneaux & Ryberg. The type species was also isolated from soil associated with *Uapaca togoensis* and *Anthonotha crassifolia* in Guinea. The epigeal basidiomata is characterized by a convex to depressed, tomentose surfaced pileus with a stipe of similar surface and with or without ridges or reticulation. The hymenophore comprises of yellowish, bifurcating and anastomosing lamellae with decurrent attachment with stipe. The context is mostly whitish to yellowish white and shows no change on exposure. The spore print is yellowish-brown. Microscopically, the basidiospores of this genus are smooth surfaced and vary from fusiform to ellipsoid. The pileipellis hyphal arrangement is of tomentum type. The hymenophoral trama is gelatinized, composed of divergent hyphae near the pileus becoming more regular towards the lamellae edge. Both species show a strong amyloid reaction in the lamella (also on exsiccata). Not the genus *Paxillus* (*Paxillaceae*), but *Boletus* (*Boletaceae*) formed a sister clade with *Paxilloboletus* based on the phylogenetic analysis. The taxonomic placement of *Paxilloboletus* is in *Boletaceae*, *Boletales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*.

Reference

Badou SA, Furneaux B, De Kesel A, Khan FK et al. 2022 – *Paxilloboletus* gen. nov., a new lamellate bolete genus from tropical Africa. Mycological Progress 21(1), 243–256.

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(Edited by **Maryam T. Noorabadi** & **Kevin D. Hyde**)

Note 1004 *Sinochloridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sinochloridium bambusicola W.P. Wu & Y.Z. Diao

Sinochloridium was introduced by Wu & Diao (2022) to accommodate *Sinochloridium bambusicola* W.P. Wu & Y.Z. Diao as a monotypic species based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The genus *Sinochloridium* was found on bamboo culms in China. This genus shares characteristics with certain *Chloridium* species, such as the production of macronematous, pigmented, and septate conidiophores, terminal phialidic conidiogenous cells, and the presence of hyaline, aseptate conidia in wet spore heads (Seifert et al. 2011). However, phylogenetic analysis, based on ITS and LSU data, revealed that it belongs to a distinct genus within the *Plectosphaerellaceae* (Wu & Diao 2022). *Sinochloridium* bears resemblance to *Phaeophialophora*, *Acremoniisimulans*, and certain *Chloridium* and *Phialophora* species. Nevertheless, *Sinochloridium* can be distinguished by its macronematous conidiophores, terminal and monophialidic conidiogenous cells, and hyaline, ellipsoid, and aseptate conidia. This newly identified genus is a saprobe, primarily found on deceased plant material, and is currently only documented in China (Wu & Diao 2022). The taxonomic placement of *Sinochloridium* is in *Plectosphaerellaceae*, *Glomerellales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

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Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 1005 *Neoconidiobolaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoconidiobolaceae X.Y. Liu, Stajich & K.T. Hodge

Neoconidiobolaceae was erected by Gryganskyi et al. (2022) to accommodate *Neoconidiobolus* B. Huang & Y. Nie as the type genus based on the morphological characteristics and phylogenetic analysis. The type species of this family is *Neoconidiobolus thromboides* (Drechsler) B. Huang & Y. Nie. The type species was isolated from leaf mould in the USA. Mycelia are hyaline. Primary conidiophores are simple or sometimes branched. Primary conidia are multinucleate, and hyaline. Replicative conidia are similar and smaller than primary conidia. Chlamydospores are globose. Zygospores are globose to ellipsoidal, smooth, and hyaline. The species of *Neoconidiobolaceae* resembles those of the *Conidiobolaceae* by not having microconidia and capilliconidia. The taxonomic placement of *Neoconidiobolaceae* is in *Entomophthorales*, *Zoopagomycota*.

Reference

Gryganskyi AP, Nie Y, Hajek AE, Hodge KT et al. 2022 – The Early Terrestrial Fungal Lineage of *Conidiobolus*—Transition from Saprotroph to Parasitic Lifestyle. Journal of Fungi 8(8), 789–801.

Entry by Pranami D. Abeywickrama, Institute of Plant Protection, Beijing Academy of Agriculture & Forestry Sciences, Beijing 100097, P.R China.
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Note 1006 *Parachytriomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Parachytriomycetes Caval. Sm

Parachytriomycetes classified into phylum *Chytridiomycota* and it was established by study of Cavalier-Smith (2022). This class characterized by zoospores with one-to-many cilia. Uni-ciliate species have two types microtubules; (i) a cone of microtubules radiating from its base towards the nucleus (ii) a distal fan of microtubules radiating in the plane orthogonal to the centriolar axis from an arc of dense fibrillar material attached distally to the ciliated centriole. Centrioles not directly attached to nucleus or to mitochondrion, without striated rhizoplast connecting to nucleus. Transition zone type I or short type II, with either nonagonal tube distal or spiral fibre proximal to transition plate; transition helix or distal dense plug absent. Phylogenetically defined as the last common ancestor of *Monoblepharis* and *Neocallimastix*, plus all its descendants. Sole orders are *Monoblepharidales* and *Neocallimastigales* (Cavalier-Smith 2022).

Reference

Cavalier-Smith T. 2022 – Ciliary transition zone evolution and the root of the eukaryote tree: implications for opisthokont origin and classification of kingdoms Protozoa, Plantae, and Fungi. Protoplasma 259, 487–593.

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Note 1007 *Ellipsoidisporodochium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ellipsoidisporodochium S.B. Liu, J.W. Xia & X.G. Zhang

The monotypic genus *Ellipsoidisporodochium* was introduced with *Ellipsoidisporodochium photiniae* as the type species (Liu et al. 2022d). This species was collected from diseased leaves of *Photinia serratifolia* which is as an important horticultural crop, from Hainan Province, China. *Ellipsoidisporodochium* was accommodated in *Tubakiaceae* (*Diaporthales*) based on phylogenic analyses of multi-gene (ITS, LSU, *tef1-α*, *tub2*, *rpb2*) sequence data *Ellipsoidisporodochium* only described from its asexual morph. *Ellipsoidisporodochium* is different from *Oblongisporothyrium* by smaller conidia (Yokoyama & Tubaki 1971, Liu et al. 2022d). *Paratubakia* is different from

Ellipsoidisporodochium by its endophytic life mode, epiphyllous or, rarely hypophyllous conidiomata, with globose to subglobose conidia, and *Racheliella* by ellipsoid to obovoid, hyaline to subhyaline conidia with obtuse apex, and truncate base (Braun et al. 2018). Therefore, morphology and phylogeny are well-supported for the generic establishment of *Ellipsoidisporodochium*.

References

Braun U, Nakashima C, Crous PW, Groenewald JZ et al. 2018 – Phylogeny and taxonomy of the genus *Tubakia* s. lat. Fungal Systematics and Evolution 1(1), 41–99.

Liu SB, Zhang ZX, Liu RY, Mu TC et al. 2022d – Morphological and molecular identification of *Ellipsoidisporodochium* gen. nov, (*Tubakiaceae*, *Diaporthales*) in Hainan Province, China, Phytotaxa 552(4), 259–266.

Yokoyama T, Tubaki K. 1971 – Cultural and taxonomical studies on the genus Actinopelte. Institute of Fermentation, Osaka, Research Communication 5, 43–77.

Entry by Indunil C. Senanayake, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Haizhu District, Guangzhou 510225, China

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Note 1008 *Holwayaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Holwayaceae Quijada, Matočec & I. Kušan

The family *Holwayaceae* was introduced within *Thelebolales* by Quijada et al. (2022b), with *Holwaya* Sacc. designated as the type genus. The family is distinguished by its pulvinate-turbinate to discoid or cup-shaped apothecia, ectal excipulum comprising hyaline to olive-brown cells arranged in a *textura globosa-angularis* to *textura prismatica*, and the capitate paraphyses, which are comprised of hyaline or partly olive-brown cells, sometimes exhibiting pigmentation in the form of refractive globules. Asci exhibits an enhanced spore discharge mechanism due to the presence of a restrictive, ring-like apical apparatus. The hyaline ascospores are smooth to ornamented and range from aseptate, ellipsoid, ovoid, fusoid to acicular, cylindrical, fusiform, with more than ten septa and sometimes capable of producing conidia. The only known anamorph of this family is *Holwaya* (Seifert et al. 1985), characterized by determinate synnemata, featuring shiny black stipes and grey fertile heads, comprising branched, hyaline conidiophores with phialides, and producing aseptate, ellipsoidal, hyaline, smooth conidia in a slimy mass. The conidia frequently germinate by budding to form microconidia. *Holwayaceae* encompasses three genera (*Holwaya*, *Patinella*, and *Ramgea*), each exhibiting diverse morphological and ecological diversities (Quijada et al. 2022b). *Holwaya* and *Ramgea* consist of two species each, while *Patinella* has approximately 25 species (Wijayawardene et al. 2020). To date, only saprobes have been reported from *Holwayaceae*. *Holwaya* species are predominantly found in the northern hemisphere, specifically in Palearctic and Nearctic regions, where they thrive on fallen trunks of *Tilia*, and other hardwood hosts like *Acer*, *Castanea*, *Fagus*, *Fraxinus*, *Magnolia*, *Quercus*, and *Ulmus*. This genus prefers old-growth forests, environments with high atmospheric humidity, and anamorphs are more frequently found in nature than teleomorphs. *Patinella* has been observed in climates and vegetation conditions similar to those favored by *Holwaya*. *Ramgea* was found in pheasant dung in the Netherlands and on bat dropping in the Croatia. In the mutli-gene phylogeny of the combined ITS, LSU, *tef1-α* and *rpb2* sequences, *Holwayaceae* was positioned basally within *Thelebolales* (Quijada et al. 2022b). This family shares certain morphological characters, such as paraphysate apothecia with actively discharging asci, similar to other *Thelebolales* taxa.

References

Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, Fungi). Biology 11(4), 583.
Seifert KA. 1985 – A monograph of *Stilbella* and some allied *Hyphomycetes*. Stud. Mycol 27, 1–225
Wijayawardene NN, Hyde KD, Al-Ani LKT, Tedersoo L et al. 2020 – Outline of Fungi and fungi-like taxa. Mycosphere 11, 1060–1456.

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Note 1009 *Pseudostanjehughesiaceae*
Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudostanjehughesiaceae K.D. Hyde & Hongsanan

Hyde et al. (2021a) established *Pseudostanjehughesiaceae* to accommodate *Pseudostanjehughesia* J. Yang & K.D. Hyde based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species is *Pseudostanjehughesia aquitropica* J. Yang & K.D. Hyde that it was isolated from decaying submerged wood in Thailand. Another species is *Pseudostanjehughesia lignicola* Z.L. Luo, K.D. Hyde & H.Y. Su. This family has distinctive characteristics in its asexual morph. Colonies are characterized by effuse, scattered, dark brown appearance, glistening in texture. These colonies feature mycelium that is partly superficial and partly immersed in the substratum. Mycelium is composed of brown, septate, and branched hyphae. Conidiophores are macronematous, mononematous, solitary, cylindrical, slightly tapering towards the apex, and can be either straight or slightly flexuous, septate, and mid to dark brown, sometimes reduced to a single conidiogenous cell, and truncate at the apex. Conidiogenous cells are monoblastic, integrated, terminal, and brown, producing acrogenous, solitary, fusiform or obclavate conidia. These conidia are truncate at the base, septate, and mid to dark brown, becoming paler towards the apex (Hyde et al. 2021a). The comprehensive phylogenetic analysis conducted by Hyde et al. (2021a) revealed a distinct clade formed by *Pseudostanjehughesia*. This clade was found to be closely related to *Acrodictyaceae*, as well as the *Proliferophorum thailandicum* and *Platytrachelon abietis* clade within *Diaporthomycetidae*. The taxonomic placement of *Pseudostanjehughesiaceae* is in *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*.

Reference

Hyde KD, Bao DF, Hongsanan S, Chethana KWT et al. 2021a – Evolution of freshwater *Diaporthomycetidae* (*Sordariomycetes*) provides evidence for five new orders and six new families. Fungal Diversity 107, 71–105.

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Note 1010 *Thermochaetoides*
Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Thermochaetoides X. Wei Wang & Houbraken

Thermochaetoides was erected by Wang et al. (2022) to accommodate *Thermochaetoides thermophila* (La Touche) X. Wei Wang & Houbraken as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb2* and *tub2*, sequence data. Another species is *Thermochaetoides dissita* (Cooney & R. Emers.) X. Wei Wang & Houbraken. *Thermochaetoides* species are found on animal dung, mushroom compost, rotten wheat straw, and typha straw in terrestrial habitats, and they are distributed in Israel, Switzerland, the Netherlands, the USA, and the UK (Cooney & Emerson 1964). *Thermochaetoides* is known only from its sexual morph and is characterized by subglobose or ovoid ascomata, with ostiolate, brown peridium, composed of irregular or angular cells, and brown terminal hairs, flexuous, dichotomously or irregularly branched, verrucose and septate, cylindrical or clavate asci, 8-spored, ascospores olivaceous when mature, single-celled, globose to subglobose or broad ovoid, with a distinctly protuberant apical germ pore (Wang et al. 2022). The genus *Ovatospora* formed a sister clade with *Thermochaetoides* based on the phylogenetic analysis. The taxonomic placement of *Thermochaetoides* is in *Chaetomiaceae*, *Sordariales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*.

References

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Note 1011 *Appendopyricularia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Appendopyricularia Crous & Osieck

Appendopyricularia is a monospecific genus accommodating *Appendopyricularia juncicola* Crous & Osieck based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated on a dead culm of *Juncus effusus* (*Juncaceae*) in the Netherlands (Crous et al. 2022a). The genus is known only from its asexual morph and is characterized by having dimorphic, solitary, or in 2–3 fascicles of conidiophores; subcylindrical, hyaline, smooth, geniculate-sinuous microconidiophores; subcylindrical, straight to curved to geniculate-sinuous, brown, thick-walled, 1 to 2-septate macroconidiophores; integrated, terminal, subcylindrical, on occasion slightly clavate; subdenticulate, denticles cylindrical conidiogenous cells with one to several per conidiogenous cell; solitary, hyaline, smooth, guttulate, fusoid to fusoid-ellipsoid, 0–2-septate, hilum truncate conidia with flexuous central apical appendage. *Appendopyricularia* shares solitary, pigmented conidiophores that terminate in denticulate conidiogenous cells, as in the *Pyricularia* complex but differs in having hyaline, fusoid to fusoid-ellipsoid conidia, and flexuous central apical appendage, with conidia arranged in an apical circle, and curved upwards (Klaubauf et al. 2014, Crous et al. 2022a). The taxonomic placement of *Appendopyricularia* is in *Barbatosphaeriaceae*, *Diaporthomycetidae*, *Dothideomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

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Klaubauf S, Tharreau D, Fournier E, Groenewald JZ et al. 2014 – Resolving the polyphyletic nature of *Pyricularia* (*Pyriculariaceae*). Studies in Mycology 79, 85–120.

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Note 1012 *Fusasporis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fusasporis J. Lovy, R.P.E. Yanong, J.M. Stilwell, T.B. Waltzek, J.P. Shelley, D.B. Pouder, J.C. Wolf & A.C. Camus

Lovy et al. (2021) introduced the microsporidian genus, *Fusasporis* which was recognized as the causal agent of a disease in two ornamental fish species, black tetra *Gymnocorymbus ternetzi* and cardinal tetra *Paracheirodon axelrodi*. *Fusasporis* is a monotypic genus and the type species is *Fusasporis stethaprioni* J. Lovy, R.P.E. Yanong, J.M. Stilwell, T.B. Waltzek, J.P. Shelley, D.B. Pouder, J.C. Wolf & A.C. Camus. The taxon occurred diffusely in most internal organs and the gill, thus referring to the condition as tetra-disseminated microsporidiosis (TDM) (Lovy et al. 2021). The causal agent was mainly characterized by histology, which 'showed that coelomic visceral organs were frequently necrotic and severely disrupted by extensive infiltrates of macrophages'. The establishment of the new genus was confirmed by the morphological characters of the spores and the 16S rDNA sequence data. According to Lovy et al. (2021), *Glugea* is the closest taxon to *Fusasporis*. The taxonomic placement of *Fusasporis* is in *Pleistophoridae*, *Glugeida*, *Haplophasea*, *Microsporea*, and *Microsporidia*.

Reference

Lovy J, Yanong RP, Stilwell JM, Waltzek TB, et al. 2021 – Tetra disseminated microsporidiosis: a novel disease in ornamental fish caused by *Fusasporis stethaprioni* n. gen. n. sp. Parasitology Research 120, 497–514.

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(Edited by **Maryam T. Noorabadi** & **Kevin D. Hyde**)

Note 1013 *Ghazallomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ghazallomyces Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef

The genus *Ghazallomyces* is an obligate anaerobic taxon that was reported from freshly deposited feces content of female Axis Deer, *Axis axis* (Hanafy et al. 2020). The genus is monotypic and the type species is *Ghazallomyces constrictus* Hanafy, Lanjekar, Dhakephalkar, T.M. Callaghan, Dagar, G.W. Griff., Elshahed & N.H. Youssef. The type species is well described with endogenous and exogenous sporangia, polyflagellate zoospores with 7–14 flagella (Hanafy et al. 2020). Phylogenetically, the type species resides with other well-established genera in

Neocallimastigomycota such as *Orpinomyces* but forms a distinct lineage. Based on phylogenetic analysis of LSU and ITS sequence data, the taxonomic placement of *Ghazallomyces* is in *Neocallimastigaceae*, *Neocallimastigales*, *Neocallimastigomycetes*, *Neocallimastigomycota*.

Reference

Hanafy RA, Lanjekar VB, Dhakephalkar PK, Callaghan TM et al. 2020 – Seven new *Neocallimastigomycota* genera from wild, zoo-housed, and domesticated herbivores greatly expand the taxonomic diversity of the phylum. Mycologia 112(6), 1212–1239.

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(Edited by **Maryam T. Noorabadi** & **Kevin D. Hyde**)

Note 1014 *Knowlespora*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Knowlespora Bojko

Knowlespora was erected by Bojko (2022) to accommodate *K. clinchi* as a monotypic species based on morphological characteristics and phylogenetic analysis of SSU sequence data. This microsporidian genus causes disease on pheasantshell mussel (*Actinonaiais pectorosa*), in a freshwater system in the USA. Bojko (2022) regarded that *K. clinchi* is not closely related to any other known molluscan microsporidians. This species indicates round-to-ovoid spores with thick spore walls. Merogony and sporogony are observed in direct contact with the cytoplasm of the host cell cytoplasm. The taxonomic placement of *Knowlespora* is in *Neopereziidae*, *Neopereziida*, and *Rozellomycota*.

Reference

Bojko J. 2022 – Systematic identity and phylogenetic analysis of *Knowlespora clinchi* (Knowles et al. 2022) gen. et comb. nov, from pheasantshell mussels (*Actinonaiais pectorosa*). Journal of Invertebrate Pathology 194, 107817.

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Note 1015 *Brasilioporus*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Brasilioporus A.C. Magnago, Alves-Silva & T.W. Henkel

Brasilioporus was introduced by Magnago et al. (2022) to accommodate *B. olivaceoflavidus* as the type species, based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. Three species are known from eastern Brazil (*B. olivaceoflavidus* and *B. simoniarum*) and Guyana (*B. rufonigricans*). Basidiomata of the genus are epigeous and pileate-stipitate with a dry pileus ranging in color from light olivaceous to nearly black. The hymenophore is tubulose, off-white at first, changing to red then black with bruising. The stipe is subglabrous to reticulate, grayish brown to black, bruising, with context staining red then black on exposure. Spores are smooth, fusoid, inamyloid, and pinkish brown in deposit. Hymenophoral cystidia are present. Pileipellis is a palisadal trichodermium, with encrusting pigment. Caulocystidia are present and the clamp connections are absent. Phylogenetic analyses based on five loci (ITS, LSU, *tef1-α*, *rpb1*, and *rpb2*) infer it is sister to *Strobilomyces* and *Afroboletus* within *Boletaceae* and related to the porphyrelloid taxa. The taxonomic placement of *Brasilioporus* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Magnago AC, Alves-Silva G, Henkel TW, da Silveira RMB. 2022 – New genera, species, and combinations of *Boletaceae* from Brazil and Guyana. Mycologia 114(3), 607–625.

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Note 1016 *Paralophiostomataceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Paralophiostomataceae V.V. Sarma & M. Niranjan

Paralophiostomataceae was introduced by Hongsanan et al. (2020a). However, the nomenclatural was invalid according to Art. F.5.1 (Shenzhen) which mentions inclusionof citation of the identifier issued for the name by a recognized repository (May et al. 2019). The family was reintroduced by e-Publishing article 492 for the proper introduction of the family status (Index Fungorum 2023). *Paralophiostomaceae* resembles *Lophiostomataceae*, but differs in having wide hysteriothecoid necks in ascomata, cylindrical asci and ascospores that split into part-spores at maturity (Hongsanan et al. 2020a). The genetic type, *Paralophiostoma* V.V. Sarma & M. Niranjan was found associated with unidentified twigs of hardwood in Andaman and Nicobar Islands of India. The nomenclature is also invalid according to Art. 40.1 (Shenzhen) which mentions that the type name should be indicated clearly, but in this case, two distinct holotype numbers were mentioned. There is only one epithet, *P. hysterioides* M. Niranjan & V.V. Sarma listed in Index Fungorum (2023). The species is not listed in Species Fungorum due to invalid nomenclature according to Art. 40.8 (Shenzhen) which mentions that the new species or infraspecific taxon published must include a statement that the culture is preserved in a metabolically inactive state (Turland et al. 2018). In Hongsanan et al. (2020a) an inhouse-code, viz. PUFNI-17617 was alsomentioned as Holotype by mistake along with the original Holotype AMH-9981 for *Paralophiostoma*. Through this article it is rectified and assigned that only AMH-9981 is the Holotype for *Paralophiostoma*. Similarly, it is now stated that the culture NFCCI-4397, mentioned in Hongsanan et al. (2020a) for *Paralophiostoma hysterioides*, is an ex-type living culture preserved in a metabolically inactive state. The family is supported by multi-loci analysis (LSU, SSU, ITS, and *rpb2*), however, the generic type and species member neededproper introduction to verify the status of the family and hence the above changes are included here. The asexual morph in this family is undetermined. The sextual morph is characterized by perithecoid ascomata that are scattered, carbonaceous, subglobular, immersed, clypeate, with a long slit-like ostiole at the apical end, and periphysate. Peridium is thick with multiple layers of textura angularis cells. Hamathecium comprises numerous filamentous, septate, branched, and anastomosing pseudoparaphyses in a gelatinous matrix. Asci are 8-spored and, bitunicate, fissitunicate, clavate to cylindrical, apically rounded, and long pedicellated. Ascospores are fusiform, hyaline to pale brownwhen young and have 1-septum with a constriction, become brown to dark brown at maturity and are 3-septate with constrictions at maturity.

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Note 1017 *Pleostigmataceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pleostigmataceae Grube, Muggia, de Hoog

Pleostigmataceae is an ascomycetous taxon belonging to the family *incertae sedis* in sub-class *Chaetothyriomycetidae* (within *Eurotiomycetes*). *Pleostigmataceae* formed a sister clade to *Verrucariales* and is related to *Chaetothyriales* but lacks statistical support, thus the monophyletic family was introduced to support the placement of the lineage within the *Chaetothyriales*-*Verrucariales* clade (Muggia et al. 2021b). The generic type, *Pleostigma* Kirschst was assigned to *Dothideomycetes* based on morphological characters. Based on molecular data of five gene loci (ITS, SSU, LSU, *rpb2*,), Stenroos et al. (2010) revised the placement to *Eurotiomycetes* (Gueidan et al. 2014, Chen et al. 2015b, Ekanayaka et al. 2019b). The family is recognised as rock-inhabiting black fungi that grow asymptomatically with epilithic or crust-forming lichens or bryophytes in alpine habitats. *Pleostigma jungermannicola* (C. Massal.) Kirschst. is recognized as the type species with the strains M174 as representative sequences of *Pleostigma* by Stenroos et al. (2010), Gueidan et al. (2014) and Ekanayaka et al. (2019b). Addition specimens are needed to confirm the morphology of *P*. *jungermannicola* with the characters described in the protologue (Kirschstein 1939). Subsequently, rock-inhabiting isolates of *Pleostigma* (*P*. *jungermannicola*, *P*. alpinum, *P*. *frigidum*, and *P*. *lichenophilum*) formed a separate lineage of *Pleostigmataceae*. In addition, six unidentified rock isolates of endolichenic fungi and *Chaetothyriales* TRN242 and A14 also clustered within the family but without strong support (Muggia et al. 2021b). The lineage of *Pleostigmataceae* is phylogenetically not supported, therefore further studies are needed to confirm its placement.

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Note 1018 *Sublophiostomataceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Sublophiostomataceae Hongsanan, Phookamsak, K.D. Hyde & Cheewangkoon,

Hongsanan et al. (2021) introduced the novel family, *Sublophiostomataceae* to accommodate the monotypic genus *Sublophiostoma* which was found from *Poaceae* in northern part of Thailand. The generic type resembles several genera in *Lophiostomataceae* based on its ascomata and asci (Tanaka et al. 2015, Hashimoto et al. 2018, Hongsanan et al. 2021). Phylogenetic analyses using combined ITS, LSU, *rpb2*, SSU, and *tef1-α* indicated that *Sublophiostoma* formed a distinct clade outside the suborders *Massarinae* and *Pleosporinae*, but within *Pleosporales* (Hongsanan et al. 2021). There is only one epithet, *S. thailandica* Phookamsak, Hongsanan, Goonas. & K.D. Hyde is listed in Species Fungorum (Species Fungorum 2024). *Sublophiostomataceae* can be distinguished by subglobose to hemisphaerical ascomata, with crest-like ostioles, a peridium with cells of *textura angularis* or *textura epidermoidea*, cylindric-clavate asci with a bulbous or foot-like narrow pedicel, and hyaline, fusiform, 1-septate ascospores surrounded by a large mucilaginous sheath. The asexual morph has been reported in axenic condition as coelomycetous-like (Hongsanan et al. 2021).

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Note 1019 *Acyanoboletus*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Acyanoboletus G. Wu & Zhu L. Yang

Acyanoboletus was introduced by Wu et al. (2023) to accommodate *A. controversus* as the type species, based on the morphological characteristics and combined phylogenetic analyses of LSU, *tef1-α*, *rpb1* and *rpb2* sequence data. Another species of the genus is *A. dissimilis*. Compared with other genera in *Boletaceae*, *Acyanoboletus* differs in strongly incurved pileal margin when young, pale yellow context and hymenophore without color changing when bruised, stipe lacking of reticulations, strong unpleasant smell, an intricate trichoderm pileipellis, and smooth basidiospores (Wu et al. 2023). *Acyanoboletus controversus* was found on soil under *Pinus kesiya* var. *langbianensis*, *Quercus*, *Lithocarpus* and *Castanopsis* hosts in China. The taxonomic placement of *Acyanoboletus* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

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Note 1020 *Alloexidiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloexidiopsis L.W. Zhou & S.L. Liu

Alloexidiopsis, a corticoid genus was introduced by Liu et al. (2022f) to accommodate *A. schistacea* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated on the fallen angiosperm trunk in China. Species of this genus are characterized by grayish-white to ochraceous, corticioid basidiomes, a monomitic hyphal system, and the presence of cystidia and hyphidia. *Metulochaete* and *Hirneolina* form a sister clade with *Alloexidiopsis* based on the phylogenetic analysis of ITS and LSU sequence data. The taxonomic placement of *Alloexidiopsis* is in *Auriculariaceae*, *Auriculariales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

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Note 1021 *Allophlebia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Allophlebia C.R.S. de Lira, Gibertoni & K.H. Larss.

Allophlebia, a monotypic genus, was established to accommodate *A. ludoviciana* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data (Lira et al. 2022). *Allophlebia ludoviciana* is a saprobe living on decaying wood in the USA. This species is characterized by resupinate, effused, adnate, ceraceous and pale yellow to deep orange basidiomata, smooth to warted hymenophores, and a monomitic hyphal system. Clamp connections are present. Basidiospores are ellipsoidid, smooth, hyaline, inamyloid, non-dextrinoid and acyanophilous while basidia are narrowly clavate with 4 sterigmata. There are two types of hyaline cystidia, which are thin-walled, narrowly obclavate to ventricose leptocystidia and thick-walled, cylindrical metuloid cystidia with encrusted and hyaline crystals (Nakasone et al. 1982, Lira et al. 2022). *Phlebia subochracea* is most similar to *A. ludoviciana* in having yellowish orange basidiomata, but it differs by wider basidiospores and lacking metudoids (Nakasone et al. 1982). The taxonomic placement of *Allophlebia* is in *Meruliaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 1022 *Allotrechispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Allotrechispora L.W. Zhou & S.L. Liu

Allotrechispora was introduced by Liu et al. (2022e) to accommodate *A. gatesiae* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, and *rpb2* sequence data. The type species was isolated from the fallen trunk of *Atherosperma moschatum* in Australia. This genus has three species including *A. daweishanensis*, *A. gatesiae*, and *A. xantha*. This genus generally occurs as annual, resupinate, cream to cinnamon-buff, corticioid, thin and soft basidiomes which are loosely attached to the substrates. Hymenophore is white to cinnamon-buff when fresh, smooth to tuberculate, and cracked with age. The hyphal system is monomitic, generative hyphae with clamp connections, absence of isodiametric subhymenial hyphae, hyaline and thin-walled. Basidiospores are ellipsoid to ellipsoid, or oblong shape, hyaline, with thin-walled, smooth, inamyloid, indextrinoid, and acyanophilous. Basidia are subcylindrical to subclavate, with four sterigmata, hyaline, thin-walled, and occurred clamp connection. Cystidia are absent. Phylogenetically *Fibrodontia* is the closest genus to *Allotrechispora*. The taxonomic placement of *Allotrechispora* is in *Allotrechisporaceae*, *Allotrechisporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

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Note 1023 *Amylotrama*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Amylotrama Bloomfield, Davoodian, Trappe & T. Lebel

Amylotrama was proposed by Lebel et al. (2022) to accommodate *A. clelandii* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, and *tef1-α* sequence data. Another species of the genus is *Amylotrama banrockensis* which was originally reported on soil from South Australia. This is a new sequestrate boletoid genus in *Xerocomoideae* (a subfamily of *Boletaceae*). Species of *Amylotrama* can be distinguished from other Australian boletoid sequestrate species by a combination of small basidiomata, creamy to yellow to gray hymenophore, amyloid trama, and inamyloid subglobose to subovate spores (Lebel et al. 2022). The taxonomic placement of *Amylotrama* is in *Boletaceae*, *Boletales*, *Xerocomoideae*, *Agaricomycetes*, and *Basidiomycota*.

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Note 1024 *Anthracoporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Anthracoporus Yan C. Li & Zhu L. Yang

Anthracoporus was proposed by Li & Yang (2021) to accommodate *A. holophaeus* as the type species, based on morphological characteristics and phylogenetic analysis of LSU, *tef1-α*, *rpb1* and *rpb2* sequence data. Another two species are accepted in *Anthracoporus* viz. *A. cystidiatus* and *A. nigropurpureus*. Species of this genus have been reported from Burma, Japan and Singapore. This genus differs from other genera in *Boletaceae* with its tomentose or rugose pileus, black to grayish black hymenophore when young and then becoming grayish pink when mature, fine hymenophore pores (0.3–2 mm wide), initially red and then becoming black discoloration of the context when injured, and trichoderm or epithelium pileipellis (Li & Yang 2021). The taxonomic placement of *Anthracoporus* is in *Boletaceae*, *Boletales*, *Agaricomycetes*, and *Basidiomycota*.

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Note 1025 *Aurantipostia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aurantipostia B.K. Cui & Shun Liu

Aurantipostia was erected by Liu et al. (2023d) as a monotypic genus to accommodate *A. macrospora* B.K. Cui & Shun Liu as the type species. *Aurantipostia* exhibits similarities to *Postia*, characterized by its aurantia-colored fruiting body. Based on combined sequence analyses (ITS, LSU, SSU, *tef1-α*, and *rpb2*), Liu et al. (2023d) proposed *Aurantipostia* as a new genus, which formed a well-resolved clade to the related genera *Nothofagiporus*, *Ptychogaster*, and distinct from *Postia*. *Aurantipostia* significantly differs from the other related genera, by having flabelliform to irregular pileus, pale-buff to apricot orange pileal surface, corky cream colored context, and cream to orange-yellow pores surface (while other closely related genera *viz*., *Nothofagiporus* differs by having clay-buff to vinaceous grey pilear surface and white to buff pore surface, *Ptychogaster* varies by having soft, corky to fragile fruitbody with white to cream pilear surface, and white to buff pore surface and *Postia* differs by its white or greyish to pale greyish brown pileal surface). *Aurantipostia* is characterized by a monomitic hyphal system with clamped generative hyphae, absence of cystidia, presence of cystidioles, and smooth, thin-walled, hyaline, oblong ellipsoid, acyanophilic, inamyloid and non-dextrinoid basidiospores and causing brown rot in the host. *Aurantipostia macrospora* was isolated on dead *Eucalyptus* in Tasmania.

Reference

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Note 1026 *Acidea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Acidea Hujslová & M. Kolařík

Based on an ITS phylogeny, an ex-type culture from the type specimen (PRM 922617) of the type species *Acidea extrema* belongs in *Discinellaceae*. Although based only on an ITS phylogeny, the family *Discinellaceae* was well-resolved in this analysis. *A. extrema*, known only from culture, was isolated from highly acidic soils (Hujslová et al. 2014).

Reference

Hujslová M, Kubátová A, Kostovčík M, Blanchette RA et al. 2014 – Three new genera of fungi from extremely acidic soils. Mycological Progress 13, 819–831.

Entry by P.R. Johnston, Manaaki Whenua – Landcare Research, Private Bag 92170, Auckland 1142, New Zealand
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Note 1027 *Callosus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Callosus C.L. Zhao

Callosus was introduced by Chen et al. (2022b) to accommodate *C. wenshanensis* as a monotypic species based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated from a fallen angiosperm branch in China and causes white rot. The phylogenetic analysis indicates that it belongs to *Phanerochaetaceae*, and forms a sister relationship with *Phanerochaete*. The type species differs from *Phanerochaete* by its membranous basidiomata with a lubricative hymenial surface and the presence of crystals between subhymenium and subiculum (Chen et al. 2022b). The hyphal structure is monomitic. Basidia are clavate to cylindrical with dominant basidioles. Basidiospores are ellipsoid, colorless, and thin-walled. The taxonomic placement of *Callosus* is in *Phanerochaetaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Chen R, He X, Zhao CL. 2022b – *Callosus wenshanensis* gen. & sp. nov. from China. Mycotaxon 137(3), 435–48.

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Note 1028 *Ceriporiopsoides*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ceriporiopsoides C.L. Zhao

Ceriporiopsoides was introduced by Zhao et al. (2023a) to accommodate *C. guidella* (≡ *Ceriporiopsis guidella*) as the type species based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The genus is monophyletic and *Ceriporiopsoides lagerheimii*, forms a sister lineage with *C. guidella* within phlebioid clade in *Polyporales*. The hyphal system is monomitic with the clamped generative hyphae and lacks cystidia and crystals. Basidiomata are annual, resupinate, hard, and brittle. Basidiospores are cylindrical, colorless, thin-walled, and smooth. Members of this genus are causing white rot (Zhao et al. 2023a). The taxonomic placement of *Ceriporiopsoides* is in *Meruliaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Zhao C, Qu M, Huang R, Karunarathna SC. 2023a – Multi-gene phylogeny and taxonomy of the wood-rotting fungal genus *Phlebia sensu lato* (*Polyporales*, *Basidiomycota*). Journal of Fungi 9(3), 320.

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Note 1029 *Chrysomycena*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chrysomycena Vizzini, Picillo, Perrone & Dovana

Chrysomycena was proposed in *Porotheleaceae* by Vizzini et al. (2019) based on morphological characteristics and phylogenetic analyses of ITS and LSU sequences. *Chrysomycena perplexa* was assigned as the type species (Vizzini et al. 2019) collected from Italy. However, with more taxon sampling from Portugal and Spain with the evidence by sequence data analyses, Villarreal et al. (2021) discovered *C. dunicola* (≡ *Mycena dunicola*). Also, they suggested that *C. perplexa* should be synonymized under *C. dunicola* based on morphology and phylogenetic analysis. *Chrysomycena* is characterized by a habitus from collybioid to clitocyboid, a pileic fibrillary surface, abundant rhizomorphs at the base of the stipe, a sub-hymenidermic to subtrichodermic pileipellis (at least in the middle of the pileus), non-amyloid spores, and widely clavate cheilocystidia (Vizzini et al. 2019). *Chrysomycena* species can be found in *Pinus* forests, coastal areas or dunes in Mediterranean areas such as Italy, Portugal and Spain (Vizzini et al. 2019, Villarreal et al. 2021). The taxonomic placement of *Chrysomycena* is in *Porotheleaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

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Note 1030 *Daedalella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Daedalella B.K. Cui & Shun Liu

Daedalella was introduced by Liu et al. (2023d) to accommodate *D. micropora* as a mono type species based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *rpb2*, and *tef1-α* sequence data. The type species was isolated from angiosperm trunk in Malaysia. Basidiocarps are annual and pileate. The hyphal system is dimitic and generative hyphae are clamped. Cystidia are absent and cystidioles are present. Basidiospores are oblong-ellipsoid, colorless, thin-walled, and smooth. *Daedalea*, a closely related genus to *Daedalella* is distinct by its usually irregularly poroid, labyrinthine/daedaleoid to lamellate or hydnoid hymenophore and catahymenium formed by skeletal hyphae penetrating the hymenium (Liu et al. 2023d). The taxonomic placement of *Daedalea* is in *Fomitopsidaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1031 *Dendrocorticiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dendrocorticiopsis Sheng H. Wu, C.L. Wei & S.H. He

Dendrocorticiopsis was introduced by Wei et al. (2022a) to accommodate *D. orientalis* as a mono-type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated from a dead angiosperm trunk in Taiwan Island.

Basidiomata are resupinate, effused, and adnate. The hyphal system is monomitic and generative hyphae are nodose-septate. Cystidia are clavate. Basidia are clavate to subclavate and 4-sterigmata. Basidiospores are ellipsoid to ovoid and smooth. *Dendrocorticiopsis* differs from other genera in *Punctulariaceae* by having strictly resupinate basidiomata, ivory hymenphore, a compact texture, a monomitic hyphal system, nodoseseptate hyphae, encrusted cystidia, dendrohyphidia and ellipsoid to ovoid basidiospores (Wei et al. 2022a). The taxonomic placement of *Dendrocorticiopsis* is in *Punctulariaceae*, *Corticiales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Wei CL, Chen CC, He SH, Wu SH. 2022a – *Dendrocorticiopsis orientalis* gen. et sp. nov, of the *Punctulariaceae* (*Corticiales, Basidiomycota*) revealed by molecular data. MycoKeys 90, 19.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1032 *Eoscyphella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eoscyphella Silva-Filho, Stevani & Menolli

Eoscyphella was introduced by Silva-Filho (2023) to accommodate the bioluminescent *E. luciurceolata* as a mono-type species, based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated from *Solanum swartzianum* in Brazil. *Eoscyphella* is characterized by absence of conspicuous long hairs on the receptacle, subglobose to broadly ellipsoid basidiospores, regularly bi-spored basidia, the absence of clamp connections, and the consistent presence of pigmented and encrusted external hyphae. The genus contains bioluminescent and non-bioluminescent representatives. *Woldmaria* forms a sister clade with *Eoscyphella* based on the phylogenetic analysis of ITS and LSU sequence data (Silva-Filho 2023). The taxonomic placement of *Eoscyphella* is in *Cyphellopsidaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Silva-Filho AG, Mombert A, Nascimento CC, Nóbrega BB et al. 2023 – *Eoscyphella luciurceolata* gen. and sp. nov. (*Agaricomycetes*) Shed Light on *Cyphellopsidaceae* with a New Lineage of Bioluminescent Fungi. Journal of Fungi 9(10), 1004.

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(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Silva-Filho AGS**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1033 *Glaciozyma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Glaciozyma Turchetti, L.B. Connell, Thomas-Hall & Boekhout

Glaciozyma was erected by Turchetti et al. (2011) to accommodate *G. antarctica* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated from ice and related cold habitats in Antarctica**.** Budding yeast cells are ovoid to elongate and the capsules may frequently form with pseudo and true hyphae in matured culture**.** The taxonomic placement of *Glaciozyma* is in *Camptobasidiaceae*, *Kriegeriales*, *Microbotryomycetes*, *Pucciniomycotina*, and *Basidiomycota*.

Reference

Turchetti B, Thomas Hall SR, Connell LB, Branda E et al. 2011 – Psychrophilic yeasts from Antarctica and European glaciers: description of *Glaciozyma* gen. nov., *Glaciozyma martinii* sp. nov. and *Glaciozyma watsonii* sp. nov. Extremophiles 15, 573–86.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1034 *Hemilanmaoa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hemilanmaoa Yang Wang, Bo Zhang & Y. Li

Hemilanmaoa was established by Wang et al. (2023) to accommodate *H. reticulatistipitata*, as a mono-type species based on morphological characteristics and phylogenetic analysis of LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. *Hemilanmaoa reticulatistipitata* was isolated from mixed broad-leaf forest (*Cyclobalanopsis* sp. and *Lauraceae*) in China. Species of this genus is similar to *Lanmaoa* but differs from the latter by pores red at the mature, stipe covered with distinctly reticulations and hyphae dextrinoid. In the type species, clamp connections are absent. Basidioma is stipitate-pileate with tubular hymenophore. Hymenophore is decurrent. Basidia are subcylindrical to clavate, and hyaline to pale brown (Wang et al. 2023). The taxonomic placement of *Hemilanmaoa* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Wang Y, Wang LY, Dai D, Qi ZX et al. 2023 – *Boletaceae* in China: Taxonomy and phylogeny reveal a new genus, two new species, and a new record. Frontiers in Microbiology 13, 1052948.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde & Subodini N. Wijesinghe**)

Note 1035 *Hertzogia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hertzogia R. Wiest

Hertzogia was proposed to accommodate a rare species previously named as *Clitocybe martiorum* J. Favre or *Lepista martiorum* (J. Favre) Bon. There are five unpublished ITS sequences named *C. martiorum* and/or *L. martiorum* in GenBank. Wiest (2022) sequenced a specimen which grouped together with these sequences in the phylogenetic tree. Compared with the phylogenetic analysis, this clade is distinct from any other known genera, thus *Hertzogia* is proposed with the type species *H. martiorum* (J. Favre) R. Wiest. *Hertzogia* is *incertae sedis* in *Agaricales*. Wiest (2022) suggested more loci to be sequenced for *Hertzogia* to confirm its monophyly. The taxonomic placement of *Hertzogia* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Wiest R. 2022 – *Hertzogia*, un nouveau genre clitocyboïde. Bull. Soc. mycol. Strasbourg n 121, 29–35.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1036 *Hongoboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hongoboletus G. Wu & Zhu L. Yang

Hongoboletus was introduced by Wu et al. (2023) to accommodate *H. ventricosus* as a monotype species, based on the morphological characteristics and phylogenetic analysis of ITS, nrLSU, *tef1-α*, *rpb1* and *rpb2* sequence data. The type species (≡ *Boletus ventricosus)* was found on the ground in a mixed forest dominated by *Pinus densiflora* and *Quercus serrata* in Japan. *Neoboletus flavidus* and *N. obscureumbrinus* are the closest species to *H. ventricosus*. This genus is characterized by quick dark-blue discoloration of all parts of basidioma upon exposure, a thick context of pileus but a thin hymenophore, yellow hymenophore surface and tubes, a stout stipe lacking reticulations on the surface, an interwoven trichoderm pileipellis, and smooth basidiospores (Wu et al. 2023). The taxonomic placement of *Hongoboletus* is in *Boletaceae*, *Boletales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Wu G, Li HJ, Horak E, Wu K et al. 2023 – New taxa of *Boletaceae* from China. Mycosphere 14(1), 745–776.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1037 *Hydropodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hydropodia Vizzini & Consiglio 2022

Hydropus Kühner ex Singer is polyphyletic in *Porotheleaceae*. The true or *Hydropus sensu stricto* must be limited to the clade including the type species, *Hydropus fuliginarius* (Batsch) Singer (Consiglio et al. 2021). Phylogenetic analyses of *Porotheleaceae* based on ITS and LSU sequences showed *Hydropus subalpinus* (Höhn.) formed a distinct clade in the family. Thus, *Hydropodia* is proposed with the type species *Hydropodia subalpine* (Höhn.) Vizzini, Consiglio & M. Marchetti. The following are found to be the synonyms of the new combination *Hydropodia subalpine*: *Mycena subalpina* Höhn., Sber. Akad. Wiss. Wien, *Hemimycena subalpina* (Höhn.) Singer, *Marasmiellus subalpinus* (Höhn.) Singer, *Hydropus subalpinus* (Höhn.) Singer, and *Collybia pseudoradicata* J.E. Lange & F.H. Møller. Species of this genus forms a mycenoid to collybioid basidiome (Consiglio et al. 2021).

Reference

Consiglio G, Vizzini A, Cooper J, Marchetti M et al. 2021 – The agaricoid members of the genus *Porotheleum* (*Porotheleaceae, Agaricales*), *Porotheleum* emend., *Porotheleaceae* s. stricto, and new genera for *Agaricus floccipes* and *Mycena subalpina*. Rivista di Micologia 64(2), 99–190.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao and Kevin D. Hyde**, **Maryam T. Noorabadi** & **Subodini N. Wijesinghe**)

Note 1038 *Kriegeriopsis*

Web-links: Index Fungorum, Facesoffungi, Microbank, GenBank

Kriegeriopsis Etayo, Diederich, Millanes & Wedin

Kriegeriopsis was introduced by Diederich et al. (2022) to accommodate *K. livingstonensis* as a monotypic species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Kriegeriopsis* is a lichenicolous genus found in Antarctica. *Kriegeriopsis livingstonensis* seems to be confined to the thalli of *Tetramelas* aff. *graminicola* growing over soil and plant debris over rocks in Antarctic environments (Diederich et al. 2022). Phylogenetic analyses based on ITS and LSU sequences showed its distinct position in the wider concept of *Kriegeriaceae* (Diederich et al. 2022). The taxonomic placement of *Kriegeriopsis* is in *Kriegeriaceae*, *Kriegeriales*, *Microbotryomycetes*, and *Basidiomycota*.

Reference

Diederich P, Millanes AM, Etayo J, Wedin M. 2022 – Class *Microbotryomycetes*. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, *Basidiomycota*. National Museum of Natural History, Luxembourg, 325–330.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1039 *Marantokordyana*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Marantokordyana M. Piepenbr., Maike Hartmann, T.A. Hofm. & M. Lutz

Marantokordyana was introduced by Piepenbring et al. (2020) to accommodate *M. oberwinkleriana* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. The type species was isolated from *Goeppertia panamensis* in Panama and *M. boliviana* is the other species of the genus found in Bolivia. *Marantokordyana* is a plant-parasitic genus in *Brachybasidiaceae*. Basidia of the genus are mixed with paraphyses. Basidiospores are blastosporic without apiculus, and cylindrical to slightly allantoid. The conidia are rod-shaped to fusiform. *Marantokordyana* species differ from other genera in *Brachybasidiaceae* by infecting species of *Marantaceae* in neotropics, fungal stromata breaking through host tissue, absence of paraphyses, proliferating basidia, and/or different shapes of conidia (Piepenbring et al. 2020). The taxonomic placement of *Marantokordyana* is in *Brachybasidiaceae*, *Exobasidiales*, *Exobasidiomycetidae*, *Exobasidiomycetes*, *Ustilaginomycotina*, and *Basidiomycota*.

Reference

Piepenbring M, Hartmann M, Hofmann TA, Lutz M. 2020 – Two new species in a new genus and a critical revision of *Brachybasidiaceae* (*Exobasidiales*, *Basidiomycota*) in honor of Franz Oberwinkler. Mycological Progress 19, 351–365.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1040 *Meira*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Meira Boekhout, Scorzetti, Gerson & Sztejnb. ex Denchev & T. Denchey

Meira Boekhout, Scorzetti, Gerson & Sztejnb. is illegally published due to the type species is typified by two specimens (Boekhout et al. 2003). Denchev & Denchev (2021) validated this name by redefine the type information. The taxonomic placement of *Meira* is in *Brachybasidiaceae*, *Exobasidiales*, *Exobasidiomycetes*, and *Basidiomycota*.

References

Boekhout T, Theelen B, Houbraken J, Robert V et al. 2003 – Novel anamorphic mite-associated fungi belonging to the *Ustilaginomycetes*: *Meira geulakonigii* gen. nov., sp. nov., *Meira argovae* sp. nov. and *Acaromyces ingoldii* gen. nov., sp. nov. International Journal of Systematic and Evolutionary Microbiology 53(5), 1655–1664.

Denchev CM, Denchev TT. 2021 –Validation of the generic names *Meira* and *Acaromyces* and nineteen species names of basidiomycetous yeasts. Mycobiota 11, 1–10.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1041 *Neopuccinia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neopuccinia A. Martins

Neopuccinia was proposed by Junior et al. (2019) to accommodate *N. bursa* as a monotype species, based on morphological characteristics and phylogenetic analysis of SSU and LSU sequence data. The type species was isolated from leaves of *Protium heptaphyllum* in Brazil. *Neopuccinia* is characterized by the presence of bag-like protrusions that arise from the teliospore walls, and irregularly ellipsoid teliospores. Phylogenetic analysis of *Pucciniales* showed that *Neopuccinia* clade forms a separate lineage within *Uredinineae incertae sedis* (Aime & McTaggart 2021). Further studies are required with more taxon sampling and additional coding loci to clarify the family placement of this genus. The taxonomic placement of *Neopuccinia* is in *Pucciniales*, *Pucciniomycetes*, and *Basidiomycota*.

References

Junior AS, Sakuragui CM, Hennen JF, Junior AA. 2019 – *Neopuccinia* (*Pucciniales*): a new *Puccinia*-like genus from the Brazilian Cerrado. Phytotaxa 406(3), 169–179.

Aime MC, McTaggart AR. 2021 – A higher-rank classification for rust fungi, with notes on genera. Fungal systematics and evolution 7(1), 21–47.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1042 *Nevesoporus*

Web-links: Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nevesoporus A.C. Magnago & T.W. Henkel

Nevesoporus was proposed by Magnago et al. (2022) to accommodate *N. nigrostipitatus* A.C. Magnago as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. Another species is *N. exiguus* (T.W. Henkel) A.C. Magnago & T. W. Henkel. The type species was found on soil in Brazil. Within *Chalciporoideae*, *Chalciporus* differs from *Nevesoporus* mainly by the reddish, pinkish red to reddish brown hymenophores, radially arranged pores, and context and hymenophore unchanging or staining bluish to dull blue slowly when cut or injured (Magnago et al. 2022). The taxonomic placement of *Nevesoporus* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, *Basidiomycota*.

Reference

Magnago AC, Alves-Silva G, Henkel TW, da Silveira RMB. 2022– New genera, species, and combinations of *Boletaceae* from Brazil and Guyana. Mycologia 114(3), 607–625.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1043 *Nigrocarnea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nigrocarnea Sparre P. & Læssøe

Nigrocarnea was erected by van de Peppel et al. (2022) as a monotypic genus to accommodate *N. radicata* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, and *tef1-α* sequence data. *Nigrocarnea radicata* was obtained from soil under *Fagaceae*-rich forest with *Quercus* and *Castanopsis* trees in Laos. *Nigrocarnea* differs from other genera within the termitomycetoid clade by producing dark-pigmented arthroconidia in the pileus context of the basidiome (van de Peppel et al. 2022). In the type species, basidiospores are ellipsoid and smooth. Basidia are clavate and 4-sterigmate. Hymenial cystidia and clamp connections are absent. The taxonomic placement of *Nigrocarnea* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Van de Peppel LJ, Aime MC, Læssøe T, Pedersen OS et al. 2022 – Four new genera and six new species of lyophylloid agarics (*Agaricales, Basidiomycota*) from three different continents. Mycological Progress 21(10), 85.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1044 *Nothofagiporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothofagiporus B.K. Cui & Shun Liu

Nothofagiporus, a monotypic genus was proposed by Liu et al. (2023d) to accommodate *N. venatus* as the type species based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *rpb1*, *rpb2*, and *tef1-α* sequence data. The type species was isolated from the fallen branch of *Nothofagus cunninghamii* in Australia. Basidiocarps are annual and pileate. Tubes are concolorous with pore surface and corky. The hyphal system is monomitic and generative hyphae are clamped. Cystidia are absent and cystidioles are present. Basidiospores are allantoid, hyaline, and smooth. *Nothofagiporus* differs from *Postia sensu stricto* by its clay-buff to vinaceous grey pileal surface, developing abundant strands of dark vinaceous or blackish veins (Liu et al. 2023d). The taxonomic placement of *Nothofagiporus* is in *Postiaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1045 *Paramarasmius*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramarasmius Antonín & Kolařík

Paramarasmius was proposed by Antonín et al. (2023) to accommodate *P. palmivorus* as the type species based on the morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Paramarasmius mesosporus* is the other accepted species of the genus. The type species was obtained from the petioles of *Elaeis guineensis* in Southern Asia. *Paramarasmius* consists of agaricoid fungi with convex or conical-convex pileus and the basidiospores are smooth, thin-walled, and non-dextrinoid. *Paramarasmius* differs from *Marasmius* by the absence of a hymeniderm pileipellis, and from *Crinipellis*, *Moniliophthora* and *Chaetocalathus* by the absence of typical setiform dextrinoid hairs in pileipellis (Antonín et al. 2023). The taxonomic placement of *Paramarasmius* is in *Marasmiaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Antonín V, Hosaka K, Kolařík M. 2023 – Taxonomy and phylogeny of *Paramarasmius* gen. nov. and *Paramarasmius mesosporus*, a worldwide distributed fungus with a strict ecological niche. Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology 157(2), 286–293.

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Note 1046 *Parmeliicida*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Parmeliicida Diederich, F. Berger, Etayo & Lawrey

Parmeliicida was proposed by Diederich et al. (2022c) to accommodate *P. pandemica* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Parmeliicida* is a lichenicolous genus originally found on *Parmelia saxatile* in France. The genus is characterized by colonies with dark reddish brown, superficial to semi-immersed bulbils overgrowing lichen thalli. It differs from other bulbilliferous *Cantharellales* species and genera by the relatively large, dark reddish-brown, and superficial nature of the bulbils confined to *Parmelia* thalli. The taxonomic placement of *Parmeliicida* is in *Hydnaceae*, *Cantharellales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Diederich P, Sikaroodi M, Lawrey JD. 2022c – Class *Agaricomycetes*, order *Cantharellales*. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, *Basidiomycota*. National Museum of Natural History, Luxembourg, 51–69.

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Note 1047 *Nimisora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nimisora Pérez-Ort., M. Svenss. & J.C. Zamora

Nimisora iberica Pérez-Ort., Turégano, M. Svenss. & J.C. Zamora was classified within the newly established monotypic genus *Nimisora* under *Lecanoraceae* (Pérez-Ortega et al. 2023). The taxonomic placement was confirmed through detailed morphological examination and phylogenetic analyses, which incorporated sequence data from ITS, LSU, and SSU regions. The type strain was found on the bark of *Cistus ladanifer* in Spain. The conidiomata have not been observed. The genus is distinguished by crustose thalli, lecideoid apothecia, thick-walled excipulum, simple to branched paraphyses, bacidia-type ascus, and colorless ascospores. *Nimisora* exhibits morphological and anatomical characteristics that align with species from genera such as *Lecidella*, *Japewia*, *Japewiella*, *Palicella*, and *Traponora*. These genera are distinguished by differences in exciple structure, pigmentation, paraphyses morphology, ascus type, ascospore features, and chemical composition. Phylogenetically, *Nimisora* formed a sister clade with *Ramboldia* using ITS, LSU, and SSU sequence data (Pérez-Ortega et al. 2023).

Reference

Pérez-Ortega S, Turégano Y, Svensson M, Zamora JC. 2023 – *Nimisora* (*Lecanoraceae*, *Ascomycota*), a new genus for a common lecideoid epiphytic species from the central Iberian Peninsula. The Lichenologist 55(5), 335–345.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

Note 1048 *Peribolospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Peribolospora Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow

Peribolospora was introduced by Witfeld et al. (2023) to accommodate *P. baueri* as the type species based on morphological characteristics and phylogenomics. *Peribolospora kevripleyi* is the other species accepted in the genus. The type species was isolated from soil associated with a stand of *Pinus resinosa* in Canada. In morphology, the chlamydospores are hyaline and triangular-shaped. Basidiomata or basidiospores are not seen. The conidia are sympodial, hyaline, and ovoid. By analyzing protein-coding genes, orthology analysis, and septal pore in the type species, the *Peribolosporomycetes* is placed within *Ustilaginomycotina*. The taxonomic placement of *Peribolospora* is in *Peribolosporaceae*, *Peribolosporales*, *Peribolosporomycetes*, and *Basidiomycota*.

Reference

Witfeld F, Guerreiro MA, Nitsche F, Wang QM et al. 2023 – *Peribolosporomycetes* class. nov. description of a new heat resistant and osmotolerant basidiomycete lineage, represented by *Peribolospora* gen. nov., *P. kevripleyi* sp. nov., and *P. baueri* sp. nov. Mycological Progress 22(4), 30.

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Note 1049 *Fanglania*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Fanglania C.L. Hou, Q.T. Wang & P.F. Cannon

Fanglania, typified by *Fanglania hubeiensis* C.L. Hou, T. Lv & P.F. Cannon, was introduced by Wang et al. (2023) under *Rhytismataceae sensu stricto* to accommodate seven species. The establishment of this genus was supported by morphological analysis and phylogenetic studies using nrLSU and mtSSU sequence data. *Fanglania hubeiensis* was isolated from the living leaves of *Ilex cornuta* in China. *Fanglania* formed a sister clade with two genera *Johnstoniella* based on phylogenetic analyses using nrLSU and mtSSU sequence data. In the new genus, stromata form on both sides of living leaves, sparsely scattered and sometimes merging, protruding above the leaf's surface and having a black appearance. Ascomata grow on the lower side of living leaves, opening with one more or less circular split. They do not have any lips. Paraphyses are filamentous, while ascospores are either cylindrical or club-shaped. The majority of ascomata belonging to *Rhytisma*-like species develop on dead leaves, i.e., fallen leaves. In contrast, the ascomata of *Fanglania* spp. reach maturity on the living leaves of evergreen *Ilex* spp. *Neorhytisma panamense* also exhibits mature ascomata on the living leaves of its evergreen host plant. This preference for living leaves is associated with the general host specificity (Wang et al. 2023).

Reference

Wang QT, Guo MJ, Lv T, Zhou H et al. 2023 – Phylogeny and taxonomy of *Rhytisma*-like species worldwide. Fungal Diversity 120(1), 77–119.

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Note 1050 *Phlebicolorata*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Zhao et al. (2023a) introduced *Phlebicolorata* within *Meruliaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) to accommodate four wood-decomposing phlebioid (tuberculate) and poroid species based on phylogenetic analyses using a combined DNA data set of the ITS, LSU, *rpb*1, *rpb*2, *tef*1, GAPDH, and SSU sequences data. *Phlebicolorata* was typified by *Phlebicolorata brevispora* (Nakasone) C.L. Zhao. The genus is distributed in China and North America (Zhao et al. 2023a). All species share annual, resupinate basidiomata, monomitic hyphal system with clamp connections. The basidiomes of different species are reported to have an apparent apricot-orange, orange-brown, reddish-brown, or brownish-olive color. The basidiospores are colorless, thin-walled, smooth, broadly ellipsoid to short cylindrical. The genus includes four species *Phlebicolorata brevispora*, *P. alboaurantia* (C.L. Zhao, B.K. Cui & Y.C. Dai) C.L. Zhao, *P. pseudoplacenta* (Vlasák & Ryvarden) C.L. Zhao, and *P. rosea* (C.L. Zhao & Y.C. Dai) C.L. Zhao (Nakasone & Eslyn 1981, Vlasák et al. 2012, Zhao et al. 2015, 2023a). Molecular analyses of ITS+LSU dataset indicate proximity of the four species (Figure 1 of Zhao et al. 2023a). However, the results of multigene analysis (ITS, mitSSU, nucLSU, *gapdh*, *tef1*, *rpb1*, and *rpb2*) of the same paper (Figure 2 of Zhao et al. 2023a) group *Aurantiporus croceus* (Pers.) Murrill to the proximity of *P. rosea*, so *Phlebicolorata* splits in two distinct lineages. The results of multigene phylogeny are questionable, because only few genetic loci were sequenced for all species of *Phlebicolorata*. Moreover, the type species *P. brevispora* was omitted in the multigene analysis. Therefore, a new multigene phylogeny including more specimens with sequences of all gene loci available for each species is desirable to confirm the status of *Phlebicolorata*. According to Zhang et al. (2024d) *P. alboaurantia*, *P. rosea* and *P. pseudoplacenta* belong to *Aurantiporus.* According to these results, only *P. brevispora* and possibly *Phlebia austroasiana* remain in *Phlebicolorata.*

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References

Nakasone KK, Eslyn WE. 1981 – A new species, *Phlebia brevispora*, a cause of internal decay in utility poles. Mycologia 73, 803–811.

Vlasák J, Vlasák Jr, Ryvarden L. 2012 – Four new polypore species from the westerm United States. Mycotaxon 119, 217–231

Zhang X, Zhou HM, Ghobad-Nejhad M, Liu HG, Vlasák J, Dai YC, Yuan Y. 2024d – Molecular and morphological data reveal two new polypores (*Polyporales*, *Basidiomycota*) with reddish brown to orange basidiomata from China. MycoKeys 107, 75–94.

Zhao CL, Wu F, Liu HX, Dai YC. 2015 – A phylogenetic and taxonomic study on *Ceriporiopsis* s. str. (*Polyporales*) in China. Nova Hedwig 101, 403–417.

Zhao C, Qu M, Huang R, Karunarathna SC. 2023a – Multi-gene phylogeny and taxonomy of the wood-rotting fungal genus *Phlebia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(3), 320.

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Note 1051 *Paralentithecium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Paralentithecium H.W. Shen, K.D. Hyde & Z.L. Luo

Shen et al. (2023) erected the new genus *Paralentithecium* to accommodate *Paralentithecium aquaticum* (Ying Zhang, J. Fourn. & K.D. Hyde) H.W. Shen & Z.L. Luo as the type species under *Lentitheciaceae* Another species is *Paralentithecium suae* H.W. Shen, K.D. Hyde & Z.L. Luo. The phylogenetic analysis was conducted using a combined sequence of LSU, SSU, ITS, and *tef1-α* datasets. The members of this genus are saprobes on submerged decaying wood in a freshwater lake. The asexual form has not been seen. In the sexual form, ascomata are clustered, scattered, and subglobose or ellipsoidal with thick, hyaline, branched, and septate pseudo paraphyses. Asci are 8-spored and clavate to subcylindrical with hyaline, 1-septate, and smooth ascospores. *Paralentithecium* species are placed in an independent clade within the *Lentitheciaceae* (Shen et al. 2023).

Reference

Shen HW, Bao DF, Boonmee S, Su XJ et al. 2023 – Lignicolous Freshwater Fungi from Plateau Lakes in China (I), Morphological and Phylogenetic Analyses Reveal Eight Species of *Lentitheciaceae*, Including New Genus, New Species, and New Records. J Fungi 9(10), 962.

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Note 1052 *Profundisphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Profundisphaeria J.F. Zhang, Jian K. Liu & Z.Y. Liu

The genus *Profundisphaeria* was introduced by Zhang et al. (2023a) based on morphology and phylogenetic tree using a combined sequence of LSU, SSU, *tef1-α*, and *rpb2* sequences. The only species is *Profundisphaeria fusiformispora* J.F. Zhang, Jian K. Liu & Z.Y. Liu, which was isolated from the dead culms of an unidentified herbaceous plant in China. In the sexual morph, ascomata are deeply immersed, scattered, and solitary. The hamathecium involves numerous, branched, and septate, pseudoparaphyses. Asci are eight-spored, bitunicate, and fissitunicate, which comprise two-celled, asymmetrical, and guttulate ascospores. The asexual morph has not been observed (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122(1), 1–60.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

Note 1053 *Karstiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Karstiomyces J.F. Zhang & K.D. Hyde

The monotypic genus *Karstiomyces* was established by Zhang et al. (2023a) to accommodate *Karstiomyces guihzouensis* J.F. Zhang & K.D. Hyde based on morphology and phylogeny (LSU, ITS, SSU, *tef1-α*, and *rpb2* sequence data). *Karstiomyces guihzouensis* was isolated from the dead culm of herbaceous plant in China. In the sexual form, ascomata are immersed, and solitary to gregarious. Asci are eight-spored, bitunicate, fssitunicate, and cylindrical with pale brown-colored and septate ascospores. The sexual structure has not been observed. Phylogenetically, *Karstiomyces* clustered sister to *Pseudopassalora*. *Karstiomyces* can be distinguished from eight genera of *Eriomycetaceae* by its multi-septate, brown ascospores and the distinctive texture and shape of the peridium. The taxonomic placement of *Karstiomyces* is an uncertain position within *Pezizomycotina*

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122(1), 1–60.

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Note 1054 *Kevinia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kevinia Rajeshk., Verma R., Wijayaw., Karun. & Tibpromma

Kevinia, as a monotypic genus, was established by Senanayake et al. (2023) to accommodate *Kevinia lignicola* Rajeshk., Verma R., Wijayaw., Karun. & Tibpromma. The introduction of the new genus was based on morphological characteristics and phylogenetic analysis using a combined DNA data set of the ITS, LSU, and *tef1-α* sequences. *Kevinia lignicola* was found on decaying branches of an unidentified plant in India. In the asexual morph, conidiophores are decreased to conidiogenous cells, which are macronematous, mononematous, erect, and ampulliform. Conidiogenous cells produce holoblastic, monoblastic, dictyosporous, and euseptate conidia. The sexual morph has not been observed. *Neoaquastroma* is the sister clade for *Kevinia* based on the combined ITS, LSU, and *tef1-α* sequence data. The newly proposed genus *Kevinia* does not exhibit any morphological similarities with any known genera and species of *Parabambusicolaceae* (Senanayake et al. 2023).

Reference

Senanayake IC, Rossi W, Leonardi M, Weir A et al. 2023 – Fungal diversity notes 1611–1716: taxonomic and phylogenetic contributions on fungal genera and species emphasis in south China. Fungal Diversity 12, 1–243.

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Note 1055 *Nothomicrothyrium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothomicrothyrium Crous

In 2023, the taxonomic classification of *Nothomicrothyrium* was established through morphological and phylogenetic analyses utilizing ITS sequence data (Crous et al. 2023b). The type species within this genus is *Nothomicrothyrium beaucarneae* Crous, isolated from the decaying leaves of *Beaucarnea stricta* in South Africa. In the new genus ascomata are thyrothecial, superficial, circular, and solitary. The hamathecium is constructed of arranged asci with thin, branched, septate, and cellular pseudoparaphyses. The asci are eight-spored, bitunicate, fissitunicate, and obovoid, which contain multiseriate, submedianly one-septate ascospores. The asexual morph of *Nothomicrothyrium* has not been observed. (Crous et al. 2023b). *Nothomicrothyrium* exhibits morphological similarities to *Pseudomicrothyrium* and *Microthyrium*; however, phylogenetic analysis has positioned *Nothomicrothyrium* within a distinct clade. Distinguishing features of *Nothomicrothyrium* include the presence of numerous ascospore appendages, setting it apart from *Pseudomicrothyrium* and *Microthyrium* (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51, 280–417.

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Note 1056 *Pseudophlebia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudophlebia C.L. Zhao

Pseudophlebia was proposed by Zhao et al. (2023a) to accommodate *P. setulosa* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. The type species was found on the wood of *Liquidambar* in the USA. Currently, four species accepted in this genus. *Pseudophlebia* differs *Phlebia* by having hard and brittle basidiomata with pale ochraceous to ochraceous yellow-brown to reddish brown hymenial surface and mostly present cystidia (Zhao et al. 2023a). Also, the genus comprises a monomitic hyphal system, and thin-walled, colorless, smooth basidiospores. In the generative hyphae, clamp connections are present. *Pseudophlebia* distinct from *Phlebia* in DNA sequences. The taxonomic placement of *Pseudophlebia* is in *Meruliaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Zhao C, Qu M, Huang R, Karunarathna SC. 2023a – Multi-gene phylogeny and taxonomy of the wood-rotting fungal genus *Phlebia sensu lato* (*Polyporales*, *Basidiomycota*). Journal of Fungi 9(3), 320.

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Note 1057 *Pseudospongipellis*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudospongipellis Y.C. Dai & Chao G. Wang

Pseudospongipellis was proposed to accommodate *P. litschaueri* based on morphological characteristics and phylogenetic analysis of ITS, LSU, and SSU sequence data by Wang & Dai (2022). The type species was isolated from *Quercus* in China. Currently, the genus consists of four species *viz*. *P. delectans*, *P. litschaueri*, *P. tomsovskyi*, and *P. unicolor* (Nakasone & Ortiz-Santana 2022, Wang & Dai 2022). In *Pseudospongipellis*, basidiomata are annual and pileate. The hyphal system is monomitic and generative hyphae have clamp connections. Cystidia and cystidioles are absent. Basidiospores are broadly ellipsoid to subglobose, and hyaline. *Pseudospongipellis* resembles to *Spongipellis* in morphology, but phylogenetically, the former nested in the *Cerrenaceae* clade, while the latter in the *Meripilaceae* clade (Wang & Dai 2022). The taxonomic placement of *Pseudospongipellis* is in *Cerrenaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

References

Nakasone KK, Ortiz-Santana B. 2022 – New species and combinations in the *Cerrenaceae* (*Polyporales, Basidiomycota*). Lilloa 59, 89–113.

Wang CG, Dai YC. 2022 – Phylogeny and taxonomy of *Spongipellis* (*Polyporales, Basidiomycota*) and its micromorphological similar genera. Mycological Progress 21(9), 73.

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Note 1058 *Pterosporomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pterosporomyces G. Guevara, Gómez-Reyes & Z.W. Ge

Pterosporomyces was proposed by Guevara-Guerrero et al. (2021) to accommodate *P. herrerae* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and *atp6* sequence data. *Pterosporomyces herrerae* was found under *Quercus* spp. and *Pinus* spp. in Mexico. It comprises olive-green to brown-green gleba and the spores have an inflated and wing-like appearance. *Restingomyces reticulatus* resembles *P. herrerae*, but it differs by having reticulated basidiospores. The taxonomic placement of *Pterosporomyces* is in *Trappeaceae*, *Hysterangiales*, *Phallomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Guevara-Guerrero G, Martínez MAM, Reyes VMG, Ge ZW et al. 2021 – New molecular data in the Truffle-like fungus, *Aroramyces Herrerae*, Reveal a novel cryptic ancestral taxon, *Pterosporomyces herrerae* gen. nov. & comb. nov. (*Trappeacea, Phallales*). Global Journal of Science Frontier Research: Biological Science 21(3).

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Note 1059 *Austrophoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Austrophoma N.Q. Pham, Marinc. & M.J. Wingf.

Marincowitz et al. (2024) introduced the monotypic genus *Austrophoma* with *Austrophoma euphorbiae* N.Q. Pham, Marinc. & M.J. Wingf., supported by both morphological traits and a phylogenetic analysis utilizing ITS, LSU, *rpb2* and *tub2* sequences. The type species was isolated from the dying *Euphorbia mauritanica* in South Africa. Only the asexual morph has been observed in the new genus. In the asexual morph, conidiomata are pycnidial, papillate, or with short necks. Conidiophores are decreased to hyaline, holoblastic, doliiform to lageniform conidiogenous cells. Conidia are hyaline, cylindrical, aseptate, and rarely one-septate. In the phylogenetic analysis using ITS, LSU, *rpb2* and *tub2* sequences, *Austrophoma* has the closest relationship with phoma-like genera (*Didymellaceae*). *Austrophoma* and *Phomatodes* exhibit similar morphological characteristics, notably hyaline conidia that vary from allantoid to cylindrical. Despite these morphological similarities, genetic sequencing clearly distinguishes them as separate lineages.

Reference

Marincowitz S, Pham NQ, Wingfield BD, Roets F et al. 2024 – Microfungi associated with dying *Euphorbia mauritanica* in South Africa and their relative pathogenicity. Fungal Syst Evol 12(1), 59–72.

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Note 1060 *Quasiramularia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Quasiramularia I-Chin Wei & R. Kirschner

Quasiramularia is a monotypic genus typified with *Q. phakopsoricola* (Kolařík et al. 2021). It is a ramularia-like hyphomycete discovered on uredinia of *Phakopsora ampelopsidis* on leaves of wild *Ampelopsis brevipedunculata* and cultivated *Parthenocissus tricuspidata* in several cities in Taiwan Island. Analyses of SSU and LSU rDNA and *rpb2* gene sequence data and ultrastructural features revealed it is a new lineage of *Ustilaginomycotina*. A new order and family are proposed to accommodate the species in this lineage, viz. *Quasiramulariales* and *Quasiramulariaceae*. *Quasiramularia* is similar to anamorphic *Ramularia* but differs by conidiogenous loci lacking the ring-shaped hollow between the central dome and the marginal ring typical of *Ramularia* species (Kolařík et al. 2021). The taxonomic placement of *Quasiramularia* is in *Quasiramulariaceae*, *Quasiramulariales*, *Ustilaginomycetidae*, *Ustilaginomycetes*, and *Basidiomycota*.

Reference

Kolařík M, Wei IC, Hsieh SY, Piepenbring M et al. 2021 – Nucleotide composition bias of rDNA sequences as a source of phylogenetic artifacts in *Basidiomycota*—a case of a new lineage of a uredinicolous *Ramularia*-like anamorph with affinities to *Ustilaginomycotina*. Mycological Progress 20, 1553–1571.

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Note 1061 *Retiperidiolia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Retiperidiolia Kraisit., Choeyklin, Boonprat. & M.E. Sm.

Retiperidiolia was proposed by Kraisitudomsook et al. (2022) to accommodate *R. reticulata* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*, and *rpb2* sequence data. *Retiperidiolia aquaphila* is the other accepted species in the genus. *Retiperidiolia* has only been found in the tropics, i.e., Brazil, Thailand, Sri Lanka, and Hawaii (USA) (Kraisitudomsook et al. 2022). It comprises globose to subglobose basidiocarps and the monomitic hyphal system. Clamp connections are present. Basidia are subglobose, thin-walled, and hyaline. Basidiospores are abundant, hyaline, and thick-walled. *Crucibulum* forms a sister clade with *Retiperidiolia* based on the phylogenomic analysis (Kraisitudomsook et al. 2024). Metamorphosed basidia is also prevalent. The taxonomic placement of *Retiperidiolia* is in *Nidulariaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

References

Kraisitudomsook N, Ahrendt S, Riley R, LaButti K et al. 2024 – On the origin of bird's nest fungi: Phylogenomic analyses of fungi in the *Nidulariaceae* (*Agaricales*, *Basidiomycota*). Molecular Phylogenetics and Evolution 193, 108010.

Kraisitudomsook N, Choeyklin R, Boonpratuang T, Pobkwamsuk M et al. 2022 – Hidden in the tropics: *Retiperidiolia* gen. nov, a new genus of bird's nest fungi (*Nidulariaceae*), and a systematic study of the genus Mycocalia. Mycological Progress 21(6), 56.

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Note 1062 *Rhodoantrodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rhodoantrodia B.K. Cui, Y.Y. Chen & Shun Liu

Rhodoantrodia was proposed by Liu et al. (2023d) to accommodate *R. tropica* as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, and *rpb2* sequence data. *Rhodoantrodia subtropica* and *R. yunnanensis* are the other accepted species in the genus. The type species was isolated from the dead tree of *Engelhardtia hainanensis* in China. Basidiocarps are annual and resupinate. The subiculum is cream to buff and corky. The hyphal system is dimitic and generative hyphae are clamped. Cystidia and cystidioles are absent. Basidiospores are cylindrical to subfusiform and smooth. *Rhodoantrodia* differs from *Antrodia sensu stricto* by its light purple to violaceous pore surface when fresh, greyish to pinkish buff upon drying, and cylindrical to subfusiform basidiospores. The taxonomic placement of *Rhodoantrodia* is in *Fomitopsidaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1063 *Rigidonotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rigidonotus Y.C. Dai, F. Wu, L.W. Zhou, Vlasák & B.K. Cui

Rigidonotus was proposed by Wu et al. (2022b) to accommodate *R. glomeratus* as the type species, based on morphological characteristics and phylogenetic analysis of ITS and LSU sequence data. *Rigidonotus pruinosus* is the second species of the genus. The type species was found on angiosperm wood in China causing a white rot. Basidiocarps are annual with a monomitic hyphal system. Hyphoid setae are present. Basidiospores are ellipsoid and pale yellowish. *Rigidonotus* resembles *Inonotus* but differs with rigid basidiomes. The taxonomic placement of *Rigidonotus* is in *Hymenochaetaceae*, *Hymenochaetales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Wu F, Zhou LW, Vlasák J, Dai YC. 2022b – Global diversity and systematics of *Hymenochaetaceae* with poroid hymenophore. Fungal Diversity 113(1), 1–92.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1064 *Rogerpetersonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rogerpetersonia Aime & McTaggart

Rogerpetersonia was proposed by de Sousa Aime & McTaggart (2021) to accommodate *R. torreyae* (≡ *Caeoma torreyae*) as a monotype species based on morphological characteristics and phylogenetic analysis of LSU, SSU, and *co3* sequence data. The type species was found in *Torreya californica* in the USA. The genus is characterized by deep-seated, periphysate spermogonia and petersonia-like aecia. The sporothallus is unknown. *Rogerpetersonia* differs from all other rust fungi (*Pucciniales*) by the formation of gametothalli on *Taxaceae* (*Torreya*). The taxonomic placement of *Rogerpetersonia* is in *Rogerpetersoniaceae*, *Pucciniales*, *Pucciniomycetes*, *Pucciniomycotina*, and *Basidiomycota*.

Reference

Aime MC, McTaggart AR. 2021 – A higher-rank classification for rust fungi, with notes on genera. Fungal systematics and evolution 7(1), 21–47.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1065 *Rossmanomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rossmanomyces Aime & McTaggart

Rossmanomyces was proposed by de Sousa Aime & McTaggart (2021) to accommodate *R. pyrolae* (Rostr.) Aime & McTaggart as the type species based on the morphological characteristics and phylogenetic analysis of LSU, SSU, and *co3* sequence data. This genus has three species including *R. monesis* (Ziller) Aime & McTaggart, *R. pyrolae* (Rostr.) Aime & McTaggart, and *R. ramischiae* (Lagerh.) Aime & McTaggart. *Rossmanomyces* is proposed to accommodate two *Chrysomyxa* species viz. *Chrysomyxa ramischiae* Lagerh. and *C. monesis* Ziller (Aime & McTaggart 2021). In the phylogenetic analysis based on 28S, 18S, and CO3 sequences, these two species formed a clade sister to *Coleosporium* in *Coleosporiaceae*. Two new combinations are proposed for these two species. The type species is *R. pyrolae* (Rostr.) Aime & McTaggart and another species *R. monesis*. *Rossmanomyces* resembles *Chrysomyxa* but could be differed by forming a systemic sporothallus. *Rossmanomyces* differs from all other rust fungi in forming sporothalli on *Moneses* and *Orthilia* (*Ericaceae*) (Aime & McTaggart 2021).

Reference

Aime MC, McTaggart AR. 2021 – A higher-rank classification for rust fungi, with notes on genera. Fungal Systematics and Evolution 7(1), 21–47.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Maryam T. Noorabadi** & **Subodini N. Wijesinghe**)

Note 1066 *Sinoganoderma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sinoganoderma B.K. Cui, J.H. Xing & Y.F. Sun

Sinoganoderma was introduced by Sun et al. (2022a) as a monotypic genus to accommodate *S. shandongense* (≡ *Ganoderma shandongense*) as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb2*, *tef1-α* and SSU sequence data. The type species has been found on *Albizia* trees in China. Basidiomata are annual, stipitate, and corky. The hyphal system is trimitic and generative hyphae are colorless with clamp connections. Basidiospores are ellipsoid to ovoid and truncated. *Sinoganoderma* differs from other genera in *Ganodermataceae* by its ganodermoid basidiomata, applanate pilei with pale yellow pileal surface, cream context, thin dissepiments of pores, truncated basidiospores with an uneven or foveolate exospore wall and solid spinules on the endospore wall (Sun et al. 2022a). The taxonomic placement of *Sinoganoderma* is in *Ganodermataceae*, *Polyporales*, and *Basidiomycota*.

Reference

Sun YF, Xing JH, He XL, Wu DM et al. 2022a – Species diversity, systematic revision and molecular phylogeny of *Ganodermataceae* (*Polyporales*, *Basidiomycota*) with an emphasis on Chinese collections. Studies in Mycology 101(1), 287–415.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1067 *Tenuipostia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tenuipostia B.K. Cui & Shun Liu

Liu et al. (2023d) established *Tenuipostia* as a monotypic genus to accommodate the type species *T. dissecta* (≡ *Polystictus dissectus*) based on morphological characteristics and phylogenetic analysis of ITS, nLSU, nSSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. *Tenuipostia dissecta* was isolated from the dead tree of *Nothofagus cunninghamii* in Australia. In the type species, basidiocarps are annual and pileate. The hyphal system is monomitic and generative hyphae are clamped. Cystidia are absent and cystidioles are present. Basidiospores are oblong to ellipsoid and smooth. *Tenuipostia* differs from *Postia senus stricto* by its thin, pileate basidiocarps dimidiate with a contracted base, oblong to ellipsoid and thin- to slightly thick-walled basidiospores (Liu et al. 2023d). The taxonomic placement of *Tenuipostia* is in *Postiaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1068 *Neophaeosphaeriopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neophaeosphaeriopsis H.D. Yang & K.D. Hyde

Neophaeosphaeriopsis, as a monotypic genus, was established in 2023 to accommodate *Neophaeosphaeriopsis triseptatispora* H.D. Yang & K.D. Hyde based on morphology and phylogeny using, ITS, LSU, SSU, and *tef1-α* sequence data (Hyde et al. 2023c). *Neophaeosphaeriopsis triseptatispora* was found as a saprobe on unidentified dead twigs in China. *Neophaeosphaeriopsis* formed a sister clade with *Mauginiella* Cavara based on phylogenetic analysis of a sequence dataset (a combined *tef1-α*, LSU, ITS, and SSU), but it differs from *Neophaeosphaeriopsis* by having only asexual structures, i.e., arthroconidia. In terms of morphology, *Neophaeosphaeriopsis* is similar to the genus *Phaeosphaeriopsis*, but they are distinct from each other based on phylogenetic analysis (Hyde et al. 2023c). In the new genus, both sexual and asexual structures have been found. Ascomata are scattered, solitary, and globose to subglobose. Asci are bitunicate, fissitunicate, and cylindrical to cylindricclavate, with septate and guttulate ascospores. Conidiomata are pycnidia. Conidiophores are septate, branched, and smooth with smooth, ampulliform, and subcylindrical conidiogenous cells. Conidia are cylindrical to oblong, guttulate, aseptate, and smooth (Hyde et al. 2023c).

Reference

Hyde KD, Norphanphoun C, Ma J, Yang HD et al. 2023c – Mycosphere notes 387–412–novel species of fungal taxa from around the world. Mycosphere 14(1), 663–744.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

Note 1069 *Tropicoboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tropicoboletus Angelini, Gelardi & Vizzini

Tropicoboletus, a monotypic genus was erected by Gelardi et al. (2023) to accommodate *T. ruborculus* (≡ *Boletus ruborculus*) as the type species, based on morphological characteristics and phylogenetic analysis of *tef1-α* and *rpb2* sequence data. The type species was found on the side of a tree near *Coccoloba* in Puerto Rico. Basidiomata of *Tropicoboletus* are pileate-stipitate, epigeal, and evelate. Basidiospores are smooth, ellipsoid-fusiform. Clamp connections are absent. No specific characteristics were reported for *Tropicoboletus* to differentiate it from other genera in *Boletaceae* and the phylogenetic analysis justified the placement of the genus as it forms an independent clade (Gelardi et al. 2023). The taxonomic placement of *Tropicoboletus* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Gelardi M, Angelini C, Biketova AY, Suz LM et al. 2023 – *Coccoloba*-associated xerocomoid boletes (*Boletaceae*) from the Caribbean and Mexico: *Tropicoboletus ruborculus* gen. et comb. nov., revision of *Xerocomus coccolobae*, phylogenetic assessment of *Singerocomus guadelupae* comb. nov., and type studies of *Xerocomus caeruleonigrescens*, *X. cuneipes*, and *X. pseudoboletinus* var. *pini-caribaeae*. Mycological Progress 22(4), 29.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1070 *Villoboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Villoboletus L. Fan & N. Mao

Villoboletus, a monotypic genus, was established by Mao et al. (2023a) to accommodate newly discovered *V. persicinus* as the type species, based on morphological characteristics and phylogenetic analysis of LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. The type species was found on the ground in a broadleaf forest dominated by *Quercus* sp. in China. *Villoboletus* is characterized by finely pubescent pileus, yellow hymenophoreyellowish tubes, context turning blue when exposed, and stipe surface covered with plenty of flocculent hairs from the apex to just above the base. Clamp connections are absent (Mao et al. 2023a). *Butyriboletus* and *Veloboletus* are somewhat similar to *Villoboletus*. The taxonomic placement of *Villoboletus* is in *Boletaceae*, *Boletales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Mao N, Zhao TY, Xu YY, Fan L. 2023a – *Villoboletus persicinus*, gen. et sp. nov. (*Boletaceae*), a bolete with flocculent-covered stipe from northern China. Mycologia 115(2), 255–262.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1071 *Wolfiporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Wolfiporiella B.K. Cui & Shun Liu

Wolfiporiella was proposed by Liu et al. (2023d) to accommodate *W. dilatohypha* as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb1*, *rpb2*, nSSU, mtSSU and *tef1-α* sequence data. Two other species are accepted in this genus including *W. cartilaginea* and *W. curvispora*. The type species was isolated from *Acer* sp. in China. In *Wolfiporiella*, basidiocarps are annual and resupinate and the pores are round. The hyphal system is dimitic and generative hyphae are simple septate. Cystidia are absent and cystidioles are present. Basidiospores are ellipsoid to broadly ellipsoid and smooth. *Wolfiporiella* is similar to *Wolfiporia* but with smaller pores (Liu et al. 2023d). The taxonomic placement of *Wolfiporia* is in *Laetiporaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1072 *Wolfiporiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Wolfiporiopsis B.K. Cui & Shun Liu

Wolfiporiopsis, a monotypic genus was proposed by Liu et al. (2023d) to accommodate *W. castanopsidis* (≡ *Wolfiporia castanopsidis*) as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, *rpb1*, *rpb2*, nSSU, mtSSU and *tef1-α* sequence data. The type species was isolated from a rotten wood of *Castanopsis orthacanthain* in China. Basidiocarps of *Wolfiporiopsis* are annual and resupinate. Subiculum is cream to buff and corky. The hyphal system is dimitic and generative hyphae are simple septate. Cystidia are absent and cystidioles are present. Basidiospores are ellipsoid to broadly ellipsoid, hyaline and thin-walled. *Wolfiporia* differs from *Wolfiporiopsis* by its sclerotia, globose or irregular basidiocarps and cylindrical to ellipsoid basidiospores (Liu et al. 2023d). The taxonomic placement of *Wolfiporiopsis* is in *Laetiporaceae*, *Polyporales*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1073 *Xerophorus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xerophorus (Bon) Vizzini, Consiglio & M. Marchetti

Xerophorus was introduced by Vizzini et al. (2020a) to accommodate *Xerophorus olivascens* (≡ *Tricholoma olivascens*) as the type species, based on morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*, *rpb2* sequence data. *Xerophorus dominicanus*, *X.*

donadinii, and *X. pakistanicus* are the other three species in the genus (Asif et al. 2023). The type species was found under cedars in parks and gardens of southern Europe, whereas other species were reported in the Dominican Republic, Europe (France and Italy), and Pakistan, respectively (Vizzini et al. 2020a, Asif et al. 2023). In the genus, the lamellae are adnate, distant, and thick. Spores are smooth, amygdaliform, and papillate. Basidia are hygrophoroid and filled with granules. Pleurocystidia is absent. Clamp connections are present or absent. The taxonomic placement of *Xerophorus* is in *Callistosporiaceae*, *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

References

Asif M, Saba M, Raza M. 2023 – First report of the genus *Xerophorus* from Asia with the description of *Xerophorus pakistanicus* (*Callistosporiaceae*), a new species from Southern Punjab, Pakistan. Phytotaxa 632(1), 38–48.

Vizzini A, Consiglio G, Marchetti M, Alvarado P. 2020a – Insights into the *Tricholomatineae* (*Agaricales*, *Agaricomycetes*): a new arrangement of *Biannulariaceae* and *Callistosporium*, *Callistosporiaceae* fam. nov., *Xerophorus* stat. nov, and *Pleurocollybia* incorporated into *Callistosporium*. Fungal Diversity 101, 211–59.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1074 *Yamadamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Yamadamyces Q.M. Wang, F.Y. Bai, M. Groenew. & Boekhout

Yamadamyces was invalidly proposed by Wang et al. (2015) based on the morphological characteristics and phylogenetic analysis of LSU sequence data. The type species had an invalid nomenclature and was preserved in a metabolically inactive state (Li et al. 2020a). Later, Li et al. (2020a) validated the genus by re-describing *Yamadamyces* indicating *Y. rosulatus* as the type species, based on the phylogenetic analysis of SSU, ITS, LSU (D1/D2), *rpb1*, *rpb2*, *tef1-α*, and cytochrome b (*cyt-b*) sequence data. Sexual reproduction of the genus is unknown. Colonies are butyrous shaped and greyish-cream. Budding cells and pseudomycelium are present. Ballistoconidia are not produced (Wang et al. 2015). The taxonomic placement of *Yamadamyces* is in *Kriegeriaceae*, *Kriegeriales*, *Microbotryomycetes*, and *Basidiomycota*.

References

Li AH, Yuan FX, Groenewald M, Bensch K et al. 2020a – Diversity and phylogeny of basidiomycetous yeasts from plant leaves and soil: proposal of two new orders, three new families, eight new genera and one hundred and seven new species. Studies in Mycology 96(1), 17–40.

Wang QM, Yurkov AM, Göker M, Lumbsch HT et al. 2015 – Phylogenetic classification of yeasts and related taxa within *Pucciniomycotina*. Studies in Mycology 81(1), 149–89.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1075 *Zyzygomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Zyzygomyces Diederich, Millanes & Wedin

Liu et al. (2015b) introduced a phylogenetic classification system for yeasts and closely related filamentous taxa within *Tremellomycetes*. They constructed this framework using a comprehensive seven-gene phylogeny, incorporating sequences from ITS, LSU (D1/D2), SSU, *rpb1*, *rpb2*, *tef1-α*, and *cyt-b* genes. In the *Filobasidiales* clade, there are species belonging to *Cryptococcus* (such as *C. arrabidensis* Á. Fonseca, Scorzetti & Fel, along with five undescribed C. sp.) and *Syzygospora* (including *S. bachmannii* Diederich & M.S. Christ and *Syzygospora physciacearum* Diederich). Liu et al. (2015b) initially classified them under the name *Heterocephalacria*. Primarily due to morphological resemblances between *Heterocephalacria solida* Berthier (the type species of *Heterocephalacria*) and the two *Syzygospora* species. However, *Heterocephalacria* lacked molecular data at that time. Subsequently, Diederich et al. (2022b) sequenced species of *Heterocephalacria solida* and discovered that it does not belong to *Filobasidiales* but rather falls within *Tremellales* based on ITS and LSU sequences. Consequently, the proposed genus *Zyzygomyces* is suggested to accommodate the two *Syzygospora* species, with *Syzygospora bachmannii* designated as the type species (Diederich & M. S. Christ.) Diederich & Millanes (Diederich et al. 2022b). Species from this genus are all lichenicolous. There are 12 species accepted in this genus including four unnamed species that remained as "sp." according Diederich et al. (2022b).

References

Diederich P, Millanes AM, Flakus A, Rodriguez-Flakus P et al. 2022b – Class *Tremellomycetes*, order *Filobasidiales*. In: Diederich et al. (eds.), Flora of Lichenicolous Fungi, Vol. 1, *Basidiomycota*. National Museum of Natural History, Luxembourg, 83–104.

Liu XZ, Wang QM, Göker M, Groenewald M et al. 2015b – Towards an integrated phylogenetic classification of the *Tremellomycetes*. Studies in Mycology 81, 85–147.

Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

(Edited by **Rui-Lin Zhao**, **Maryam T. Noorabadi**, **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1076 *Polonospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polonospora Błaszk., Niezgoda, B.T. Goto & Magurno

Polonospora was introduced by Błaszkowski et al. (2021b) with *Polonospora polonica* (Błaszk.) Błaszk. et al. (Basionym: *Acaulospora polonica* Błaszk. fide Błaszkowski (1988)) as the type species. Phylogenetic analyses based on SSU, ITS, LSU, and *rpb1* loci showed that this taxon has a distinct phylogenetic lineage in *Archaeosporales*, *Glomeromycetes*, *Glomeromycota*. The genus is monotypic and was a mycorrhizal species of *Thuja occidentalis* in Poland (Błaszkowski 1988). The genus is monotypic and its *P. polonica* formed mycorrhiza with *Thuja occidentalis* in Poland (Błaszkowski 1988). *Polonospora polonica* is characterized by forming hypogeous single acaulosporoid glomerospores (= spores) directly on the neck of a sporiferous saccule. Spores are hyaline to white, usually globose to subglobose, with three spore walls. Spore wall 1 consists of a short-lived, evanescent, thin layer, continuous with the wall of the sporiferous saccule, and a permanent, laminate, thicker layer. Spore wall 2 is composed of one permanent, flexible to semi-flexible layer. Spore wall 3 has two permanent, hyaline, smooth layers (Błaszkowski et al. 2021b).

References

Blaszkowski J, Niezgoda P, Meller E, Milczarski P et al. 2021b – New taxa in *Glomeromycota*: *Polonosporaceae* fam. nov., *Polonospora* gen. nov., and *P. polonica* comb. nov. Mycological Progress 20, 941–951.

Błaszkowski J. 1988 – Four new species of the *Endogonaceae* (*Zygomycotina*) from Poland. Karstenia 27, 37–42.

Entry by Nalin N. Wijayawardene, Center for Yunnan Plateau Biological Resources Protection and Utilization, College of Biological Resource and Food Engineering, Qujing Normal University, Qujing, Yunnan, P.R. China

(Edited by **Maryam T. Noorabadi**)

Note 1077 *Catenomargarita*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Catenomargarita F.A. Custório & O.L. Pereira

Catenomargarita, a monotypic genus, was introduced to accommodate *Catenomargarita pseudocercosporicola* F.A. Custório & O.L. Pereira based on morphology and phylogeny (ITS, LSU, and SSU sequence dataset) (Crous et al. 2023b). This species was discovered on *Pseudocercospora fijiensis*, which grows on the leaves of *Musa acuminata* in Brazil. The conidiophores are produced on septate, branched, and smooth- or rough-walled mycelia. The conidiophores are erect, unbranched, septate, and may reduce to conidiogenous cells. Conidiogenous cells are monophialidic, smooth-walled, and cylindrical to subulate with limoniform, papillate, thin- and smooth-walled, and aseptate conidia. The conidiogenous cells, conidia, and chlamydospores are hyaline. *Trichosphaerella ceratophora* is the closest species to *Catenomargarita* based on a combined DNA data set of ITS, LSU, and SSU sequence data. *Catenomargarita* differs from *Trichosphaerella* through its characteristic monophialidic conidiogenous cells and smooth-walled conidia. Additionally, it stands out among other genera in the *Niessliaceae* due to features such as the formation of conidial chains, branched conidiophores, and the presence of chlamydospores. (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51, 280–417.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

Note1078 *Neobrevicollum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neobrevicollum W.L. Li & Jian K. Liu

Li et al. (2023c) introduced *Neobrevicollum* under *Neohendersoniaceae* to accommodate *Neobrevicollum oleae* W.L. Li & Jian K. Liu as the type species based on morphology and phylogenetic analyses. Another species is *Neobrevicollum biancaeae* H.Z. Du, Y.H Lu & Jian K. Liu (Lu et al. 2024c). *Neobrevicollum oleae* and *N. biancaeae* were isolated from *Olea europaea* and *Biancaea sappan* in China, respectively (Li et al. 2023c, Lu et al. 2024c). The sexual morph only has been observed. The new genus *Neobrevicollum* is identified by its cylindrical to obclavate asci that have an elongated and cylindrical pedicel, as well as hyaline, fusiform ascospores with 1-3 septa. *Neobrevicollum* differs in morphology from *Brevicollum* and *Crassiparies* based on their ascospore characteristics. *Neobrevicollum* features 1–3-septate, hyaline ascospores with a mucilaginous sheath, whereas *Brevicollum* displays 3–5-septate ascospores that are either hyaline or brown, enveloped by a rounded mucilaginous sheath. In contrast, *Crassiparies* exhibit hyaline ascospores lacking a sheath. Molecular analyses of the multi-locus dataset (ITS, SSU, LSU, *tef1-α*, and *rpb2*) have confirmed that the genus belongs to the *Neohendersoniaceae* and formed a sister clade with *Brevicollum* and *Amarenographium solium* (Li et al. 2023c, Lu et al. 2024c).

References

Li WL, Liang RR, Dissanayake AJ, Liu JK. 2023c – Mycosphere Notes 413–448, *Dothideomycetes* associated with woody oil plants in China. Mycosphere 14(1), 1436–1529.

Lu YH, Zhang SN, Du HZ, Cheewangkoon R et al. 2024c – Additions to Crassiparies and *Neobrevicollum* (*Neohendersoniaceae*, *Pleosporales*) associated with woody hosts in Southwest China. Phytotaxa 636(2), 126–38.

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Note 1079 *Hyphodontiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Hyphodontiaceae Xue W. Wang & L.W. Zhou

Hyphodontiaceae was erected by Wang et al. (2021) to accommodate *Hyphodontia* as a monotypic genus based on the morphological characteristics and phylogenetic analysis of ITS, nLSU, mt-SSU, *tef1-α*, *rpb1*, *rpb2* and *atp6* sequence data. *Hyphodontia pallidula* is the type species isolated from twigs of *Betula alba* and *Pinus silvestris* trees in Poland. Basidiocarps of *H. pallidula* are resupinate with smooth hymenophores. The hyphal system is monomitic to pseudodimitic with clamp connections. Basidia are clavate while, basidiospores are smooth, hyaline, inamyloid, and acyanophilous. Thirteen species are accepted within *Hyphodontia* (Wang et al. 2021). The taxonomic placement of *Hyphodontiaceae* is in *Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

Reference

Wang XW, May TW, Liu SL, Zhou LW. 2021 – Towards a natural classification of *Hyphodontia sensu lato* and the trait evolution of basidiocarps within *Hymenochaetales* (*Basidiomycota*). Journal of Fungi 7, 478.

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Note 1080 *Phallogastraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Phallogastraceae Castellano, T. Lebel, Davoodian & K. Hosaka

Davoodian et al. (2021) revised *Hysterangiales* based on the morphological and molecular phylogenetic analysis with *atp6* and *tef1-α* sequence data. The phylogenetic analysis results showed two species previously named *Trappea pinyonensis* States and *Hysterangium phillipsii* Harkn. formed a clade separated from all other known families in *Hysterangiales*. *Phallogastraceae* is proposed to name this clade with the type genus *Phallogaster* Morgan. Two species are accepted in this genus *Phallogaster pinyonensis* (States) K. Hosaka, Castellano, Davoodian & T. Lebel and *P. phillipsii* (Harkn.) K. Hosaka, Castellano, Davoodian & T. Lebel. Species of this family have sequestrated basidiomes with white rhizomorphs. They are saprotrophic, occurring on decaying wood or leaves, or partially buried in litter (Davoodian et al. 2021).

Reference

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Note 1081 *Nidulariaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nidulariaceae Dumort.

Nidulariaceae was established by Dumortier (1822) based on the morphological characteristics. Later, *Nidulariaceae* was proven to be a sister lineage of *Squamanitaceae* in the phylogenetic analysis of combined LSU, *tef1-α*, *rpb2* sequence and genomic data (Kraisitudomsook et al. 2021), and was accepted as a valid family in *Agaricales* (Kalichman et al. 2020, Kraisitudomsook et al. 2021, 2022). Six genera are accepted in this family, and the type genus *Nidularia* was typified by *N. radicata*. Members of this family are saprotrophic growing on dung and woody debris, and globally distributed in various habitats on all continents except Antarctica (White 1902). The taxonomic placement of *Nidulariaceae* is in *Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, and *Basidiomycota*.

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Entry by Maoqiang He, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

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Note 1082 *Sistotremastrales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Sistotremastrales L.W. Zhou & S.L. Liu

Sistotremastrales was introduced by Liu et al. (2022e) to accommodate *Sistotremastraceae* based on the morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*,and *rpb2* sequence data. The type genus of the family is *Sistotremastrum* and it was typified by *S. suecicum*. Members of *Sistotremastrales* are composed of wood-inhabiting corticioid fungi. In this order, basidiomes are resupinate, effuse, and thin. The hyphal system is monomitic with clamp connections. Most species exhibit a notable microscopic characteristic by possessing 6–8 sterigmata of basidia, while the basidia in a few species have only 4 sterigmata (Liu et al. 2022e). Currently, the order consists of one family *Sistotremastraceae*, encompassing two genera: *Sistotremastrum* and *Sertulicium*. The taxonomic placement of *Sistotremastrales* is in *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*.

Reference

Liu SL, He SH, Wang XW, May TW et al. 2022e – *Trechisporales* emended with a segregation of *Sistotremastrales* ord. nov. (*Basidiomycota*). Mycosphere 13(1), 862–954.

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Note 1083 *Francisrosea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Francisrosea Ertz & Sanderson

Newly generated phylogenetic analysis based on combined LSU, SSU, and *rpb2* gene regions (Ertz et al. 2021) segregated several resolved subclades in the ostropalean *Porina-Petractis* clade, out of which one is represented by a newly erected genus *Francisrosea* Ertz & Sanderson, with a sole species *Francisrosea bicolor* Ertz & Sanderson. *Francisrosea* is differentiated from other members of *Gyalectaceae* by very reduced thallus, composed of erumpent discrete soralia, elevated from thallic base immersed in the bark. The soralia are pale greenish at lower areas, but orange-ochre on more elevated parts. Acetone soluble secondary metabolites detectable by TLC are absent. It may be confined to fagalean old-growth forests and pasture woodlands where it has been frequently recorded, repeatedly found occupying the wound tracks on senescent European beech (*Fagus sylvatica*) and pedunculate oak (*Quercus robur*) trees. The most similar species in terms of thallic structure, and the ecology is relatively distantly related *Thelopsis corticola* (= *Opegrapha corticola*, cf. Coppins & James 1979).

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Note 1084 *Inopinatum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Inopinatum Haelew. & Aime

Recent research of pink yeasts, relying on the analysis of combined ITS, SSU, and LSU sequence data (Haelewaters et al. 2021b), discovered that *Sporobolomyces lactosus* does not belong to a corresponding genus, showing a clear relationship with *Thelebolales* lineage of *Leotiomycetes*, making this species the first known yeast-like member of this class. The genus *Inopinatum* was therefore erected to accommodate its sole species. Thelebolalen fungi are markedly ecologically versatile, known to dwell under extremely diverse habitats, in a deep-sea environment inside sponges, cold Antarctic ecosystems to the extremely dry environments in bee hives, developing a wide variety of ecological/evolutionary adaptations (Quijada et al. 2022b). The thelebolalean fungi known to exist as filamentous life forms under usual natural conditions, also can live under ecologically harsh conditions existing in petrochemical wastes from sewage treatment plants in a yeast-like form (Sláviková & Grabiňska-Loniewska, 1992). Peterson et al. (2009) revealed that the sole species of *Inopinatum* (*I. lactosum*) can also inhabit dung – an ecological niche characteristic for some other thelebolalean fungi. As it is so far known, its yeast-like mother cell produces bilaterally symmetrical blastoconidia (on PDA), but colonies may also form pseudohyphae and hyphae. The intriguing question is, however, could this species develop some other features, more reminiscent of its phylogenetic relatives when inhabiting natural environments with less ecological pressure.

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Note 1085 *Densorhytisma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Densorhytisma C.L. Hou, Q.T. Wang & P.F. Cannon

Wang et al. (2023) introduced *Densorhytisma* under *Rhytismataceae sensu stricto* to accommodate two species based on morphology and phylogenetic analyses using nrLSU and mtSSU sequence data. This genus is typified by *Densorhytisma huangshanense* (C.L. Hou & M.M. Wang) C.L. Hou, Q.T. Wang & P.F. Cannon. Another species is *Densorhytisma anhuiense* (C.L. Hou & M. Piepenbr.) C.L. Hou, Q.T. Wang & P.F. Cannon. The type species was isolated from *Rhododendron simsii* as a parasite in China. Only the sexual morph has been observed. In the sexual morph, ascomata open by a longitudinal split or irregular splits. Lips are not present. Paraphyses are filiform, unbranched, and curved at the apex. Ascospores are narrowly clavate to filiform, often curved, and lack gelatinous sheaths. *Densorhytisma* formed a sister clade with *Fanglania* and *Johnstoniella* based on phylogenetic analyses using nrLSU and mtSSU sequence data. The *Shiqia* species are parasites that infect deciduous *Rhododendron* species, whereas the

Densorhytisma species infect semi-evergreen *Rhododendron* species. Despite their similar ecological roles, these species are distantly related. Furthermore, there are differences in the morphological characteristics of the stromata between the two genera. While the stromata of *Shiqia* spp. appear as large spots, those of *Densorhytisma* are small and densely developed on a leaf. Based on the host plants, stromata features, and characteristics of the ascomata, there is a strong indication that this specimen warrants classification as another species within *Densorhytisma*. However, further collection of specimens is necessary to conclusively verify its taxonomic classification. (Wang et al. 2023).

Reference

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Note 1086 *Lineolatales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lineolatales Crous, Spatafora, Haridas & I.V. Grig.

Kohlmeyer & Kohlmeyer (1967, 1979) described the type species, *Didymosphaeria rhizophorae*, and subsequently, Kohlmeyer et al. (1990) suggested a transfer to a new genus, *Lineolata* Kohlm. & Volkm.-Kohlm, reflecting changes in the understanding of the generic concept *Didymosphaeria* species. *Lineolata rhizophorae* (Kohlm. & E. Kohlm.) Kohlm. & Volkm. could be differentiated from *Didymosphaeria fufilis* (Berk. & Broome) Rehm based on distinctive morphological traits. These include the lack of a clypeus, nearly superficial ascomata, a colored peridium, and a hamathecium with a gelatinous matrix. Asci possess an apical ring-like structure around the ocular chamber. Ascospores display ornamented features (Kohlmeyer et al. 1990). Haridas et al. (2020) introduced *Lineolatales* to accommodate the monotypic family, *Lineolataceae* Crous, Spatafora, Haridas & I.V. Grig. based on morphology and phylogeny using pyrosequencing, Sanger fosmids, and Illumina data. The type genus and type species are *Lineolata* Kohlm. & Volkm.-Kohlm. and *Lineolata rhizophorae* (Kohlm. & E. Kohlm.) Kohlm. & Volkm.-Kohlm.. Based on the taxonomic classification, this newly established order encompasses a singular family, genus, and species. (Haridas et al. 2020). In another study, the whole genome data supported the reconstruction of the phylogenetic relationships within the *Dothideomycetes*. The phylogenomic tree displayed strongly supported branches. In general, there were two main groups identified. The first group consisted of 17 species from four different orders. The second group comprised 62 species from 11 orders within the *Dothideomycetes*, which was further divided into two closely related subgroups. *Lineolatales* is classified in the second subgroup, which consisted of only one species (Dal'Sasso et al. 2023). The taxonomic placement of *Lineolatales* is in *Dothideomycetes*, *Ascomycota*, *Pezizomycotina* (Haridas et al. 2020, Dal'Sasso et al. 2023). Phylogenetically, *Lineolatales* formed a sister clade with *Patellariales* using phylogeny, pyrosequencing, Sanger fosmids, and Illumina data (Haridas et al. 2020) and whole-genome data (Dal'Sasso et al. 2023). In the new order, the ascomata are obpyriform, immersed to superficial ostiolate, papillate, periphysate, and dark brown to black. The pseudoparaphyses are trabeculate in a gelatinous matrix (*sensu* Liew et al. 2000). The asci are eight-spored, cylindrical, short pedicellate, non-amyloid, with a multi-layered refractive ring, and fissitunicate. The ascospores are uniseriate, one-septate, ellipsoidal, and brown with surface sculpturing (Haridas et al. 2020). *Lineolata rhizophorae* was discovered in marine environments as a saprobe (Haridas et al. 2020).

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Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

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Note 1087 *Paragliomastix*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paragliomastix L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced *Paragliomastix* under *Bionectriaceae*, *Hypocreales*, *Sordariomycetes*, to accommodate four species based on morphology and phylogenetic analyses based on ITS and LSU sequence data. The new genus has been described only based on its asexual morph. *Paragliomastix chiangraiensis* (J.F. Li, R.H. Perera & Phookamsak) L.W. Hou, L. Cai & Crous, *P. luzulae* (Fuckel) L.W. Hou, L. Cai & Crous, *P. rosea* L.W. Hou, L. Cai & Crous, and *Paragliomastix znieffensis* (Lechat & J. Fourn.) L.W. Hou, L. Cai & Crous are the accepted species of the genus. *Paragliomastix* was typified by *P. luzulae* (Fuckel) L.W. Hou, L. Cai & Crous, which was isolated from decaying wood of *Picea* sp. (*Pinaceae*) in Germany. In this genus, mycelium is constructed of branched, septate, and hyaline hyphae. Conidiophores are solitary or aggregated, erect, and unbranched or poorly branched. Phialides are lateral, terminal, and subulate. Conidia are aseptate, ovoid, or fusiform, and arranged in dry long chains. Chlamydospores and sexual morph have not been observed. *Paragliomastix* bears a strong morphological resemblance to *Gliomastix* due to their darkly pigmented ameroconidia. *Paragliomastix* is distinguished from *Gliomastix* based on differences in its phialides and conidia morphology. Phylogenetic analysis of the combined ITS, LSU, *rpb2*, and *tef1-α* dataset revealed that *Paragliomastix* species form distinct clusters distant from those of *Gliomastix* within *Bionectriaceae* (Hou et al. 2023).

Reference

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Note 1088 *Hyalopsoraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Hyalopsoraceae P. Zhao & L. Cai

Hyalopsoraceae was introduced in Zhao et al. (2022b) to accommodate three closely related clades, representing the genera *Coleopuccinia*, *Hyalopsora* and *Melampsoridium*. *Hyalopsora* and *Melampsoridium* were previously included in *Pucciniastraceae* (Cummins & Hiratsuka 1983, 2003), a highly polyphyletic family (Aime et al. 2018, Aime & McTaggart 2021, Zhao et al. 2021), while *Coleopuccinia* was considered a synonym of *Gymnosporangium* (*Gymnosporangiaceae*). However, Cao et al. (2018b) recognised the phylogenetic distinctiveness of the latter two genera. Zhao et al. (2022b) included six species (including one un-named species) of *Hyalopsora* in their phylogenetic tree. The genus *Hyalopsora* contains 22 species (Index Fungorum), all occurring on ferns with their alternate hosts in *Pinaceae*. *Melampsoridium* comprises ten species (Index Fungorum) parasitic on *Betulaceae* and *Magnoliaceae*, also with their alternate hosts in *Pinaceae*, of which three species were included by Zhao et al. (2022b). Both *Hyalopsora* and *Melampsoridium* are widely dispersed around the world. *Coleopuccinia* comprises only two species (Index Fungorum), both described from China on *Rosaceae*, with *C. sinensis* included in the phylogenetic analysis by Zhao et al. (2022b). The family *Hyalopsoraceae* can be distinguished from phylogenetically allied families by possessing intraepidermal telia with sessile and unicellular teliospores with intercalary cell. Based on analysis of ITS and LSU sequence data, Zhao et al. (2022b) showed that the three genera lie in a separate clade, which was defined as the new family.

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Note 1089 *Thekopsoraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Thekopsoraceae P. Zhao & L. Cai in Zhao, et al.

Thekopsoraceae was introduced by Zhao et al. (2022b) to accommodate the genus *Thekopsora*, which was previously included in *Pucciniastraceae* (Cummins & Hiratsuka 1983, 2003), a family that was highly polyphyletic (Aime et al. 2018, Aime & McTaggart 2021, Zhao et al. 2021). Although the genus *Thekopsora* contains 11 species (Index Fungorum), Zhao et al. (2022b) included only the type species, *T. areolata* in their phylogenetic tree, but Yang et al. (2015) included nine species in an analysis of LSU and ITS sequences. *Thekopsora areolata* is phylogenetically close to *Cronartium* but distinct from *Pucciniastrum* species in agreement with Aime et al. (2018). *Thekopsora* resembles *Coleopuccinia*, *Hylospora*, *Melampsoridium*, and

Pucciniastrum, but differs from these genera in the aecia, uredinia, and telia (Yang et al. 2015). It also differs from the phylogenetically allied family *Cronartiaceae* in the structures of spermogonia, uredinia, and telia. *Thekopsora* species are characterized by intracellular teliospores, center-oriented germ pores in each cell of the spore balls, and well developed uredinial ostiolar cells (Hiratsuka et al. 1992, Cummins & Hiratsuka 2003, Yang et al. 2014). Their uredinia and telia have been reported on *Asteraceae*, *Boraginaceae*, *Cornaceae*, *Ericaceae*, *Rosaceae*, *Rubiaceae* and *Saxifragaceae*, while *Picea* species are the alternate host. The genus is widely distributed, especially in the northern hemisphere. Thus, based on analysis of ITS and LSU sequence data, Zhao et al. (2022b) showed that *Thekopsora* lies in a separate clade, which was defined as the new family.

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Note 1090 *Nothopucciniastraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank\

Nothopucciniastraceae P. Zhao & L. Cai

Nothopucciniastraceae was introduced in Zhao et al. (2022b) to accommodate the new genus *Nothopucciniastrum*. This monotypic family comprises ten species, all previously included in the genus *Pucciniastrum*. The ten species of rust fungi were all described from Japan on a variety of host plants. *Nothopucciniastrum* is autoecious and known to produce spermogonia, aecia, uredinia and telia on a broad range of host plants within families *Actinidiaceae*, *Clethraceae*, *Cornaceae*, *Fagaceae*, *Malvaceae*, *Sapindaceae*, *Styracaceae*, *Theaceae*, *Urticaceae* and *Viburnaceae*. The genus is characterized by group 1 (type 2 and 3) spermogonia, peridermium-type or milesia-type aecia, milesia-type uredinia with well-developed ostiolar cells, and subepidermal telia that are one spore deep and consist of laterally adherent, aseptate or multiseptate teliospores. As previously understood, the traditional delimitation of *Pucciniastraceae* (Cummins & Hiratsuka 1983, 2003) is highly polyphyletic (Aime et al. 2018, Aime & McTaggart 2021, Zhao et al. 2021), and several genera have been moved to other families (Aime & McTaggart 2021, Zhao et al. 2022b). Based on analysis of ITS and LSU sequence data, Zhao et al. (2022b) showed that *Nothopucciniastrum* lies in a well-supported clade, containing ten species, which was defined as the new family. Unfortunately, because Zhao et al. (2022b) failed to give registration numbers issued by a recognized repository for the genus *Nothopucciniastrum* and the new combinations made into this genus, all the new names are invalid (Turland et al. 2018).

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Note 1091 *Gyrothricaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gyrothricaceae Hern Restr. & Crous

Hernández-Restrepo et al. (2022) introduced *Gyrothricaceae* into the *Xylariales* to accommodate the genera *Gyrothrix*, *Neogyrothrix*, *Pseudoceratocladium*, *Pseudocircinotrichum*, and *Xenoanthostomella*. The type genus is *Gyrothrix* (Corda) Corda. The members of this family are distributed in different countries. *Gyrothricaceae* is characterized by gyrothrix- and circinotrichum-like asexual morphs in having erect, straight, or flexuous, simple or branched, pale brown to brown, septate, smooth to verrucose setae; polyblastic, obclavate to lageniform, hyaline to subhyaline, thin-walled conidiogenous cells born laterally on the superficial hyphae; and cylindrical to fusiform, straight, or slightly curved, ends bluntly corniform, free end more obtuse than the attached end, hyaline conidia adherent, dry, aggregated into a thick whitish layer at the base of the setae. The anthostomella-like sexual morphs are immersed, black, coriaceous, clustered ascomata, rarely solitary, globose in cross-section with wide ostiolar neck; papillate ostioles with a central periphysate canal; two to multiple cell layered peridium, of pale brown cells of *textura irregularis*; long, numerous, filamentous, septate paraphyses; 8-spored, unitunicate, cylindrical asci with discoid, apical ring, J+ in Melzer's reagent; and uni- to biseriate, ellipsoidal, unicellular, pale brown to dark brown, smooth-walled ascospores occasionally with mucilaginous sheath, and sigmoid to straight germ slit. Four *Gyrothrix* species have been described, mainly collected from the Czech Republic (*Sambucus nigra*), Italy (*Vitis vinifera*), Mexico (unidentified host), the

Netherlands (*Astragalus* sp., *Juncus inflexus*), South Africa (*Elegia equisetacea*, *Encephalartos* sp., *Eucalyptus dunnii*, *Eucalyptus* sp., *Podocarpus falcatus*, *Thamnochortus spicigerus*), and the UK (*Urtica dioica*) (Daranagama et al. 2016, Hernández-Restrepo et al. 2022). *Neogyrothrix* is a monotypic genus that is similar to *Gyrothrix* but phylogenetically distinct. The only known *Neogyrothrix* species has been recorded from South Africa (*Olea capensis* subsp. *macrocarpa*, *Diospyros whyteana*) (Crous et al. 2019b, Hernández-Restrepo et al. 2022). A *Pseudoceratocladium* species has been recorded from Spain (unidentified tree), while *Pseudocircinotrichum* from Brazil (*Theobromae cacao*) and New Zealand (*Beilschmiedia tataire*). Species belonging to the above-mentioned genera have been mainly isolated from dry or rotted leaves. *Xenoanthostomella* species have been described from Australia (*Cycas* sp.), Brazil (*Drimys* sp.), Malaysia (petioles of *Albizia falcataria*, seed pods of *Falcataria moluccana*), South Africa (*Kniphofia roeperi*), and Thailand (*Chromolaena odorata*, *Nephrolepis* sp., *Calamus* sp.). Based on ITS, LSU, and *rpb2* combined phylogeny, *Gyrothricaceae* forms a sister clade to *Lopadostamataceae*. However, in our preliminary phylogenies, with the addition of more taxa from the *Xylariales* genera incertae sedis, the taxonomic placements of some of the accepted species show uncertain phylogenetic placements. Therefore, further studies with additional collections and robust phylogenies are required for the acceptance of genera in *Gyrothricaceae*.

References

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Hernández-Restrepo M, Decock CA, Costa MM, Crous PW. 2022 – Phylogeny and taxonomy of *Circinotrichum, Gyrothrix, Vermiculariopsiella* and other setose *hyphomycetes*. Persoonia 49, 99–135.

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Note 1092 *Chloridiopsiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chloridiopsiella Réblová

Réblová & Nekvindová (2023) introduced the monotypic genus *Chloridiopsiella*, assigning *C. preussii* (W. Gams & Hol.Jech.) Réblová as its type species based on comprehensive phylogenetic analysis of ITS, LSU, *tef1-α*, and *rpb2* sequence data alongside morphological characteristics. In the asexual morph of the genus, conidiophores are macronematous, mononematous, solitary, scattered, erect, and unbranched. Conidiogenous cells are monophialidic, integrated, and subcylindrical. Conidia are oblong to obovate to long-cuneiform, hyaline, aseptate, and smooth. Chlamydospores are absent. The sexual morph has not been observed. *Chloridiopsiella* formed a sister clade with *Chloridiopsis* based on phylogenetic analysis with ITS, LSU, *tef1-α*, and *rpb2* sequences. The genus is distinct from *Chloridiopsis* by having a single layer of conidiophores, and oblong to obovate to long-cuneiform conidia. *Chloridiopsis preussii* was isolated from decaying wood (*Taxus baccata*) as a saprobe in the Netherlands and on decaying wood in Germany (Réblová & Nekvindová 2023). The taxonomic placement of this genus is in *Vermiculariopsiellaceae*, *Vermiculariopsiellales*, and *Sordariomycetes*

Reference

Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in the *Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106, 199–258.

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Note 1093 *Pallidohirschioporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pallidohirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou

Zhou et al. (2023a) established *Pallidohirschioporus*, with *P. biformis* (Fr.) Y.C. Dai, Yuan Yuan & Meng Zhou as the type species, through morphological and phylogenetic analyses utilizing ITS, LSU, nSSU, mtSSU, and *tef1-α* sequence data. Ten species are accepted in the genus. *Pallidohirschioporus biformis*, a frequently encountered species, thrive across a broad spectrum of habitats, spanning from subtropical to temperate regions in the Northern Hemisphere, often thriving on flowering plants. Additionally, *Pallidohirschioporus* species are typically associated with flowering plants and exhibit a wide distribution across various temperate regions. Basidiomata are typically annual, occasionally manifesting as effused-reflexed, and seldom as resupinate structures. The hyphal system is dimitic to trimitic and generative hyphae have clamp connections. The cystidia are present in the hymenium, thin- to thick-walled, and smooth or apically encrusted. The basidiospores are ellipsoid to cylindrical, hyaline, thin-walled, and smooth. Phylogenetically, *Pallidohirschioporus* forms a sister clade with *Hirschioporus* based on combined dataset of ITS, LSU, and *tef1-α* sequence data. *Pallidohirschioporus* is distinguished from other genera in *Trichaptum sensu lato* based on its pileate basidiomata, unique hymenophore, and tendency to thrive on angiosperms. (Zhou et al. 2023a).

Reference

Zhou M, Dai YC, Vlasák J, Liu HG et al. 2023a – Updated systematics of *Trichaptum s.l.* (*Hymenochaetales*, *Basidiomycota*). Mycosphere 14(1), 815–917.

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Note 1094 *Psychromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Psychromyces L. Perini & Zalar

Perini et al. (2021) based on SSU, LSU, ITS, *tef1-α*, *cyt-b*, *rpb1* and *rpb2* sequence data introduced this genus in *Microbotryomycetes* to accommodate a dimorphic taxon isolated from the subglacial ice in Norway and Greenland. The only and type species is *Psychromyces glacialis* L. Perini & Zalar. This is a monotypic genus, isolated as a yeast. However, only a single strain retained its ability to grow as a yeast after 2 years of preservation at -80° C, while other strains were revived as purely filamentous. Globose to subglobose teliospores were observed in young cultures some containing oil droplets. Budding is uni-bi-or multilateral occurring solitarily on the mother cell directly or on sympodially proliferating long stalks. Daughter yeast cells are formed on terminal or lateral sympodially proliferating stalks. Some yeast cells formed pseudomycelium-like structures. The presence of hyphae, with and without clamps, was observed. The clamped mycelium was wider than the ones without clamps. This genus can assimilate Tween 80, indicating lipolytic ability. Phylogenetically *Psychromyces* is closer to *Camptobasidium*, *Glaciozyma*, and *Cryolevonia*. Sexual reproduction in the form of germinating basidia from teliospores. Sequence data for SSU, *cytb*, *tef1-α*, and *rpb2* are also available for this genus.

Reference

Perini L, Andrejašič K, Gostinčar C, Gunde-Cimerman N et al. 2021 – Greenland and Svalbard glaciers host unknown basidiomycetes: the yeast *Camptobasidium arcticum* sp. nov. and the dimorphic *Psychromyces glacialis* gen. and sp. nov. International Journal of Systematic and Evolutionary Microbiology 71(2).

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Note 1095 *Prathigadoides*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Prathigadoides M. Bakhshi, Zare & U. Braun

This passalora-like plant pathogenic genus was introduced by Bakhshi et al. (2021) based on LSU, ITS, and *rpb2* sequence data. The only type species is *Prathigadoides gleditsiae-caspicae* M. Bakhshi, Zare & U. Braun. This genus was found in Iran on an endemic plant species *Gleditsia capsica* distributed in a small geographical area. Conidiophores are fasciculate and semi-immersed. Conidiogenous cells are integrated, and terminal. Conidia are solitary, brown in color, and subcylindrical to obclavate. This genus is closer to *Prathigoda* (now known as *Pseudocercospora*) which was described from *Gleditsia triacanthos* in North America (Braun et al. 2013), but differs in having finely verruculose conidiophores with wider conidiogenous loci and shorter conidia with numerous dense septa and narrower hila. Bakhshi et al. (2021) suggested that *Cercospora condensata* and *Prathigadoides gleditsiae-caspicae*, might be congeneric based on the morphology of conidiogenous loci. Phylogenetically this genus is closer to *Cercosporidium* and *Neocercosporidium*, however, *Prathigadoides* creates a separate distinct branch, confirming that it is a separate genus.

References

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Note 1096 *Nothodevriesia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothodevriesia Crous & Boers

Based on analysis of combined ITS, LSU, *act*, *rpb2*, *tef1-α* and *tub2* sequence data, Crous et al. (2022a) introduced *Nothodevriesia* in *Teratosphaeriaceae* to accommodate *Nothodevriesia narthecii* Crous & Boers. *Nothodevriesia* was described as a saprobe associated with leaf litter. The type species *N. narthecii* was isolated from dead leaves of *Narthecium ossifragum* in the Netherlands. This genus is known only from its sexual morph and is characterized by an immersed brown hyphal network linking ascomata, 2–3-layered medium brown *texutra angularis* ascomatal wall, aparaphysiate, subsessile asci with multiseriate, overlapping, hyaline to pale brown ascospores. Upon discharge, ascospores become verruculose. This genus is a monotypic genus. Even though related to *Devriesia*, *Nothodevriesia* can be distinguished by its unique morphology and is distinct in phylogeny.

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48(1), 261–371.

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Note 1097 *Magnostiolata*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Magnostiolata Samarak. & K.D. Hyde

Magnostiolata was established by Samarakoon et al. (2022) with *Magnostiolata mucida* Samarak. & K.D. Hyde as the type species based on morphology and phylogenetic analysis of combined ITS, LSU, SSU, *rpb2*, *tub2*, and *tef1-α* sequence data. The type species was found as saprobic on dead bamboo branches from Nan Province in Thailand. *Magnostiolata* has immersed, black ascomata, with inverted funnel-shaped ostiolar canals, beneath a black clypeus, 8-spored asci, with J+, apical ring, unitunicate, and brown to dark brown, aseptate, oblong to broadly ellipsoidal ascospores with a germ slit on ventral side, mostly with a large guttule and a wing-shaped mucilaginous sheath (Samarakoon et al. 2022). *Magnostiolata* is similar to anthostomella-like taxa in having immersed ascomata under a black clypeus, unitunicate asci with a J+, apical ring and brown, ellipsoidal ascospores with a germ slit. However, it differs from anthostomella-like taxa in having funnel-shaped ostiolar canals, filled with amorphous cells and ascospores covered with a wing-shaped mucilaginous sheath. Furthermore, the multilocus phylogeny demonstrates that it formed a distinct clade from *Anthostomelloides* species.

Reference

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Note 1098 *Fuscosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fuscosphaeria D.G. Knapp & Pintye

Fuscosphaeria was proposed by Pintye & Knapp (2020) to accommodate *Fuscosphaeria hungarica* D.G. Knapp & Pintye as a monotypic species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, SSU, *tef1-α*, *rpb1*, and *tub* sequence data. The only species under this genus, *Fuscosphaeria hungarica* (D.G. Knapp & Pintye), was isolated from the roots of *Festuca vaginata*, a grass species in the family *Poaceae* in Hungary. The genus *Fuscosphaeria* is currently recognized solely by its anamorphic stage. Notably, colonies cultivated on malt extract agar (MEA) manifest as yellowish-grey and display a flattened morphology with only a sparse development of aerial mycelium. Furthermore, the strains exhibit a capacity to impart a dark brown pigmentation to the agar medium. When grown on potato dextrose agar (PDA), the colonies assume a dark grey hue, lay flat, and are bordered by a pale brown peripheral zone. Additionally, the agar medium acquires a light brown stain. Essential microscopic features observed in these colonies are the formation of chlamydospores, and immature or degenerated sporocarp-like structures as highlighted by Pintye & Knapp (2020). The type species is distinct from one of its closest phylogenetic neighbors *Trematosphaeria pertusa* based on DNA sequences.

References

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Note 1099 *Heteromicrosphaeropsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heteromicrosphaeropsis M. Mehrabi-Koushki, K.D. Hyde & Jayaward

Heteromicrosphaeropsis was proposed by Artand et al. (2022) to accommodate *Heteromicrosphaeropsis ononidicola* (Thambug., Camporesi & K.D. Hyde) M. Mehrabi, K.D. Hyde & Jayaward as the type species based on the morphological characteristics and phylogenetic analysis of ITS, LSU, *tub2*, and *rpb2* sequence data. Artand et al. (2022) classified it as a monotypic entity within *Didymellaceae* (*Pleosporales*, *Dothideomycetes*). This genus was designated to encompass the species *Heteromicrosphaeropsis ononidicola*, which was previously identified as *Microsphaeropsis*. The species was isolated as a saprobic organism on the deceased aerial stem of *Ononis spinosa*, a member of the *Fabaceae*, in Italy (Thambugala et al. 2018). Through molecular phylogenetic examination using LSU, ITS, *tub2*, *rpb2* gene sequences, Artand et al. (2022) demonstrated that this particular species diverged from the *Microsphaeropsis* lineage as well as other genera that form part of the *Microsphaeropsis* complex. Consequently, to reflect this phylogenetic distinction, the genus *Heteromicrosphaeropsis* was proposed. The sexual morph of this genus remains undescribed. The asexual morph displays morphological similarities to the genus *Microsphaeropsis*. *Heteromicrosphaeropsis* is characterized by pycnidial, immersed to erumpent, globose to subglobose conidiomata, which can either be solitary or confluent, with uni-to bi-loculate chambers and an ostiole. The pycnidial wall is composed of a light to dark brown textura angularis. The conidiogenesis process is phialidic, producing hyaline, cylindrical conidiogenous cells that may be discrete or integrated. The resulting conidia exhibit a thin, smooth wall, with a coloration ranging from hyaline to yellowish brown. These aseptate conidia are obovoid to ellipsoidal, remain straight, and occasionally display guttulation.

References

Artand S, Mehrabi-Koushki M, Tabein S, Hyde KD et al. 2022 – Revision of the *Microsphaeropsis* complex with addition of four new *Paramicrosphaeropsis* L.W.Hou, L.Cai & Crous species from Zagrosian forest trees in Iran. Cryptogamie Mycologie 43(7), 159–175.

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Note 1100 *Conidiobolaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Conidiobolaceae B. Huang, Stajich & K.T. Hodge

Conidiobolaceae is established to accommodate the five genera resulting from the division of *Conidiobolus sensu lato* (Gryganskyi et al. 2022). *Conidiobolaceae* includes three genera: *Azygosporus* B. Huang & Y. Nie (2 accepted species), *Conidiobolus sensu stricto* (17 accepted species), and *Micronocidiobolus* B. Huang & Y. Nie (3 accepted species). *Conidiobolus* Bref. and *C. utriculosus* Bref are the type genus and species, respectively. *Conidiobolaceae* forms the most basal clade of all sampled *Entomophthoromycotina* in Gryganskyi et al. 2022 and Saussure et al. (2023). This family, like other basal lineages in *Entomophthoromycotina*, mainly consists of soil-borne saprotrophic species and a few arthropod pathogens with a wide breadth of host ranges (Sacco & Hajek 2023). Indeed, *Conidiobolaceae* is one of the basal families with most species infecting multiple arthropod orders (Sacco & Hajek 2023). For example, *Conidiobolus coronatus* has one of the broadest host ranges of the entire family (Gryganskyi et al. 2022, Sacco & Hajek 2023). Recently, two new species from China were described in the genus *Conidiobolus* senus stricto., namely *C. longiconidiophorus* and *C. polysporus* (Nie et al. 2023). According to these authors, *Microconidiobolus* should be placed in a separate family. The lack of genomic or transcriptomic data prevents assigning a higher taxonomic level to *Microconidiobolus* (Gryganskyi et al. 2022).

References

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Nie Y, Cai Y, Zhao H, Zhou Z et al. 2023 – Morphological and phylogenetic analyses reveal two new species in *Conidiobolus sensu stricto* (*Conidiobolaceae, Entomophthorales*) from China. MycoKeys 98, 221–232.

Sacco NE, Hajek AE. 2023 – Diversity and Breadth of Host Specificity among Arthropod Pathogens in the *Entomophthoromycotina*. Microorganisms 11(7), 1658.

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Note 1101 *Capillidiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Capillidiaceae Y. Nie, Stajich & K.T. Hodge

The monogenetic family *Capillidaceae* originated from the rank elevation of the genus *Capillidium* B. Huang & Y. Nie to the family level by Gryganskyi et al. (2022) using phylogenetic analyses based on molecular and genomic data. Initially, Nie et al. (2019) erected the genus *Capillidium* to accommodate species previously placed in *Conidiobolus sensu lato* (*Conidiobolaceae*). Gryganskyi et al. (2022) placed one genus and ten species in *Capillidaceae*, with *Capillidium* and *C. heterosporum* (Drechsler) B. Huang & Y. Nie as the type genus and species, respectively. *Capillidiaceae* occupies a sister position to a clade encompassing *Batkoaceae*, *Entomophthoraceae*, and *Neoconidiobolaceae* in the phylogenetic reconstruction based on SSU, LSU, *tef1-α*, SSU, and genome-scale data (Gryganskyi et al. 2022). Conversely, the family was placed sister to *Neoconidiobolaceae* in Saussure et al. (2023) with a phylogenetic tree based solely on LSU sequences. Members of *Capillidaceae* are easy to culture on artificial nutrient media, are no insect pathogens, and their shared ancestors with other basal lineages of entomophthoralean fungi were probably saprotrophic (Gryganskyi et al. 2022).

References

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Note 1102 *Groenewaldia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Groenewaldia Rajeshk., R.K. Verma, O.P. Sruthi & Crous

The establishment of the monotypic genus *Groenewaldia* within *Lentitheciaceae* by Rajeshkumar et al. (2023) was supported by morphological and phylogenetic analyses utilizing LSU, SSU, ITS, and *tef1-α* sequence data. This classification accommodates *Groenewaldia indica* Rajeshk., R.K. Verma, O.P. Sruthi & Crous as the type species. It was isolated from the bark of *Eucalyptus tereticornis* in India. The sexual morph has not been observed in this genus Conidiomata are found on bark, synnematous, scattered, and dark brown to black. Conidiophores are septate, straight, smooth, and pale brown, or colorless. Conidiogenous cells are integrated, terminal, ellipsoidal with percurrent proliferation, and noncicatrized. Conidia are broad obovoid or obclavate, with thick walls, pale to dark brown color, verruculose, bases truncate, and rhexolytic. The new genus *Groenewaldia* formed a distinct clade from other genera in *Lentitheciaceae* based on morphology and phylogenetic analyses using TEF, LSU, SSU, and ITS sequence data. *Pantospora* exhibits morphological similarities with the new genus *Groenewaldia*, but it is distinguished by thinner, determinate synnemata. Conidiogenous cells are either sympodial or percurrent. Additionally, the conidia of Pantospora are phragmosporous or dictyosporous, characterized by shizolytic secession. (Rajeshkumar et al. 2023).

Reference

Rajeshkumar KC, Varma RK, Sruthi OP, Gautam AK et al. 2023 – *Groenewaldia* (*Lentitheciaceae*), a new corticolous fungal genus from India. Mycological Progress 22(6), 43.

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Note 1103 *Hypomontagnella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hypomontagnella Sir, L. Wendt & C. Lamb.

Lambert et al. (2019) segregated this genus from *Hypoxylon* based on the analysis of combined ITS, LSU, *rpb2*, and *tub2* sequence data and was accepted within *Hypoxylaceae* (*Xylariales*, *Sordariomycetes*, *Ascomycota*) (Lambert et al. 2019). *Hypomontagnella* is typified by *Hypomontagnella monticulosa* (Mont.) Sir, L. Wendt & C. Lambert. *Hypomontagnella* species produce pulvinate to effused-pulvinate, brown vinaceous to blackish stromata with inconspicuous to conspicuous perithecial mounds. The young stromata are KOH+ vinaceous purple, without apparent KOH extractable pigments in mature stromata (Lambert et al. 2019). Ascomata are spherical to obovoid, ostiolate, and perithecial with minutely to conspicuous conical papillate ostioles higher than the stromatal surface and surrounded by a black disc (Lambert et al. 2019). Asci are 8-spored, cylindrical, stipitate, and persistent with an amyloid, distinct discoid apical ring. Ascospores are ellipsoid-inequilateral, light brown, brown or dark brown, aseptate, with broadly or narrowly rounded ends, and perispore dehiscent or indehiscent in 10% KOH. The germ slit on the convex side is straight, oblique, or sigmoid and much less than spore-length or nearly spore-length or spore-length (Lambert et al. 2019). The asexual morph is hyphomycetous with mononematous or synnematous hyaline to pale brown, smooth, or roughened conidiophores. The conidiophore branching pattern is virgariella-like or rarely nodulisporium-like. Conidiogenesis is holoblastic. Conidiogenous cells are hyaline and smooth to finely rough-walled. Conidia are ellipsoid, hyaline, and smooth to finely rough-walled (Lambert et al. 2019). Species of this genus are associated with wood and bark as saprobes. *Hypomontagnella* is distinct from the genera *Annulohypoxylon* and *Jackrogersella* by having perispores and striate ornamentations. Additionally, this genus is distinct from *Hypoxylon* by stromata, papillate ostioles, and KOH-extractable pigments.

Reference

Lambert C, Wendt L, Hladki AI, Stadler M et al. 2019 – *Hypomontagnella* (*Hypoxylaceae*): a new genus segregated from *Hypoxylon* by a polyphasic taxonomic approach. Mycological Progress 18(1), 187–201.

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Note 1104 *Tengochaeta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tengochaeta X. Wei Wang & Houbraken

This genus was originally isolated from soil in *Pinus* forests in Spain. Von Arx et al. (1986) identified a strain (CBS 639.83) as *Chaetomium hispanicum* Guarro & Arx (= *Parachaetomium hispanicum* (Guarro & Arx) X. Wei Wang & Houbraken). Later according to the multigenes phylogenetic analysis (ITS, LSU, *rpb2*, and *tub2*), Wang et al. (2022) found that CBS 639.83 is distinct from *Parachaetomium*, and introduced the monotypic genus *Tengochaeta* X. Wei Wang & Houbraken, with *T. nigropilosa* X. Wei Wang & Houbraken as the type species in *Chaetomiaceae*. This genus is characterized based on superficial, solitary or clustered, ellipsoidal or subglobose ascomata covered by white aerial mycelium. Pyriform or broadly clavate asci. Olivaceous brown, ellipsoidal to fusiform ascospores with an apical germ pore. The asexual morph is unknown Members in *Chaetomiaceae* usually are thermophilic, and have a possible application in biotechnology, the indoor environment, and human health (Wang et al. 2022).

References

Von Arx JA, Guarro J, Figueras MJ. 1986 – The Ascomycete genus *Chaetomium*. Beihefte zur Nova Hedwigia 84, 1–162.

Wang XW, Han PJ, Bai FY, Luo A et al. 2022 – Taxonomy, phylogeny, and identification of *Chaetomiaceae* with emphasis on thermophilic species. Studies in Mycology 101, 121–243.

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Note 1105 *Neomackenziella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neomackenziella Crous & Osieck

This monotypic genus was isolated from a dead culm of *Juncus effusus* (*Juncaceae*), in the Netherlands. According to the ITS phylogenetic analysis, Tan et al. (2022) introduced the new genus *Neomackenziella* Crous & Osieck with *N. juncicola* Crous & Osieck as the type species. Only the asexual morph has been observed. This genus is characterized by solitary, erect, subcylindrical, and dark brown conidiophores, terminal, integrated, and medium brown conidiogenous cells, and medium brown, septate, dark brown, fusoid-ellipsoid to subcylindrical conidia which are formed in short, branched chains. Based on Tan et al. (2022), *Neomackenziella* resembles *Mackenziella* in having subcylindrical, and dark brown conidiophores. However, *Neomackenziella* can be easily recognized by its septate conidia in branched chains (Tan et al. 2022).

References

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Note 1106 *Fusoidigranularius*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Fusoidigranularius W. Dong, H. Zhang & K.D. Hyde

Fusoidigranularius is a monotypic genus, which was transferred from *Annulatascus* based on multigene phylogeny and morphological characteristics by Dong et al. (2021), with *Fusoidigranularius nilensis* (*Annulatascus nilensis*) as the type (Dong et al. 2021). It was collected from submerged stems of *Phragmites australis* in the river Nile in Egypt (Abdel-Wahab et al. 2011). *Fusoidigranularius* is known only as a sexual morph, and is characterized by immersed, black, obpyriform ascomata, oriented horizontally to the host substrate; peridium is multi-layered, comprising thick-walled, hyaline to dark brown, flattened cells of *textura angularis*; pseudoparaphyses are septate, hyaline, unbranched; asci are 8-spored, unitunicate and cylindrical with a large, refractive, J-, apical ring, and ascospores are fusoid, septate, hyaline with a large, gelatinous, irregular, granular sheath (Abdel-Wahab et al. 2011). *Annulatascus nilensis* is different from other members of *Annulatascus* in having immersed ascomata, horizontal to the host substrate and with an upwardly bending neck, and ascospores with an irregular, granular sheath. In combining phylogenetic distinctions *Annulatascus nilensis* was accepted into the newly established genus *Fusoidigranularius* (Abdel-Wahab et al. 2011, Dong et al. 2021). Only LSU sequence data (HQ616536) is available for *Fusoidigranularius nilensis*. Phylogenetic analysis based on combined LSU, ITS, *tef1-α* and *rpb2* sequence data showed that *Fusoidigranularius nilensis* formed a single clade in *Annulatascaceae* (*Annulatascales*, *Sordariomycetes*) with weak bootstrap support (Dong et al. 2021). Currently, one species, *Fusoidigranularius nilensis* is known, which is saprobic on *Phragmites* in a freshwater habitat (Abdel-Wahab et al. 2011).

References

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Dong W, Hyde KD, Jeewon R, Doilom M et al. 2021 – Towards a natural classification of annulatascaceae-like taxa II: introducing five new genera and eighteen new species from freshwater. Mycosphere 12(1), 1–88.

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Note 1107 *Gongromerizella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gongromerizella Réblová

Gongromerizella was proposed by Réblová et al. (2022) to accommodate four earlier *Chloridium* species, based on the results of morphological and phylogenetic analysis, with *Gongromerizella lignicola* (F. Mangenot) Réblová as the type (Réblová et al. 2022). The sexual morph is known only for *Gongromerizella pachytrachela*, and the asexual morph are known for *Gongromerizella lignicola* (F. Mangenot) Réblová, *G. pini* (Crous & Akulov) Réblová and *G. silvana* Réblová (Réblová et al. 2022, Réblová & Nekvindová 2023). The asexual morph of *Gongromerizella* is characterized by effuse, hairy, dark brown, whitish colonies when sporulating; solitary, scattered or crowded, unbranched, macronematous conidiophores with percurrent proliferations; monophialidic, terminal, integrated, conidiogenous cells extending percurrently, with a single conidiogenous locus and pronounced wall thickening, collarettes flaring, funnel-shaped and ellipsoidal, hyaline, aseptate conidia adhering in slimy heads. The sexual morph is characterized by perithecial, astromatic, dark brown, superficial, glabrous ascomata with paraphyses; unitunicate, stipitate asci with a non-amyloid apical annulus and fusiform, hyaline, 1-septate ascospores (Réblová et al. 2022, Réblová & Nekvindová 2023). Members of

Gongromerizella as saprobes on decaying wood of *Fagus sylvatica*, *Picea abies*, *Pinus sylvestris*, and unidentified host from terrestrial habitats in in the Americas, North America, and Europe (Réblová et al. 2022, Réblová & Nekvindová 2023). The latest multigene phylogenetic analysis based on ITS, LSU and *tef1-α* sequence data showed that four species of *Gongromerizella*, a total of eight strains clustered into an independent lineage in *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*) (Réblová & Nekvindová 2023). Currently four terrestrial species are accepted in *Gongromerizella*, and the type strains of all species have sequences (Réblová & Nekvindová 2023).

References

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Réblová M, Hernández-Restrepo M, Sklenář F, Nekvindová J et al. 2022 – Consolidation of *Chloridium*: new classification into eight sections with 37 species and reinstatement of the genera *Gongromeriza* and *Psilobotrys*. Studies in Mycology 103, 87–212.

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Note 1108 *Longivarius*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Longivarius W. Dong, H. Zhang & K.D. Hyde

Longivarius is a monotypic genus, which was transferred from *Annulatascus* based on multigene phylogeny and morphological characteristics by Dong et al. (2021), with *Longivarius aquatorbae* (Boonyuen & Sri-indr.) W. Dong, H. Zhang & K.D. Hyde as the type (Dong et al. 2021). *Longivarius aquatorbae* was collected from submerged wood test block of *Erythrophleum teysmannii* in Thailand (Boonyuen et al. 2012). It is characterized by semi-immersed or superficial, globose, brown to dark brown ascomata with a long neck; brown, thick-walled peridium comprising pseudoparenchymatous cells; pseudoparaphyses filiform, septate, hyaline; unitunicate, cylindrical asci with a distinct, wedge-shaped, J-, apical ring; fusoid to lunate, septate ascospores without appendages or sheath (Boonyuen et al. 2012, Dong et al. 2021). Based on unevenly colored ascospores with brown central cells and subhyaline end cells, and combined with the results of multigene phylogenetic analysis, Dong et al. (2021) introduced *Longivarius* to accommodate this species that is significantly different from other species of *Annulatascus*. Currently, only one species, *Longivarius aquatorbae* (Boonyuen & Sri-indr.) W. Dong, H. Zhang & K.D. Hyde in *Longivarius*, and only LSU sequence data are available (Dong et al. 2021).

References

Boonyuen N, Sri-indrasutdhi V, Suetrong S, Sivichai S et al.2012 – *Annulatascus aquatorba* sp. nov., a lignicolous freshwater ascomycete from Sirindhorn Peat Swamp Forest, Narathiwat, Thailand. Mycologia 104, 746–757.

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Note 1109 *Asterocalycella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Asterocalycella Höhn. ex R. Kirschner

Asterocalycella was erected by Kirschner et al. (2019) as a nom. nov. for the illegitimate *Asterocalyx* Höhn. 1912 (non *Asterocalyx* Ettingsh. 1888, fossil *Dioscoreaceae*), with the type species *A. mirabilis* (Höhn.) R. Kirschner. Only two species have been described in *Asterocalyx* or *Asterocalycella*, but genetic and morphological variation among specimens that have been sequenced show there are several additional undescribed species in this fern-inhabiting genus. ITS sequences from specimens from Australia (MH578457), New Zealand (MH578456) and Taiwan Island (MK088084) differ sufficiently to suggest they are different species. The New Zealand and Australian specimens differ also in ascus and ascospore size, and somewhat in macroscopic appearance (P.R. Johnston, unpubl. data). Spooner (1987) noted that the Australian specimen he examined was somewhat different from the type specimen from Java. Kirschner et al. (2019) reported specimens with white as well as with the more typical dark-colored apothecia, suggesting more than one species in Taiwan Island. There appears to be a set of closely related, undescribed *Asterocalycella* species on ferns in Australasia and tropical Asia. Only rDNA sequences are available for *Asterocalycella*; an unpublished analysis based on concatenated SSU, ITS and LSU sequences (MH578566, MH578456, MH587169) show a strongly supported relationship with *Godroniaceae* but lifestyle (saprobic on tree ferns) is very different to other genera in this family (pathogens of angiosperms and gymnosperms), so this position needs confirming with additional genes.

References

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Spooner BM. 1987 – *Helotiales* of Australasia. *Geoglossaceae, Orbiliaceae, Sclerontinaceae, Hyaloscyphaceae*. Bibliotheca Mycologica 116, 1–711.

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Note 1110 *Bacilliformis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bacilliformis Ekanayaka & K.D. Hyde

Ekanayaka et al. (2019a) described the monotypic genus *Bacilliformis* for *B. hyalinus*, a species with pycnidial conidioma containing flask-shaped conidiogenous cells lining the inner wall of the peridium, which produce hyaline, short cylindrical or bacilliform conidia. *Bacilliformis hyalinus* has been reported from dying twigs of *Salix* in Russia, where it was described as a weak parasite or saprotroph. *Bacilliformis* is similar to *Allantophomopsiella* Crous but lacks mucoid appendages and unlike *Apostrasseria* and *Allantophomopsis*, its conidiogenous cells lack percurrent proliferations and its conidia are bacilliform. Based on an ITS and LSU phylogeny, *B. hyalinus* is basal to the main *Phacidiaceae* clade, which is sister to *Darkera* (Ekanayaka et al. 2019a).

Reference

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10, 310–489.

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Note 1111 *Blastosporium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Blastosporium Z.F. Yu & H. Zheng

Blastosporium is a monotypic genus, the type species *B. persicolor* isolated from mildewed tobacco leaves and known only from its asexual morph. In culture, it forms irregularly-shaped, aseptate hyaline conidia from simple phialides, solitary or held on short, simple conidiogenous cells. An analysis based on SSU and LSU sequences placed it within *Helotiales*, but without a clear relationship within the order (Zheng et al. 2019).

Reference

Zheng H, Zhang Z, Wen Z, Castañeda-Ruiz RF et al. 2019 – *Blastosporium persicolor* gen. et sp. nov., a new helotialean fungus. MycoKeys 51, 55–64.

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Note 1112 *Brunaudia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Brunaudia (Sacc.) Kuntze

The type species of this monotypic genus, *Brunaudia phormigera*, is known only from dead *Phormium* leaves from New Zealand. ITS sequences (KF727423, voucher PDD 75309; MH578490, voucher PDD 111553; MH578488, culture ICMP 22796) from the specimens identified as *B. phormigera*, collected from the same region and host as the type species, place this genus in *Helotiaceae* (P.R. Johnston, unpubl. data).

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Note 1113 *Cairneyella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cairneyella D.J. Midgley & N. Tran-Dinh

This monotypic genus was described as an ericoid mycorrhizal fungus from Australia (Midgley et al. 2016). A phylogeny based on multiple genes extracted from a genome sequenced from the type specimen places the genus in an isolated position in *Helotiales* (Johnston et al. 2019).

References

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA fungus 10, 1–22.

Midgley DJ, Rosewarne CP, Greenfield P, Li D et al. 2016 – Genomic insights into the carbohydrate catabolism of *Cairneyella variabilis* gen. nov. sp. nov., the first reports from a genome of an ericoid mycorrhizal fungus from the southern hemisphere. Mycorrhiza 26, 345–52.

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Note 1114 *Calvophomopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calvophomopsis J.B. Tanney & Seifert

Calvophomopsis is a monotypic genus represented by *C. rubenticola*, described from strains isolated as endophytes from surface sterilized needles of *Picea rubens* from Eastern Canada (Tanney & Seifert 2018). *Calvophomopsis rubenticola* produces hyaline, aseptate, naviculate to ellipsoidal conidia from phialides borne within pycnidial conidiomata. A phylogenetic analysis of *rpb*2 placed *Calvophomopsis* in *Phacidiaceae*, sister to *Gloeopycnis protuberans* and *Darkera parca* with weak to moderate support.

Reference

Tanney JB, Seifert KA. 2018 – *Phacidiaceae* endophytes of *Picea rubens* in Eastern Canada. Botany 96(9), 555–588.

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Note 1115 *Calyptrozyma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calyptrozyma Boekhout & Spaay

Calyptrozyma is a monotypic genus, the type species *C. arxii* was isolated from human lower oesophagus tissue. Originally placed in *Eurotiomycetidae*, this simple fungus forms asci on loose aggregations of generative hyphae and a range of blasto-, aleurio- and arthroconidia (Boekhout et al. 1995). ITS and SSU sequences from the type culture (GenBank NR_137141 and NG_070787 from CBS 354.92) place the species in a clade with *Aotearoamyces*, *Collophorina*, and *Claussenomyces prasinulus* (P.R. Johnston, unpubl. data), taxa accepted as *Leotiales* by Quijada et al. (2022b, Figure 1).

References

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Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, Fungi). Biology 11(4), 583.

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Note 1116 *Capturomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Capturomyces S. Bien, C. Kraus & Damm

Capturomyces encompasses two species *viz*. *C. funiculosus* (the type species) and *C. luteus*, that form a monophyletic clade within *Tympanidaceae* (Bien et al. 2020). Both species were isolated from spore traps mounted on *Vitis vinifera* vines in Germany, and both form yeast-like colonies due to slimy spore masses, which consist of small, hyaline, aseptate, oblong to ellipsoidal conidia produced from intercalary conidiophores mostly reduced to openings with collarettes or short necks directly on hyphae, rarely from discrete phialides and from conidiogenous loci formed in each cell just below the septum and at the apex of septate conidiophores inside conidiomata (Bien et al. 2020). Based on the identical ITS sequences from *C. luteus* and a specimen identified as *Pragmopora amphibola* (type species of the genus, OM456226), the two genera may be synonyms. *Pragmopora amphibola* is found on the dry bark of conifers, trees often used as shelter belts in vineyards.

Reference

Bien S, Kraus C, Damm U. 2020 – Novel collophorina-like genera and species from *Prunus* trees and vineyards in Germany. Persoonia 45(1), 46–67.

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Note 1117 *Chaetophiophoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank,GenBank

Chaetophiophoma Speg.

Chaetophiophoma was described by Spegazzini (1911), with a single species, *C. trematis*, reported as developing superficially on living leaves of *Trema micrantha* in Argentina. The second species, *C. sorbi*, was described by Li et al. (2020c), from *Sorbus* from Italy, as a saprobe on dead branches. An LSU sequence from *C. sorbi* places the genus in *Dermateaceae* (Li et al. 2020c). An epitype for *C. trematis* is needed to confirm this taxonomy.

References

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Note 1118 *Chaetoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chaetoscypha Syd.

Chaetoscypha was originally described based on *C. nidulans*, a species reported from leaves of *Olearia colensoi* from New Zealand (Sydow 1924). Johnston (2002a) described the same fungus as *Pirottaea nidulans*, reporting it from the leaf tomentum on the undersides of leaves of the *Asteraceae* genera *Olearia* and *Celmisia*. However, Baral (in Jaklitsch et al. 2016a) noted that *P. nidulans* has an ascus with an apical ring typical of *Helotiaceae* rather than *Pyrenopezizaceae* (as *Ploettnerulaceae*), the family he accepted for *Pirottaea*. ITS sequences from *C. nidulans* (MK039695, voucher PDD 62647), *C. palmicola* (KM677205, culture ICMP 13383) and *C. mahinapua* (MK039696, culture ICMP 13382) support its position in *Helotiaceae* and this was confirmed with a multigene phylogenetic analysis using *C. palmicola* (ICMP 13383, GenBank genome PRJNA48767) (Johnston 2022b).

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Sydow H. 1924 – Beiträge zur Kenntnis der Pilzflora Neu-Seelands - I. Annales Mycologici 22(3-6), 293–317.

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Note 1119 *Clarireedia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Clarireedia L.A. Beirn, B.B. Clarke, C. Salgado & J.A. Crouch

Clarireedia was originally named with four species, all pathogens causing dollar spot diseases of turf grasses (Salgado-Salazar et al. 2018). Based on rDNA comparison, Baral et al. (2023b) recombined several additional monocotyledon-inhabiting species formerly placed in *Ciboria*, *Rutstroemia* and *Stromatinia* into the genus. Genes extracted from a *Clarireedia homeocarpa* genome (GenBank SAMN04267405) placed the genus amongst the paraphyletic *Rutstroemiaceae* clades (Johnston et al. 2019).

References

Baral HO, Sochorová Z, Sochor M. 2023b – *Bryorutstroemia* (*Rutstroemiaceae*, *Helotiales*), a new genus to accommodate the neglected sclerotiniaceous bryoparasitic discomycete *Helotium fulvum*. Life 13(4), 1041.

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA fungus 10, 1.

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Note 1120 *Cochlearomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cochlearomycetaceae Crous

Cochlearomycetaceae was described by Crous et al. (2017b) including two genera, *Cochlearomyces* and *Satchmopsis*. Both genera are known only from their distinctive asexual states. The LSU phylogeny presented by Crous et al. (2017b) showed the type species *Cochlearomyces eucalypti* placed as sister to *Tympanidaceae*, while Johnston (2022) showed a similar position for *Satchmopsis metrosideri* based on LSU and *tub2* sequences. A more thorough phylogenetic analysis with additional genes is needed to better determine the placement of this family amongst the basal clades of *Leotiomycetes*.

References

Crous PW, Wingfield MJ, Burgess TI, Carnegie AJ et al. 2017b – Fungal Planet description sheets: 625–715. Persoonia 39, 270–467.

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

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Note 1121 *Constrictochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Constrictochalara W.P. Wu & Y.Z. Diao

In their study on *Chalara*-like *Leotiomycetes*, Wu & Diao (2023) proposed three new genera within *Hamatocanthoscyphaceae* viz. *Constrictochalara*, *Cylindrochalara* and *Stipitochalara*. *Constrictochalara* was introduced for the type species *Constrictochalara clavatospora*, along with *Chalara constricta*, *C. ellisii*, *C. holubovae*, and *Hamatocanthoscypha podocarpi*, grouped together as a strongly supported monophyletic clade distinct from other *Chalara*-like fungi (Wu & Diao 2023). Morphologically all five species shared some similarities such as solitary, simple, and short conidiophores, an abrupt transition from venter to collarette and marked by a pronounced and dark-colored constriction, and hyaline, aseptate conidia with obtuse to truncate ends (Wu & Diao 2023). Two other species without DNA sequence data share a similar morphology and may also belong in *Constrictochalara*, *Chalara novae-zelandiae* and *C. verruculosa* (Wu & Diao 2023). Phylogenetically *Constrictochalara* is also closely related to *Infundichalara*, but morphologically differs from it by tubular-shaped collarettes and endogenous conidia, while collarettes in *Infundichalara* are more or less funnel-shaped, and conidia are ellipsoidal and not endogenous (Wu & Diao 2023). *Constrictochalara* is placed in *Hamatocanthoscyphaceae* (*Helotiales*, *Leotiomycetes*, *Ascomycota*), revealed by molecular analysis based on two separate rDNA region datasets: SSU and LSU, and ITS and LSU respectively (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1122 *Cornibusella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cornibusella J.B. Tanney & Seifert

Cornibusella is a monotypic genus erected for *C. ungulata*, which was isolated as an endophyte from an asymptomatic, surface-sterilized needle from *Picea rubens* (Tanney & Seifert 2018). *Cornibusella ungulata* was not observed to sporulate in culture but formed large (10 × 1–2 mm) sterile stromatic projections. Based on a *rpb*2 phylogeny, *C. ungulata* was placed basal to other *Phacidiaceae* taxa.

Reference

Tanney JB, Seifert KA. 2018 – *Phacidiaceae* endophytes of *Picea rubens* in Eastern Canada. Botany 96(9), 555–88.

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Note 1123 *Cryonesomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryonesomyces Unter. & Réblová

Cryonesomyces is a monotypic genus with an uncertain placement, and a four-gene phylogeny placed it within *Vandijckellaceae* having a poor support (Untereiner et al. 2019). *Cryonesomyces dreyfussii* is a psychrotolerant, phialophora-like species known as a single strain isolated from the moss in Antarctica. In culture, it produces phialides that are hyaline, cylindrical to ampulliform and tapering towards the apex with cylindrical or cup-shaped collarettes, occurring singly and arising from hyphae or sparingly and basitonously branched conidiophores. The phialides give rise to conidia that are hyaline, clavate to ellipsoidal, with truncate bases, forming chains or accumulating in small groups at the phialide apices.

Reference

Untereiner WA, Yue Q, Chen L, Li Y et al. 2019 – *Phialophora* section *Catenulatae* disassembled: New genera, species, and combinations and a new family encompassing taxa with cleistothecial ascomata and phialidic asexual states. Mycologia 111(6), 998–1027.

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Note 1124 *Cylindrocephalum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cylindrocephalum Bonord.

Based mostly on specimens from China, Wu & Diao (2023) revised the taxonomy of *Leotiomycetes* with *Chalara*-like asexual states. Wu & Diao (2023) accepted *Chalara sensu stricto* within *Pezizellaceae*, along with two new genera *Nagrajchalara* and *Parachalara*, and the reinstated *Cylindrocephalum* (the type species *C. aureum*). Both *Nagrajchalara* and *Cylindrocephalum* are distinguished from *Chalara sensu stricto* by their septate conidia, the two genera forming distinct lineages within *Pezizellaceae* (Wu & Diao 2023). Wu & Diao (2023) noted that no teleomorph has been associated with *Cylindrocephalum*, but ITS sequences from cultures grown from germinated ascospores from New Zealand specimens (PDD 60159, PDD 59109, PDD 82949, PDD 112196) appear to represent unnamed species of *Cylindrocephalum sensu* Wu & Diao (Whenua 2023).

References

Whenua M. 2023 – Specimen data from the New Zealand Fungarium (PDD). Accessed through Systematics Collection Data, Landcare Research.

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1125 *Cylindrochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Cylindrochalara W.P. Wu & Y.Z. Diao

The monotypic genus *Cylindrochalara* was introduced to accommodate *Cylindrochalara hyalocuspica*, originally described as *Chalara hyalocuspica*, a species isolated as a saprotroph on a needle of *Picea abies* in the Czech Republic (Wu & Diao 2023, Koukol 2011). Koukol (2011) inferred a wider host and geographical range for *Cylindrochalara hyalocuspica* based on ITS sequences (e.g., endophytes of *Pinus monticola* in the USA, roots of *Calluna vulgaris* in Germany, and roots of *Picea abies* in Germany). *Cylindrochalara hyalocuspica* forms a clade with *Infundichalara microchona*, *Constrictochalara*, and other *Hamatocanthoscyphaceae* taxa that form chalara-like anamorphs. Morphologically, *Constrictochalara hyalocuspica* is almost indistinguishable from its closest relative, *Infundichalara microchona*, by the absence of septate conidiophores and its collarette that is slightly pigmented except for the hyaline apex. A *Cylindrochalara* is placed in *Hamatocanthoscyphaceae* (*Helotiales*, *Leotiomycetes*, *Ascomycota*), revealed by molecular analysis based on two separate rDNA region datasets: SSU and LSU, and ITS and LSU respectively (Wu & Diao 2023).

References

Koukol O. 2011 – New species of *Chalara* occupying coniferous needles. Fungal Diversity 49, 75–91.

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1126 *Davidhawksworthia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Davidhawksworthia Crous

Davidhawksworthia contains two species viz. the type species *D. ilicicola* and *D. quintiniae*. Both species form an asexual morph that is reminiscent of the related genus *Coleophoma*; hyaline, aseptate, subcylindrical conidia produced from phialidic conidiogenous cells that are ampulliform to doliiform (Crous & Groenewald 2016). *Davidhawksworthia* is positioned in a basal clade within *Dermateaceae* (Iliushin & Kirtsideli 2023).

References

Crous PW, Groenewald JZ. 2016 – They seldom occur alone. Fungal Biology 120(11), 1392–1415.

Iliushin VA, Kirtsideli IY. 2023 – *Pseudoxenochalara* gen. nov. (*Dermateaceae*, *Helotiales*), with *P. grumantiana* sp. nov. from the Svalbard archipelago. Botanica Serbica 47(1), 55–63.

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Note 1127 *Eupezizella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eupezizella Höhn.

Previously considered a synonym of *Hyaloscypha*, *Eupezizella* was accepted as a separate genus for four species by Kosonen et al. (2021). It is distinguished from *Hyaloscypha* by the abundant resinous exudates, the predominantly blunt and aseptate hairs, and by the lack of overall dextrinoid reactions (Kosonen et al. 2021).

Reference

Kosonen T, Huhtinen S, Hansen K. 2021 – Taxonomy and systematics of *Hyaloscyphaceae* and *Arachnopezizaceae*. Persoonia 46(1), 26–62.

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Note 1128 *Eustilbum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eustilbum Rabenh.

The resinicolous discomycete originally described with its sexual state named *Bisporella resinicola* and asexual state *Eustilbum aureum*, was shown by Mitchell et al. (2021) to be a monotypic genus in *Helotiales* with no clear family-level relationship. These authors showed *Bisporella* to be polyphyletic, the *Eustilbum* name accepted for *Bisporella resinicola*. –

Reference

Mitchell JK, Quijada L, Johnston PR, Pfister DH. 2021 – Species of the common discomycete genus *Bisporella* reassigned to at least four genera. Mycologia 114(4), 713–731.

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Note 1129 *Gemmina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gemmina Raitv.

Gemmina includes two species comprising small, pale apothecia with short hairs, walls thin and roughened at the apex. In the past, this nondescript fungus has been placed in genera such as *Pezizella*, *Calycina*, and *Hyphodiscus* (Raitviir 2004). ITS sequences from a specimen identified as the type species, *G. gemmarum* (GenBank OM456209 and KH501127, from vouchers H.B. 6883 and SBRH 862 respectively) place the genus in *Hamatocanthoscyphaceae* (P.R. Johnston, unpubl. data).

Reference

Raitviir A. 2004 – Revised synopsis of the *Hyaloscyphaceae*. Scripta Mycologica 20, 1–132.

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Note 1130 *Gloeopycnis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gloeopycnis J.B. Tanney & Seifert

Gloeopycnis is a monotypic genus with the type species *G. protuberans*, described from strains isolated from asymptomatic surface-sterilized needles of *Picea rubens* in Eastern Canada (Tanney & Seifert 2018). *Gloeopycnis protuberans* develops pycnidioid conidiomata in the culture that are irregularly multilocular and contain conidiophores that are sparsely branched or reduced to conidiogenous cells that are phialidic. The conidia were described as being diverse: aseptate, hyaline to subhyaline, smooth, thin-walled, fusiform-cylrindrical to broadly naviculate or ellipsoidal, but with some conidia being thick-walled, greyish-yellow and featuring tubercular protuberances (Tanney & Seifert 2018). On apple juice agar, *G. protuberans* produced slimy spore masses from budding conidia and hyphae. A phylogenetic analysis based on *rpb*2 placed *G. protuberans* sister to *Calvphomopsis* and *Darkera* but with weak support (Tanney & Seifert 2018).

Reference

Tanney JB, Seifert KA. 2018 – *Phacidiaceae* endophytes of *Picea rubens* in Eastern Canada. Botany 96(9), 555–588.

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Note 1131 *Glutinomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Glutinomyces Nor. Nakam.

Glutinomyces comprises four species isolated as endophytes of roots of *Quercus* and *Castanopsis cuspidata* trees in Japan (Nakamura et al. 2018). *Glutinomyces brunneus* is the type species of the genus. Asexual and sexual reproduction has not been observed in any *Glutinomyces* strains, which are slow-growing and sterile with sticky exudates, although Nakamura et al. (2019) suggested the partial presence of parasexuality. Based on an ITS+LSU phylogeny, *Glutinomyces* is sister to *Gamarada*, a monotypic genus consisting of *G. debralockiae*, a widely distributed ericoid mycorrhizal fungus associated with *Ericaceae* in Australia (Midgley et al. 2018, Quijada et al. 2022a).

References

Midgley DJ, Sutcliffe B, Greenfield P, Tran-Dinh N. 2018 – *Gamarada debralockiae* gen. nov. sp. nova—the genome of the most widespread Australian ericoid mycorrhizal fungus. Mycorrhiza 28(4), 379–89.

Nakamura N, Tanaka E, Tanaka C, Takeuchi-Kaneko Y. 2018 – Localization of helotialean fungi on ectomycorrhizae of *Castanopsis cuspidata* visualized by in situ hybridization. Mycorrhiza 28, 17–28.

Nakamura N, Tanaka C, Takeuchi-Kaneko Y. 2019 – Recombination and local population structure of the root endophytic fungus *Glutinomyces brunneus* based on microsatellite analyses. Fungal Ecology 41, 56–64.

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1132 *Goniopila*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Goniopila Marvanová & Descals

The type of the monotypic genus *Goniopila*, *G. monticola*, is an aquatic hyphomycete, similar to *Margaritispora* with its globose and protuberate conidia, but differing in having short monilioid conidiophores branched at the base and polyblastic conidiogenous cells (Marvanová & Descals 1985). ITS sequences from isolates identified as the type species (GenBank MK353141, voucher DSM 104367) place the genus within *Helotiaceae* (P.R. Johnston, unpubl. data). This however, was based on a misidentified GenBank accession (C. Baschien, pers. comm.). *Goniopila* belongs in *Dothideomycetes* according to Campbell et al. 2006.

References

Campbell J, Shearer C, Marvanová L. 2006 – Evolutionary relationships among aquatic anamorphs and teleomorphs: *Lemonniera*, *Margaritispora*, and *Goniopila*. Mycological Research 110(9), 1025–1033.

Marvanová L, Descals E. 1985 – New and critical taxa of aquatic hyphomycetes. Botanical Journal of the Linnean Society 91(1-2), 1–23.

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Note 1133 *Helgardiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Helgardiomyces Crous

Helgardiomyces is a monotypic genus containing *H. anguioides*, a species known only for its asexual state and formerly placed in *Helgardia*, *Oculimacula*, *Pseudocercosporella*, and *Ramulispora* (Robbertse et al. 1995, Crous et al. 2021b). *Helgardiomyces anguioides* produces hyaline, multi-septate, long, flexuous, subcylindrical conidia with truncate bases from solitary to aggregated, rarely branched, conidiophores with terminal conidiogenous cells that have apical sympodial proliferation and inconspicuous scars. *Helgardiomyces aguioides* is a weakly pathogenic species that is infrequently associated with eyespot in winter wheat (Bateman 1988).

References

Bateman GL. 1988 – *Pseudocercosporella anguioides*, a weakly pathogenic fungus associated with eyespot in winter wheat at a site in England. Plant Pathology 37(2), 291–296.

Crous PW, Braun U, McDonald BA, Lennox CL et al. 2021b – Redefining genera of cereal pathogens: *Oculimacula*, *Rhynchosporium* and *Spermospora*. Fungal Systematics and Evolution 7(1), 67–98.

Robbertse B, Campbell GF, Crous RW. 1995 – Revision of Pseudocercosporella-like species causing eyespot disease of wheat. South African Journal of Botany 61(1), 43–8.

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Note 1134 *Hispidula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hispidula P.R. Johnst.

Hispidula was described by Johnston (2003) as a group of fungi characterised by the sessile apothecia having very long excipular hairs (the walls of which are dextrinoid in Melzer's reagent) aggregated into large, tapering, tooth-like appendages. Known only from Australasia, species in this saprobic genus have been described from dead tissue of tree fern fronds and fallen leaves of *Acmena* and *Dracophyllum*. Another unnamed species occurs on fallen *Nothofagus* leaves in Australia (GenBank MH921856, voucher PDD 112245). *Hispidula tokerau* has multiple genes available and these places the genus in *Helotiaceae* (Johnston et al. 2019).

References

Johnston PR. 2003 – *Hispidula* gen. nov. (*Helotiales*, *Hyaloscyphaceae*) in Australia and New Zealand. New Zealand Journal of Botany 41(4), 685–697.

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA fungus 10, 1.

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Note 1135 *Isthmiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Isthmiella Darker

Isthmiella comprises four species including the type *I. abietis*, that cause needle cast on *Abies*. They form elongated, nervisequious ascomata on the underside of needles that bear bifusiform ascospores surrounded by a gelatinous sheath. Ascospores are forcibly discharged in mid-summer and infect the current year's needles; the following spring, pycnidia develop on the surface of these infected needles (Darker 1967). Ascomata develop two years after infection. As of this writing, *Isthmiella* has not been subject to phylogenetic analysis and its relationship to *Bifusella* and other nervisequious, *Rhytismataceae* should be assessed.

Reference

Darker GD. 1967 – A revision of the genera of the *Hypodermataceae*. Canadian Journal of Botany 45(8), 1399–444.

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Note 1136 *Kukwaea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kukwaea Suija, Motiej. & Zhurb.

Kukwaea was introduced as a lichenicolous genus from coniferous forests in Europe and the Asian region of Russia. The new taxon, *K. pubescens* is characterized by its cupulate, brown ascomata with grey to blackish disc surrounded by brownish-grey hairs. Using data from BLAST matches from DNA sequence data Suija et al. (2020) placed this in genus incertae sedis in *Helotiales*. Using concatenated nSSU, LSU, mtSSU and *rpb2* sequences from Suija et al. (2020) incorporated into an expanded multigene dataset from Johnston et al. (2019), *Kukwaea* belongs to *Hamatocanthoscyphaceae* (Johnston 2022).

References

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA Fungus 10, 1.

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

Suija A, Zhurbenko MP, Stepanchikova IS, Himelbrant DE et al. 2020 – *Kukwaea pubescens* gen. et sp. nova (*Helotiales, incertae sedis*), a new lichenicolous fungus on *Cetraria islandica*, and a key to the lichenicolous fungi occurring on *Cetraria* s. str. Phytotaxa 459(1), 39–50.

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Note 1137 *Lanceolata*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lanceolata Ekanayaka & K.D. Hyde

Ekanayaka et al. (2019a) proposed the monotypic genus *Lanceolata* to accommodate *L. brunnea*, described from unidentified wood in the United Kingdom. *Lanceolata brunnea* produces apothecia with a cupulate receptacle that is brown or orange and appear glassy, with a brown disc. Its narrowly lanceolate paraphyses contribute to the genus name and it produces amyloid asci that arise from croziers and give rise to aseptate, fusoid, hyaline and guttulate ascospores. The 5-gene phylogeny presented by Ekanayaka et al. (2019a) placed *L. brunnea* basally within *Calloriaceae*, with low statistical support, and an updated phylogeny by Johnston (2022) placed it basally within a clade containing *Calloriaceae*, *Vandijckellaceae*, *Stamnaria*, *Polyphilus* and other taxa.

References

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EH et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10(1), 310–489.

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

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Note 1138 *Leochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leochalara W.P. Wu

Leochalara was erected by Wu & Diao (2023) for a single species of *Arachnopezizaceae* from China with a *Chalara*-like asexual state. This genus is characterised by the conidiophores and phialides being subhyaline to pale brown, and the transition from venters to collarettes is gradual. The cylindrical conidia are hyaline and aseptate (Wu & Diao 2023). The only known species *L. danxiashanensis* is saprobic on dead leaves.

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1139 *Leptomelanconium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leptomelanconium Petr.

Kowalski et al. (2018) provided ITS and LSU sequences for specimens authentic for the type species of *Leptomelanconium*, *L. allescheri* (= *L. asperulum*), a needle pathogen of *Pinus* spp. Previously, the only DNA sequence data available for the genus was *L. australiense* (= *Teratosphaeria australiensis*, *Teratosphaeriaceae*, *Mycosphaeriales*). The new sequence data placed the type species of *Leptomelanconium* in the unnamed monophyletic clade containing *Piceomphale bulgarioides*, sister and basal to *Sclerotiniaceae* plus *Rutstroemiaceae* in *Helotiales* (Kowalski et al. 2018, Johnston et al. 2019). This position has morphological support from the structure of the amyloid ring at the ascus apex of *P. bulgarioides*, typical of the *Sclerotinia* type. With all *Leptomelanconium* spp. known only from their asexual states, the phylogenetic position of the other species requires confirmation with DNA sequences.

References

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA Fungus 10, 1.

Kowalski T, Boroń P, Bartnik C, Rossa R. 2018 – Morphological and molecular characterization of *Leptomelanconium allescheri* associated with necrotic lesions on *Pinus mugo* needles in the Polish Tatra Mountains. Forest Pathology 48(3), e12420.

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Note 1140 *Lophomerum*
Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lophomerum Ouell. & Magasi

Lophomerum was erected to accommodate *L. autumnale*, previously known as *Lophodermium autumnale*, on the basis of its 3-septate ascospores. Later, other species were described or transferred from *Lophodermium* to *Lophomerum* based on ascospore septation, resulting in nine currently accepted species. However, the validity of this morphological character as a rationale for generic delimitation within *Rhytismataceae* is questionable and should be assessed with molecular-based phylogenetic analysis (Darker 1967).

Reference

Darker GD. 1967 – A revision of the genera of the *Hypodermataceae*. Canadian Journal of Botany 45(8), 1399–444.

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Note 1141 *Microstrobilinia*
Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Microstrobilinia Beenken & Andr. Gross

Microstrobilinia is a monotypic genus accommodating *M. castrans*, a parasite of pollen cones of *Picea* spp. in Europe. This species stromatizes the tissue of pollen cones and infects pollen grains. A multi-gene phylogenetic analysis confirmed its placement within *Sclerotiniaceae* (Beenken et al. 2023).

Reference

Beenken L, Stroheker S, Dubach V, Schlegel M et al. 2023 – *Microstrobilinia castrans*, a new genus and species of the *Sclerotiniaceae* parasitizing pollen cones of *Picea* spp. Mycological Progress 22(2), 14.

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Note 1142 *Minichalara*
Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Minichalara W.P. Wu & Y.Z. Diao

Wu & Diao (2023) discussed species in a number of genera within *Neolauriomycetaceae* that have *Chalara*-like asexual states. Two of the species (*Minichalara aseptata* and *M. microspora*) formed a phylogenetically distinct clade that Wu & Diao (2023) accepted as *Minichalara*. *Minichalara* is characterized by reduced conidiophores composed of a short basal stalk and a terminal phialide in pale brown colour, obclavate to lageniform phialides, abrupt transition from a long venter to a short collarette, and hyaline, aseptate and cylindrical conidia. It differs from *Chalara sensu stricto* in having reduced conidiophores, obclavate to lageniform phialides, and narrower conidia (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119, 213–490.

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Note 1143 *Moellerodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Moellerodiscus Henn.

The phylogenetic relationships of many of the genera in *Rutstroemiaceae* remain poorly understood (e.g. Zhao et al. 2016, Baral et al. 2023b). Amongst these is *Moellerodiscus*, sometimes treated as a synonym of *Ciboria*, but a name still in wide use and generally accepted as *Sclerotiniaceae* or *Rutstroemiaceae*. The type species *M. brockesiae* has no DNA sequence data available. The GenBank accessions placed in *Moellerodiscus* represent at least five separate genus-level clades (P.R. Johnston, unpubl. data).

References

Baral HO, Sochorová Z, Sochor M. 2023b – *Bryorutstroemia* (*Rutstroemiaceae*, *Helotiales*), a new genus to accommodate the neglected sclerotiniaceous bryoparasitic discomycete *Helotium fulvum*. Life 13, 1041.

Zhao YJ, Hosaka K, Hosoya T. 2016 – Taxonomic re-evaluation of the genus *Lambertella* (*Rutstroemiaceae*, *Helotiales*) and allied stroma-forming fungi. Mycological Progress 15(12), 1215– 1228.

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Note 1144 *Mycosylva*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycosylva M.C. Tulloch

Mycosylva comprises three coprophilous species that form conspicuous synnemata with chains of blastoconidia interlinked by tube-like connectives (Tulloch 1973, Christensen & Worley 1978). Wijayawardene et al. (2022) placed *Mycosylva* in*******incertae sedis but available ITS sequences of the ex-type strains for all three species indicate they are within *Myxotrichaceae*, which is also supported by their asexual morphology. The type species *Mycosylva clarkii*, *M. reticulata*, and *M. setosa* share ITS sequences only differing by 1–2 bp, suggesting they may be conspecific.

References

Christensen M, Worley AC. 1978 – *Mycosylva* from a Larix-Picea and Sphagnum Bog in Wisconsin. Mycologia 70(2), 456–460.

Tulloch M. 1973 – *Stysanus amyli* and *Mycosylva clarki*. Transactions of the British Mycological Society 61(1), 198.

Wijayawardene NN, Hyde KD, Dai DQ, Sánchez-García M et al. 2022 – Outline of Fungi and fungus-like taxa–2021. Mycosphere 13(1), 53–453.

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Note 1145 *Neomelanconium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neomelanconium Petr.

Newly generated molecular data show that *Neomelanconium* and *Mycosphaerangium* have a sister relationship within *Cenangiaceae* (Volgmayr et al. 2020). *Mycosphaerangium* and *Neomelanconium* share many traits like similar conidia, conidiogenesis, asci, and ascospores, but their apothecia differ particularly in excipular features and are therefore recognized as distinct genera. Both genera have dark-walled, more or less globose conidia with gelatinous sheaths (Volgmayr et al. 2020). *Neomelanconium* is saprotrophic on dead wood (Volgmayr et al. 2020).

Reference

Voglmayr H, Jaklitsch WM, Tello S. 2020 – *Mycosphaerangium* and *Neomelanconium* (*Cenangiaceae*) are closest relatives: phylogenetic relationships, morphology and a new species. Mycological Progress 19(11), 1329–1352.

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Note 1146 *Neometulocladosporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neometulocladosporiella Crous & M.J. Wingf.

Neometulocladosporiella comprises two species, the type species *N. eucalypti* and *N. seifertii* (Crous et al. 2018b, 2020a). Both species produce dimorphic conidiophores; microconidiophores that give rise to a single, terminal conidiogenous cell and macroconidiophores that give rise to a series of up to 20 metulae or branches. The brown, smooth-to-finely verruculose conidia are born in dry acropetal chains from primary and secondary ramoconidia. *Neometulocladosporiella eucalypti* and *N. seifertii* are very similar and best differentiated by DNA sequences. Despite their similarity, *Neometulocladosporiella* is apparently polyphyletic based on the LSU phylogeny presented by Crous et al. (2020a), with *N. seifertii* sister to a clade containing *Lanzia allantospora*, *Ciboria americana*, and *Neometulocladosporiella eucalypti*.

References

Crous PW, Wingfield MJ, Burgess TI, Hardy GS et al. 2018b – Fungal Planet description sheets: 716–784. Persoonia 40, 239–392.

Crous PW, Cowan DA, Maggs-Kölling G, Yilmaz N et al. 2020a – Fungal Planet description sheets: 1112–1181. Persoonia 45, 251–409.

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Note 1147 *Neomollisia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neomollisia Ekanayaka & K.D. Hyde

Baral et al. (2019) considered the monotypic genus *Neomollisia* synonymous with *Mollisia* and *Neomollisia gelatinosa* as a synonym of *Mollisia solidaginis*, based on matching ITS sequences between *Neomollisia gelatinosa* and two specimens from *Eupatorium* that they identified as *Mollisia solidaginis*. The protologues of both species show them to be similar (Baral et al. 2019). Tanney & Seifert (2020) place *Neomollisia gelatinosa* in a clade they treat as *Mollisia sensu stricto*.

References

Baral HO, Lindemann U, Wieschollek D. 2019 ('2017') – *Vibrissea catarhyta* - a rare aquatic inoperculate discomycete. Mycologia Montenegrina 20, 111–124.
Tanney JB, Seifert KA. 2020 – *Mollisiaceae*: An overlooked lineage of diverse endophytes. Studies in Mycology 95, 293–380.

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Note 1148 *Neopyrenopeziza*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neopyrenopeziza Ekanayaka & K.D. Hyde

Neopyrenopeziza nigripigmentata was described from dead branches of *Crataegus* in Italy (Ekanayaka et al. 2019a). Its black apothecia are pulvinate and possess a black-brown parenchymatic excipulum, filiform, apically enlarged and dark brown pigmented paraphyses, asci with amyloid apical ring, and hyaline, 1–5-septate, ellipsoid to fusoid-clavate ascospores. *Neopyrenopeziza nigripigmentata* shares a >99% similar ITS with a sequence identified as *Patellariopsis dennisii* (voucher G.M.2017-09-04.3, GenBank MK120898), suggesting conspecificity. This species is morphologically hardly distinguished from the unsequenced type species of *Patellariopsis*, *P. clavispora* (ascospore size in the protologue of *P. dennisii* is incorrect as it does not concur with the illustration, Baral ined.), These two taxa are quite distinct from *P. atrovinosa*, which appears to not be congeneric with *P. dennisii* based on a different phylogenetic relationship (Baral ined.). The family *Patellariopsidaceae* was established by Karunarathna et al. (2020) to accomodate *P. atrovinosa* as a presumed representative. The authors excluded *P. dennisii* from their analysis because another strain of *P. dennisii* with a very different relationship (CBS 174.66) existed, making the species ambiguous. However, a morphological documentation of G.M. 2017-09-04.3 and another specimen of *P. dennisii* with unpublished sequence (B.P. Dgf/C7D 02-02-24a) confirm the correct identity of G.M. 2017-09-04.3. Accodingly, *P. dennisii* clustered in *Mollisiaceae* (Baral ined.), consequently *Patellariopsidaceae* should be synonymised with that family, whereas CBS 174.66 is a contaminant and represents *Mycocalicium victoriae* or a very close species.

References

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EH et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10(1), 310–489.

Karunarathna A, Peršoh D, Ekanayaka AH, Jayawardena RS et al. 2020 – *Patellariopsidaceae* fam. nov. with sexual-asexual connection and a new host record for *Cheirospora botryospora* (*Vibrisseaceae, Ascomycota*). Frontiers in Microbiology 11, 906.

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Note 1149 *Newbrunswickomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Newbrunswickomyces Crous & Malloch

Newbrunswickomyces abietophilus was isolated from the buds of *Abies balsamea* in Eastern Canada. In culture it produces phialidic conidiogenous cells with inconspicuous percurrent proliferation at apex, which aggregate into sporodochia. The conidia are solitary, hyaline, subcylindrical to narrowly ellipsoid, with a truncate hilum, and form a mucoid mass. Although Crous et al. (2022a) placed this genus in *Pezizales* incertae sedis, it shares a 99% similarity (LSU) with the species of *Nagrajchalara* (*Pezizellaceae*, *Helotiales*).

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48(1), 261–371.

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Note 1150 *Ovadendron*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ovadendron Sigler & J.W. Carmich.

Ovadendron sulphureo-ochraceum comprises the monotypic genus *Ovadendron*. This keratinolytic species was isolated from human sputum and is reported to have caused endophthalmitis resulting in enculeation in a patient (Sigler & Carmichael 1976, Lee et al. 1995). *Ovadendron sulphureo-ochraceum* produces a malbranchea-like asexual morph that consists of swollen arthroconidia that exceed the width of the fertile hyphae, differentiating it from *Malbranchea*. Recently, Crous et al. (2023c) showed the placement of *Ovadendron* within *Pseudoeurotiaceae*.

References

Crous PW, Osieck ER, Shivas RG, Tan YP et al. 2023c – Fungal Planet description sheets: 1478–1549. Persoonia 50, 158 – 310.

Lee BL, Grossniklaus HE, Capone Jr A, Padhye AA et al. 1995 – *Ovadendron sulphureo-ochraceum* endophthalmitis after cataract surgery. American Journal of Ophthalmology 119(3), 307–312.

Sigler L, Carmichael JW. 1976 – Taxonomy of *Malbranchea* and some other *Hyphomycetes* with arthroconidia. Mycotaxon 4, 349–488.

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Note 1151 *Pallidophorina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pallidophorina S. Bien & Damm

Pallidophorina is a monotypic genus introduced with *P. paarla*, isolated from necrotic wood of *Prunus persica* in South Africa and described as *Collophora paarla* (Damm et al. 2010). In Germany, *P. paarla* was the second most isolated species from the wood of *Prunus* spp. (Bien et al. 2020). This species is yeast-like in culture and produces abundant conidia from enteroblastic conidiogenous cells, as endoconidia inside hyphae, and through microcyclic conidiation. Multigene phylogenetic analyses place *Pallidophorina* incertae sedis within *Leotiales* (Quijada et al. 2022b, Johnston 2022).

References

Bien S, Kraus C, Damm U. 2020 – Novel collophorina-like genera and species from *Prunus* trees and vineyards in Germany. Persoonia 45(1), 46–67.

Damm U, Fourie PH, Crous PW. 2010 – *Coniochaeta* (*Lecythophora*), *Collophora* gen. nov. and *Phaeomoniella* species associated with wood necroses of *Prunus* trees. Persoonia 24(1), 60–80.

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, Fungi). Biology 11(4), 583.

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Note 1152 *Parachalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parachalara W.P. Wu & Y.Z. Diao

Parachalara is monotypic, the type species *P. olekirkii* growing as a saprobe on unidentified dead leaves (Wu & Diao 2023). Based mostly on specimens from China, Wu & Diao (2023) revised the taxonomy of *Leotiomycetes* with *Chalara*-like asexual states. Wu & Diao (2023) accepted *Chalara sensu stricto* within *Pezizellaceae*, along with two new genera *Nagrajchalara* and *Parachalara*. The aseptate conidia of *Parachalara* distinguishes it from *Nagrajchalara*, with its 1-septate conidia. In *Parachalara* the conidiophores are reduced to a basal cell and a terminal phialide. *Parachalara* is indistinguishable from some existing species of *Chalara sensu stricto* with the reduced conidiophores and aseptate conidia, they can only be distinguished by the phylogenetic analysis (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1153 *Pleuroascaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pleuroascaceae Unter. & Réblová

Pleuroascaceae was named by Untereiner et al. (2019) for *Pleuroascus*, a genus with cleistothecial ascomata, together with two new soil-inhabiting genera known only from their asexual states, *Entimomentora* and *Venustampulla*. Because of the morphology of its sexual state, *Pleuroascus* was previously placed in *Thelebolales*, but based on DNA sequences from the ex-type culture of the type species *P. nicholsonii* (CBS 345.73), Untereiner et al. (2019) showed that it belongs to *Helotiales*.

Reference

Untereiner WA, Yue Q, Chen L, Li Y et al. 2019 – *Phialophora* section *Catenulatae* disassembled: New genera, species, and combinations and a new family encompassing taxa with cleistothecial ascomata and phialidic asexual states. Mycologia 111(6), 998–1027.

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Note 1154 *Poculum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Poculum Velen.

The phylogenetic relationships of many of the genera in *Rutstroemiaceae* remain poorly understood (Zhao et al. 2016). The type species of *Poculum*, *P. ruborum*, has no DNA sequence data available but the generic name is still in wide use and generally accepted as *Rutstroemiaceae*.

Reference

Zhao YJ, Hosaka K, Hosoya T. 2016 – Taxonomic re-evaluation of the genus *Lambertella* (*Rutstroemiaceae*, *Helotiales*) and allied stroma-forming fungi. Mycological Progress 15(12), 1215–1228.

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Note 1155 *Pseudoclathrosphaerina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoclathrosphaerina Voglmayr

Pseudoclathrosphaeria species are aeroaquatic hyphomycete fungi with globose conidia produced by a repeatedly dichotomously branched conidial filament, the branches of which are tightly and irregularly interwoven (Voglmayr & Krisai-Greilhuber 1997). ITS sequences from an ex-type culture of the type species *P. evamariae* (CBS 616.97, GenBank MH862664) is *Hyaloscyphaceae*, sister to the second species in the genus *P. spiralis* (ICMP 20879, GenBank MK432781) (P.R. Johnston, unpubl. data).

Reference

Voglmayr H, Krisai-Greilhuber I. 1997 – *Pseudoclathrosphaerina evamariae* gen. et sp. nov. and Sympodioclathra globosa gen. et sp. nov., two aeroaquatic fungi similar to *Clathrosphaerina*. Mycologia 89(6), 942–951.

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Note 1156 *Pseudogeomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudogeomyces Zhi Y. Zhang & Y.F. Han

Zhang et al. (2023e) introduced *Pseudogeomyces* (*Incertae sedis*, *Thelebolales*, *Leotiomycetes*) to accommodate *Pseudogeomyces lindneri* Zhi Y. Zhang & Y.F. Han as the type species based on the comparison of micromorphological features and DNA sequence data. The sexual morph has not been observed. In the asexual morph, the hyphae are branched, septate, and smooth. Conidiophores are solitary, occasionally branched, hyaline, and smooth. Conidia are hyaline, verrucose, solitary, and globose to obovoid with a short basal frill. Intercalary conidia are hyaline, verrucose, globose to subglobose, with both ends truncate. Chlamydospores have not been seen. The genus is distinguished from other *Thelebolales* in possessing short, irregularly branched conidiophores bearing two to four conidiogenous cells and verrucose conidia separated by connective cells. The type species, *Pseudogeomyces lindneri*, is represented by three isolates from China that form a strongly supported clade in the phylogeny inferred from ITS, ITS, LSU, *ef1A*, *mcm7*, and *rpb*2 sequences. Four additional isolates obtained from the soil in bat hibernacula in the USA (12NJ08, 17WV09, 23WI08, and 23WI14) do not comprise a single clade and are not described as a new species in *Pseudogeomyces*. These unnamed isolates were divided between two well-supported clades in the multi-locus phylogeny presented by Minnis & Lindner (2013) but the positions of these clades and *Geomyces* were not resolved completely. Future research could focus on naming undescribed members of *Thelebolaceae* (= *Pseudoeurotaiceae fide* Ekanayaka et al. 2019a) and resolving relationships among lineages basal to *Pseudogymnoascus* (Minnis & Lindner 2013).

Reference

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10, 310–489.

Minnis AM, Lindner DL. 2013 – Phylogenetic evaluation of *Geomyces* and allies reveals no close relatives of *Pseudogymnoascus destructans*, comb. nov, in bat hibernacula of eastern North America. Fungal Biology 117, 638–649.

Zhang ZY, Han YF, Chen WH, Tao G. 2023e – Additions to *Thelebolales* (*Leotiomycetes*, *Ascomycota*): *Pseudogeomyces lindneri* gen. et sp. nov. and *Pseudogymnoascus campensis* sp. nov. MycoKeys 95, 47.

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Note 1157 *Pseudoxenochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudoxenochalara Iliushin & Kirtsideli

Pseudoxenochalara is a monotypic genus consisting of *P. grumantiana*, recently described as a single strain isolated from soil from the Arctic tundra in Norway (Iliushin & Kirtsideli 2023). *Pseudoxenochalara grumantiana* produces conidia that are hyaline, ellipsoid to ovoid, with a truncate base in chains from phialidic conidiogenous cells with short, cup-shaped collarettes. *Pseudoxenochalara grumantiana* is distinguished from *Xenochalara* (*Hamatocanthoscyphaceae*) by its penicillately-branched conidiophores, cylindrical to ampulliform phialidic conidiogenous cells, and 2–3 times larger conidia (Iliushin & Kirtsideli 2023). Although Iliushin & Kirtsideli (2023) place their genus in *Dermateaceae*, the taxon selection in their phylogenetic analysis is problematic in that the taxa selected are strongly biased toward genera in *Dermateaceae*. BLAST searches using their *P. grumantiana* ITS and LSU sequences suggested that a wider range of families should be included. An unpublished analysis, incorporating the ITS, LSU, *tub2* and *rpb2* sequences of *P. grumantiana* (GenBank OM774424, OM776920, OM782292, OM782293) into the dataset of Johnston (2022), place the genus in *Helotiaceae* (P.R. Johnston, pers. comm.).

References

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Note 1158 *Psychrophila*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Psychrophila M.M. Wang & Xing Z. Liu

Psychrophila is an illegitimate name (Art. 53.1, homonym, non *Psychrophila* (DC.) Bercht. & J. Presl 1823, *Ranunculaceae*) originally proposed for three species cultured from substrates from very cold habitats. Two of the species are known only from sterile cultures, the third has a simple *Phialophora*-like morphology (Wang et al. 2015). A fourth species named later was from a similar very cold habitat (Untereiner et al. 2019). The genus was placed in *Arachnopezizaceae* by Untereiner et al. (2019). This was supported by the analysis in Johnston (2022), although few genes are available for *Psychrophila*, and although sister to the main *Arachnopezizaceae* clade, it is on a long branch. Its position needs to be confirmed with additional molecular data.

References

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Note 1159 *Pulvinata*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pulvinata Ekanayaka & K.D. Hyde

Pulvinata is a monotypic genus comprising *P. tomentosa*, a discomycete collected from an unidentified herbaceous stem in the United Kingdom (Ekanayaka et al. 2019a). *Pulvinata tomentosa* has pulvinate apothecia with tomentose margins and hyaline, aseptate, and ellipsoid to fusoid ascospores produced from cylindric-clavate, apically amyloid asci arising from croziers. In gross morphology it resembles a *Mollisia*. Tanney & Seifert (2018) confirmed its placement in *Mollisiaceae* within the *Loramyces-Obtectodiscus* semi-aquatic clade, which contains divergent taxa from mostly aquatic to semi-aquatic environments.

References

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Note 1160 *Ramoconidiophora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ramoconidiophora S. Bien & Damm

Ramoconidiophora is a monotypic genus, the type species *R. euphorbiae* being described originally as *Collophorina euphorbiae* from a strain isolated from a healthy *Euphorbia polycaulis* plant (Nasr et al. 2018). *Ramoconidiophora euphorbiae* is yeast-like, on synthetic nutrient-poor agar medium, producing abundant conidia inside hyphae (i.e., endospores), enteroblastic from conidiogenous cells on hyphae, often reduced to mere openings with collarettes, and within closed conidiomata, and via microcyclic conidiation. Its position within *Tympanidaceae* was supported in the multigene analysis of Johnston (2022). These yeast-like taxa within *Tympanidaceae* are difficult to distinguish based on asexual morphs; *R. euphorbiae* differs by its conidiomatal conidiophores that are frequently branched and form conidiogenous openings intercalary and, more frequently terminally (Nasr et al. 2018, Bien et al. 2020).

References

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Note 1161 *Rhynchobrunnera*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rhynchobrunnera B.A. McDonald, U. Braun & Crous

Rhynchobrunnera was erected by Crous et al. (2021b) to accommodate two species of *Rhynchosporium*, *R. lolii* (type species) and *R. orthospora*. A multigene phylogenetic analysis placed *Rhynchobrunnera* sister to *Rhynchosporium*. The two genera are distinguished by their different conidial morphology, *Rhynchobrunnera* possesses 1–3-septate, straight conidia without any apical beak while *Rhynchosporium* species have 1-septate conidia with hooked apical beaks Crous et al. (2021b).

Reference

Crous PW, Braun U, McDonald BA, Lennox CL et al. 2021b – Redefining genera of cereal pathogens: *Oculimacula*, *Rhynchosporium* and *Spermospora*. Fungal Systematics and Evolution 7(1), 67– 98.

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Note 1162 *Rubropezicula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rubropezicula Ekanayaka & K.D. Hyde

Ekanayaka et al. (2019) described *Rubropezicula thailandica* from unidentified plant stems in Thailand. Its erumpent ascomata are cupulate with a flat and white disc with margins that are red owing to the red pigments of the cylindric hairs and hyaline, 3-septate, ovoid ascospores are produced from amyloid asci lacking croziers. *Rubropezicula thailandica* is placed with weak support sister to *Scleropezicula alnicola* within a clade containing *Mollisina*, *Calycellina*, and *Zymochalara* (Lestari & Kandawatte 2022). Wu & Diao (2023) place it in a clade with *Nagrajchalara* but did not comment on why they considered it distinct at the generic level.

References

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Note 1163 *Satchmopsis*

Web-links Index Fungorum, Facesoffungi, MycoBank, GenBank

Satchmopsis B. Sutton & Hodges

Satchmopsis was introduced by to accommodate *S. brasiliensis* B. Sutton & Hodges based on the morphological characteristics. The type species was isolated from dead leaves of *Eucalyptus paniculata* in Brazil. Mycelium is immersed branched, and septate. Conidiophores are aggregated, hyaline, smooth, and subcylindrical. Conidiogenous cells are doliiform to subcylindrical to lageniform, phialidic. Conidia are solitary, aseptate, hyaline, and cylindrical. The sexual morph was not observed. The LSU phylogeny presented by Crous et al. (2017b) showed the type species *Cochlearomyces eucalypti* placed as sister to *Tympanidaceae*, while Johnston (2022) showed a similar position for *Satchmopsis metrosideri* based on LSU and *tub*2 sequences. The taxonomic placement of *Satchmopsis*is in *Cochlearomycetaceae*, *Leotiales*, *Leotiomycetes*, and *Ascomycota*.

References

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Note 1164 *Schroeteria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Schroeteria G. Winter

Schroeteria is characterised by forming chlamydospores in sori inside the living seed capsules of its host plants. This morphology and lifestyle are similar to smut fungi. However, these 'false smuts' have been shown to possess a phialidic microconidial synanamorph that develops on the chlamydospores, a feature suggesting that they represent a member of *Sclerotiniaceae*. This relationship was confirmed with recent molecular studies on both the sexual and asexual states of these fungi when Baral et al. (2022) reported for the first time the sexual state of *Schroeteria*.

Reference

Baral HO, Rönsch P, Richter U, Urban A et al. 2022 – *Schroeteria decaisneana, S. poeltii*, and *Ciboria ploettneriana* (*Sclerotiniaceae, Helotiales, Ascomycota*), three parasites on Veronica seeds: First report of teleomorphs in *Schroeteria*. Mycological Progress 21(1), 359–407.

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Note 1165 *Stipitochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Stipitochalara W.P. Wu & Y.Z. Diao

In their study on *Chalara*-like *Leotiomycetes*, Wu & Diao (2023) proposed three new genera within *Hamatocanthoscyphaceae*; *Constrictochalara*, *Cylindrochalara* and *Stipitochalara*. *Stipitochalara* was established for *Chalara longipes*, *C. picea-abietis* and *C. recta*, all characterized by multi-septate conidiophores, terminal phialides with an abrupt transition from venter to collarette, and hyaline, aseptate, cylindrical conidia without basal frill. *Stipitochalara* can hardly be distinguished from *Chalara* s.s. (*Pezizellaceae*) in morphology, but phylogenetically it belongs to a different family in *Leotiomycetes* (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1166 *Strasseria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Strasseria Bres. & Sacc.

The type species of *Strasseria*, *S. geniculata*, is found on the leaves and fruits of various hosts within *Ericaceae*, *Pinaceae*, *Rosaceae*, and other families (Nag Raj 1983). *Strasseria geniculata* produces conidiomata in which its conidia, bearing a distinct tubular basal appendage and a funnel-shaped mucoid apical appendage, are produced from phialidic conidiogenous cells with distinct collarettes (Tanney & Seifert 2018). A phylogenetic analysis based on *rpb2* places *S. geniculata* in *Phacidiaceae* (Tanney & Seifert 2018). Whether other species placed in this genus match *S. geniculata* phylogenetically awaits future molecular studies.

References

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Note 1167 *Tricellula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tricellula Beverw.

Species of *Tricellula*, known only from the asexual state, form Y-shaped, 3-celled conidia. Originally named for a species isolated from air, *T. inaequalis*, the genus has subsequently been found in aquatic habitats (Van Beverwijk 1954, Webster 1959). ITS sequences from an ex-type culture of *T. inaequalis* (GenBank MH857245, culture CBS 359.53) place the genus in a clade with specimens identified as *Calloria urticae*, the type species of *Calloria* (P.R. Johnston, unpubl. data).

References

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Note 1168 *Trichopezizella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Trichopezizella Dennis ex Raitv.

Trichopezizella was one of the genera Ekanayaka et al. (2019a) placed in their new family *Solenopeziaceae*. Johnston & Bastien (2020) refined a core *Solenopeziaceae*, restricting it to a clade basal to *Lachnaceae*. This clade included a *Trichopezizella* species but the type species *T. nidulus* has no DNA sequence data available. Jaklitsch et al. (2016b) had earlier suggested that *Solenopezia*, *Trichopeziza*, and *Trichopezizella* warranted their own family because of distinct morphological characteristics including excipular and hair characteristics and the absence of an apothecial stipe. Although Index Fungorum lists 16 species in *Trichopezizella*, few of these have had their phylogenetic position confirmed with DNA sequences.

References

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Note 1169 *Umbellidion*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Umbellidion B. Sutton & Hodges

Based on a multigene phylogeny, Barreto et al. (2023) described a novel monotypic order and family to accommodate *Umbellidion radulans*, a saprotroph on dead fallen leaves of *Eucalyptus* and other diverse host plants in Brazil, Cuba, Trinidad and Tobago (Sutton & Hodges 1975). *Umbellidion radulans* is placed in an isolated basal clade in *Leotiomycetes*, similar to *Lauriomycetales*. It produces macronematous, mononematous conidiophores that are erect, unbranched or branched, and brown, which bear whorls of cylindrical to lageniform, smooth, hyaline, broadly denticulate conidiogenous cells that are polyblastic, indeterminate and extend sympodially. The hyaline, smooth, solitary, dry, navicular conidia are produced in schizolytic succession.

References

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Note 1170 *Variabilispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Variabilispora S. Bien, C. Kraus & Damm

Variabilispora comprises two species, the type species *V. flava*, isolated from a spore trap mounted on a vine of *Vitis vinifera* in Germany, and *V. viridis*, isolated from *Picea abies* driftwood in Norway (Bien et al. 2020, Crous et al. 2021). Both species are yeast-like in culture due to abundant conidia, which are formed from conidiophores often reduced to mere openings with collarettes or short necks directly on hyphae, less often from discrete phialides, and by microcyclic conidiation. Although multigene analyses are not available for *Variabilispora*, its position within the phylogeny of Bien et al. (2020) suggests that it is incertae sedis within *Leotiales*, following Quijada et al. (2022b).

References

Bien S, Kraus C, Damm U. 2020 – Novel collophorina-like genera and species from Prunus trees and vineyards in Germany. Persoonia 45(1), 46–67.

Crous PW, Osieck ER, Jurjevi Ž, Boers J et al. 2021e – Fungal Planet description sheets: 1284–1382. Persoonia 47(1), 178–374.

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Note 1171 *Velebitea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Velebitea I. Kušan, Matočec & Jadan

Velebitea is a monotypic genus, the type species *V. chrysotexta* being described from rotten wood in Europe. ITS and LSU sequences from apothecia place the genus in *Lachnaceae* (Phookamsak et al. 2019). These authors discuss morphological similarities between *Velebitea* and some *Dasyscyphella* species but note significant differences between their fungus and the type species of *Dasyscyphella*, *D. cassandrae*, a species with no available genetic data. Baral & Quijada (2020) place the genus in synonymy with *Dasyscyphella* for morphological reasons (H.-O. Baral, pers. comm.), but this is not supported by publicly available rDNA sequence data where specimens in GenBank identified as *Dasyscyphella* species are scattered across *Lachnaceae* and phylogenetically distinct from *V. chrysotexta* (P.R. Johnston, unpubl. data).

References

Baral HO, Quijada L. 2020 – Nomenclatural novelties. Index Fungorum 454, 1–3.

Phookamsak R, Hyde KD, Jeewon R, Bhat DJ et al. 2019 – Fungal diversity notes 929–1035: taxonomic and phylogenetic contributions on genera and species of fungi. Fungal Diversity 95, 1–1273.

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Note 1172 *Venturioscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Venturioscypha Baral, T. Kosonen & Polhorský

The monotypic *Venturioscypha* was erected for a minute, short-stalked inoperculate discomycete with long, cylindrical, partly flexuous, dark blackish-brown, smooth, finally thick-walled hairs. It has been collected repeatedly in Europe on dead, corticated branches of *Pinus* spp. attached to living or recently dead trees. The hair wall of *Venturioscypha* appears superficially smooth, but the surface is inconspicuously pitted as viewed under light microscopy (Baral et al. 2023a). *Venturioscypha* is unique in *Hyphodiscaceae* by its peculiar hairs, inamyloid asci with a thin apical wall that ruptures irregularly by a terminal split at spore discharge, spores with a delicate sheath, and apothecial proliferation (Baral et al. 2023a).

Reference

Baral HO, Kosonen T, Polhorský A, Stöckli E et al. 2023a – *Venturioscypha nigropila* (*Hyphodiscaceae*, *Helotiales*) – a new genus and species from xeric *Pinus* bark. Karstenia 60(1-2), 28–48.

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Note 1173 *Vestigium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Vestigium Piroz. & Shoemaker

Pirozynski & Shoemaker (1972) described *Vestigium* to accommodate *V. felicis*, collected from twigs of *Thuja plicata* in Oregon and British Columbia. *Vestigium felicis* forms subcuticular or intraepidermal acervuli that are blister-like and composed of a palisade-like fascicle of filiform conidiophores that are simple to twice-branched. The conidiogenous cells are terminal, polyblastic or sympodial, and produce 1–3 distinctive conidia, which are flat, thin-walled, hyaline, and composed of an angular central cell and (4–)5(–6), toe-like, ovoid and often curved peripheral cells (Pirozynski & Shoemaker 1972). Later, Shoemaker et al. (2013) described *V. trifidum* from needles of *Abies balsamea* in Eastern Canada. *Vestigium trifidum* produced superficial pycnothyria with applanate, hyaline, echinulate conidia consisting of a somewhat rectangular central cell with (2–)3(–4) obovoid, toe-like cells (Shoemaker et al. 2013). Based on the ITS sequence of *V. trifidum* (KC407777), this species appears to be placed within *Cenangiaceae* (J.B. Tanney, unpubl. data);

whether *V. trifidum* and *V. felicis* are congeneric remains to be proven with molecular analysis. The taxonomic placement of *Vestigium* is in *Pezizomycotina* and *Ascomycota*. *Vestigium* is incertae sedis in *Ascomycota* due to its unstable phylogenetic placement (Wijayawardene et al. 2022).

References

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Note 1174 *Vexillomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Vexillomyces S. Bien, C. Kraus & Damm

Bien et al. (2020) named several new genera in *Tympanidaceae* with a *Collophorina*-like morphology, including *Vexillomyces*, a genus in which they accepted two species isolated from spore traps in a vineyard. Based on DNA sequence matches, Baral & Quijada (2020) realised that some of the common *Claussenomyces* species belong to *Vexillomyces*, recognising for the first time the sexual state of *Vexillomyces*. Fungi named *Claussenomyces* are widespread on dead wood in north temperate regions, and the genus has also been reported from Argentina (Gamundi & Giaiotti 1995). The type species of *Claussenomyces*, *C. jahnianus*, has no DNA sequence data available, but is distinct from the *Vexillomyces* spp. (H.-O. Baral, pers. comm).

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Note 1175 *Xenosphaeropsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenosphaeropsis F. Liu, Crous & L. Cai

Zhao et al. (2021b) introduced *Xenosphaeropsis* to accommodate *X. pyriputrescens*, a species previously placed in *Sphaeropsis* (*Botryosphaeriaceae*, *Botryosphaeriales*). *Xenosphaeropsis pyriputrescens* belongs to a polytomous clade within *Phacidiaceae*, including *Allantophomopsiella*, *Allantophomopsis*, *Bulgaria*, *Phacidium* and *Potebniamyces*. As the specific epithet indicates, *X. pyriputrescens* causes postharvest decay of fruits of *Malus* and *Pyrus*, including stem-end, calyx-end, and wound-associated rots. It produces pycnidial conidiomata lined with phialides that produce conidia that are hyaline at first then become brown with maturity, smooth, and clavate to subglobose or occasionally ellipsoidal (Zhao et al. 2021b).

Reference

Zhao P, Crous PW, Hou LW, Duan WJ et al. 2021b – Fungi of quarantine concern for China I: *Dothideomycetes*. Persoonia 47(1), 45–105.

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Note 1176 *Xeropilidium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xeropilidium Baral & Pärtel

Xeropilidium is a monotypic genus, the type species *X. dennisii* a saprobe forming apothecia and pycnidia on dry angiosperm bark. Multigene phylogenetic analyses place the genus in *Chaetomellaceae* (Pärtel et al. 2017).

Reference

Pärtel K, Baral HO, Tamm H, Põldmaa K. 2017 – Evidence for the polyphyly of *Encoelia* and *Encoelioideae* with reconsideration of respective families in *Leotiomycetes*. Fungal Diversity 82, 183–219.

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Note 1177 *Ypsilina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ypsilina J. Webster, Descals & Marvanová

Ypsilina includes two species, the type species *Y. graminea* and *Y. buttingtonensis*, both aquatic hyphomycetes known only from their asexual states. Previously referred to *Volucrispora*, reportedly a synonym of *Tricellula*, Descals et al. (1998) distinguished their new genus *Ypsilina* from *Tricellula* based on morphological differences in colony appearance and conidial branching patterns. In the development of the spore the main axis is first produced and in it, a median septum is formed. Below this, the lateral branch arises (Ingold et al. 1968). Based on an ITS phylogeny using the ex-epitype strain of *Y. graminea* (GenBank MH862967, voucher CBS 114630), the genus is a member of *Pyrenopezizaceae* (P.R. Johnston, unpubl. data).

References

Descals E, Marvanová L, Webster J. 1998 – New taxa and combinations of aquatic hyphomycetes. Canadian Journal of Botany 176(9), 1647–1659.

Ingold CT, McDougall PJ, Dann V. 1968 – *Volucrispora graminea* sp. nov. Transactions of the British Mycological Society 51(2), 325–328.

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Note 1178 *Nagrajchalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nagrajchalara W.P. Wu & Y.Z. Diao

Based mostly on specimens from China, Wu & Diao (2023) revised the taxonomy of *Leotiomycetes* with chalara-like asexual states. Wu & Diao (2023) accepted *Chalara sensu stricto* within *Pezizellaceae*, along with two new genera *Nagrajchalara* and *Parachalara*, and the reinstated *Cylindrocephalum*. Both *Nagrajchalara* and *Cylindrocephalum* are distinguished from *Chalara sensu stricto* by their septate conidia. Wu & Diao (2023) accepted 43 species with DNA sequences available in *Nagrajchlarara*. Although very variable, the conidiophores are well-developed with multi-septate basal stalk or reduced to 1–2 basal stalk cells with a terminal phialide. The conidia are always septate, cylindrical or short-cylindrical, with obtuse apex and truncate or obtuse base, often with basal frills. Included in Wu & Diao (2023) *Nagrajchalara* clade are two species with a sexual state, '*Calycellina*' *leucella* and the type of *Rubropezicula*, *R. thailandica*. If the rDNA-based phylogenies on which this relationship is based are found to be supported by more gene-rich analyses, then *Nagrajchalara* would be a synonym of the older name *Rubropezicula*. There are many other existing *Chalara* species with a similar morphology but with no DNA sequences available and many of these may also belong to *Nagrajchlarara* (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1179 *Acephala*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Acephala Grünig & T.N. Sieber

Acephala was introduced by Grünig & Sieber (2005) to accommodate the purely mycelial *A. applanata* Grünig & Sieber as the type species based on culture morphology and a phylogenetic analysis of ITS sequence data. Phylogenetically, *Acephala* falls within *Phialocephala sensu lato* as circumscribed by Tanney & Seifert (2020), who based their analysis on the phylogeny of ITS, LSU, *rpb1*, DNA topoisomerase1 (*top1*), Lipin/Ned1/Smp2 (*lns2*). The taxonomic placement of *Acephala applanata* is in *Mollisiaceae*, *Helotiales*, *Leotiomycetes*, *Ascomycota*. The second species placed in this genus, *A. macrosclerotiorum* Münzenb. & Bubner, forms a phylogenetically distinct clade within *Phialocephala sensu lato* (Tanney & Seifert 2020). This species reportedly forms true ectomycorrhizas and sclerotia on the roots of *Pinus sylvestris* (Münzenberger et al. 2009). *Acephala applanata* is a dark septate symbiont of the roots of *Picea abies*, earlier known under the invalid name *Mycelium radicis-atrovirens* (Grünig & Sieber 2005).

References

Grünig CR, Sieber TN. 2005 – Molecular and phenotypic description of the widespread root symbiont *Acephala applanata* gen. et sp. nov., formerly known as dark-septate endophyte Type 1. Mycologia 97, 628–640.

Münzenberger B, Bubner B, Wöllecke J, Sieber TN et al. 2009 – The ectomycorrhizal morphotype *Pinirhiza sclerotia* is formed by *Acephala macrosclerotiorum* sp. nov., a close relative of *Phialocephala fortinii*. Mycorrhiza 19, 481–492.

Tanney JB, Seifert KA. 2020 – *Mollisiaceae*: An overlooked lineage of diverse endophytes. Studies in Mycology 95, 293–380.

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Note 1180 *Aeruginoscyphus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aeruginoscyphus Dougoud

Aeruginoscyphus was established by Dougoud (2012) as a monotypic genus to accommodate *A. sericeus* (Alb. & Schwein.) Dougoud as the type species. *Aeruginoscyphus sericeus* was found on dead wood of *Quercus* (Dougoud 2012). In naming this genus, Dougoud (2012) placed *Erinella aeruginosa* in synonymy with *A. sericeus*, following Dixon (1974, as *Chlorosplenium sericeum*). *Aeruginoscyphus* appears to be phylogenetically related to *Chlorovibrissea*, and close to an unnamed taxon from New Zealand with similar blue-green, hairy apothecia, but with very different ascospores (Johnston 2021). These taxa are in *Helotiales* but with no clear family relationship. The taxonomic placement of *Aeruginoscyphus* is in *Helotiales*, *Leotiomycetidae*, *Leotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

References

Dixon JR. 1974 – *Chlorosplenium* and its segregates. I. Introduction and the genus *Chlorosplenium*. Mycotaxon 1, 65–104.

Dougoud R. 2012 – *Aeruginoscyphus*, un nouveau genre pour *Peziza sericea* (*Helotiales*, *Hyaloscyphaceae*). Ascomycete.org 4(1), 1–4.

Johnston PR. 2021 – *Chlorovibrissea sensu* Sandoval-Leiva et al. 2014 is polyphyletic. Manaaki Whenua – Landcare Research Datastore.

Entry by
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Note 1181 *Amylocarpus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Amylocarpus Curr.

Amylocarpus was introduced by Currey (1859) as monotypic genus to accommodate *A. encephaloides* Curr. *Amylocarpus encephaloides* was found on wood in intertidal marine habitats. This genus is characterized by an enclosed, globose ascoma. The asci are clavate with a short stem. The ascospores are globular and hyaline with long delicate sharp rays on the surface. The asexual morph has not been observed. Based on ITS sequence, Johnston et al. (2019) tentatively placed the genus in *Helotiaceae*, and this has been confirmed using data extracted from the JGI genome Amynec1 (Hagestad et al. 2021), see Johnston (2022). The taxonomic placement of *Amylocarpus* is in *Helotiaceae*, *Helotiales*, *Leotiomycetes*, and *Ascomycota*.

References

Currey F. 1859. – On the existence of amorphous starch in a new tuberaceous fungus. proceedings of the Royal Society of London 9, 119–123.

Hagestad OC, Hou L, Andersen JH, Hansen EH et al. 2021– Genomic characterization of three marine fungi, including *Emericellopsis atlantica* sp. nov. with signatures of a generalist lifestyle and marine biomass degradation. IMA Fungus 12(1), 1–23.

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Note 1182 *Angelina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Angelina Fr.

Angelina is known from a single species, *A. rufescens*, a saprobe found on dead wood of *Quercus* and *Castanea*. Karakehian et al. (2014) showed that the genus is in *Rhytismatales*. Its relationship within the order is poorly resolved, perhaps reflecting that it has some morphological features atypical for the order (Karakehian et al. 2014).

Reference

Karakehian JM, LoBuglio KF, Pfister DH. 2014 – Placement of the genus *Angelina* within *Rhytismatales* and observations of *Angelina rufescens*. Mycologia 106, 154–162.

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Note 1183 *Apiculospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Apiculospora Wijayaw., Camporesi, A.J.L. Phillips & K.D. Hyde

Apiculospora was introduced by Wijayawardene et al. (2016) to accommodate *A. spartii* Wijayaw, Camporesi, A.J.L. Phillips & K.D. Hyde as the type species based on the morphological characteristics and phylogenetic analysis of ITS, SSU and LSU sequence data. *Apiculospora penniseti* A. Karunarathna & C.H. Kuo is the second species that is placed in this genus. The type species was isolated from dead branches of *Spartium junceum* in Italy (Wijayawardene et al. 2021b). The sexual morph was not observed. Conidiomata are unilocular and subglobose. Conidiogenous cells are subcylindrical to ovoid. This saprobic genus has distinctive, 1-septate, apiculate conidia with a thick, dark, central septum. Karunarathna et al. (2021) showed the genus can be placed in *Pezizellaceae*, *Helotiales*, *Leotiomycetes* based on phylogenetic analysis of rDNA sequence data.

References

Karunarathna A, Działak P, Jayawardena RS, Karunarathna SC et al. 2021 – A novel addition to the *Pezizellaceae* (*Rhytismatales*, *Ascomycota*). Phytotaxa 480, 251–261.

Wijayawardene NN, Hyde KD, Wanasinghe DN, Papizadeh M et al. 2016 – Taxonomy and phylogeny of dematiaceous *coelomycetes*. Fungal Diversity 77(1), 1–316.

Wijayawardene NN, Phillips AJ, Tibpromma S, Dai DQ et al. 2021b – Looking for the undiscovered asexual taxa: Case studies from lesser studied life modes and habitats. Mycosphere 12(1), 1290–1333.

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Note 1184 *Arachnoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Arachnoscypha Boud.

The type species, *Arachnoscypha aranea*, has been treated as *Arachnopeziza* by some authors, based on morphological similarity of the apothecial hairs and subiculum-like hyphae at the base (see Kosonen et al. 2021). Kosonen et al. (2021) showed the traditional concept of *Arachnopeziza* to be polyphyletic, with *A. aranea* phylogenetically distant to *Arachnopezizaceae*. These authors considered the basal hyphae to be anchoring hyphae, rather than a subiculum as is characteristic for *Arachnopeziza*. It has a sister relationship to *Polydesmia*, amongst the basal clades of *Helotiales*.

Reference

Kosonen T, Huhtinen S, Hansen K. 2021 – Taxonomy and systematics of *Hyaloscyphaceae* and *Arachnopezizaceae*. Persoonia 46(1), 26–62.

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Note 1185 *Dimorphospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dimorphospora Tubaki

Dimorphospora is a monotypic genus of aquatic hyphomycete fungi. The ex-type culture of the type species *D. foliicola*, CBS 221.59, has only rDNA sequences available but the ITS sequence places it in *Gelatinodiscaceae* with strong support (Johnston et al. 2019). The type species has been linked to a sexual state (Abdullah et al. 1981), but whether the type specimen of the putative sexual state genetically matches the type culture of *D. foliicola* is not known. The GenBank ITS accessions identified as *D. foliicola* represent three different species (plus another accession that is a contaminating *Geotrichum* sp.), amongst these the type culture CBS 221.59 is unique, although all three species fall within *Gelatinodiscaceae* (unpubl. data).

References

Abdullah SK, Descals E, Webster J. 1981 – Teleomorphs of three aquatic hyphomycetes. Transactions of the British Mycological Society 77, 475–483.

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification for the *Leotiomycetes*. IMA Fungus 10, 1.

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Note 1186 *Endoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Endoscypha Syd.

Endoscypha is a monotypic genus, a pathogen endemic to New Zealand, causing a leaf spot of *Dracophyllum*. rDNA and mtSSU sequences from voucher specimen PDD 102231 from the type locality and host, place this genus in *Helotiaceae*, close to *Hymenotorrendiella* (Johnston et al. 2019, Grupe et al. 2022).

References

Grupe AC, Smith ME, Weier A, Healy R et al. 2022 – Two new species of *Phaeohelotium* (*Leotiomycetes*: *Helotiaceae*) from Chile and their putative ectomycorrhizal status. Fungal Systematics and Evolution 10, 231–249.

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification for the *Leotiomycetes*. IMA Fungus 10, 1.

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Note 1187 *Fuscolachnum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fuscolachnum J.H. Haines

Fuscolachnum is polyphyletic, the type species *F. pteridii* is in a clade with several other fern-inhabiting fungi, including *Scolecolachnum pteridii* (Quijada et al. 2022a). Other putative *Fuscolachnum* species, *F. misellum* on *Rubus* and *F.* cf. *misellum* on *Ribes*, form a clade with *Venturiocistella*. Based on an ITS + LSU analysis, both of the *Fuscolachnum* clades belong in *Hyphodiscaeae* (Quijada et al. 2022a).

Reference

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1188 *Gamarada*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gamarada D.J. Midgley & Tran-Dinh

Known only from sterile cultures, the monotypic *Gamarada*, type species *G. debralockiae*, is a widely distributed ericoid mycorrhizal fungus in Australia. Based on DNA sequencing, other unnamed species occur through the Asia-Pacific region (Quijada et al. 2022a). DNA sequencing places *Gamarada* in *Hyphodiscaceae*, forming a sister relationship with *Glutinomyces* (Quijada et al. 2022a, Johnston 2022).

References

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1189 *Geniculospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Geniculospora Sv. Nilsson ex Marvanová & Sv. Nilsson

Geniculospora, known only from its asexual state, is one of the aquatic hyphomycetes in *Leotiomycetes*. DNA sequences are not available for the type species of *Geniculospora*, *G. inflata*, but cultures identified as *G. grandis* in the CBS database (GenBank MH861735, culture CBS 261.84) and by Baschien et al. (2013; GenBank GQ411354, voucher UMB-176.01) are phylogenetically similar, have been accepted as authentic for the genus by several authors, and belong in *Tricladiaceae* (Johnston & Baschien 2020).

References

Baschien C, Tsui CKM, Gulis V, Szewzyk U et al. 2013 – The molecular phylogeny of aquatic hyphomycetes with affinity to the *Leotiomycetes*. Fungal Biology 117, 660–672.

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6, 233–242.

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Note 1190 *Graddonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

***Graddonia* (**Bres.) Dennis

A specimen identified as the type species of *Graddonia*, *G. coracina* (GenBank JQ256423, voucher ILLS 60491), is strongly supported as forming a basal clade within *Tricladiaceae* (Johnston & Baschien 2020). Known only from its sexual morph, the lifestyle of this fungus is typical for *Tricladiaceae*, reported from wet habitats (Gminder 1993). The sessile apothecia have an excipular structure similar to that found in other *Tricladiaceae* (Dennis 1955) but the asci are reportedly nonamyloid as in the terrestrial *Cudoniella acicularis*, with which it forms a supported clade, which raises the question as to whether *Graddonia* should be taken as a synonym of *Cudoniella*.

References

Dennis RWG. 1955 – Two proposed new genera of *Helotiales*. Kew Bulletin 10, 359–362.

Gminder A. 1993 – *Graddonia coracina* (Bresadola) Dennis. Rheinland-Pfälzisches Pilzjournal 3, 104–107.

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6, 233–242.

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Note 1191 *Pseudopolyplosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudopolyplosphaeria J.F. Zhang, Y.Y. Chen & Jian K. Liu

Zhang et al. (2023a) erected the monotypic genus *Pseudopolyplosphaeria* to accommodate *Pseudopolyplosphaeria guizhouensis* J.F. Zhang, Y.Y. Chen & Jian K. Liu based on phylogeny (LSU, ITS, SSU, *tef1-α*, *rpb2*, and *tub* sequence data) and morphology. The type species was collected on the dead bamboo culms in China. In the sexual morph, ascostromata are immersed, solitary, scattered, and have four to six locules with gregarious and subglobose ascomata. Asci are eight-spored, bitunicate, fissitunicate, and clavate which contain fusiform, two-celled, and bi- to tri-seriate ascospores. The asexual morph has not been observed. Phylogenetically, *Pseudopolyplosphaeria* formed a sister cluster to the *Aquatisphaeria* and *Ernakulamia*. However, it differentiates from other genera in the *Tetraplosphaeriaceae* due to its ascostromata that contain multiple ascomata.

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122(1), 1–60.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

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Note 1192 *Neodictyospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodictyospora J.F. Zhang, Jian K. Liu & K.D. Hyde

Morphologically and phylogenetically (using LSU, *tef1-α*, and *rpb2* sequence data), the monotypic genus *Neodictyospora* (*Tubeufiaceae*, *Tubeufiales*, *Pezizomycotina*) was established to accommodate *Neodictyospora karstii* J.F. Zhang, Jian K. Liu & K.D. Hyde (Zhang et al. 2023a). The type species was discovered on the dead culm of an unidentified herbaceous plant in China. In this genus, ascomata are superficial, globose to subglobose, setaceous, and coriaceous. The pseudoparaphyses are branched in the hamathecium. Asci are eight-spored, bitunicate, and fissitunicate. Ascospores are fasciculate, hyaline, and nine-septate. The asexual form has not been observed. Phylogenetically (LSU, ITS, SSU, *tef1-α*, *rpb2*, and *tub* sequence datasets), *Neodictyospora* formed a sister clade to *Camporesiomyces*. *Neodictyospora* resembles *Camporesiomyces* and *Dictyospora*. *Neodictyospora* can be differentiated from *Dictyospora* by ascospore shapes. Additionally, *Camporesiomyces* differs from *Neodictyospora* by having multi-loculate ascomata which produce cylindrical ascospores (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 202a3 – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122(1), 1–60.

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(Edited by **Kevin D. Hyde**)

Note 1193 *Leptosphaerioides*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leptosphaerioides J.F. Zhang, Jian K. Liu & K.D. Hyde

The monotypic genus *Leptosphaerioides* was introduced by Zhang et al. (2023a) to accommodate *Leptosphaerioides guizhouensis* J.F. Zhang, Jian K. Liu & K.D. Hyde based on morphological characteristics and phylogenetic analysis using LSU, ITS, and SSU sequence data. In the new genus, the ascomata are black, scattered, globose to subglobose, and glabrous, which comprise branched pseudoparaphyses. The asci are eight-spored, bitunicate, and fissitunicate with fusiform, hyaline, and two-celled ascospores. The asexual morph has not been observed. *Leptosphaerioides guizhouensis* was isolated from the dead branches of unidentified wood in China. *Leptosphaerioides* resembles *Leptosphaeria* by the shape of the ascomata and asci, but *Leptosphaerioides* differs from *Leptosphaeria* by having one-septate, hyaline, and fusoid ascospores. Phylogenetically, both genera are distant from each other (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122(1), 1–60.

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Note 1194 *Cerradopsora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cerradopsora Ebinghaus & Dianese

Ebinghaus et al. (2023b) introduced *Cerradopsora* (*Phakopsoraceae*, *Pucciniales*, *Pucciniomycotina*) to accommodate *Cerradopsora rossmaniae* (Dianese, L.T.P. Santos & D.J. Tessmann) Ebinghaus & Dianese as the type species using morphological characteristics and phylogeny (SSU, LSU, and *co3* sequence data). The type species was isolated from the living leaves of *Campomanesia adamantium* in Brazil. This genus includes two species, namely *Cerradopsora rossmaniae* (Dianese, L.T.P. Santos & D.J. Tessmann) Ebinghaus & Dianese and *Cerradopsora hennenii* (Dianese & L.T.P. Santos) Ebinghaus & Dianese. *Cerradopsora hennenii* was isolated from the living leaves of *Qualea multiflora* in Brazil. In this genus, spermogonia and aecia have not been observed. Uredinia are erumpent with reniform-urediniospores. The paraphyses are thick-walled and incurved. Also, the telia are one-celled, sessile, and immersed (Ebinghaus et al. 2023b).

Reference

Ebinghaus M, Martins JM, Dos Santos MD. 2023b – *Cerradopsora*, a new genus of neotropical rust fungi. Mycologia 115(6), 802–812.

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(Edited by **Kevin D. Hyde**)

Note 1195 *Neochrosporium*

Web links: Index Fungorum, Facesoffungi, MycoBank

Neochrosporium R.P. Liu, Meng Zhang & Y.H. Geng

The monotypic genus *Neochrosporium* was established to accommodate *Neochrosporium camelliae-sinensis* R.P. Liu, Meng Zhang & Y.H. Geng based on morphology and phylogeny using ITS and LSU sequence data, which was isolated from the leaves of *Camellia sinensis* in China (Liang et al. 2023). The taxonomic placement of *Neochrosporium* is in an uncertain position in *Pleosporales*. In the phylogenetic tree with combined sequences of ITS and LSU datasets, *Neochrosporium* formed a sister clade to *Ochrocladosporium*. *Neochrosporium* and *Ochrocladosporium* differ from each other by the morphology of colony and conidial forms. Furthermore, *Neochrosporium camelliae-sinensis* is distinguished from all similar cladosporium-like hyphomycetes by its white colonies on PDA, and the absence of ramoconidia. In *Neochrosporium camelliae-sinensis,* conidiophores are micronematous with monophialidic integrated, subcylindrical to doliifor and smooth conidiogenous cells. Conidia are aseptate, oval, and thin-walled. The sexual morph has not been observed (Liang et al. 2023).

Reference

Liang LY, Liu RP, Ma QZ, Cao JY et al. 2023– *Neochrosporium camelliae-sinensis* gen. & sp. nov. from tea in China. Mycotaxon 137(4), 813–819.

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(Edited by **Kevin D. Hyde**)

Note 1196 *Pseudomultiseptospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudomultiseptospora Phookamsak, Rajeshk., Karun. & Wijayaw.

The monotypic genus *Pseudomultiseptospora* was established by Senanayake et al. (2023) to accommodate *Pseudomultiseptospora thysanolaenae* (Phook., Ariyaw. & K.D. Hyde) Phookamsak, Rajeshk., Karun. & Wijayaw. based on morphology and phylogeny (SSU, LSU, and *tef1-α* sequence data). This species was isolated from a dead leaf sheath of *Thysanolaena maxima* in Thailand. In this genus, only the sexual form has been observed. The ascomata are scattered, immersed, uni-loculate, and globose to subglobose. The hamathecium is composed of dense and cellular pseudoparaphyses. The asci are eight-spored, bitunicate, fissitunicate which consist of fusiform, septate, smooth-walled ascospores, with a mucilaginous sheath. The taxonomic classification of *Pseudomultiseptospora* within the order *Pleosporales* is uncertain. *Pseudomultiseptospora* shares morphological characteristics with *Multiseptospora*, but *P. thysanolaenae* is differentiated from *Multiseptospora thalandica* by larger ascomata, asci, and ascospores as well as glabrous ascostromata, and brown ascospores, and less ascospore septation. The combined analysis of LSU and *tef1-α* sequence data has shown that the new genus is distant from *Multiseptospora* (Senanayake et al. 2023).

Reference

Senanayake IC, Rossi W, Leonardi M, Weir A et al. 2023 – Fungal diversity notes 1611–1716: taxonomic and phylogenetic contributions on fungal genera and species emphasis in south China. Fungal Diversity 12, 1–243.

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(Edited by **Kevin D. Hyde**)

Note 1197 *Pseudorepetophragma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudorepetophragma Phookamsak, Bhat & Hongsanan

The monotypic genus *Pseudorepetophragma* was erected by Hongsanan et al. (2023) based on morphology and phylogeny (ITS and LSU sequence data). The type species is *Pseudorepetophragma zygopetali* (O.L. Pereira, Meir. Silva & R.F. Castañeda) Phookamsak, Bhat & Hongsanan, which was isolated from sooty blotch on living leaves of *Zygopetalum mackayi* in China. Only the sexual morph has been observed. The hyphae are septate, branched, and dark brown. Conidiophores are macronematous, mononematous, simple, erect, and septate, which contain aremonoblastic, enteroblastic, and integrated conidiogenous cells. Conidia are solitary, cylindrical to obclavate, septate, with schizolytic secession conidial. Phylogenetically, *Pseudorepetophragma* formed a sister cluster to *Stomiopeltis* and *Chaetothyrina* using ITS and LSU sequence data. *Pseudorepetophragma* resembles *Repetophragma zygopetali* but differs in its integrated and monoblastic percurrent structure, with irregularly spaced conidiogenous cells having undulating or uneven apices after each conidial release (Hongsanan et al. 2023b).

Reference

Hongsanan S, Phookamsak R, Bhat DJ, Wanasinghe DN et al. 2023b – Exploring ascomycete diversity in Yunnan, China I: resolving ambiguous taxa in *Phaeothecoidiellaceae* and investigating conservation implications of fungi. Front Cell Infect Microbiol 13.

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Note 1198 *Pseudostomiopeltis*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudostomiopeltis Phookamsak & Hongsanan

Pseudostomiopeltis was established to accommodate *Pseudostomiopeltis xishuangbannaensis* Phookamsak, Hongsanan, Wanas. & Bhat as the type species by morphology and phylogeny (using ITS and LSU sequence data) (Hongsanan et al. 2023b). Another species is *Pseudostomiopeltis phyllanthi* (Jayasiri, E.B.G. Jones & K.D. Hyde) Phookamsak & Hongsanan. Both sexual and asexual morphs have been observed. The mycelium is absent in both sexual and asexual structures. Ascomata are thyriothecial, black, solitary, gregarious, and superficial. The hamathecium is without pseudoparaphyses. Asci are four-spored, bitunicate, and fissitunicate, with hyaline, asymmetric, obovoid to ellipsoid and one-septate ascospores. Conidiomata are thyriothecial, superficial, scattered, and uniloculate. Conidiophores are reduced to conidiogenous cells which are hyaline, enteroblastic, phialidic, and smooth-walled. Conidia are solitary, aseptate, smooth-walled, hyaline, and ellipsoidal to oblong. *Pseudostomiopeltis* formed a sister clade to *Stomiopeltis* by phylogenetic analysis using ITS and LSU sequence data. The type species was found on dead leaves of *Dicotyledonae* in China. The members of this genus are epiphytic or saprobic on leaves and fruits. *Pseudostomiopeltis xishuangbannaensis* resembles *Stomiopeltis syzygii*, but it differs from *Stomiopeltis syzygii* in sporulation in vitro and the shape and size of conidia. The phylogenetic positions of *Stomiopeltis* and its connections with other genera are still uncertain. Further sequence data and morphological investigations are necessary to validate the classification of *Stomiopeltis* (Hongsanan et al. 2023b).

Reference

Hongsanan S, Phookamsak R, Bhat DJ, Wanasinghe DN et al. 2023b – Exploring ascomycete diversity in Yunnan, China I: resolving ambiguous taxa in *Phaeothecoidiellaceae* and investigating conservation implications of fungi. Frontiers in Cellular and Infection Microbiology 13.

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Note 1199 *Neonematogonum*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neonematogonum Crous & Akulov

The monotypic genus *Neonematogonum* was established by Crous et al. (2023b) to accommodate *Neonematogonum carpinicola* Crous & Akulov based on morphological characteristics and phylogenetic analysis (ITS, LSU, *rpb2*, and *tub2* sequences). This new genus was established solely with an asexual morph. In this genus, conidiophores are erect, unbranched, subcylindrical, and pale brown. Conidia are in unbranched chains, aseptate, pale brown, and smooth-walled. This genus involves primary and secondary conidia. The type species was isolated from the dead branches of *Carpinus betulus* in Ukraine. *Neonematogonum* shares morphological similarities with *Nematogonum*, but differs in having nodose conidiophores and being obligately fungicolous, unable to grow in culture without the host fungus. Phylogenetically, *Neonematogonum* is closely related to genera in the order *Helotiales*, despite being distinct from them (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51(1), 280–417.

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(Edited by **Kevin D. Hyde**)

Note 1200 *Intumescentia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Intumescentia H.L. Si, R.L. Chang, T. Bose & Y.C. Wang

Si et al. (2023) introduced *Intumescentia* under *Teratosphaeriaceae* to accommodate four endolichenic species based on morphology and phylogenetic analyses using LSU, ITS, *act*, *cmdA*, *rpb2*, and *tef1-α* sequence data. This genus was typified by *Intumescentia tinctorum* H.L. Si, R.L. Chang, T. Bose & Y.C. Wang. Other species of the new genus *Intumescentia* including *I. ceratinae* H.L. Si, R.L. Chang, T. Bose & Y.C. Wang, *I. pseudolivetorum* H.L. Si, R.L. Chang, T. Bose & Y.C. Wang, *Intumescentia tinctorum* H.L. Si, R.L. Chang, T. Bose & Y.C. Wang, and *Intumescentia vitii* H.L. Si, R.L. Chang, T. Bose & Y.C. Wang. The type species was isolated from *Parmotrema tinctorum* in China. In the genus *Intumescentia*, the hyphae are septate, multi-guttulate, and branched. Conidial cells are catenulate, 3-8 or more in a chain, and caducous. The conidia are columnar to doliiform, and dark brown. The sexual morph was not seen. Phylogenetically, *Intumescentia* formed a sister clade with *Acidiella* and *Xenopenidiella* using LSU, ITS, *act*, *cmdA*, *rpb2*, and *tef1-α* sequence data. *Intumescentia* exhibits notable morphological differences when compared to closely related genera *Acidiella*, *Araucasphaeria*, and *Xenopenidiella*. In contrast to *Intumescentia*, *Acidiella* and *Xenopenidiella* produce distinct mitospores. *Acidiella* forms puffed and truncate arthroconidia, while *Xenopenidiella* generates branched chains of verruculose conidia that are ellipsoid to cylindrical-oblong and brown. *Araucasphaeria* is distinguished by its production of sexual spores. Taxa from the *Acidiella*, *Araucasphaeria*, and *Xenopenidiella* genera have a faster growth rate than *Intumescentia* (Si et al. 2023).

Reference

Si H, Wang Y, Liu Y, Li S et al. 2023 – Fungal Diversity Associated with Thirty-Eight Lichen Species Revealed a New Genus of Endolichenic Fungi, *Intumescentia* gen. nov. (*Teratosphaeriaceae*). Journal of Fungi 9(4), 423.

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(Edited by **Kevin D. Hyde**)

Note 1201 *Neobelonopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neobelonopsis Itagaki & Hosoya

In 2023, Itagaki & Hosoya established the genus *Neobelonopsis* designating *Neobelonopsis multiguttata* as its type species, supported by both morphology and phylogenetic analyses incorporating LSU, *rpb1*, and ITS sequence data. The type species was isolated from decaying culms of *Sasa kurilensis* in Japan. The new genus comprises nine accepted species. In the sexual form, apothecia are dispersed to clustered, appearing superficial, flat to concave, and sessile. The outer excipulum exhibits a texture ranging from globulose to angular, that is non-gelatinous and lacks crystals or exudates. Asci are cylindrical clavate, and eight-spored. Ascospores are ellipsoid to fusiform, thin-walled, and hyaline. Conidiogenesis follows a phialidic pattern, resembling that observed in *Phialocephala* or *Cadophora*, if it occurs. *Loramyces* and *Ombrophila* formed a sister clade with *Neobelonopsis* based on phylogenetic analyses using LSU, *rpb1*, and ITS sequence data. *Neobelonopsis* is distinguished from closely related genera such as *Belonopsis*, *Trichobelonium*, and *Mollisia* by distinct morphological traits. The etymology of the genus name is derived from its morphological resemblance to the genus *Belonopsis*. *Neobelonopsis* is distinguished from *Belonopsis* through its superficial apothecia, which can emerge from a dark-hued hyphal mass, presenting as dark spots on the surface and appearing flattened in cross-section. The receptacle is entirely brownish, and there are no crystals present in the medullary excipulum. In comparison to *Trichobelonium*, *Neobelonopsis* lacks crystals in the medullary excipulum and does not have anchoring hyphae that connect the basal apothecia and subiculum. It differs from *Mollisia* due to its longer ascospores with (0–)1–3 septa, the stark contrast in color between the white hymenium and dark receptacle, and its preference for graminicolous habitats like the culms of *Sasa* spp. and *Miscanthus sinensis* (Itagaki & Hosoya 2023).

Reference

Itagaki H, Hosoya T. 2023 – A new genus *Neobelonopsis* and two new species of *Trichobelonium* (*Helotiales, Ascomycota*) discovered mainly from poaceous grasses native to Asia in Japan. MycoKeys 99, 45.

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(Edited by **Kevin D. Hyde**)

Note 1202 *Nothoramularia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoramularia Crous, J. Kruse & U. Braun

Crous et al. (2023a) introduced *Nothoramularia* under *Acarosporaceae* to accommodate *Nothoramularia ragnhildianicola* (J. Kruse & U. Braun) Crous, J. Kruse & U. Braun as the type species based on morphology and phylogenetic analyses using LSU and ITS sequence data. The type species was identified on *Ragnhildiana ferruginea* and is known to be parasitic *on Artemisia vulgaris* in Germany. In the new genus *Nothoramularia*, the mycelium is hyaline and is constructed of branched, hyaline, septate, and smooth hyphae. Conidiophores are solitary, lateral, and erect and usually aseptate and reduced to conidiogenous cells. Conidia are ellipsoid-ovoid, fusiform, subcylindrical, aseptate or one-septate, thin-walled, hyaline, and minute. Phylogenetically, *Nothoramularia* formed a sister clade with three genera *Neoacrodotiella*, *Vanderaaea*, and *Cytosporella* based on LSU sequence data (Crous et al. 2023a).

Reference

Crous PW, Akulov A, Balashov S, Boers J et al. 2023a – New and interesting fungi. 6. Fungal Systematics and Evolution 11(1), 109–156.

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Note 1203 *Oleaginea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Oleaginea J. Ma & Y.Z. Lu

Liang et al. (2023) introduced the monotypic genus *Oleaginea* with *Oleaginea sichuanensis* W.L. Li & Jian K. Liu as the type species based on morphology and phylogenetic analyses usingLSU, ITS, *tef1-α*, and *rpb2* sequence data. The type species was found on the dead branches of *Olea europaea* in China. The asexual morph has not been documented. In the sexual morph, ascomata are uniloculate, globose to subglobose, coriaceous, papillate, and ostiolate. The hamathecium is filiform, unbranched, septate, hyaline, and smooth. Asci are eight-spored, bitunicate, fissitunicate, and clavate. Ascospores are biseriate, fusiform to ellipsoid, hyaline, septate, and smooth-walled. *Oleaginea* distinguishes itself from other genera in the *Lophiostomataceae* due to its hyaline, one-septate ascospores that are broadly fusiform to ellipsoid, without a mucilaginous sheath or terminal appendages. In a phylogenetic analysis utilizing ITS, LSU, *tef1-α*, and *rpb2* sequence data, *Oleaginea* was found to form a sister clade to the genus *Dimorphiopsis*. However, distinct morphological differences are observed among the species within these respective clades (Liang et al. 2023).

Reference

Liang RR, Dissanayake AJ, Liu JK. 2023 – Mycosphere Notes 413–448: *Dothideomycetes* associated with woody oil plants in China. Mycosphere 14(1), 1436–1529.

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Note 1204 *Perennihirschioporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Perennihirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou

Zhou et al. (2023a) introduced *Perennihirschioporus* within *Hirschioporaceae* (*Hymenochaetales*, *Agaricomycetes*. *Basidiomycota*) typified by *P. perennis* (Y.C. Dai & H.S. Yuan) Y.C. Dai, Yuan Yuan & Meng Zhou. *Perennihirschioporus* is distinguished from *Hirschioporus* Donk., by producing perennial basidiomata and differs from other genera among *Trichaptum sensu lato* by having large, perennial, brown basidiomata with a glabrous pileal surface when mature, mostly irpicoid, daedaleoid to lamellate hymenophores, yellowish skeletal hyphae, small basidiospores (< 6 µm in length), and occurrence in pantropical areas (Zhou et al. 2023a). This genus has been reported from Costa Rica, Malaysia, China, Brazil, Venezuela, Mexico and French Guiana (Zhou et al. 2023a). It is commonly found in angiosperm forests in pantropical areas, generally in semi-arid climatic regions, and causes white rot (Zhou et al. 2023a). *Perennihirschioporus* accommodates five accepted species, and molecular analyses of the multi-locus dataset (ITS, LSU, SSU, and *tef1-α* sequences) have confirmed that the genus belongs to a monophyletic clade that is basal to *Hirschioporaceae* (Zhou et al. 2023a).

Reference

Zhou M, Dai YC, Vlasák J, Liu HG et al. 2023a – Updated systematics of *Trichaptum* s.l. (*Hymenochaetales, Basidiomycota*). Mycosphere 14(1), 815–917.

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Note 1205 *Chalarosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chalarosphaeria W.P. Wu & Y.Z. Diao

A monotypic genus *Chalarosphaeria* was defined based on *C. breviclavata* (Nag Raj & W.B. Kendr.) W.P. Wu & Y.Z. Diao as its type species (Wu & Diao 2023). This classification was determined by assessing morphological traits and a phylogenetic analysis encompassing SSU, LSU, and ITS sequence data. Phylogenetically, *Chaetosphaeria* and *Paragaeumannomyces*, two closely related genera are separated from *Chalarosphaeria*. *Paragaeumannomyces* differs from *Chalarosphaeria* by having filiform or cylindrical ascospores accompanied by Obeliospora-like anamorphs. *Chaetosphaeria* differs from *Chalarosphaeria* by having one-septate ascospores and *Chloridium* anamorphs with wet spore mass in the type species. The examined type species was isolated from dead branches of an unidentified plant and on the rotten wood of *Betula* sp. in China. Furthermore, *Chalarosphaeria breviclavata* (=*Chalara breviclavata* Nag Raj & W.B. Kendr) is a saprobtic fungus inhabiting deceased branches across diverse tree species. Its distribution encompasses regions in Asia, Central America, Europe, and North America. (Wu & Diao 2023). Both sexual and asexual morphs have been observed. In the asexual morph, conidiophores are solitary, simple, cylindrical to subcylindrical, septate, and smooth-walled. Conidiogenous cells are integrated, phialidic, subcylindrical, and smooth-walled. Conidia are hyaline, aseptate, guttulate, and smooth-walled. In the sexual morph, ascomata are perithecial, superficial, subglobose, and smooth-walled. Asci are thin-walled and cylindrical to clavate with hyaline and septate paraphyses. Ascospores are fusiform to elongate fusiform, hyaline, and guttulate (Wu & Diao 2023). The taxonomic placement of this genus is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, *Pezizomycotina*, and the members are saprobes on dead plant material (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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Note 1206 *Chloridiopsiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chloridiopsiella Réblová

Réblová & Nekvindová (2023) introduced the monotypic genus *Chloridiopsiella*, assigning *C. preussii* (W. Gams & Hol.Jech.) Réblová as its type species based on comprehensive phylogenetic analysis of ITS, LSU, *tef1-α*, and *rpb2* sequence data alongside morphological characteristics. In the asexual morph of the genus, conidiophores are macronematous, mononematous, solitary, scattered, erect, and unbranched. Conidiogenous cells are monophialidic, integrated, and subcylindrical. Conidia are oblong to obovate to long-cuneiform, hyaline, aseptate, and smooth-walled. Chlamydospores are absent. The sexual morph has not been observed. *Chloridiopsiella* formed a sister clade with *Chloridiopsis* based on phylogenetic analysis with ITS, LSU, *tef1-α*, and *rpb2* sequences. The genus is distinct from *Chloridiopsis* by having a single layer of conidiophores, and oblong to obovate to long-cuneiform conidia. *Chloridiopsis preussii* was isolated from decaying wood (*Taxus baccata*) as a saprobe in the Netherlands and on decaying wood in Germany (Réblová & Nekvindová 2023). The taxonomic placement of this genus is in *Vermiculariopsiellaceae*, *Vermiculariopsiellales*, and *Sordariomycetes*.

Reference

Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in the *Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106, 199–258.

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Note 1207 *Cyanoporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cyanoporus Y.C. Dai, W.L. Mao & Yuan Yuan

Based on morphological and phylogenetic analyses of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data, Mao et al. (2023b) introduced *Cyanoporus* under *Polyporaceae* (*Polyporales*, *Agaricomytes*, *Basidiomycota*) to accommodate *Cyanoporus fuligo* (Berk. & Broome) Y. C. Dai, W.L. Mao & Yuan Yuan, and *C. camptogrammus* (Pat.) Y.C. Dai, W.L. Mao & Yuan Yuan, previously classified as *Grammothele fuligo* and *Porogramme camptogrammus*, respectively (Patouillard 1913, Ryvarden 1979). The type species is *Cyanoporus fuligo*. *Cyanoporus* is characterized by its annual, resupinate, adnate, and corky to coriaceous basidium; bluish gray to dark blue pore surface; dimitic hyphal system with clamped generative hyphae and skeletal hyphae IKI–, CB–; hyaline, thin-walled, smooth and ellipsoid basidiospores; typically found on monocotyledons, causing white rot (Mao et al. 2023b). The molecular analyses of a multi-locus dataset (ITS, LSU, *tef1-α*, *rpb1*, and *rpb2*) revealed that *Cyanoporus* formed a distinct clade closely related to genera *Epithele*, *Grammothele*, *Porogramme*, and *Theleporus*. Additionally, divergence time estimation indicated a well-supported lineage that diverged 62.1 million years ago (Mao et al. 2023b). Subsequent research could focus on collecting more samples to thoroughly characterize the diversity and improve the systematic position of *Cyanoporus* (Mao et al. 2023b).

References

Mao WL, Wu YD, Liu HG, Yuan Y et al. 2023b – A contribution to *Porogramme* (*Polyporaceae*, *Agaricomycetes*) and related genera. IMA Fungus 14, 5.

Patouillard NT. 1913 – Quelques champignons du Tonkin. Bulletin de la Société Mycologique de France 29, 206–228.

Ryvarden L. 1979 – *Porogamme* and related genera. Transactions of the British Mycological Society 73, 9–19.

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Note 1208 *Aquabispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aquabispora J. Yang, E.B.G. Jones & K.D. Hyde

Based on the morphological characteristics and molecular analyses of LSU, SSU, *tef1-α*, and *rpb2* sequence data, *Aquabispora* was introduced by Yang et al. (2023b) and typified with *A. setosa*. The genus is placed within *Savoryellaceae* (*Savoryellales*, *Sordariomycetes*, *Ascomycota*). The sexual morph is characterized by perithecial, papillate, and dark-pigmented ascomata with lanceolate setae scattered on their coriaceous walls. Paraphyses are abundant, persistent, and septate. Asci are stipitate and broadly cylindrical to clavate. The apex is round or papillate with a non-amyloid apical apparatus with a central pore. Each ascus contains two muriform ascospores, mostly surrounded by a mucilaginous sheath. Ascospores are hyaline at early stages and turn brown in maturity (Yang et al. 2023b). *Aquabispora* resembles *Boerlagiomyces* in the morphology of ascomata and ascospores but differs by having two-spored asci (Yang et al. 2023b). Apart from *Aquabispora setosa*, *Aquabispora* comprises two other species, *Aquabispora websteri* and *A. grandisporus*, which were previously classified under *Boerlagiomyces*. All three species were isolated from decaying wood submerged in freshwater habitats (Shearer & Crane 1995, Stanley & Hyde 1997, Yang et al. 2023b).

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Note 1209 Aciculomyces

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Aciculomyces Torres-Garcia, Gené & Dania García

Based on analysis of combined ITS, and LSU sequence data, Torres-Garcia et al. (2023a) introduced the monotypic genus, *Aciculomyces* under *Herpotrichiellaceae* (*Chaetothytiales*, *Eurotiomycetes*, *Ascomycota*) to accommodate the type species, *A. restrictus* Torres-Garcia, Gené & Dania García, which was collected from the fluvial sediments of Llobregat River in Spain The genus shares some similar morphological characters with *Ramichloridium* and *Rhinocladiella*, especially in its conidiogenous shape (Arzanlou et al. 2007, Torres-Garcia et al. 2023a). *Ramichloridium* is accepted in *Mycosphaerellaceae* whereas *Rhinocladiella* species are phylogenetically unrelated to *Aciculomyces* and placed in *Herpotrichiellaceae*. However, *Aciculomyces* formed an unsupported clade with the *Atrokylindriopsis setulosa* in phylogeny. In contrast, the morphology of *Aciculomyces* differs from *Atrokylindriopsis* in the production of subhyaline, one-celled conidia from sympodial and denticulate conidiogenous cells, while *Atrokylindriopsis* produce pigmented, transversally septate and setulate conidia from phialidic conidiogenous cells (Ma et al. 2015, Torres-Garcia et al. 2023a).

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Note 1210 *Ajigaurospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ajigaurospora E. Azevedo, P. Correia & M.F.

Correia et al. (2023) introduced *Ajigaurospora* to accommodate *A. pseudopulchella* (≡ *Corollospora pseudopulchella*) based on phylogeny (LSU, ITS, and SSU sequence data) and morphological characters. *Ajigaurospora* is a monotypic, marine, and saprobic genus belonging to *Halosphaeriaceae* (*Microascales*, *Sordariomycetes*, *Ascomycota*). *Corollospora* has been reconsidered as a cryptic taxon and has caused taxonomic confusion. Thus, 10 genera have been introduced to accommodate the corollospora-like clade. The pairwise distances of *Ajigaurospora* from other taxa were confirmed through molecular analyses of LSU, ITS, and SSU, revealing 15–16% differences in ITS and 6% in LSU (Correia et al. 2023). *Ajigaurospora* is characterized by black, carbonaceous ascomata with a two-layered peridium and papilla. Asci are fusiform to ellipsoidal and early deliquescent, containing eight fusiform, slender, and hyaline ascospores. The ascospores have 7–11 septa with attenuate apices towards both ends and lack polar spines. The asexual morph has not been determined. In addition to the molecular distance, *Ajigaurospora* differs from other *Corollospora* species in the morphology of smooth-surfaced ascomata and in the dimensions and number of septa of fusiform ascospores with attenuate apices (Correia et al. 2023). The genus has a worldwide distribution, isolated from India, Cuba, Denmark, Japan, Mexico, South Africa, and Thailand (Nakagiri 1987, Gonzalez et al. 2001b, Steinke & Lubke 2003, Jones et al. 2006, Borse et al. 2013, Sémon-Legrá et al. 2014, Jones & Pang 2021, Correia et al. 2023).

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Note 1211 *Allomusicillium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Allomusicillium L.W. Hou, L. Cai & Crous

The monotypic genus *Allomusicillium* was introduced by Hou et al. (2023) to accommodate *A. domschii* (W. Gams) L.W. Hou, L. Cai & Crous. This species was originally named *Acremonium domschii* W. Gams (Gams 1971), but based on phylogenetic analysis, it is not classified as a member of *Acremonium*. Multi-locus phylogenetic analyses (LSU, ITS, *rpb2*, and *tef1-α*) supported *Allomusicillium* as the basal genus to the clade containing *Musicillium* and *Paramusicillium*, in *Plectosphaerellaceae*, *Glomerellales*. *Allomusicillium* is characterized by the basitonously branched conidiophores, commonly proliferating repeatedly sympodially, bearing conidiogenous cells mono- or polyphialidic, often with conspicuous periclinal thickening and cylindrical collarette. The conidia are aseptate, ellipsoidal, short cylindrical, with slightly apiculate hilum at bases and obtuse apices, straight, hyaline, smooth-walled, eguttulate, arranged in long chains, collapsing as conidial heads. The sexual morph has not been observed. The type species was reported as a mycophilic species, and isolated from *Inonotus obliquus* (*Hymenochaetaceae*, *Agaricomycetes*).

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Note 1212 *Austroacremonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Austroacremonium Y.P. Tan, Sbaraini & E. Lacey

Tan et al. (2023) introduced the new genus *Austroacremonium* within *Nectriaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate a distinct phylogenetic lineage represented by a single specimen. The genus is typified with *A. gemini* Y.P. Tan, Sbaraini & E. Lacey, which was isolated from rotten wood in Queensland (Australia), and distinguished from the genera *Paracremonium* and *Xenoacremonium* based on the phylogenetic analysis of ITS and LSU sequence data (Tan et al. 2023). Molecular analyses of the multi-locus dataset (ITS, LSU, and *rpb2*) showed a moderately supported sister relationship to the anamorphic genus, *Paracremonium*. Although the authors referred to the genus as acremonium-like, its morphological characteristics could not be fully assessed due to the lack of provided data in the original description (Tan et al. 2023).

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Note 1213 *Caligospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Caligospora Réblová

Réblová & Nekvindová (2023) established *Caligospora* to accommodate *C. dilabens* (Réblová & W. Gams) Réblová (basionym: *Chaetosphaeria dilabens* Réblová & W. Gams) as the type species, based on morphology and phylogenetic analysis (ITS, LSU, and *tef1-α* sequence data). In the asexual morph, the conidiophores are macronematous, mononematous, solitary, erect, and unbranched. The conidiogenous cells are monophialidic, terminal, and integrated with aseptate and smooth conidia, while chlamydospores are not present. The perithecia are superficial and globose to subglobose with two-layered walls. In the sexual morph, the asci are unitunicate, cylindrical-clavate, and 8-spored, with fusiform and hyaline ascospores. The type species was isolated from the stem of *Bambusa* sp. in Japan. The second species, *C. pannosa*, was isolated from the roots of *Theobroma cacao* in Brazil. *Caligospora* shows a close relationship with *Caliciastrum* and *Craspedodidymum elatum* based on phylogenetic analysis ITS, LSU, *rpb2*, and *tef1-α* sequence data (Réblová & Nekvindová 2023). *Caliciastrum* is distinguished from other genera of *Chaetosphaeriaceae* by its septate and bicolorous ascospores, cup-shaped setose ascomata, and chloridium-like asexual form (Réblová & Nekvindová 2023). The taxonomic placement of this genus is in *Chaetosphaeriaceae*, *Chaetosphaeriales*, and *Ascomycota*.

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Note 1214 *Coniothyrioides*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Coniothyrioides Wijes., M.S. Calabon, E.B.G. Jones & K.D. Hyde

Coniothyrioides was established in *Coniothyriaceae* (*Pleosporales*, *Dothideomycetes*) to accommodate a new saprobic species, that was collected from submerged decaying wood in salt marsh ecosystems in Thailand, based on morphology and phylogenetic analysis using ITS, LSU, and SSU sequence data (Wijesinghe et al. 2023a). *Coniothyrioides* is a monotypic genus and it is typified by *C. thailandica* (Wijesinghe et al. 2023a). This genus is described by its asexual morph characteristics, including black, conspicuous pycnidia and ostiolate, globose to subglobose conidiomata. Brown setae with a hyaline apex observed on the outer layers of the conidiomata wall. The ellipsoidal to obovoid conidia are aseptate, initially hyaline, and become pale brown to dark brown over time (Wijesinghe et al. 2023a). Several *Coniothyrium*-like taxa show similar conidial characteristics to *Coniothyrioides* including *Coniothyrium* and *Neoconiothyrium*. However, phylogenetically, *Coniothyrioides* forms a distinct lineage from both *Coniothyrium* and *Neoconiothyrium* (Wijesinghe et al. 2023a).

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Note 1215 *Cystidioporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Cystidioporia B.K. Cui & Xing Ji

This monotypic genus originated from *Perenniporia* Murrill, and was typified by *Cystidioporia piceicola* (Y.C. Dai) B.K. Cui & Xing Ji. *Cystidioporia* is characterized by resupinate basidiomata with slightly dextrinoid and cyanophilous skeletal hyphae, the presence of thick-walled cystidia, and thick-walled, oblong-ellipsoid, truncate, slightly dextrinoid, and cyanophilous basidiospores (Ji et al. 2023a). In terms of the ecology and geographical distribution of the genus, the specimens of *C. piceicola* are found on fallen trunks of *Picea* D. Don and *Abies* D. Don ex Loudon species in boreal forests (near the Himalayan mountains) in southwestern China (Dai et al. 2002a, Ji et al. 2023a). According to molecular analysis of the multi-locus dataset (ITS, LSU, SSU, *tef1-α*, *tub1*), *Cystidioporia* forms a monophyletic group closely related to *Truncospora* Pilát, *Rhizoperenniporia* B.K. Cui & Xing Ji and *Perenniporiopsis* C.L. Zhao in the "Core polyporoid clade" (Ji et al. 2023a). However, these three genera are differentiated from *Cystidioporia* by their hymenium without thick-walled cystidia (Decock et al. 2011, Wu et al. 2017, Ji et al. 2023a). Additionally, *Truncospora* and *Perenniporiopsis* have pileate basidiomata, and *Rhyzoperenniporia* presents basidiomata with rhizomorphs (Decock et al. 2011, Wu et al. 2017, Ji et al. 2023a). From a nomenclatural and taxonomic point of view, *Cystidioporia* is placed in *Polyporaceae* and, *Polyporales* (Ji et al. 2023a).

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Note 1216 *Dematosporites*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Dematosporites V.D. Kapgate & Wanjari ex R.K. Saxena, V.D. Kapgate & P.M. Kirk

The new monotypic genus, *Dematosporites* was introduced to accommodate *D. mahabalei* V.D. Kapgate & Wanjari ex R.K. Saxena, V.D. Kapgate & P.M. Kirk as a single fossil mitosporic species found on plant remains (fruit and leaf of an unknown leguminous host) in India (Kapgate & Wanjari 2014, Saxena et al. 2023). Although originally described as a hyphomycete, according to the preserved fungal structures, the genus corresponds to a coelomycetous asexual morph, with a parasitic lifestyle. The main diagnostic features of this fossil *Ascomycota* genus are the stromatic, dark brown, multilocular conidiomata, with the locules at one level, separated by vertical columns of dark pseudoparenchyma, with no distinguishable conidiophores. Conidiogenous cells are short cylindrical, discrete, and ovate, cylindrical or irregular, brown conidia, with 1 or 2 transverse, longitudinal, and thick septa. The morphology of conidiomata resembles that of *Cytoplea orientalis* Sutton (Sutton 1980), while conidia look like some in *Dichomera* (Saxena et al. 2023).

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Note 1217 Erysiphacites

Web-links: Index Fungorum, Facesoffungi, MycoBank

Erysiphacites V.D. Kapgate ex R.K. Saxena, V.D. Kapgate & P.K. Kirk

Kapgate (2016) introduced *Erysiphacites* (fossil *Ascomycota*) within *Erysiphaceae* (*Leotiomycetes*, *Ascomycota*) to describe a new species based on morphological analyses of a fossil specimen found in India. This monotypic genus was typified by *E. nambudirii* V.D. Kapgate ex R.K. Saxena, V.D. Kapgate & P.K. Kirk. However, the genus and species names were invalidly published by Kapgate (2016). Later, records and identifiers were added to validate the fossil specimen by Saxena et al. (2023). Mainly due to its slender unbranched, unicellular conidiophores consisting of a basal cell and short terminal generative cell, this fossil genus is comparable with *Erysiphe*. Differences with *Phyllactinia* and *Sphaeroteca* arise from these latter genera having globular conidiophores. *Erysiphacites* was found on pieces of petrified cherts from the Late Cretaceous (Nambudiri & Chitaley 1991, Kapgate 2016), and using modern ecological requirements as a paleoecological and climatological analog could be possible for the fossil species to be a non-aquatic-obligatory-parasite on a wide range of angiosperms and several herbaceous plants, probably under mild weather conditions (Nguyen et al. 2016, Põlme et al. 2020, Hsiao et al. 2022).

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Note 1218 Garethelia

Web-links: Index Fungorum, Facesoffungi, MycoBank

Garethelia E. Azevedo, P. Correia & M.F. Caeiro

Garethelia was introduced as a new genus to accommodate *G. parvula* as the type species based on morphological characteristics and molecular data (Correia et al. 2023). A combined analysis of ITS, LSU, and SSU revealed that *Garethelia* isolates form a distinct, well-supported clade separate from other *Corollospora* species (Correia et al. 2023). *Garethelia* species display filiform, C, or U-shaped conidia that are 4–8-septate, distinguishing them from other *Corollospora* species (Jones et al. 2009, Abdel-Wahab et al. 2010). Initially, *Garethelia* was introduced as *Halosigmoidea parvula* (Jones et al. 2009). It was later synonymized under *Corollospora parvula* due to their similarities in the asexual morphs (Réblová et al. 2016). However, further analysis of molecular data showed that *Corollospora parvula* is not phylogenetically related to the type species clade of *Corollospora*, thus necessitating the introduction of *Garethelia* as a new genus. *Garethelia parvula* was reported as a marine taxon associated with the seagrass *Zostera marina*, the seaweed *Polysiphonia* species and *Ceramium* species in Germany, and sea foam in Japan (Jones et al. 2009).

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Note 1219 *Heterocorticium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heterocorticium S.H. He, T. Nie & Yue Li

Heterocorticium was proposed by Li et al. (2023e) with *H. bambusicola* S.H. He, T. Nie & Yue Li, as the type species from China. The genus is characterized by the resupinate coriaceous basidiomes with smooth, pigmented hymenophores, a monomitic hyphal system with clamped hyphae, and cylindrical or ellipsoid basidiospores. Li et al. (2023e) introduce the genus using morphological and molecular data, including a combined DNA data set of ITS and LSU sequences.

Heterocorticium is similar to *Exidiopsis*, *Alloexidiopsis*, and *Sclerotrema*, However, in the phylogenetic reconstruction, *Heterocorticium* formed a distinct lineage and did not show a close relationship with those genera (Wells 1961, Wells & Raitviir 1977, Malysheva & Spirin 2017, Liu et al. 2022f). The genus currently has two accepted species *Heterocorticium bambusicola* and *H. latisporum* S.H. He, T. Nie & Yue Li, both from China and growing on bamboo and dead angiosperm branches. The taxonomic placement of *Heterocorticium* is in *Auriculariaceae*, *Auriculariales*, *Agaricomycetes*, and *Basidiomycota* (Li et al. 2023e).

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Note 1220 *Honshuriella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Honshuriella P. Correia, E. Azevedo & M.F. Caeiro)

Correia et al. (2023) introduced the monotypic genus *Honshuriella* to accommodate *H. fusca* (Nakagiri & Tokura) P. Correia, E. Azevedo & M.F. Caeiro (initially named *Corollospora fusca* Nakagiri & Tokura) based on morphological characteristics and phylogeny using ITS and LSU sequence data. The type species, *H. fusca*, differs from *Corollospora* in having a three-layered peridium wall compared to *Corollospora fusca* which only has two layers. Furthermore, *Honshuriella* features such as distinctive ascospores which are large, muriform, ornamented with polar pines and contain longitudinal striations of melanin within a mesospore (Nakagiri & Tokura 1987, McKeown et al. 1996, Correia et al. 2023). These characteristics are not covered in the generic description of *Corollospora*, thereby justifying its placement in a new genus (Correia et al. 2023). Molecular data further support the morphological distinctions. Phylogenetic analyses of ITS and LSU sequences reveal that the isolates of *Honshuriella* form a well-supported clade (Correia et al. 2023). This shows that ITS is a necessary locus for species classification in corollospora-like taxa. *Honshuriella*. *fusca* is a marine fungus reported as a saprobe in wood and sand in Japan, Mexico, and South Africa (Nakagiri & Tokura 1987, Gonzalez et al. 2001b, Steinke & Lubke 2003). *Honshuriella fusca* is classified under *Halosphaeriaceae*, *Microascales* (Correia et al. 2023).

References

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McKeown TA, Moss ST, Jones EBG. 1996 – Ultrastructure of the melanized ascospores of *Corollospora fusca*. Canadian Journal of Botany 74, 60–66.

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Note 1221 *Keraliethelia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Keraliethelia P. Correia, E. Azevedo & M.F. Caeiro

Keraliethelia was introduced by Correia et al. (2023) to accommodate *K. pulchella*, (Kohlm., I. Schmidt & Nair) P. Correia, E. Azevedo & M.F. Caeiro based on morphology and phylogeny (ITS and LSU data sequences). The genus is placed in *Halosphaeriaceae*, *Microascales*, *Hypocreomycetidae*, *Sordariomycetes*, *Ascomycota* (Correia et al. 2023). This new monotypic genus is known by its sexual and asexual morphs. The sexual morph produces superficial, to immersed, carbonaceous, black, subglobose, papillate ascomata with an irregular surface. The peridium consists of two layers, with the outer layer composed of relatively globose cells and the inner layer consisting of elongated cells. Paraphyses are absent and the center of ascomata is occupied by cylindrical, fusiform, short-pedicellate, unitunicate asci. The asci deliquesce and liberate eight, hyaline, fusiform to slightly curved ascospores. The ascospores are 7-septate, constricted at each septum, and have blunt apexes. They have secondary appendages that develop from the outer layer of each spore. The asexual morph consists of hyaline and cylindrical conidiophores. The conidia are tetraradiate, multicellular, and hyaline to light brown, with dark and bulbous cells at the base and crowns bearing diverging arms (Correia et al. 2023). The above morphological characteristics show *K. pulchella* considerably different from other members of the genus *Corollospora* (Abdel-Wahab et al. 2009). More taxon sampling and additional loci from protein-coding genes in phylogenetic analysis are necessary to gain a comprehensive understanding of the genus *Keraliethelia* (Correia et al. 2023).Widely distributed on submerged wood and seafoam, USA, Australia, India, Baltic Sea, Denmark, Mexico, Cuba, Taiwan Island, Thailand, Portugal.

References

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Note 1222 *Luteoperenniporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Luteoperenniporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Luteoperenniporia* within *Polyporaceae* (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) segregated from *Perenniporia* Murrill. The latter has been described as a polyphyletic genus within the core polyporoid clade (Robledo et al. 2009, Zhao et al. 2013a). *Luteoperenniporia* was typified by *L. bannaensis* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji, a new combination from *Perenniporia bannaensis* B.K. Cui & C.L. Zhao. Both genera, *Luteoperenniporia* and *Perenniporia s. s.* are very similar, but *Luteoperenniporia* differs mainly by its buff-yellow to cinnamon-buff pore surfaces and non-truncate basidiospores. Furthermore, it differs from other genera within the core polyporoid clade by its resupinate basidiocarps with buff-yellow to cinnamon-buff pore surface, a dimitic hyphal system with weak to strong dextrinoid skeletal hyphae, cystidioles present, and thick-walled, ellipsoid, and non-truncate, dextrinoid basidiospores (Ji et al. 2023). Four species have been proposed in *Luteoperenniporia* (three new combinations have been formed from *Perenniporia*) based on morphological characteristics and molecular data of ITS, LSU, SSU, *tef1-α*, and *tub1* sequences. Molecular analyses of the above multi-locus sequence dataset show the species of *Luteoperenniporia* form a sister clade with *Perenniporia* s.s. (Ji et al. 2023).

References

Ji X, Sun YF, Wu DM, Gao N et al. 2023 − An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1223 *Nakagariella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nakagariella P. Correia, E. Azevedo & M.F. Caeiro

Nakagariella was introduced by Correia et al. (2023) as a monotypic genus to accommodate *N. filiformis* (Nakagiri) P. Correia, E. Azevedo & M.F. Caeiro based on the morphology and phylogenetic analysis. This genus is classified in *Halosphaeriaceae*, *Microascales*, *Sordariomycetes*. Only the sexual morph has been reported in this genus and it is saprobic and can be found in sandy beach environments on (Correia et al. 2023). *Nakagariella* is characterized by carbonaceous, superficial, solitary, and globose to sub-globose ascomata without paraphyses. The peridium consists of three layers: a flattened cell arrangement in the inner layer, a thick-walled cell structure in the outer layer, thin-walled, polygonal, or rounded cell structure in the middle layer. Asci are unitunicate, 8-spored, and show early deliquescing. Ascospores are multiseptate, filiform, hyaline, lacking polar spines, and featuring equatorial secondary appendages. *Nakagariella* was derived from the basionym, *Corollospora filiformis* Nakagiri. *Nakagariella* is distinguished from *Corollospora* (*C.*) (Nakagiri 1989) as the latter has a two-layered peridium, fusiform, or sub-ellipsoidal ascospores with polar spines (Correia et al. 2023). Based on ITS and LSU phylogenetic analysis placed *Nakagariella filiformis* in a distinct clade sister to *Keraliethelia*. *Distribution*: Japan, India, Thailand, Taiwan Island, South Africa, Sweden.

References

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Note 1224 *Neohypochnicium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neohypochnicium N. Maek. & R. Sugaw.

Maekawa et al. (2023) established the novel genus *Neohypochnicium* within *Polyporales* (*Basidiomycota*) to accommodate the species in *Hypochnicium sensu stricto*. *Hypochnicium* is polyphyletic, with *Hypochnicium* s. str. containing species with smooth basidiospores, and *Neohypochnicium* comprising species with both smooth and ornamented basidiospores (Maekawa et al. 2023). *Neohypochnicium* is typified by *N. perlongicystidiosum* N. Maek., Kogi & Norikura, and was found on the dead ranches of Angiospermae in Japan. The new genus was established based on morphology and phylogeny (ITS and LSU sequence data). *Neohypochnicium* is characterized by resupinate, effused, and adnate basidiomata with a smooth to odontoid hymenial surface. *Neohypochnicium* has a monomitic hyphal system with clamp connections at all septa. Cystidia are often present, aseptate, thin to thick-walled, enclosed, or outgrowth beyond the hymenial surface. Basidia are subclavate to suburniform, bearing 4-sterigmata and a basal clamp. Basidiospores are ellipsoid to subglobose, smooth, finely verrucose or finely echinulate, thick-walled, cyanophilous, and inamyloid (Maekawa et al. 2023). Based on morphological and phylogenetic analysis of ITS and LSU sequence data, two new species and 15 new combinations (11 species with ornamented basidiospores and four with smooth basidiospores) are established in *Neohypochnicium* (Maekawa et al. 2023).

Reference

Maekawa N, Sugawara R, Kogi H, Norikura S et al. 2023 − *Hypochnicium sensu lato* (*Polyporales*, *Basidiomycota*) from Japan, with descriptions of a new genus and three new species Mycoscience 64(1), 19−34.

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Note 1225 *Proxiovicillium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Proxiovicillium L.W. Hou, L. Cai & Crous

Proxiovicillium (*Bionectriaceae*, *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*) was introduced by Hou et al. (2023) to accommodate *P. blochii* as the type species. The genus was established based on morphological characteristics and the phylogeny of multiple gene regions (ITS, LSU, *rpb2*, and *tef1-α*) (Hou et al. 2023). The type species was isolated from human skin in the Netherlands. The other accepted species with molecular data in this genus is *P. lepidopterorum*. Phylogenetically, *Proxiovicillium* is a sister to *Ovicillium*, hence its name reflects the phylogenetic similarity. However, they are distinct. The conidia of *Proxiovicillium* spp. are typically arranged in interminable chains, while those of *Ovicillium* are clustered in huge globose to subglose conidial heads. Additionally, the conidia of *Proxiovicillium* spp. are aseptate, hyaline, thin- and smooth-walled, broadly ovoid or ellipsoid, and taper to apiculate bases, and obtuse apices. The sexual morph of *Proxiovicillium* has not yet been reported (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

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Note 1226 *Synchrospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Synchrospora T. Jung, Y. Balci, K. Broders & M. Horta Jung

The monotypic genus *Synchrospora* within *Peronosporaceae* (*Peronosporales*, *Peronosporomycetes*, *Stramenipila*) was introduced by Jung et al. (2023) to accommodate *S. medusiformis* T. Jung, Y. Balci, K. Broders, & I. Milenković based on phylogenetic analysis and morphology. *Synchrospora* is characterized by the production of numerous sporangia from a single sporangiophore apex. *Synchrospora medusiformis* is characterized by candelabra-like structures that extend long pedicels, giving rise to papillate allantoid to tubular sporangia. This synchronous formation results in a multi-sporangia structure that bears a remarkable resemblance to the shape of a medusa. The breeding system is homothallic. Phylogenetic analyses using sequences from ITS, LSU, and *tub*, and mitochondrial *cox1* and *cox2* genes placed *Synchrospora* at the base of a large cluster comprising all known *Peronosporaceae* genera (Jung et al. 2023). *Synchrospora medusiformis* was isolated from naturally fallen tree leaves in a tropical cloud forest in Panama, indicating an aerial lifestyle as a leaf and bark pathogen for this species. Further research is necessary to elucidate the true diversity and geographic distribution of this genus (Jung et al. 2023).

Reference

Jung T, Balci Y, Broders KD, Milenković I et al. 2023 – *Synchrospora* gen. nov., a new *Peronosporaceae* genus with aerial lifestyle from a natural cloud forest in Panama. Journal of Fungi 9, 517.

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Note 1227 *Basingstokeomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Basingstokeomyces Crous & Denman

Crous et al. (2023c) introduced *Basingstokeomyces* into *Vandijckellaceae* (*Helotiales*, *Leotiomycetes*, *Ascomycota*) to accommodate the monotypic species, *B. allii* Crous & Denman based on morphological characteristics and the multi-gene phylogenetic analyses of ITS, LSU, and *rpb2* sequence data. *Basingstokeomyces*, which was isolated from *Allium schoenoprasum* (*Amaryllidaceae*) in Britain, exhibits distinctive features, including penicillate conidiophores that form 2–4 terminal clusters featuring flat-tipped apices. Additionally, the terminal conidiogenous cells display several flat-tipped apices without noticeable thickening or darkening, and the chain conidia are observed to be aseptate (Crous et al. 2023c). This genus can be distinguished from its close relative *Vandijckella* by its penicillate conidiophores forming 2–4 terminal clusters with flat-tipped apices, in contrast to the simple conidiophores of the latter that produce monophialides, occurring solitarily and laterally on aerial hyphae (Crous et al. 2017b, 2023c).

References

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Crous PW, Wingfield MJ, Burgess TI, Carnegie AJ et al. 2017b – Fungal Planet description sheets: 625–715. Persoonia 39, 270–467.

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Note 1228 *Capillisphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Capillisphaeria Réblová

Réblová & Nekvindová (2023) introduced *Capillisphaeria* to accommodate *C. crustacea* as a monotypic species. This genus belongs to *Chaetosphaeriaceae* and phylogenetically (obtained from combined ITS, LSU and *tef1-α* sequence data) closely related to *Fusichloridium* and *Spicatispora* (Réblová & Nekvindová 2023). This genus has both sexual and asexual morphs. The sexual morph has astromatic, globose to subglobose, dark brown, setose, papillate, perithecial ascomata, periphysate ostiolar canals, a carbonaceous, two-layered peridium, branching anastomosing paraphyses, 8-spored unitunicate asci with cylindrical-clavate, short-stipitate apical rings, and hyaline cylindrical-fusiform and transversely septate ascospores (Réblová & Nekvindová 2023). The asexual morph has macronematous, mononematous conidiophores, cylindrical, unbranched, brown, monophialidic conidiogenous cells with percurrent proliferations, and cylindrical-clavate or ellipsoidal-oblong, hyaline, aseptate conidia, adhering in slimy heads (Réblová & Nekvindová 2023). *Chaetosphaeria crustacea* is similar to *Fusichloridium cylindrosporum* but can differ by conidiophores forming and conidia septate (Gams & Holubová- Jechová 1976, Réblová & Gams 1999). *Chaetosphaeria crustacea* shares striking similar morphology with *Curvichaeta curvispora*, but phylogenetic analyses identified them as separate genera, and they can be distinguished on their conidiogenous loci, conidia and ascomata (Réblová & Gams 1999, Réblová 2004, Réblová & Nekvindová 2023). The type species is well known as a saprobe on decaying wood of pine trees such as *Abies alba*, *Picea abies* and *Pinus sylvestris* from the Czech Republic, Finland, New Zealand and Ukraine (Réblová & Gams 1999, Réblová & Nekvindová 2023).

References

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Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in *the Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106, 199–258.

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Note 1229 *Citrinoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Citrinoporia B.K. Cui & Xing Ji

Citrinoporia (*Polyporales*, *Agaricomycetes*, *Basidiomycota*) was introduced by Ji et al. (2023) to accommodate two species segregated from the polyphyletic genera *Perenniporia* Murrill based on morphological characteristics and molecular data (ITS, LSU, SSU, and *tef1* sequences). *Citrinoporia* differs from the *Perenniporia* s. s. by its yellow pore surface and dimitic hyphal system. Additionally, it has dextrinoid, and cyanophilous shortly arboriform vegetative hyphae and ellipsoid, truncate, thick-walled, dextrinoid, cyanophilous basidiospores that distinguish it from other closest genera (Ji et al. 2023). *Citrinoporia corticola* mainly grows on trees of *Dipterocarpaceae* and *Citrinoporia citrinoalba* on trees of *Fagaceae* (Ji et al. 2023). Molecular analyses of the multi-locus dataset (ITS, LSU, SSU, *tef1-α*, and *tub1* sequences) show that the species of *Citrinoporia* form a well-resolved monophyletic clade distantly related to *Perenniporia* s.s. However, *Citrinoporia* was not typified and is therefore a Nom. inval., Art. 40.1 (Shenzhen).

References

Ji X, Sun YF, Wu DM, Gao N et al. 2023 − An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1230 *Pseudoniveomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoniveomyces Tasanathai, Noisripoom & Kobmoo

Pseudoniveomyces was erected in *Cordycipitaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate *P. blattae* Tasanathai, Noisripoom & Kobmoo as the type species based on morphology and phylogeny using ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* sequence data (Kobmoo et al. 2023). This genus comprises two species, both found in Thailand. *Pseudoniveomyces blattae* is a hyperparasite, and observed growing on insect fungal parasites of *Ophiocordyceps* on a cockroach. In contrast, *Pseudoniveomyces arachnovorum* is known to infect the egg sacs of an unidentified spider host. *Pseudoniveomyces* species are characterized by sporothrix-like anamorphs, producing both micro- and macroconidia (or type I and type II conidia, respectively), the latter typically fusoid. Additionally, the production of red diffusible pigments on culture distinguishes this genus from *Niveomyces* (Kobmoo et al. 2023). A multi-locus molecular phylogeny (ITS, LSU, *rpb1*, *rpb2*, and *tef1-α*) positioned *Pseudoniveomyces* as distantly related to

Niveomyces, being related and basal to *Gibellula*, *Hevansia*, and *Jenniferia* (Kobmoo et al. 2023). However, the latter genera differ from *Psudoniveomyces* by having distinct teleomorphs and producing either aspergillus-like (*Gibellula*), or akanthomyces-like (*Hevansia* and *Jenniferia*) anamorphs (Kepler et al. 2017, Mongkolsamrit et al. 2022).

References

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Mongkolsamrit S, Noisripoom W, Tasanathai K, Kobmoo N et al. 2022 – Comprehensive treatise of *Hevansia* and three new genera *Jenniferia*, *Parahevansia* and *Polystromomyces* on spiders in *Cordycipitaceae* from Thailand. MycoKeys 91, 113–149.

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Note 1231 *Tokurathelia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Tokurathelia M.F. Caeiro, E. Azevedo & P. Correia

The monotypic genus *Tokurathelia* was introduced by Correia et al. (2023) to accommodate *T. colossa* (Nakagiri and Tokura) M.F. Caeiro, E. Azevedo & P. Correia as the type species, based on morphology and molecular analyses using ITS and LSU sequence data. *Tokurathelia* is classified in *Halosphaeriaceae*, *Microascales*, *Sordariomycetes*. Only the sexual morph has been reported. *Tokurathelia* is saprobic on sand grainsand associated with wood and is characterized by carbonaceous, superficial, solitary, gregarious, and globose to sub-globose ascomata without paraphyses. The peridium consists of three layers. The inner layer is composed of a flattened cell arrangement, the medium layer is composed of polygonal and roundish cell structures and a thick-walled, and hyaline cell structure at the outer layer. Unitunicate asci are 8-spored, fusiform, thin-walled, and early deliquescing. Ascospores are multiseptate, fusiform, ellipsoidal, hyaline, and without polar spines. The secondary appendages are long, fibrous, and peritrichous. *Corollospora* differs from *Tokurathelia* by having a two-layered peridium, large ascospores with seven septa, and absence of polar spines. The type species is distributed in India, Japan, South Africa, Taiwan Island, Thailand and Malaysia (Correia et al. 2023).

Reference

Correia P, Azevedo E, Caeiro MF. 2023 – Redefining the genus *Corollospora* based on morphological and phylogenetic approaches. Journal of Fungi 8, 841–882.

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Note 1232 *Astrotestudinimyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Astrotestudinimyces C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed

Pratt et al. (2023) introduced *Astrotestudinimyces* within *Neocallimastigomycetes* (*Neocallimastigomycetes incertae sedis*, *Chytridiomycota*) to accommodate *A. divisus* C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed as the type species using morphological characteristics, physiological preferences, and phylogenetic analyses (LSU, ITS, and *rpb1* sequence data). The type species represents one of two genera of obligately anaerobic gut fungi in *Neocallimastigomycetes* and isolated from the dung of *Geochelone platynota*: in the USA. The other is *Testudinimyces gracilis* (Pratt et al. 2023). Multi-locus phylogenetic analyses (ITS, LSU, and *rpb1*) have confirmed that *Astrotestudinimyces* belongs to a monophyletic clade that is basal to the *Neocallimastigomycetes*, with *Testudinimyces gracilis* as its only close relative (Hanafy et al. 2020). *Astrotestudinimyces divisus* displays a broader temperature growth range than found in the anaerobic gut fungi found in mammalian hosts. This is consistent with the poikilothermic metabolism of its host. *Astrotestudinimyces divisus* has an optimal growth temperature of 39°C, in contrast to *T. gracilis*, which grows optimally at 30°C (but also has a broad temperature growth range) (Pratt et al. 2023). Growth of *A. divisus* in *in vitro* culture is unusual compared to all other anaerobic gut fungi (including, *T. gracilis*), in that it does not grow on glucose and cellulose (Griffith et al. 2009). However, it does grow well on fructose, mannose, cellobiose, inulin, and starch. In roll tube culture, *A. divisus* forms small pinpoint thalli, comprising a nucleated rhizomycelium with many branched and blunted rhizoids. Multiple elongated subglobose sporangia, originating from a single central swelling, are formed on each thallus. These release uniflagellate zoospores through an apical pore. The branched, blunted rhizoids of *A. divisus* and long zoospore flagellum distinguish it from *T. gracilis* (Pratt et al. 2023).

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Note 1233 *Agroathelia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Agroathelia Redhead & Mullineux

Redhead & Mullineux (2023) introduced *Agroathelia* following the study conducted by Song et al. (2016). *Agroathelia* was established to accommodate *A. rolfsii*, *A. delphinii*, and *A. coffeicola* as comb. nov, previously classified in *Athelia* within *Atheliales*. According to phylogenetic analysis with ITS and LSU sequence data, *Agroathelia* is placed within *Amylocorticiaceae*, *Amylocorticiales* (*Basidiomycota*), and is typified by *Agroathelia rolfsii* (Sacc.) Redhead & Mullineux 2023. Tu & Kimbrough (1978) described the sclerotia as varying in size, brownish with a “hyphal strand type ontogeny”. According to Redhead & Mullineux (2023), they consist of 4 zones, occasionally slightly stalked while vegetating. On surface view, the outer cortical cells of the sclerotia appear polyhedron-like. The hymenium is rarely observed in nature, and when present is whitish, resupinate, discontinuous, later becoming smooth and pellicular. Basidia are clavate to subcylindrical, with or lacking clamp connections. Basidiospores are ovoid to broadly elliptical, thin-walled, hyaline, smooth, and nonamyloid. Hyphae are compact and floccose, clamped, hyaline, and branching at the septa. Species of *Agroathelia* are facultative parasites causing wilt or blight on many angiosperm species in regions with warm climates. The type species, *Agroathelia rolfsii*, has a cosmopolitan distribution and causes southern-blight disease in an extensive host range of plants (Punja 1985). *Agroathelia coffeicola* causes target-spot disease of coffee and other tropical plants (Kirschner et al. 2018), while *A. delphinii* also causes southern-blight and its distribution is limited to regions of temperate climate, such as parts of China and in the Northern and Midwestern region of the United States (Xu et al. 2010). Symptoms include the production of abundant sclerotia, a mycelium enveloping the base of the plant stem, or infecting fallen seeds and fruits and living leaves in some hosts; In one species needle-like propagules are produced on leaves in addition to sclerotia (Redhead & Mullineux 2023).

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Note 1234 *Aurantioporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aurantioporia B.K. Cui & Xing Ji

Aurantioporia was established by Ji et al. (2023) to accommodate *A. bambusicola* as the type species based on morphology and phylogenetic analyses of ITS, LSU, SSU, and *tef1-α* sequence data. The two species belong to this genus are orange wood rotting species, *A. bambusicola* (≡ *Perenniporia bambusicola*) and *A. aurantiaca* (≡ *Pyrofomes aurantiacus*) (Choeyklin et al. 2009). As Ji et al. (2023) pointed out, the genus differs from others (*Perenniporia* s.l.) by having species that produce resupinate and rhizomorphic basidiomata with an orange pore surface. Also, microscopically, a dimitic hyphal system with arboriform skeletal hyphae, becoming violet in KOH, and ellipsoid, truncate, and slightly dextrinoid basidiospores are features important to recognize it. Molecular analyses performed by Ji et al. (2023), using a multi-locus dataset (ITS, nLSU, mtSSU, *tef1-α*, and *tub1*), recovered *Aurantioporia* as a clade distantly related to *Perenniporia* s.s., and closely related to *Citrinoporia* B.K. Cui & Xing Ji, another new genus described in Ji et al. (2023). *Citrinoporia* also presents species with colored basidiomata, as the name suggests, being mainly differentiated from *Aurantioporia* by not having rhizomorphs. They have the same overall morphology, yellow to orange pore surface, dimitic hyphal system, with ellipsoid and truncate basidiospores. *Aurantioporia* seems to be a tropical distributed genus, since *A. bambusicola* is recorded for Southeast Asia (Thailand as the type locality) and *A. aurantiaca* for Neotropics (French Guyana as the type locality), the former with most of the records associated with the name *Perenniporia aurantiaca* (Decock & Ryvarden 1999), another homotic synonym.

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Note 1235 *Appressodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Appressodiscus Aptroot & L.A. Santos

Appressodiscus was introduced as a new genus within *Ramalinaceae* (*Lecanorales*, *Lecanoromycetes*, *Ascomycota*) to accommodate two species, *A. badius* (Aptroot) Aptroot and *A. isidiobadius* Aptroot & L.A. Santos, both species exclusively found in Brazil (Aptroot et al. 2023). The genus is typified by *A. isidiobadius*. Both species are lichenized with trebouxioid photobiont and grow on tree bark in various forests. The genus is characterized by a crustose thallus (in one species with isidia), flat apothecia, prosoplectenchymatous excipulum, 8-spored asci with small ocular chamber, and simple and hyaline ascospores. The genus forms a sister clade with *Phyllopsora* (Aptroot et al. 2023). The relationships between the genera within *Ramalinaceae* are generally poorly supported (Kistenich et al. 2018, Orange 2020, Kukwa et al. 2023), even in multi-locus phylogenies, but sequencing of additional molecular markers for *Appressodiscus* may help to establish its position within the family.

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Note 1236 *Neoveronaea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoveronaea L. Qiu, K. Zhang, R.F. Castañeda & Jian Ma

Qiu et al. (2023) introduced *Neoveronaea* within *Herpotrichiellaceae* (*Chaetothyriales*, *Eurotiomycetes*, *Ascomycota*) to accommodate *N. sinensis* L. Qiu, K. Zhang, R.F. Castañeda & Jian Ma, based on morphology and phylogenetic analysis. *Neoveronaea sinensis* is a saprobe that was isolated from dead branches on an unidentified angiosperm in China (Qiu et al. 2023). Only the asexual morph has been observed in this genus. *Neoveronaea* is characterized by macronematous, mononematous, erect or slightly flexuous, smooth, septate, cylindrical, and unbranched conidiophores that are brown to dark brown. The conidiogenous cells are polyblastic, integrated, terminated, and intercalary, sympodially extending with tiny denticles, and pale brown. Conidia are solitary, acropleugenous, obovoid to ellipsoidal, smooth, euseptate, and pale brown with schizolytic conidial secession. According to the multigene phylogeny (ITS and LSU), *Neoveronaea* formed a separate clade in *Herpotrichiellaceae* sister to *Exophiala*, *Veronaea*, *Minimelanolocus*, and *Thysanorea* (Qiu et al. 2023). *Neoveronaea* resembles *Veronaea*, however, *Veronaea* differs from *Neoveronaea* in having cicatrized conidiogenous cells and faintly pigmented, flattened, and thin scars. *Neoveronaea* also shares similar conidial ontogeny with other genera in *Herpotrichiellaceae*, *viz*. *Dactylaria*, *Minimelanolocus*, *Pleurophragmium*, *Rhodoveronaea*, and *Veranaeopsis* (Qiu et al. 2023). However, *Minimelanolocus* differs from *Neoveronaea* by inconspicuous or slightly prominent, narrow, and opaque conidiogenous cells and refractive to somewhat obscure conidiogenous loci (Qiu et al. 2023). *Dactylaria*, *Pleurophragmium*, *Rhodoveronaea*, and *Veranaeopsis* differ from *Neoveronaea* by terminal conidiogenous cells with prominent denticles (Qiu et al. 2023).

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Note 1237 *Pseudoniesslia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoniesslia L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced the monotypic genus *Pseudoniesslia* in *Pseudoniessliaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate *P. minutispora* (W. Gams et al.) L.W. Hou, L. Cai & Crous based on morphological and phylogenetic studies (Gams et al. 2019, Hou et al. 2023). It is distinguished from *Niesslia sensu stricto* due to its relatively long phialides, grouped on terminal whorls on top of short stalks, and the development of sporodochial conidiomata (Gams et al. 2019). *Pseudoniesslia* has been found in temperate Western Europe (Belgium, Germany, and the Netherlands), mostly isolated from bark and decaying wood of *Fagaceae*, *Oleaceae*, and *Salicaceae*, agricultural soil, and in association with *Auricularia auricula-judae* (*Basidiomycota*) (Hou et al. 2023). Although originally allocated in *Niesslia* based on morphological characters (Gams et al. 2019), the protologue of *N. minutispora* already suggested a distinct phylogenetic placement. This was recently confirmed through a multi-locus phylogenetic analysis (ITS, LSU, and *rpb2*), establishing it as a genetically distinct monophyletic lineage basal to *Chrysonectriaceae*, *Nectriaceae*, and *Neoacremoniaceae* (Hou et al. 2023).

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Note 1238 *Asperopilum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Asperopilum Spooner

Spooner (1987) established the genus *Asperopilum* for a fungus common on dead leaves of *Juncus* in Australia and New Zealand. Because of the rough-walled hairs on the apothecium, Spooner accepted the genus in *Hyaloscyphaceae*, a family that he used in a traditional sense that is now known to be phylogenetically unsupported. Recent DNA sequences from New Zealand material of this fungus (GenBank KP161272, OQ455039, OQ466403, OQ455014, OQ473171, OQ454993, OQ454961, OQ473137, voucher PDD 99993) included in multigene analyses of Johnston (2022) show that *Asperopilum* is *Lachnaceae* and phylogenetically close to *Lachnum*.

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Note 1239 *Austropezia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Austropezia Spooner

Austropezia was erected by Spooner (1987) for a single species common on dead palm fronds in New Zealand, *A. samuelsii*, originally described in *Eriopezia*. Spooner (1987) discussed several morphological differences between the two genera and later phylogenetic studies showed that *Eriopezia* (a member of *Arachnopezizaceae*) and *Austropezia* are phylogenetically distant (Johnston et al. 2019, suppl. Data Fig 2). *Austropezia samuelsii* is one of a group of phylogenetically related, unnamed species from New Zealand that have apothecia developed amongst well-developed subiculum-like hyphae, or covered with a clypeus-like layer when immature (Johnston 2020). These species belong in *Pezizellaceae* as currently treated by most authors, in a clade with *Mollisina* and *Phialina*, sister to the core *Pezizellaceae*.

References

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Note 1240 *Beskidomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Beskidomyces Czachura & Piątek

Beskidomyces was erected by Crous et al. (2023c) to accommodate *Beskidomyces laricis* Czachura & Piątek as monotypic species. *Beskidomyces* was isolated from resin of *Larix decidua* ssp. *polonica* (*Pinaceae*) in Poland (Crous et al. 2023c). *Beskidomyces laricis* produces intercalary or terminal macroconidia on hyphae or side branches, typical of other genera in *Pseudoeurotiaceae*, and microconidia from phialides with indistinct collarettes. Sexual morph not observed. A phylogenetic analysis based on ITS, LSU, *rpb2*, and *tef1-α* placed *B. laricis* on an isolated branch sister to a major clade containing *Geomyces*, *Gymnostellatospora*, *Ovadendron*, *Pseudogeomyces*, *Pseudogymnoascus*, and *Solomyces* (Crous et al. 2023c). This is the first record of a resinicolous *Thelebolales* species. The taxonomic placement of *Beskidomyces* is in *Pseudeurotiaceae*, *Thelebolales*, *Leotiomycetes*, and *Ascomycota*.

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Note 1241 *Bettsia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bettsia Skou

Bettsia was erected by Pitt et al. (2013) to accommodate *Bettsia alvei* (Betts) Skou as type species. *Bettsia* was isolated from pollen in honeycomb in Denmark. *Bettsia* was previously placed in *Ascosphaeraceae*, *Onygenales* based on its unusual, closed ascomata (Wijayawardene et al. 2022). Based on ITS sequence data, the ex-type culture of *Chrysosporium holmii* (= *Bettsia alvei*) is a sister to all other lineages of *Pseudeurotiaceae* and *Thelebolaceae*. Pitt et al. (2013) had recognised the polyphyletic nature of *Chrysosporium*, this reflected by differences in cultural morphology and growth rate. The type species *Bettsia alvei* produces the simplest closed ascoma, a unicellular cleistothecium (Quijada et al. 2022b). In addition, asexual morph includes solitary aleurioconidia (Pitt et al. 2013). The taxonomic placement of *Bettsia* (*Pseudeurotiaceae sensu lato*) is in *Thelebolales*, *Eurotiomycetes*, *Pezizomycotina*, and *Ascomycota*.

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Note 1242 *Bloxamia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bloxamia Berk. & Broome

Based on ITS sequences from a specimen identified as the type species of *Bloxamia*, *B. truncata*, Mitchell et al. (2022) showed *Bloxamiaceae* Locq. to be a synonym of *Pezizellaceae* and speculated that *Bloxamia* may be a synonym of *Calycina*. However, in a comprehensive survey of *Chalara*-like fungi, Wu & Diao (2023) accepted *Bloxamia* as a separate genus within *Pezizellaceae*. Wu & Diao (2023) reported that all *Calycina* species with *Bloxamia* asexual states were in a single strongly supported clade. If *Bloxamia* is accepted in this sense, *Calycina* as currently accepted would need to be split into four genera. Biologically, most of the described *Bloxamia* species are saprobic fungi on dead leaves and wood (Wu & Diao 2023).

References

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Note 1243 *Bloxamiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Bloxamiella W.P. Wu & Y.Z. Diao

Bloxamiella is a monotypic genus, the type species *Bloxamiella cyatheicola* a pathogen of ferns from Brazil (Guatimosim et al. 2016, as *Bloxamia cyatheicola*). Although, sharing sporodochial conidiomata with *Bloxamia*, *Bloxamiella cyatheicola* is phylogenetically distinct from *Bloxamia truncata*, the type species of *Bloxamia* (Wu & Diao 2023). *Bloxamiella* is characterized by a pleomorphic life cycle that includes apothecial, black, erumpent, hypophyllous teleomorph of discoid shape, consisting of the basal stroma of textura intricata, medullary excipulum of textura epidermoidea and hymenial elements composed of filiform hyaline paraphyses swollen at the tips, and subcylindrical to clavate 8-spored asci, with small euamyloid apical ring, arising from simple septa. Ascospores are fusiform, two-celled, with one cell slightly larger, biguttulate, hyaline, and smooth. The anamorphic phase of life cycle is sporodochial, amber-coloured, slimy, erumpent, and pathogenic on ferns. The whole group of *Leotiomycetes* with chalara-like genera are efficiently differentiated by a key using broad-scoped phenetic characters, viz. morphology, ecology, pigments, and physiology in axenic cultures based on anamorphic structures (Wu & Diao, 2023).

Bloxamiella is placed in *Pezizellaceae* (*Helotiales*, *Leotiomycetes*, *Ascomycota*), revealed by molecular analysis based on two separate rDNA region datasets: SSU and LSU, and ITS and LSU respectively (Wu & Diao, 2023).

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Note 1244 *Bulgariella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bulgariella P. Karst.

Based on multigene data from Iturriaga et al. (2017) the cosmopolitan, saprobic, wood-inhabiting discomycete *Bulgariella pulla* (type of the genus *Bulgariella*) is *Helotiaceae* (Johnston et al. 2019). It is basal within *Helotiaceae sensu stricto*, i.e., the monophyletic clade sister to *Pseudeurotiaceae* (Johnston 2022). Based on the synonymy in Iturriaga et al. (2017) the genus contains two named species.

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Note 1245 *Cadophora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cadophora Lagerb. & Melin

Cadophora is a polyphyletic genus, the phylogenetic structure reflecting the diversity of lifestyles within the genus (Maciá-Vicente et al. 2020). Of the two main clades these authors recognize, species within *Cadophora sensu stricto* (includes the type species *C. fastigiata*) are often associated with vascular staining, whereas the species in a second phylogenetically divergent clade are mostly found as endophytes of healthy roots, but with a few vascular staining species. Incorporating data from Maciá-Vicente et al. (2020) and Walsh et al. (2018) into the 15 gene dataset of Johnston et al (2019), *Cadophora sensu stricto* probably needs its own family, sister to *Drepanopezizaceae* and *Pyrenopezizaceae* (Johnston 2022, *Pyrenopezizaceae* as *Ploettnerulaceae*, *Cadophora* represented by *C. novi-eboraci* and *C. orientoamericana*). The root-inhabiting '*Cadophora*' species belong in *Pyrenopezizaceae* in a clade sister to the vascular staining '*C*'.

malorum. Based on teleomorph morphology, *Cadophora sensu stricto* cannot be distinguished from the sexual states of species in *Pyrenopezizaceae* (H.O. Baral, pers. comm.).

References

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Maciá-Vicente JG, Piepenbring M, Koukol O. 2020 – Brassicaceous roots as an unexpected diversity hot-spot of helotialean endophytes. IMA Fungus 11, 16.

Walsh E, Duan W, Mehdi M, Naphri K et al. 2018 – *Cadophora meredithiae* and *C. interclivum*, new species from roots of sedge and spruce in a western Canada subalpine forest. Mycologia 110, 201–214.

Entry by P.R. Johnston, Manaaki Whenua – Landcare Research, Private Bag 92170, Auckland 1142, New Zealand

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Note 1246 *Calycellinopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calycellinopsis W.Y. Zhuang

Calycellinopsis has a single species, *C. xishuangbanna*. It was originally described from dead petioles of an unidentified plant, and a later specimen (HMAS 187063) identified as the same species was collected on petioles of a plant tentatively identified as *Aralia chinensis* (Zhuang et al. 2010). Multiple genes sequenced from HMAS 187063 showed the genus belongs in *Cenangiaceae* (Johnston et al. 2019). The Johnston et al. (2019) analysis showed that it is closely related to a species described from New Zealand, *Cenangium colensoi* Berk. Based on the description in Zhuang et al. (2010) and images from PDD 112240 (https://scd.landcareresearch.co.nz/Specimen/PDD_112240), both species also share distinctive short, cylindric, hair-like elements around the margin of the apothecium. The two species are probably congeneric. Gómez-Zapata et al. (2021) placed *Calycellinopsis* and *Cenangium colensoi* in *Trochila*, although support for that relationship is not strong (Johnston 2022).

References

Gómez-Zapata PA, Haelewaters D, Quijada L, Pfister DH et al. 2021 – Notes on *Trochila* (*Ascomycota*, *Leotiomycetes*), with new species and combinations. Mycokeys 78, 21–47.

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Zhuang WY, Luo J, Zhao P. 2010 – The fungal genus *Calycellinopsis* belongs in *Helotiaceae* not *Dermateaceae*. Phytotaxa 3, 54–58.

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Note 1247 *Chalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chalara (Corda) Rabenh.

Based mostly on specimens from China, Wu & Diao (2023) revised the taxonomy of *Leotiomycetes* with *Chalara*-like asexual states. It has long been known that *Chalara* is polyphyletic, but a lack of reliable DNA sequences from the type species, *C. fusidioides*, has hampered efforts to clearly define the genus phylogenetically. Wu & Diao (2023) accepted *Chalara sensu stricto* to accommodate eight *Chalara*-like fungi (*Chalara africana*, *C. bambusicola*, *C. clidemiae*, *C. cylindrosperma*, *C. longiphora*, *C. platanicola* and *C. qinlingensis*) based on phylogenetic and morphological data. These species clustered as a strongly supported clade distinct from the other *Chalara*-like fungi in *Pezizellaceae*. *Chalara* s.s. is characterized by solitary and unbranched conidiophores, the terminal phialide consisting of a venter and a cylindrical collarette with deeply seated sporulating locus, and hyaline, aseptate, cylindrical conidia (Wu & Diao 2023). However, the type species, *C. fusidioides*, has no reliable DNA sequence data available, and the conclusions of Wu & Diao (2023) need confirmation following epitypification of *C. fusidioides*.

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119, 213–490.

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(Edited by **Maryam T. Noorabadi**)

Note 1248 *Chlorovibrissea*

Web-links: Index Fungorum, MycoBank, Facesoffungi, GenBank

Chlorovibrissea L.M. Kohn

Sandoval-Leiva et al. (2014) showed that *Chlorovibrissea* is phylogenetically distant from *Vibrissea*, based on a study of species from Australia, Chile, and New Zealand. This was confirmed by Zheng & Zhuang (2017) in their study describing a new species from China. With only rDNA sequences available for the genus, its position within *Helotiales* remains uncertain.

References

Sandoval-Leiva P, Carmarán CC, Park D, Romero AI et al. 2014 – Vibrisseaceous fungi from the southern hemisphere, including *Chlorovibrissea chilensis* (*Helotiales*, *incertae sedis*) sp. nov. Mycologia 106, 1159–1067.

Zheng H, Zhuang W. 2017 – *Chlorovibrissea korfii* sp. nov. from northern hemisphere and *Vibrissea flavovirens* new to China. MycoKeys 26, 1–11.

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Note 1249 *Ciliolarina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ciliolarina Svrček

Based on ITS sequences from specimens from *Pinus* from Europe identified as the type species *Ciliolarina laricina* (UNITE UDB034371) and as *Ciliolarina pinicola* (GenBank KY800411), this genus belongs in *Hamatocanthoscyphaceae* (unpubl. data). The small, often sessile apothecia with short, mostly encrusted hairs and forming on fallen coniferous wood and bark is both morphologically and in lifestyle similar to other *Hamatocanthoscyphaceae*. Huhtinen (1993) accepted six species in the genus, and a further species has since been added (Raitviir 2004).

References

Huhtinen S. 1993 – New or less known hyaloscyphaceous fungi from the Canadian timberline. Bibliotheca Mycologica 150, 93–103.

Raitviir A. 2004 – Revised Synopsis of the *Hyaloscyphaceae*. Scripta Mycologica 20, 1–133.

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Note 1250 *Clathrosphaerina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Clathrosphaerina Beverw.

Notes: *Clathrosphaerina* is an aeroaquatic fungus with distinctive clathrate, hollow conidia. Based on an ITS phylogeny including the ex-type culture of the type species *Clathrosphaerina zalewskii* (GenBank NR_159766, culture CBS 162.49) and the morphologically typical specimen ICMP 15322 (GenBank EF029222), *Clathrosphaerina* forms, along with the illegitimate *Psychrophila antarctica* (GenBank JZ001640, ex-type specimen) and the other *Psychrophila* species, a monophyletic clade sister to *Arachnopezizaceae* (Johnston et al. 2019, unpubl. data). A multigene analysis places *Psychrophila* in *Arachnopezizaceae*, although on a long branch and with low gene coverage (Johnston 2022). The sexual state of *Clathrosphaerina zalewskii* is described as lacking the subiculum characteristic of *Arachnopezizaceae* (Descals & Webster 1976, as *Hyaloscypha zalewskii*) and there are no reports of an aeroaquatic lifestyle or morphology amongst *Arachnopezizaceae*. With a lack of morphological support for a relationship with *Arachnopezizaceae* and less than ideal molecular data for *Clathrosphaerina* and *Psychrophila*, for now we leave them incertae sedis in *Helotiales*.

References

Descals E, Webster J. 1976 – *Hyaloscypha*: perfect state of *Clathrosphaerina zalewskii*. Transactions of the British Mycological Society 67, 525–528.

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Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA fungus 10, 1–22.

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Note 1251 *Claussenomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Claussenomyces Kirschst.

Bien et al. (2020) described *Vexillomyces*, from its asexual state alone. Following its description, Baral & Quijada (2020) used morphology and ITS sequence similarity to place some *Claussenomyces* species in *Vexillomyces*, so recognizing for the first time the sexual state of

Vexillomyces (*Tympanidaceae*). However, the morphology of the type species of *Claussenomyces*, *C. jahnianus*, is distinct from the *Vexillomyces* spp. (H.-O. Baral, unpubl. data) but with no DNA sequence data available, for now *Claussenomyces* remains *Leotiomycetes*, *incertae sedis*.

References

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Bien S, Kraus C, Damm U. 2020 – Novel collophorina-like genera and species from *Prunus* trees and vineyards in Germany**.** Persoonia 45(1), 46–67.

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Note 1252 *Cudoniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cudoniella Sacc.

The type species of *Cudoniella*, *C. queletii*, was accepted as a synonym of *C. acicularis* by Dennis (1964), following Boudier (1907). An ITS sequence from a specimen identified as *C. acicularis* (GenBank DQ202512, culture CBS 100273), places the genus in *Tricladiaceae* (Johnston & Baschien 2020).

References

Boudier É. 1907 – *Histoire et Classification des Discomycètes d'Europe*. Librairie des Sciences Naturelles, Paris.

Dennis RWG. 1964 – Remarks on the genus *Hymenoscyphus* S.F. Gray, with observations on sundry species referred by Saccardo and others to the genera *Helotium*, *Pezizella* or *Phialea*. Persoonia 3, 29–80.

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6(1), 233–242.

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Note 1253 *Curviclavula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Curviclavula G. Delgado, F.A. Fernández & A.N. Mill.

Curviclavula is a monotypic genus, the type specimen isolated into culture from air and forming complex dictyosporous conidia (Delgado et al. 2015). Only rDNA sequences are available for the genus (NG_067483 and NR_164230 from type culture CBS 138123), which place the genus in *Hamatocanthoscyphaceae* with strong support (unpubl. data).

Reference

Delgado G, Miller AN, Fernández FA. 2015 – *Curviclavula*, a new genus of anamorphic *Helotiales* (*Leotiomycetes*) isolated from air. Mycological Progress 14, 1–7.

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Note 1254 *Deltopyxis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Deltopyxis Baral & G. Marson

Deltopyxis is a monotypic genus based on *D. triangulispora* Baral & Marson (2013) which is known only from Europe, forming minute, black, cup-shaped ascomata on dead, dry wood and bark. The saccate, inamyloid asci are 64-spored, the ascospores more or less triangular in outline. Only rDNA sequences are available for the genus, a phylogeny based on the closest BLAST matches from the LSU sequence (OK142272) suggests a relationship with *Lecanoromycetes*, *Ostropomycetidae* (Baral et al. 2020).

Reference

Baral HO, Marson G. 2013 – *Deltopyxis triangulispora* gen. et sp. nov., a polysporous discomycete of unclear relationship. Andrias 19, 175–183, pl. 1–6.

Baral HO, Weber E, Marson G. 2020 – Monograph of *Orbiliomycetes* (*Ascomycota*) based on vital taxonomy. Part 1 and 2. Musee National d'Histoire Naturelle, Luxembourg, 1752.

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Note 1255 *Dematioscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dematioscypha Svrček

Dematioscypha is a saprobic fungus forming on wood, the type species generally found in association with a *Haplographium* asexual state (Huhtinen 1987). Multigene analyses place the genus incertae sedis within *Helotiales* (Kosonen et al. 2021, Johnston 2022).

References

Huhtinen S. 1987 – Taxonomic studies in the genera *Protounguicularia*, *Arachnopeziza* and *Dematioscypha*. Mycotaxon 30, 9–28.

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

Kosonen T, Huhtinen S, Hansen K. 2021 – Taxonomy and systematics of *Hyaloscyphaceae* and *Arachnopezizaceae*. Persoonia 46(1), 26–62.

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Note 1256 *Filosporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Filosporella Nawawi

Filosporella was introduced by Nawawi (1976) to accommodate *Filosporella aquatica* Nawawi as the type species. *Filosporella* is a genus of aquatic hyphomycetes from the tropics that originally was isolated from Malaysia. GenBank accessions identified as *Filosporella* fall into two phylogenetically distinct groups within *Leotiomycetes*, *Gelatinodiscaceae* and *Tricladiaceae* (Johnston & Baschien 2020). There is no genetic data available for the type species *F. aquatica*, meaning that the phylogenetic position of the genus remains uncertain. Morphology showed the genus can be placed *Helotiales* (Johnston & Baschien 2020).

References

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6(1), 233–242.
Nawawi A. 1976 – *Filosporella* gen. nov., an aquatic hyphomycete. Transactions of the British Mycological Society 67(1), 173–176.

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Note 1257 *Fulvoflamma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fulvoflamma Crous

Fulvoflamma eucalypti, the only species in the genus, was originally described from *Eucalyptus* litter from Spain (Crous et al. 2006). It has subsequently been detected from DNA samples from soil from the United States, Italy, and Japan (UNITE SHSH0977738.09FU, DOI: SH0977738.09FU). Although only rDNA sequences are available, the ITS sequence from the ex-type culture (GenBank DQ195779, voucher CPC 11243), clearly shows it to have a poorly resolved relationship amongst the orders at the base of the *Leotiomycetes*, close to *Phacidiales* and *Thelebolales*, with a sister relationship to the lichenicolous species *Epicladonia sandstedei* and *Epithamnolia xanthoriae* (unpubl. data).

Reference

Crous PW, Verkley GJM, Groenewald JZ. 2006 – *Eucalyptus* microfungi known from culture. 1. *Cladoriella* and *Fulvoflamma* genera nova, with notes on some other poorly known taxa. Studies in Mycology 55, 53–64.

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Note 1258 *Gelatinopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gelatinopsis Rambold & Triebel

The type species of *Gelatinopsis*, *G. geoglossi*, is a mycoparasite of *Geoglossum* and *Trichoglossum* (Rambold & Triebel 1990). There is no DNA sequence data available for *G. geoglossi*, but three other mycoparasitic species referred to *Gelatinopsis* do have DNA data available. Of these, *G. hysteropatellae* is in *Cordieritidaceae*, *G. fungicola* is in *Helicogoniaceae*, and *G. exidiophiala* has an uncertain position amongst the basal *Leotiomycetes* clades (unpubl.

data). The phylogenetic diversity of these taxa and lack of data for the type species means *Gelatinopsis* for now must be considered incertae sedis within *Leotiomycetes*.

Reference

Rambold G, Triebel D. 1990 – *Gelatinopsis*, *Geltingia* and *Phaeopyxis*: three helotialean genera with lichenicolous species. Notes from the Royal Botanical Garden Edinburgh 46, 375–389.

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Note 1259 ***Gorgomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gorgomyces M. Gonczol & Revay

Gorgomyces is known only from its asexual state, the two known species both with filiform, flexuous conidia with a large apical appendage (Gönczöl & Révay 1985, Roldan 1989). Based on ITS sequences from ex-type cultures, these species have a well-supported sister relationship with *Alatospora acuminata*, a fungus that belongs in the *Aotearoamyces* clade of Quijada et al. (2022b), this clade within *Leotiales*.

References

Gönczöl J, Révay A. 1985 – *Gorgomyces*, gen.nov., an unusual hyphomycete from terrestrial litter of Hungary. Nova Hedwigia 41, 453–461.
Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, Fungi). Biology 11(4), 583.
Roldan A. 1989 – A new addition to the genus *Gorgomyces*. Mycotaxon 34, 381–385.

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Note 1260 ***Halenospora***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Halenospora E.B.G. Jones

Halenospora is one of the hyphomycetes in *Leotiomycetes*. Known only from its asexual state, its conidia comprise irregular coils of globose, dark-walled cells. *Halenospora varia* is the type species, Jones et al. (2009) basing their new genus on DNA sequence data from ATCC 28788 (AF169303, MF5849 ex Bills et al. 1999, incorrectly cited as ATCC 28878). This places the genus in *Tricladiaceae* (Johnston & Baschien 2020). Widely distributed in Atlantic, Indian andPacific Oceans.

References

Bills GF, Platas G, Peláez F, Masurekar P. 1999 – Reclassification of a pneumocandin-producing anamorph, *Glarea lozoyensis* gen. et sp. nov., previously identified as *Zalerion arboricola*. Mycological Research 103, 179–192.
Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6(1), 233–242.

Jones EBG, Sakayaroj J, Suetrong S, Somrithipol S et al. 2009 – Classification of marine *Ascomycota*, anamorphic taxa and *Basidiomycota*. Fungal Diversity 35, 1–187.

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Note 1261 *Hamatocanthoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hamatocanthoscypha Svrček

Three different species, two from Japan and one from Europe, are labelled in GenBank as *Hamatocanthoscypha laricionis*, the type species of *Hamatocanthoscypha*. All three species fall in *Hamatocanthoscyphaceae* and of them, it is likely that the species from Europe (with specimens from the United Kingdom and the Netherlands, voucher specimens K(M)158578 and SBRH935 respectively) better represents the true *H. laricionis*, a species originally named from European material (Velenovsky 1934, as *Uncinia laricionis*). See also notes under *Hamatocanthoscyphaceae*.

Reference

Velenovský J. 1934 – Monographia Discomycetum Bohemiae 1, 1–436.

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Note 1262 *Hamatocanthoscyphaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hamatocanthoscyphaceae Ekanayaka & K.D. Hyde

Hamatocanthoscyphaceae was named by Ekanayaka et al. (2019a) for one of the monophyletic subclades within *Pezizellaceae sensu* Johnston et al. (2019). This same clade had been referred to as Clade 1 by Han et al. (2014) and although recognised by these authors as phylogenetically and distinct, was not formally named. Later multigene analyses have consistently resolved *Hamatocanthoscyphaceae* as a monophyletic clade sister to the rest of *Pezizellaceae sensu* Johnston et al. (2019). Ekanayaka et al. (2019a) discussed a close relationship between *Hamatocanthoscyphaceae* and *Hyphodiscaceae* but this was not supported by later analyses (e.g., Haelewaters et al. 2021a). One issue with defining *Hamatocanthoscyphaceae* phylogenetically, is uncertainty surrounding the identity of the type species of *Hamatocanthoscypha*, *H. laricionis*. GenBank accessions labelled with this name represent three different species, two from Japan and one from Europe. Despite this uncertainty, all three species fall in *Hamatocanthoscyphaceae*. Of the putative *H. laricionis* species, it is likely that the European species (with specimens from the United Kingdom and the Netherlands, voucher specimens K(M)158578 and SBRH935 respectively) better represents the true *H. laricionis*. Several recently named genera with a *Chalara*-like morphology, including *Constrictochalara*, *Stipitochalara* and *Xenochalara*, also belong in this clade (Wu & Diao 2023). No detailed study of the breadth of morphological diversity has yet been carried out for the taxa in this clade meaning that the key morphological features of the family remain poorly understood.

References

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Haelewaters D, Park D, Johnston PR. 2021a – Multilocus phylogenetic analysis reveals that *Cyttariales* is a synonym of *Helotiales*. Mycological Progress 20, 1323–1330.
Han JG, Hosoya T, Sung GH, Shin HD. 2014 – Phylogenetic reassessment of *Hyaloscyphaceae sensu lato* (*Helotiales*, *Leotiomycetes*) based on multigene analyses. Fungal Biology 118, 150–167.
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Note 1263 *Helicocentralis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Helicocentralis Sri-indr., Chuaseehar., Boonyuen, K. Yamag., Suetrong & C.K.M. Tsui

Helicocentralis is a monotypic genus, known only from the asexual state that has coiled conidia typical of aeroaquatic fungi. ITS sequences from the type specimen place the genus in an unresolved position within *Helotiales* (Johnston et al. 2019).

Reference

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification of *Leotiomycetes*. IMA fungus 10, 1–22.

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Note 1264 *Humicolopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Humicolopsis Cabral & S. Marchand

Known only from its asexual state, *Humicolopsis cephalosporioides* was isolated from soil from *Nothofagus* forests in Argentina (Marchand et al. 1976). A multigene analysis shows it has a phylogenetically isolated position distinct from *Helotiales*, amongst the basal clades of *Leotiomycetes*, viz. *Phacidiales*, *Rhytismatales*, etc. (Johnston 2022).

References

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.
Marchand S, Cabral D, Wright JE. 1976 – Tres nuevos géneros de Hifomycetes de Tierra del Fuego. Boletín de la Sociedad Argentina de Botánica 17, 63–72.

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Note 1265 *Hyalodendriella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyalodendriella Crous

Hyalodendriella is known only from its asexual, similar to *Cladosporium* (Crous et al. 2007). Sequences from the type specimen (CBS 261.82) place the genus in *Hamatocanthoscyphaceae* (Wu & Diao 2023). Based on the analyses in Wu & Diao (2023), the second species referred to this genus, *Hyalodendriella bialowiezensis* Gorczak, is unlikely to be congeneric with the type species.

References

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Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119, 213–490.

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Note 1266 *Hymenobolus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hymenobolus Durieu & Mont.

Hymenobolous is a monotypic genus, the only species being a leaf pathogen of *Agave americana*. Morphologically distinctive, it had been placed *incertae sedis* within *Leotiomycetes*. DNA sequences obtained from recently collected specimens showed that it is *Cenangiaceae* (Ribes et al. 2021).

Reference

Ribes MA, Escobio V, Negrín R, Baral HO et al. 2021 – Wanted on *Agave americana*! *Hymenobolus agaves*, an overlooked introduced pathogen in the western palearctic region. Fungal Systematics and Evolution 8, 129–142

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Note 1267 *Hyphodiscaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyphodiscaceae Ekanayaka & K.D. Hyde

Ekanayaka et al. (2019a) established *Hyphodiscaceae*, formally naming a clade previously referred to as Clade 4 by Han et al. (2014). There were several problems with the Ekanayaka et al. (2019) concept of the family. These were discussed and resolved by Quijada et al. (2022a), following incorporation of new molecular data into phylogenetic analyses and examination of morphological features of the included taxa. Quijada et al. (2022a) provided an emended description of *Hyphodiscaceae*, descriptions of the included genera, and keys to genera and species. Genera accepted in *Hyphodiscaceae* by Quijada et al. (2022a) were *Fuscolachnum*, *Gamarada*, *Glutinomyces*, *Hyphodiscus*, *Hyphopeziza*, *Microscypha*, *Scolecolachnum*, *Soosiella* and *Venturiocistella*. Ekanayaka et al. (2019a) also mistakenly included *Hyalopeziza*, represented in their analyses by specimens referred to *Hyalopeziza pygmaea*, *H. leuconica* and *H. nectrioidea*. However, *H. pygmaea* had earlier been recombined as the type species of the genus *Hyphopeziza* (Han et al. 2014), and *H. leuconica* and *H. nectrioidea* were shown by Ekanayaka et al. (2019a, Figure 5) to be not related to *Hyphodiscaceae*. *Microscypha* was placed in *Hamatocanthoscyphaceae* by Ekanayaka et al. (2019a) on the basis of DNA sequences from specimens phylogenetically distant to the type of the genus *M. arenula* (= *M. grisella*) (Quijada et al. 2022a). Taxonomic issues in the family remain to be resolved; *Microscypha* and *Fuscolachnum* are polyphyletic, as are *Hyphodiscus hymeniophilus* and *Fuscolachnum misellum*; the boundaries between *Fuscolachnum* s.s. and *Scolecolachnum* are not well-resolved; and the genera *Fuscolachnum*, *Microscypha* and *Venturiocistella* contain morphologically strongly divergent species or groups of species whose relationship to the rest of the genus has not been tested with molecular methods (Quijada et al. 2022a).

References

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10, 310–489.

Han JG, Hosoya T, Sung GH, Shin HD et al. 2014 – Phylogenetic reassessment of *Hyaloscyphaceae sensu lato Helotiales* (*Leotiomycetes*) based on multigene analyses. Fungal Biology 118, 150–167.

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1268 *Hyphodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyphodiscus Kirschst.

Hyphodiscus species are mainly found as saprotrophs on decaying wood and often on corticioid fungi, one on lichens and two species on liverworts and mosses, and have been detected as endophytes on mosses (Quijada et al. 2022a). *Hyphodiscus* differs from phylogenetically similar genera within *Hyphodiscaceae* with a known sexual morph by its usually strongly gelatinized excipular cells, usually short-clavate coarsely warted hairs, usually with an apical cell longer than lower cells, and the frequent presence of pigmented exudates (Quijada et al. 2022a).

Reference

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1269 *Hyphopeziza*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyphopeziza J.G. Han, Hosoya & H.D. Shin

The monotypic *Hyphopeziza pygmaea* was originally described from *Quercus* leaves from Europe but later reported from a wide range of hosts (Huhtinen 2001, as *Hyalopeziza pygmaea*) and also from Asia (Han et al. 2014). The genus is characterized by white-greyish, minutely pubescent apothecia, excipular cells slightly gelatinized, hairs non-septate, walls thick, granulate, and glassy, paraphyses with the apical cell clavate-lanceolate and coarsely warty and glassy like the hairs (Quijada et al. 2022a). The only DNA sequences supporting the phylogenetic position of the genus within *Hyphodiscaceae* are from specimens from Asia and whether or not they represent the same species as found in Europe remains unknown.

References

Han JG, Hosoya T, Sung GH, Shin HD. 2014 – Phylogenetic reassessment of *Hyaloscyphaceae sensu lato* (*Helotiales*, *Leotiomycetes*) based on multigene analyses. Fungal Biology 118, 150–167.

Huhtinen S. 2001 – Redisposition of some taxa of *Pseudolachnea*, with some other transfers. Österreichische Zeitschrift für Pilzkunde 10, 1–13.

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1270 *Hysterostegiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Hysterostegiella Höhn.

Saprobic fungi with small, erumpent apothecia, known only from temperate Europe (Hein 1983). *Hysterostegiella* species possess elongated vacuolar bodies within the paraphyses, a feature characteristic of *Cenangiaceae* (Baral in Jaklitsch et al. 2016a). Unpublished DNA sequences support this position (J.B. Tanney, pers. comm.).

Reference

Jaklitsch W, Baral HO, Lücking R, Lumbsch HT et al. 2016a – *Syllabus of Plant Families - A. Engler's Syllabus der Pflanzenfamilien Part 1/2.13th edn*. Borntraeger Science Publishers, Germany.

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Note 1271 *Infundichalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Infundichalara Reblova & W. Gams

Infundichalara is known only from its asexual state. In culture it forms penicillate and *Chalara*-like conidiogenous cells and conidia. DNA sequences from several genes from the ex-type specimen of the type species *I. microchona* (CBS 175.74) place this genus in

Hamatocanthoscyphaceae (Ekanayaka et al. 2019a, Wu & Diao 2023). Koukol (2012) discussed morphological differences between the *Chalara*-like genera *Infundichalara* and *Xenopolyscytalum*.

References

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10, 310–489.

Koukol O. 2012 – A new species of *Infundichalara* from pine litter. Mycotaxon 120, 343–352.

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119, 213–490.

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Note 1272 *Lasiobelonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lasiobelonium Ellis & Everh.

The type species of *Lasiobelonium*, *L. subflavidum*, and a species described from New Zealand as *Dascyscyphus triseptatus*, were placed in synonymy by Raitviir (1980) and this synonymy was accepted by Spooner (1987). Based on the description in Spooner (1987), a recent specimen from New Zealand (PDD 60106, https://scd.landcareresearch.co.nz/Specimen/PDD_60106) is morphologically typical of *L. subflavidum*. The multi-gene analysis of Johnston (2022) incorporates data from PDD 60106 and places *Lasiobelonium* in *Solenopeziaceae sensu* Johnston & Baschien (2020). This supports Johnston & Baschien (2020), an analysis where *Lasiobelonium* was represented by *L. lonicerae* rather than the type species.

References

Johnston PR. 2022 – *Leotiomycetes* phylogeny updated. Manaaki Whenua – Landcare Research Datastore.

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6, 233–242.

Raitviir A. 1980 – The Genus *Lasiobelonium*. Scripta Mycologica 9, 99–132.

Spooner BM. 1987 – *Helotiales* of Australasia: *Geoglossaceae*, *Orbiliaceae*, *Sclerotiniaceae*, *Hyaloscyphaceae*. Bibliotheca Mycologica 116, 1–711.

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Note 1273 *Leohumicola*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Leohumicola N.L. Nick.

Leohumicola species are known only from cultures isolated from soil, the fungi often found in association with *Ericaceae* (Nguyen & Seifert 2008). Although only rDNA sequences are available, ITS sequences from the ex-type culture of the type species *L. verrucosa* (GenBank NR_121306, culture CBS 115880), place the genus within *Helotiales*, but without a clear family-level position within the order (Johnston et al. 2019).

References

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Nguyen HDT, Seifert KA. 2008 – Description and DNA barcoding of three new species of *Leohumicola* from South Africa and the United States. Persoonia 21, 57–69.

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Note 1274 *Loramyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Loramyces W. Weston

Loramyces is one of the genera with enclosed ascomata that have evolved independently several times across *Leotiomycetes*. Based on their distinctive ascomatal morphology they have often been treated as taxonomically distinct, despite being closely related in molecular phylogenetic studies to taxa with the cup-shaped ascomata more typical of *Leotiomycetes*. The monotypic family *Loramycetaceae* was placed in synonymy with *Mollisiaceae* by Tanney & Seifert (2020).

Reference

Tanney JB, Seifert KA. 2020 – *Mollisiaceae*: An overlooked lineage of diverse endophytes. Studies in Mycology 95, 293–380.

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Note 1275 *Medeolaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Medeolaria Thaxt.

Medeolaria is a monotypic genus, the type species *M. farlowii* being a stem parasite of *Medeola* (*Liliaceae*). The fungus has historically been placed in its own genus and order because of its distinctive, reduced morphology, with the asci and paraphyses produced in a poorly organized hymenium on the host tissue (LoBuglio & Pfister 2010). Although only rDNA sequences are available, the analysis of LoBuglio & Pfister (2010) shows that this species clearly belongs to *Helotiales sensu* Johnston et al. (2019).

References

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification for the *Leotiomycetes*. IMA Fungus 10, 1.

LoBuglio KF, Pfister DH. 2010 – Placement of *Medeolaria farlo*wii in the *Leotiomycetes*, and comments on sampling within the class. Mycological Progress 9, 361–368.

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Note 1276 *Microscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Microscypha Syd. & P. Syd.

Microscypha is a genus of small, saprobic discomycetes with short, rough-walled hairs on the apothecium. GenBank accessions labeled as *Microscypha* are from fungi in several different genera and families (Quijada et al. 2022a). Recent DNA sequences from the type species *M. arenula* (= *M. grisella*) clearly place the genus in *Hyphodiscaceae* (Quijada et al. 2022a).

Reference

Quijada L, Baral HO, Johnston PR, Pärtel K et al. 2022a – A review of *Hyphodiscaceae*. Studies in Mycology 103, 59–85.

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Note 1277 *Mollisiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mollisiaceae Rehm

In a major survey of *Mollisia* and *Mollisia*-like fungi, Tanney & Seifert (2020) delimited *Mollisiaceae* to represent a monophyletic clade sister to *Vibrisseaceae*. Despite its distinctive apothecial morphology, *Loramycetaceae* is nested within *Mollisiaceae* phylogenetically and was placed in synonymy with *Mollisiaceae*. Sensible generic limits within the family remain uncertain. The two largest genera are *Mollisia* and *Phialocephala* but several other small genera, distinguished on the basis of morphology or ecology, make these large genera paraphyletic.

Reference

Tanney JB, Seifert KA. 2020 – *Mollisiaceae*: An overlooked lineage of diverse endophytes. Studies in Mycology 95, 293–380

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Note 1278 *Mycoarthris*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycoarthris Marvanova & P.J. Fisher

Mycoarthris is a monotypic genus, known only from its asexual state, isolated from freshwater foam. ITS sequences from the ex-type cultures of *M. corallinus* (AH009124) and *Vandijckella johannae* (LT904725 ex CBS 143182) are very similar. *Mycoarthris corallinus* was isolated from freshwater foam, *V. johannae* from soil. Based on the descriptions from Marvanová et al. (2002) and Sandoval-Denis & Giraldo (2017), the two fungi are morphologically quite distinct. Phylogenetically they have a poorly resolved position within *Helotiales*, in the *Stamnaria* lineage/Han Clade 9/*Vandijckellaceae* clade of Johnston et al. (2019).

References

Johnston PR, Quijada L, Smith CA, Baral HO et al. 2019 – A multigene phylogeny toward a new phylogenetic classification for the *Leotiomycetes*. IMA Fungus 10, 1.
Marvanová L, Landvik S, Fisher PJ, Moss ST et al. 2002 – A new fungus with arthroconidia from foam. Nova Hedwigia 75, 255–269.
Sandoval-Denis M, Giraldo A. 2017 – Fungal Planet 711. Persoonia 39, 454–455.

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Note 1279 *Mycofalcella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycofalcella Marvanová, Om-Kalth. & J. Webster

Mycofalcella is an aquatic hyphomycete in *Leotiomycetes*. The ex-type specimen of the type species *M. calcarata* (GenBank NR_154165, CCM F-10289) belongs to *Tricladiaceae* (Johnston & Baschien 2020). Known only from its asexual state, *Mycofalcella* is a typical aquatic hyphomycete both ecologically and morphologically, with elongate, gently curved conidia (Marvanová et al. 2002).

References

Johnston PR, Baschien C. 2020 – *Tricladiaceae* fam. nov. (*Helotiales*, *Leotiomycetes*). Fungal Systematics and Evolution 6, 233–242.
Marvanová L, Landvik S, Fisher PJ, Moss ST et al. 2002 – A new fungus with arthroconidia from foam. Nova Hedwigia 75, 255–269.

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Note 1280 *Mycosphaerangium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycosphaerangium Verkley

Newly generated molecular data show *Mycosphaerangium* and *Neomelanconium* have a sister relationship within *Cenangiaceae* (Voglmayr et al. 2020). The two genera share many traits like similar conidia, conidiogenesis, asci and ascospores, but their apothecia differ particularly in excipular features and are therefore recognized as distinct genera. Both genera have dark-walled, broadly elliptical to subglobose ascospores and conidia, both with gelatinous sheaths (Voglmayr et al. 2020). *Mycosphaerangium* is putatively mycoparasitic, being regularly associated with effete fructifications of *Coryneum* (Voglmayr et al. 2020).

Reference

Voglmayr H, Jaklitsch WM, Tello S. 2020 – *Mycosphaerangium* and *Neomelanconium* (*Cenangiaceae*) are closest relatives: phylogenetic relationships, morphology and a new species. Mycological Progress 19, 1329–1352.

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Note 1281 *Mycosymbioces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycosymbioces J.L. Frank

Mycosymbioces is monotypic, *M. mycenophila* being a mushroom parasite, originally described from North America (Frank 2014) and later recorded from the United Kingdom (Edwards et al. 2020). Only ITS sequences are available for the genus, but a sequence from the type specimen clearly places the genus in *Leotiales sensu* Quijada et al. (2022b) (Johnston et al. 2019).

References

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Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, *Fungi*). Biology 11, 583.

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Note 1282 *Neocrinulaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neocrinulaceae Crous

Neocrinulaceae contains a single genus, *Neocrinula*. Known only from the asexual state, fungi in this genus are morphologically similar to the asexual state of *Holwaya* (Crous et al. 2016b). *Neocrinula* includes two species, both described from leaves from native Australian plants (Crous et al. 2017b), apparently saprobic. *Neocrinulaceae* is phylogenetically distinct amongst the basal clades of *Leotiomycetes*, without a clear affiliation to any other family of *Leotiomycetes* (Quijada et al. 2022b).

References

Crous PW, Groenewald JZ, Wingfield MJ, Burgess TI et al. 2016b – Fungal Planet description sheets: 469–557. Persoonia 37, 286–287.
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Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, *Fungi*). Biology 11(4), 583.

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Note 1283 *Obtectodiscus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Obtectodiscus E. Müll., Petrini & Samuels

Obetctodiscus is an aquatic ascomycete, in the protologue described as being partly perithecioid and partly apothecioid. Its morphology was compared to *Loramyces*, with which it also shares a *Cyperaceae* substrate (Müller et al. 1979). Previously classified in *Loramycetaceae*, this family was placed in synonymy with *Mollisiaceae* by Tanney & Seifert (2020).

References

Müller E, Petrini O, Samuels GJ. 1979 – *Obtectodiscus aquaticus* gen. nov. et spec. nov., ein neuer, wasserbewohnender Ascomycet aus den Alpen. Sydowia 32, 190–197.
Tanney JB, Seifert KA. 2020 – *Mollisiaceae*: An overlooked lineage of diverse endophytes. Studies in Mycology 95, 293–380.

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Note 1284 *Patinella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Patinella Sacc.

Patinella is a saprobe of woody substrates with very dark, sessile apothecia. Although 25 species are placed in *Patinella*, unpublished data shows that the genus as currently accepted is highly polyphyletic (Quijada et al. 2022b). For this reason, the Quijada et al. (2022b) concept of *Holwayaceae* includes only one species of *Patinella*, the type species *P. hyalophaea*. *Patinella* differs from the superficially morphologically similar genera *Tympanis*, *Durandiella* (*Tympanidaceae*), *Aotearoamyces* and *Bulgaria* (*Phacidiaceae*) in having an excipulum comprising mostly globose-angular cells in combination with non-amyloid asci and ascospores (Quijada et al. 2022b).

Reference

Quijada L, Matočec N, Kušan I, Tanney JB et al. 2022b – Apothecial ancestry, evolution, and re-evolution in *Thelebolales* (*Leotiomycetes*, *Fungi*). Biology 11(4), 583.

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Note 1285 *Porodiplodia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Porodiplodia Crous

Based on ITS sequences from a specimen identified as the type species of *Porodiplodia*, *P. livistonae*, Mitchell et al. (2022) showed *Porodiplodiaceae* to be a synonym of *Pezizellaceae*. Depending on generic limits within *Pezizellaceae*, Mitchell et al. (2022) speculated that *Porodiplodia* may be a synonym of *Calycina*. Wu & Diao (2023, Figure 8) placed *Porodiplodia* in their *Chalara sensu stricto* clade but did not formally propose the synonymy.

References

Mitchell JK, Quijada L, Johnston PR, Pfister DH. 2022 – Species of the common discomycete genus *Bisporella* reassigned to at least four genera. Mycologia 114, 713–731.

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119, 213–490.

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Note 1286 *Psilachnum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Psilachnum Höhn.

Psilachnum is a genus of small, short-stipitate, saprobic discomycetes with short to long, smooth and thin-walled hairs. Although the genus contains 28 species at present, it is poorly understood and polyphyletic. ITS sequences from a specimen identified as the type species *P. lateritioalbum* (GenBank OP626155, ex S. Helleman SBRH962) and *Psilachnum chrysostigma* (GenBank JF908572, as *Pezizella chrysostigma*), place the genus in *Hamatocanthoscyphaceae* (unpubl. data). Other GenBank accessions identified as *Psilachnum* species are phylogenetically distant from SBRH962, including the specimen representing the genus in Ekanayaka et al. (2019a), *S. staphyleae*, voucher KUS F52105.

Reference

Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC et al. 2019a – Preliminary classification of *Leotiomycetes*. Mycosphere 10, 310–489.

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Note 1287 *Pyrenopezizaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pyrenopezizaceae Velen.

Kirschstein (1924) proposed the family name *Ploettnerulaceae* for the genera *Ploettnerula* (now a synonym of *Pirottaea*), *Pyrenopeziza*, *Pirottaea*, and relatives. However, he failed to provide a description, making the name a nomen nudum and hence invalid. This invalid family name was inadvertently used by Jaklitsch et al. (2016a) and in the last Outline of Fungi, Wijayawardene et al. (2022). As noted by Doweld (2022), the family name *Pyrenopezizaceae*, a name first proposed invalidly and later validated with a Latin description by Velenovský (1934), is available for this group of genera. *Pyrenopezizaceae* is used here as a family name for the genera listed under *Ploettnerulaceae* in Wijayawardene et al. (2022).

References

Doweld AB. 2022 – (2865–2866) Proposals to conserve the name *Pyrenopezizaceae* against *Excipulaceae* and *Pyrenopeziza*, nom. prot., with a conserved type (*Fungi*: *Ascomycota*: *Leotiomycetes*). Taxon 71, 461–462.

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Note 1288 *Ramgea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ramgea Brumm.

Ramgea is a coprophilous genus previously included in *Thelebolaceae* because of its morphological resemblance to *Thelebolus*. As shown by Quijada et al. (2022b), phylogenetically it belongs in *Holwayaceae*, many of its distinctive morphological features reflecting its coprophilous lifestyle. The genus comprises two species, *R. annulispora* Brumm. (Van Brummelen 1992) and *R. ozimecii* I. Kušan, Matočec, et al. (Hyde et al. 2017b).

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Note 1289 *Rhexocercosporidium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rhexocercosporidium U. Braun

Species placed in *Rhexocercosporidium* include both plant pathogens and saprobes on dead plant tissue. The type species *R. carotae* is a root pathogen. ITS sequence from the ex-type culture (GenBank NR_111086, ex CBS 418.65) place the genus in *Pyrenopezizaceae*, and this is supported by multiple genes from the genome of a specimen isolated as a root endophyte and identified as *Rhexocercosporidium* (Mesny et al. 2021, Johnston et al. 2019, as *Ploettnerulaceae*).

References

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(Edited by **Maryam T. Noorabadi**)

Note 1290 *Scleromitrula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Scleromitrula S. Imai

The type species of *Scleromitrula*, *S. shiraiana*, maybe a hyperparasite on stromata of *Ciboria shiraiana*, another *Leotiomycetes* fungus co-occurring on fruits of *Morus* (Spooner 1987). Based on ITS and LSU sequences, these two species are phylogenetically distinct, with *C. shiraiana* (GenBank JN033430 and JN086733 ex KUS-F52447) in *Sclerotiniaceae*, whereas *S. shiraiana* (GenBank AY789408 ex Hirayama 062001) is in a clade with *S. spiraeicola* (GenBank Z81448 and Z81424) and *S. calthicola* (GenBank Z80887 and Z81422), forming one of the paraphyletic *Rutstroemiaceae* clades sister to *Sclerotiniaceae* (Johnston et al. 2019, Baral et al. 2022). This supports the conclusions of Holst-Jensen et al. (1997, as *Verpatinia calthicola* and *V. spiraeicola*) and Schumacher & Holst-Jensen (1997) who discussed differences in sclerotial morphology between *Scleromitrula* and *Sclerotiniaceae*.

References

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Note 1291 *Scolecolachnum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Scolecolachnum Guatim., R.W. Barreto & Crous

Scolecolachnum was erected by Guatimosim et al. (2016) with a single species *S. pteridii*, a pathogen of ferns from Brazil. Ekanayaka et al. (2019a) added a second species, *S. nigricans*, found on woody stems of an unnamed host. Quijada et al. (2022b) showed that both *S. pteridii* and *S. nigricans* were *Hyphodiscaceae*. They also showed that *S. nigricans* is a synonym of another fern inhabiting fungus *Fuscolachnum pteridis*. Quijada et al. (2022b) speculated that *Scolecolachnum* and *Fuscolachnum* may be synonyms but did not formally propose the synonymy because of morphological differences between the type species of the genera and uncertainty around the phylogenetic limits of *Fuscolachnum*.

References

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Note 1292 *Scytalidium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Scytalidium Pesante

The morphologically simple *Scytalidium* is characterized by arthroconidia formed by fragmentation of undifferentiated hyphae, the conidia thick-walled, usually smooth, 0-1 septate, pale to mid-brown. The type species *S. lignicola* has been isolated from wood, soil, and other substrates. Several species have been added to the genus in recent years based on DNA sequences matching those from the ex-type culture CBS 233.57 (=UAMH 1502). Genes extracted from the genome identified as *S. lignicola* (DSM 105466 ex GenBank PRJNA382337) places the genus basal within *Helotiales* (Johnston et al. 2019) and close to specimens identified as the type species of *Polydesmia* and *Arachnoscypha* (Johnston 2022). Although the ITS sequence from the genome identified as *S. lignicola* (GenBank MG815782) shows it is a different species to the ex-type culture (GenBank NR_121314 ex CBS 233.57), they are congeneric (unpubl. data).

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Note 1293 *Solenopeziaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Solenopeziaceae Ekanayaka & K.D. Hyde

Ekanayaka et al. (2019a) established *Solenopeziaceae* as a formal name for a clade basal to *Hyaloscyphaceae*, earlier recognized as morphologically and phylogenetically distinct from *Hyaloscyphaceae* by Han et al. (2014, as Clade 10) and Baral (in Jaklitsch et al. 2016), but not formally named in these earlier studies. However, when erecting *Solenopeziaceae*, Ekanayaka et al. (2019) included two phylogenetically distinct sets of genera, those accepted by Johnston & Baschien (2020) as *Solenopeziaceae* — *Lasiobelonium*, *Solenopezia*, *Trichopeziza* and *Trichopezizella*, along with those accepted by Johnston & Baschien (2020) as *Tricladiaceae*, a clade basal to *Helotiaceae* (see separate note). Morphologically, apothecia of the genera in *Solenopeziaceae* differ from *Tricladiaceae* in having conspicuous, smooth-walled hairs, a

Calycina-like ascus apex, and lacking the morphologically complex asexual spores characteristic of *Tricladiaceae*.

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Note 1294 *Solomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Solomyces Zhi Y. Zhang, Y.F. Han & Z.Q. Liang

Known only from cultures isolated from soil, *Solomyces* species are morphologically similar to *Geomyces* and the asexual morphs of *Pseudogymnoascus* (Zhang et al. 2020b). The genera are phylogenetically distinct and differ also in the arrangement of their conidiogenous cells and conidia (Zhang et al. 2020b). Zhang et al. (2020b) place their new genus in *Thelebolaceae*, regarding *Pseudeurotiaceae* as a synonym of *Thelebolaceae*. Later analyses (e.g. Johnston 2022, Quijada et al. 2022b) accept the two families as taxonomically and phylogenetically distinct, and using this concept, *Solomyces* is *Pseudeurotiaceae*.

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Note 1295 *Soosiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Soosiella Hujslova & M. Kolarık

The monotypic genus *Soosiella* was described from cultures from highly acidic soils by Hujslová et al. (2014). This morphologically nondescript species was placed by the describing authors in *Helotiales* incertae sedis based on an analysis of ITS and LSU sequences. A recent analysis by Quijada et al. (2022a), based on the same sequences but including a more comprehensive set of taxa, showed it belongs in *Hyphodiscaceae*.

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Note 1296 *Spirosphaera*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spirosphaera Beverw.

DNA sequences from the type specimen of the type species, *Spirosphaera floriformis* (CBS 402.52), place this genus in *Tricladiaceae* (Johnston & Baschien 2020), a position supported by its 'aquatic hyphomycete' biology and morphology.

Reference

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Note 1297 *Srinivasanomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Srinivasanomyces S. Rana & S.K. Singh

Phylogenies based on ITS and LSU sequences from the type specimen of *Srinivasanomyces* (NFCCI 4504), place this genus in a monophyletic clade with *Strossmayeria*. The *Strossmayeria* lineage was shown by Johnston et al. (2019) to be phylogenetically distinct from *Vibrisseaceae*, the family in which *Srinivasanomyces* was previously placed.

Reference

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Note 1298 *Thedgonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Thedgonia B. Sutton

Based on a specimen identified as the type species, *Thedgonia ligustrina* (GenBank GU269839 ex culture CBS 123025), *Thedgonia* is *Drepanopezizaceae*. Although based only on the ITS phylogeny, *Drepanopezizaceae* is well-resolved as a clade with this phylogeny (Johnston et al. 2019). The biology of this fungus, causing a leaf spot of *Ligustrum*, is consistent for *Drepanopezizaceae*.

Reference

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Note 1299 *Tricladiaceae*

Web-links: Index Fungorum, Fcesoffungi, MycoBank, GenBank

Tricladiaceae P.R. Johnst. & Baschien

The clade accepted here as *Tricladiaceae* had been previously included in *Helotiaceae* by Johnston et al. (2019). Two monophyletic clades basal within *Helotiaceae sensu* Johnston et al. (2019) were later treated as separate families, *Pleuroascaceae* (Untereiner et al. 2019) and *Tricladiaceae* (Johnston & Baschien 2020). Johnston & Baschien (2020) accepted *Cudoniella*, *Geniculospora*, *Graddonia*, *Halenospora*, *Mycofalcella*, *Spirosphaera* and *Tricladium* within *Tricladiaceae*. Monophyly of the family was supported in an analysis with up to 15 genes. Several of these genera had previously been placed prematurely in *Solenopeziaceae* by Ekanayaka et al. (2019a). Morphologically, apothecia of the genera in *Solenopeziaceae* differ from *Tricladiaceae* in having conspicuous, smooth-walled hairs and a *Calycina*-like ascus apex. *Tricladiaceae* have glabrous apothecia and a *Hymenoscyphus*-like ascus apex. In addition, *Tricladiaceae* characteristically have morphologically complex asexual spores, a feature not known for *Solenopeziaceae*.

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Note 1300 *Venturiocistella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Venturiocistella Raitv.

Venturiocistella was accepted in *Hyphodiscaceae* by Quijada et al. (2022a), based on morphology plus DNA sequences from specimens identified as *V. japonica* (TNS F-18030) and an unnamed *Venturiocistella* sp. Species in *Venturiocistella* are characterized by their long, dark brown, thick-walled, partially smooth spiny hairs (setae), along with short, lighter brown, thin-walled, warted, cylindrical hairs. *Venturiocistella* in this sense forms a clade with some '*Fuscolachnum*' species phylogenetically distant from the type species of *Fuscolachnum* (Quijada et al. 2022a). No recombinations were proposed as currently there is no molecular data available for the type species of *Venturiocistella, V. venturioides*. Morphologically, *Venturiocistella* is very homogeneous, except for one species, *V. heterotricha*, which has long stiff spiny hairs and long flexuous thin-walled hairs, both with smooth walls and for which the new genus *Helicoscypha* was proposed (Baral 2023). *Fuscolachnum* concurs morphologically with *Venturiocistella*, but lacks the spiny hairs of that genus.

Reference

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Note 1301 *Xenochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenochalara M.J. Wingf. & Crous

Xenochlara was placed in *Hamatocanthoscyphaceae* by Wu & Diao (2023). rDNA sequences from the epitype culture (AF184889, from a single conidial isolate from CBS 670.75, Coetsee et al. 2000) match exactly the sequences used to represent this species in Wu & Diao (2023). *Xenochalara* differs from *Chalara sensu stricto* in producing conidia through apical wall building, and being tolerant of cycloheximide (Coetsee et al. 2000, Wu & Diao 2023).

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Note 1302 *Xenopolyscytalum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenopolyscytalum Crous

In the analyses presented by Wu & Diao (2023), DNA sequences from the ex-type culture of *Xenopolyscytalum pinea* (CBS 126493), place this monotypic genus in *Hamatocanthoscyphaceae*. Koukol (2012) discussed morphological differences between the *Chalara*-like genera *Xenopolyscytalum* and *Infundichalara*.

References

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Note 1303 *Golubevia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Golubevia Q.M. Wang, F.Y. Bai, Begerow & Boekhout

Golubevia was proposed by Wang et al. (2015) to accommodate *G. pallescens* (Gokhale) Q.M. Wang, F.Y. Bai, Begerow & Boekhout which was transferred from *Tilletiopsis*, as a yeast lineage without further relationship in the *Exobasidiales*. Unfortunately, Wang et al. (2015) did not cite the basionym of the proposed combination, making this combination invalidly published (ICN, Art. 41.5), and as a consequence, the generic name was also invalidly published (ICN, 40.1). Later, Richter et al. (2019) failed to validate the name *Golubevia* (ICN, F.5.1). This generic name was finally validly published by Guarnaccia et al. (2023). The genus consists of three species, namely *G. heteromorpha*, *G. mali*, and *G. pallescens* based on the phylogeny (ITS, LSU, *tef1-α*, and *rpb2* sequence data) and morphology (Guarnaccia et al. 2023). The type species is *G. pallescens* (≡*Tilletiopsis pallescens* Gokhale), which was isolated from *Sirobasidium* in Japan. They are known only in their yeast stage, but in *G. heteromorpha*, holobasidium-like structure that forms ballistospores on the apex was observed by Boekhout (1991). The taxonomic placement of *Golubevia* is in *Golubeviaceae*, *Golubeviales*, *Exobasidiomycetidae*, *Exobasidiomycetes*, *Ustilaginomycotina*, and *Basidiomycota*.

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Note 1304 *Golubeviaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Golubeviaceae Q.M. Wang, F.Y. Bai, Begerow & Boekhout

Golubeviaceae was proposed by Wang et al. (2015) as a monotypic family to accommodate *Golubevia* Q.M. Wang, F.Y. Bai, Begerow & Boekhout within *Exobasidiomycetes*. Based on phylogenic analyses of seven loci datasets (ITS, LSU, SSU, *rpb1*, *rpb2*, *tef1-α*, and *cyt-b*), *Golubevia* was proposed to introduce a single species *G. pallescens* (Gokhale) Q.M. Wang F.Y. Bai, Begerow & Boekhout. It occurred as a sister lineage of the other orders within *Exobasidiomycetes* (Wang et al. 2015). However, in the description of *Golubevia*, the type species, *G. pallescens*, which was transferred from *Tilletiopsis*, Wang et al. (2015) did not cite the basionym. This made not only the type species and generic name invalidly published (ICN, Art. 41.5 & 40.1, respectively), but also invalidated the family name, *Golubeviaceae* (ICN, Art. 32.1(c)), as an automatically typified name formed from *Golubevia*. Recently, this combination, generic and family names were validly published by Guarnaccia et al. (2023). *Golubeviaceae* consists of one genus with three species, namely *Golubevia heteromorpha*, *G. mali*, and *G. pallescens* based on the phylogeny (ITS, LSU, *tef1-α*, and *rpb2* sequence data) and morphology (Guarnaccia et al. 2023). They are known not only in their yeast stage but also a holobasidium-like structure forming ballistospores on the apex, as observed in *G. heteromorpha* by Boekhout (1991). The taxonomic placement for *Golubeviaceae* is in the *Golubeviales* and *Exobasidiomycetes*. In the type genus, sexual reproduction is unknown. Budding cells and ballistoconidia are present. Hyphae are branched, narrow, and cylindrical-shaped. Clamp connections and starch-like compounds are absent (Wang et al. 2015, Guarnaccia et al. 2023).

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Note 1305 *Kgaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Kgaria Halling, Fechner & Davoodian

Halling et al. (2023) introduced *Kgaria* within *Boletaceae* (*Boletales*, *Agaricomycetes*, *Basidiomycota*). The second species is *K. similis* Halling, Fechner & Davoodian. *Kgaria* resembles porphyrellus-like taxa, and Halling et al. (2023) hypothesized that neither *Tylopilus* nor *Porphyrellus* were suitable taxa to accommodate these taxa, thus justifying the introduction of

Kgaria. Watling & Gregory (1991) indicated that *Tylopilus* was abundant in Australasia, with many undocumented species. They conducted treatments on boletes from Australasia, with a preliminary survey published in 1999. Further studies have documented new taxa, clarified concepts, and inferred phylogenetic relationships. Osmundson et al. (2021) clarified earlier concepts used to delimit *Tylopilus* worldwide. The main characters of this genus include a dark brown to pale lilac/violet colouration, or very infrequently, nearly black basidiomes with a dark brown spore deposit and a sequence of oxidation reactions that change from blue to red, then practically black. Additionally, indicative are idiosyncratic blue-green pigment encrustations, or cyanogranules, and a corresponding colour reaction of the hyphae on the surfaces of the pileus and stipe. Molecular analyses of multiple genes, including LSU, *tef1-α*, and *rpb2*, were used to confirm the new genus.

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Note 1306 *Geniculoseta*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Geniculoseta Réblová

The monotypic genus *Geniculoseta* (*Chaetosphaeriaceae*, *Chaetosphaeriales*, *Pezizomycotina*, *Ascomycota*) was introduced by Réblová & Nekvindová (2023) to accommodate *G. preussii* W. Gams & Hol.-Jech. based on morphology and multi-loci phylogenetic analyses. Gams & Holubová-Jechová (1976) earlier linked *Chaetosphaeria preussii* to *Chloridium preussii*, with the former representing the sexual morph, while the latter, the asexual morph. However, the morpho-phylogenetic analyses conducted by Réblová & Nekvindová (2023) showed that these sexual and asexual morphs represent two different taxa from two distinct genera. The description in the protologue of *Chloridium preussii* did not belong to the latter and was instead based on three other strains (not ex-type strain of *Chloridium preussii*) which were identical to the hyphomycetes growing next to the ascomata of *Chaetosphaeria preussii* in its holotype specimen (Réblová & Nekvindová 2023). These three strains (asexual morph) were genetically identical to the sexual morph of *Chaetosphaeria preussii*. Therefore, *Chaetosphaeria preussii* and *Chloridium preussii* are not representative parts of the life cycle of the same fungus (Réblová & Nekvindová 2023). While *Chloridium preussii* has been transferred to *Chloridiopsiella preussii* in *Vermiculariopsiellales* (Réblová & Nekvindová 2023), *Chaetosphaeria preussii*, whose strains form a phylogenetically well-separated clade in *Chaetosphaeriales*, has been accommodated in the new genus *Geniculoseta* (Réblová & Nekvindová 2023).

Geniculoseta preussii, the only taxon in the genus, in its sexual morph, comprises superficial, astromatic, ostiolate ascomata that are smooth and glossy, but which at times are surrounded by a thick mat of dark hyphae. The ascomatal walls are 2-layered and the paraphyses are septate, sparsely branched, and persistent. The asci have broad rounded apices with non-amyloid apical rings and are short-pedicellate. The 1-septate, cylindrical to ellipsoidal ascospores usually separate into part spores, which are obliquely arranged in a 1-seriate configuration within the asci (Réblová & Nekvindová 2023). In its asexual morph on the natural substrate, *Geniculoseta preussii* is characterized by solitary, straight to flexuous, macronematous, and unbranched conidiophores which are scattered to aggregated. They are brown to dark reddish-brown and bulbous at the base, gradually tapering and becoming paler towards the apex. They are also geniculate with several percurrent proliferations due to the frequent extension of the phialides. The conidiogenous cells, which extend percurrently, are integrated, terminal, paler than the conidiophores, monophialidic, and have only one conidiogenous locus. The conidia are hyaline, smooth, aseptate, and form slimy heads (Réblová & Nekvindová 2023). Phylogenetically, *Geniculoseta* formed a sister clade with *Gongromeriza* (a concatenated data set of ITS, LSU, and *tef1-α* sequences). The species is saprobic on decaying wood and woody fruits and has been reported in the European region (Réblová & Nekvindová 2023).

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Note 1307 *Golubeviales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Golubeviales Q.M. Wang, F.Y. Bai, Begerow & Boekhout

Golubeviales was introduced by Wang et al. (2015) as a monotypic order to accommodate *Golubevia* Q.M. Wang, F.Y. Bai, Begerow & Boekhout within *Exobasidiomycetes*. Based on phylogenetic analyses of seven loci datasets (ITS, LSU, SSU, *rpb1*, *rpb2*, *tef1-α*, and *cyt-b*), *Golubevia* was established for the single species clade formed by *G. pallescens* (Gokhale) Q.M. Wang, F.Y. Bai, Begerow & Boekhout. It was found as a sister lineage of the other orders within the *Exobasidiomycetes* (Wang et al. 2015). Unfortunately, in the description of *Golubevia* by Wang et al. (2015) the type species, *G. pallescens*, which was transferred from *Tilletiopsis*, was not provided with a citation of the basionym. This omission has made not only the type species and generic name invalidly published (ICN, Art. 41.5 & 40.1, respectively), but also the order name, *Golubeviales* (ICN, Art. 32.1(c), as it is an automatically typified name, formed from *Golubevia*. Recently, this combination and the generic and order names were validly published in Guarnaccia et al. (2023). *Golubeviales* consists of a monotypic family and a genus with three species that are known only in their yeast stage (Guarnaccia et al. 2023). In the type genus, sexual reproduction is unknown. Budding cells and ballistoconidia are present. Hyphae are branched, narrow, and cylindrical. Clamp connections and starch-like compounds are absent (Wang et al. 2015, Guarnaccia et al. 2023).

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Note 1308 *Neodacampia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neodacampia Crous & Osieck

Crous et al. (2023c) proposed the monotypic genus *Neodacampia* within *Phaeosphaeriaceae* (*Pleosporales*, *Dothideomycetes*, *Ascomycota*) to accommodate *N. ulmea* Crous & Osieck as the type species. This taxonomic decision was based on a combination of morphological characteristics and phylogenetic analyses. *Neodacampia ulmea* was originally isolated from a branch of *Ulmus laevis* in the Netherlands, displaying a red discoloration of the wood as a saprobe (Crous et al. 2023c). The genus name was chosen due to its morphological resemblance to *Dacampia* A. Massal, although its phylogenetic affinity aligns more closely with the asexual *Banksiophoma* Crous (Crous et al. 2023c). The ITS, LSU, SSU, *tef1-α* and *rpb2* sequence data for *N. ulmea* are available in GenBank (2024). In terms of sexual morphology, *Neodacampia* is characterized by solitary pseudothecia featuring hyphae-like pseudoparaphyses and bitunicate, subcylindrical asci with apical chambers (Crous et al. 2023c). Ascospores are brown, fusoid-ellipsoid, guttulate, muriformly septate, and lack a sheath (Crous et al. 2023c). The asexual morphology was not detected in the culture and it is speculated to be phoma-like, considering its close affinity with *Banksiophoma*. However, Crous et al. (2023c) highlighted that the taxonomic positioning of this lignicolous saprobe within *Phaeosphaeriaceae* was rather unexpected, particularly in accordance with Jaklitsch et al. (2016a), who noted that the majority of taxa in this family are primarily associated with monocotyledons.

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Note 1309 *Nigrohirschioporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nigrohirschioporus Y.C. Dai, Yuan Yuan & Meng Zhou

The taxonomy of *Trichaptum sensu lato* underwent a comprehensive revision through the integration of morphological analysis and molecular studies based on ITS, LSU, SSU, and *tef1-α* sequence data from 256 samples (Zhou et al. 2023a). The polyphyletic nature of *Trichaptum sensu lato* was revealed and consequently, *Nigrohirschioporus* was established (Zhou et al. 2023a). The genus is typified by *N. sector* (Ehrenb.) Y.C. Dai, Yuan Yuan & Meng Zhou and is characterized by effuso-reflexed or pileate to resupinate, annual to perennial basidiomata. The surface of the pileus ranges from blackish to purplish to greyish brown and is generally glabrous to velutinose. The nature of the hymenophore may be hydnoid, irpicoid, or poroid, where tubes are concolorous to the pileus surface. The hyphal system varies from dimitic or trimitic with clamp connections present on the generative hyphae. The presence of cystidia is reported in this genus. Basidiospores are thin-walled, hyaline, smooth, cylindrical to ellipsoid (Zhou et al. 2023a). The members of *Nigrohirschioporus* can be differentiated from other genera in *Trichaptum sensu lato* by their typical blackish, woody basidiomata with poroid or toothed hymenophore and sometimes the presence of skeletocystidia (Zhou et al. 2023a). *Nigrohirschioporus* are associated mostly with angiosperm wood causing white rot and their distribution is pantropical. To date, 13 species have been documented within this genus (Zhou et al. 2023a, Saha et al. 2024).

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Note 1310 *Podocarpioporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Podocarpioporus Y.C. Dai, Yuan Yuan & Meng Zhou

Zhou et al. (2023a) introduced *Podocarpioporus* within *Hymenochetales* (*Agaricomycetes*, *Basidiomycota*) to accommodate two wood-decomposing species, *P. podocarpi* (Y.C. Dai) Y.C. Dai, Yuan Yuan & Meng Zhou and *P. vinaceobrunneus* (Corner) Y.C. Dai, Yuan Yuan & Meng Zhou (Zhou et al. 2023a). The genus is characterized by annual basidiomata, which are resupinate, effused-reflexed to pileate; with a pileus surface tomentose that is sulcate and zonate, ranging in colour from cinnamon to vinaceous fuscous brown. The hymenophore is poroid to irpicoid and the hymenium colour varies from clay-buff, brown to vinaceous. The hyphal system is dimitic with generative hyphae having clamp connections and occasional skeletal hyphae with simple septa, with tissue darkening but otherwise unchanged in KOH. Cystidia are occasionally encrusted at the apex, and the basidiospores are allantoid, colorless, thin-walled, smooth, and negative in Melzer's reagent (Hattori 2001, Dai et al. 2009, Zhou et al. 2023a). The genus is distributed in tropical Asia (China and Malaysia) growing on woody hosts of *Podocarpaceae*. Molecular analyses of a multi-locus dataset (ITS, LSU, nSSU, mtSSU, and *tef1-α*) confirmed that the genus belongs to a monophyletic clade, but only *P. podocarpi* was phylogenetically analyzed. The DNA sequences of *P. vinaceobrunneus* have not been published till now.

References

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Note 1311 *Cnidariophoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cnidariophoma Crous & Yarden

Crous et al. (2023c) introduced *Cnidariophoma* under *Pleosporaceae* (*Pleosporales*, *Dothideomycetes*, *Ascomycota*) as a monotypic genus to accommodate a phoma-like species based on morphology and phylogenetic analyses. This genus was typified by *C. eilatica* Crous & Yarden (ex-type, CBS 149672). This species was isolated from *Stylophora pistillata*, a coral in the Red Sea, in Israel. Based on the phylogenetic analysis of LSU sequence data *C. eilatica* is placed in a clade close to *Decorospora gaudefroyi* (Crous et al. 2023c). *Cnidariophoma eilatica* is a phoma-like species with a pycnidial asexual morph, while the asexual morph in *Decorospora gaudefroyi* has not been determined and it was described based on the sexual morph. According to the blast search results provided by Crous et al. (2023c), based on the different DNA loci (LSU = OQ629062, ITS = OQ628480, *act* = OQ627931, *rpb2* = OQ627943, *tub2* = OQ627964), *C. eilatica* had the highest similarity with various genera including *Tamaricicola* and *Comoclathris*. Preliminary phylogenetic analyses of ITS and *rpb2* sequences data using maximum likelihood and maximum parsimony revealed that *C. eilatica* is closer to *Tamaricicola* in a single clade. *Cnidariophoma* is distinguished from *Pleospora*, the type genus of *Pleosporaceae* by having a phoma-like asexual morph. Moreover, *Tamaricicola* differs from *Pleospora* in both sexual and asexual morphs as mentioned by Thambugala et al. (2017a). Thus, examining the position of both phoma-like genera *Cnidariophoma* and *Tamaricicola* at the family level is recommended in phylogenetic studies on *Dothideomycetes*.

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Note 1312 *Tamasia*

Web-links: Index of fungi, Facesoffungi, MycoBank, GenBank

Tamasia Farkas

Farkas (2023) introduced *Tamasia* within *Ramalinaceae* (*Lecanorales*, *Lecanoromycetes*) to accommodate *T. fijiensis* Farkas as the type species. The generic name *Tamasia* was derived from the Hungarian botanist Tamás Pócs. *Tamasia* differs from the lichen-forming fungal genera

Bacidina (*Ramalinaceae*), *Megalaria* (*Lecanoraceae*), and *Felhanera* (*Pilocarpaceae*) based on morphological characteristics, such as the ascus apex resembling the *Lecidella*-type (now described as *Tamasia*-type), the branching of paraphyses near the apices, the width and septation of ascospores, the foliicolous habitat, and the presence of the cyanobacterium *Rhizonema* as photobiont (Farkas 2023). There is no evidence so far of mutualistic associations between cyanobacteria and *Ramalinaceae* mycobionts; on the contrary, *Ramalinaceae* mycobionts tend to associate with eukaryotic green microalgae of the class *Trebouxiophyceae* (Casano et al. 2011, Sanders & Masumoto 2021, Blázquez et al. 2022). In the phyllosphere community where *Tamasia* crustose thallus grows, free-living cyanobacteria and other fungi lichenized with *Rhizonema* were detected (Farkas 2023). Future research must conduct an integrative approach to confirm the phylogenetic placement of the mycobiont in the *Ramalinaceae* and validate the taxonomic identity of the photosynthetic partner. Additionally, transmission electron microscopy could be used to determine if, besides *Rhizonema*, some eukaryotic green algae are involved in the symbiosis (Lücking et al. 2009, Sanders et al. 2016).

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Note 1313 *Complexispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Complexispora Błaszk., B.T. Goto, Niezgoda & Magurno

Complexispora was introduced by Błaszkowski et al. (2023) to describe two new species of glomeromycotean taxa based on morphology and phylogenetic analyses of 45S and *rpb1* sequence data. The genus was typified by *C. multistratosa* Błaszk., B.T. Goto, Niezgoda & Magurno, and *C. mediterranea* Błaszk., B.T. Goto, Niezgoda & Magurno was the second species, both accommodated within *Glomeraceae* (*Glomerales*, *Glomeromycetes*, *Glomeromycota*). *Complexispora* formed a highly supported new clade sister to the *Glomus* clade (Błaszkowski et al. 2023).The etymology refers to the complex spore wall structure with 4–6 layers. However, the only morphological structure that appears to be diagnostic for *Complexispora* is the swelling, colourless, laminate spore wall layer (Błaszkowski et al. 2023). These species were originally found in the rhizosphere soils of *Ammophila arenaria* (L.) Link colonizing maritime sand dunes on the beach in Greece (Błaszkowski et al. 2023).

Reference

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Note 1314 *Neocirrenalia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neocirrenalia J. Yang & K.D. Hyde

Yang et al. (2023b) introduced the monotypic genus *Neocirrenalia* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*) to accommodate *N. nigrospora* (Somrith., Chatmala & E.B.G. Jones) J. Yang & K.D. Hyde based on morphological characteristics and phylogeny. This marks the first recorded helicoid conidia in *Chaetosphaeriaceae* (Yang et al. 2023b). *Neocirrenalia nigrospora* is a saprobe isolated from decaying submerged wood in a freshwater stream in Thailand. Only the asexual morph has been observed for *Neocirrenalia*, characterized by macronematous, mononematous, simple, smooth-walled, septate, unbranched conidiophores that are pale brown to dark brown. The conidiogenous cells are monoblastic, terminal, determinate, subcylindrical, and brown. Conidia are acrogenous, solitary, regularly helicoid, multiseptate, 1–1.5 times coiled, non-complanate, dark olivaceous brown to black, with cells increasing in diameter from the base to the terminal. The terminal cells are contractible and have opaque septa (Yang et al. 2023b). Previously, *N. nigrospora* was classified in *Cirrenalia* as *C. nigrospora*. However, *Cirrenalia* exhibits distinct morphological characteristics such as versicoloured, curved to one coiled with strongly constricted septate conidia, and a larger and darker terminal conidial cell (Yang et al. 2023b). Based on multigene phylogeny (ITS, LSU, and *tef1-α*), *N. nigrospora* forms a sister clade with *Zanclospora*. *Neocirrenalia nigrospora* resembles *Cirrenalia* in having non-constricted septate and dark brown or black helicoid conidia. However, *Cirrenalia* differs from *N. nigrospora* in having sporodochia and different coiling times in conidia (Yang et al. 2023b).

Reference

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Note 1315 *Luteodorsum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Luteodorsum Z.J. Peng, X.Y. Liu, & Z.D. Yu

Luteodorsum, consists of only one species, *L. huanglongense* Z.J. Peng, X.Y. Liu, & Z.D.Yu which was described based on morphological characters and phylogenetic evidence (Peng et al.

2023a). Basidiomes of *Luteodorsum* are gomphoid, fleshy, and stipitate-pileate. The pileus is initially clavate to horse hoof-like, maturing into a fan or funnel form. Its surface is gritty, nearly glabrous to fibrillose, and it occasionally develops warts. Its edge is subundulate and faintly hygrophanous. The hymenophore is decurrent, wrinkly, and ridged, sometimes in asymmetrical regions, with a constant colour when exposed to light salmon, dark salmon, and rosy-brown. The stipe is firm, cylindrical to slightly tapering downwards, central or slightly eccentric, and with a white basal mycelial cord. Pleurocystidia are cylindrical to clavate, flexuous, smooth, and sporadically distributed amid and barely protruding beyond the basidia. Clamp connections are present. The basal mycelium is smooth, with druse crystals resembling rosettes. The wart-adorned, pale orange to light cinnamon basidiospores are ellipsoid to obovoid, inamyloid, and cyanophilic. The morphology of *Luteodorsum* is distinct from the five other cantharelloid–gomphoid genera, *Gomphocantharellus*, *Gloeocantharellus*, *Gomphus*, *Phaeoclavulina* and *Turbinellus*, due to its ellipsoid to obovoid warted basidiospores, its wrinkled, ridged, salmon to rosy-brown hymenophore, and its stipitate-pileate basidiomes that exhibit an almost glabrous to fibrillose pileus without noticeable scales (based on its LSU, *atp6*, and mtSSU sequences), *Luteodorsum* forms a robustly autonomous well-clustered branch of *Gomphales* (Peng et al. 2023a).

Reference

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Note 1316 *Proliferophialis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Proliferophialis L.W. Hou, L. Cai & Crous

Proliferophialis, a monotypic genus in *Bionectriaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*), was introduced by Hou et al. (2023), with *P. apiculata* as the type species. The type species was isolated from *Triticum aestivum* (*Poaceae*) in France. The nomenclature of the genus reflects the occurrence of proliferating conidiophores and phialides. *Proliferophialis* was established based on its morphological characteristics and multigene phylogenetic analyses of ITS, LSU, *rpb2*, and *tef1-α* sequence data (Hou et al. 2023). Their phylogeny included four strains of *P. apiculata*, with the latter forming a distinct lineage from other genera in *Bionectriaceae*. This distinct clade supports the establishment of *Proliferophialis* as a novel taxon. The key characteristic that sets *Proliferophialis* apart from other taxa is its ability to produce abundant phialides with continuous apical percurrent proliferation. *Proliferophialis* is characterized by aseptate, hyaline, thick- and smooth-walled, ovoid or fusoid conidia, with hilar spots at the apex and base, typically arranged in interminable chains (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JW, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105, 23–203.

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Note 1317 *Pseudogrammothele*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudogrammothele Y.C. Dai, W.L. Mao & Yuan Yuan

Mao et al. (2023b) introduced *Pseudogrammothele* within *Polyporaceae* (*Polypoprales*, *Agaricomycetes*, *Basidiomycota*) to accommodate *P. separabillima* (H.S. Yuan) Y.C. Dai, W.L. Mao & Yuan Yuan based on morphology and phylogenetic analyses of ITS, LSU, *tef1-α*, and *rpb1* sequence data. This monotypic genus was found on a fallen angiosperm twig in China and causes white rot. *Pseudogrammothele* is characterized by a resupinate, leathery basidiome that easily separates from the substrate, with a yellowish brown to pale luteous pore surface, subiculum duplex with a distinct black line separating the two layers, the hyphal system dimitic with skeletal hyphae IKI–, CB + and oblong ellipsoid, hyaline, thin-walled, smooth basidiospores, usually with a large guttule, IKI– and CB +. Phylogenetically, this genus formed a well-supported clade distant from *Epithele*, *Grammothele*, *Porogramme*, and *Theleporus*, which are morphologically similar. However, *Pseudogrammothele* has basidiomes easily separating from the substrate, distinct pores, a duplex subiculum and large and cyanophilous basidiospores with guttules (Mao et al. 2023b). *Pseudogrammothele separabillima* was originally described in *Grammothele* by having a resupinate basidiome with a brownish pore surface, a poroid hymenophore with hymenium restricted to the base of the tubes, a duplex subiculum, a dimitic hyphal system with dextrinoid and CB– skeletal hyphae, presence of dendrohyphidia and oblong ellipsoid, thin-walled, IKI–, CB– basidiospores and phylogenetic analysis with ITS (Núñez & Ryvarden 2001, Yuan 2015). Molecular analyses based on the dataset (ITS, LSU, *tef1-α*, and *rpb1*) confirmed that the genus belongs to a monophyletic clade in the family *Polyporaceae* (Mao et al. 2023b). Further investigations should include the type specimen of *Grammothele separabillima* H.S. Yuan in the phylogenetic analysis to confirm the validity of the genus because this was not considered and there are some differences in the morphology of type specimen with the specimens studied by Mao et al. (2023).

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Yuan HS. 2015 – Molecular and morphological evidence reveal two new species in *Grammothele* and *Theleporus* (*Basidiomycota*) from southern China. Phytotaxa 213(1), 46–56.

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Note 1318 *Ustilagosporites*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ustilagosporites V.D. Kapgate ex R.K. Saxena, V.D. Kapgate & P.M. Kirk

Ustilagosporites is a monotypic fossil genus (type *U. mundkurii* V.D. Kapgate ex R.K. Saxena et al. 2023). It was discovered by Kapgate (2016) from Intertrappean Beds (Early Tertiary) in India. Specimens of this fossil basidiomycetous species were found in a petrified chert piece. The fungal spore balls are oval and consist of a few chlamydospores. Chlamydospores are sessile, uninucleate, unicellular, and globose. They are enclosed within spore balls that consist of two size categories: large spores and small spores grouped, without stalk or conidiophores. The exospores are thick with spiny ornamentation, and the endospore is thin. The parasitic fungus is intercellular, with fungal spore balls irregularly distributed in the infected parts of the host tissue. The host tissue looks like an inflorescence axis with short lobes of branches. The tissue is sufficiently thick, but the cells are completely disorganized by the parasite-formed pseudoparenchyma, and are pale yellow. The spore balls are buried in the host tissue and covered by a sterile sheath or pseudomembrane. Sterile hyphae or mycelium were not seen inside the intercellular spaces of the host tissue. The nucleus is prominent in each spore. *Ustilagosporites* was not validly published by Kapgate (2016) because the species name indicating its type was not validly published (Turland et al. 2018, Art. F.5.1). Saxena et al. (2023) validated the genus and its type species by providing the missing Registration Identifier. The genus name indicates its similarity with *Ustilago* (*Ustilaginales*, *Ustilaginaceae*).

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Note 1319 *Shirahamella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Shirahamella E. Azevedo, P. Correia & M.F. Caeiro

Shirahamella (*Halosphaeriaceae*, *Microascales*, *Hypocreomycetidae*, *Pezizomycotina*) was introduced based on morphology and phylogeny to accommodate *S. gracilis* (Nakagiri & Tokura) E. Azevedo, P. Correia & M.F. Caeiro (≡ *Corollospora gracilis* Nakagiri & Tokura) as a monotypic species (Correia et al. 2023). This species is characterized by narrow, uni-septate ascospores, typically measuring less than 8 µm in diameter. It produces abundant ascomata in single-spore cultures (Nakagiri & Tokura 1987). These characteristics distinguish it from other *Corollospora* species. Based on molecular analysis of combined ITS, LSU, and SSU sequence data, this species grouped in a well-supported clade separate from the closest taxa including *Ajigaurospora* and *Garethelia* species (Correia et al. 2023). *Shirahamella gracilis* is a marine fungus initially isolated from sea foam in Japan (Nakagiri & Tokura 1987). It has also been documented as a saprobe in marine substrates in India, South Africa, Cuba, and Thailand, indicating its status as an obligate marine fungus (Steinke & Lubke 2003, Borse et al. 2013, Samón-Legrá et al. 2014).

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Note 1320 *Saxispiralis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Saxispiralis D.S. Paiva & A. Portugal

The monotypic genus *Saxispiralis* was introduced by Paiva et al. (2023) to accommodate *S. lemnorum* D.S. Paiva & A. Portugal based on morphology and phylogeny of LSU, ITS, and *rpb2* sequence data. *Saxispiralis lemnorum* was isolated from deteriorated limestone in the Lemos Pantheon, Portugal. The stone surface where the fungus was isolated had salt damage, and *S. lemnorum* exhibited the ability to survive on surfaces with high evaporation levels and low water activity. *Saxispiralis* represents yet another genus of rock-inhabiting fungi (Liu et al. 2021a) that are classified in several orders of *Dothideomycetes* (Gueidan et al. 2008, Abdollahzadeh et al. 2020). It is a member of *Aeminiaceae* in *Mycosphaerellales*. The only other genus in *Aeminiaceae* is the monotypic *Aeminium* J. Trovão, I. Tiago & A. Portugal, based on *A. ludgeri* J. Trovão, I. Tiago & A. Portugal, described from biodeteriorated limestone collected in the Old Cathedral of Coimbra, Portugal (Trovão et al. 2019). Both *Saxispiralis* and *Aeminium* are black hyphomycetes with similar morphology that form terminal chains of brown arthoconidia, although *A. ludgeri* lacks the spirally twisted hyphae observed in *Saxispiralis lemnorum*. Phylogenetically (a combined DNA sequence data of LSU, ITS, and *rpb2*), *Aeminium ludgeri* and *Saxispiralis lemnorum* represent a sister clade within *Aeminiaceae*. In *Saxispiralis*, before dividing into arthroconidia, the cells undergo a process of gradually swelling (torulose), thickening their walls, and darkening, eventually forming long chains of conidia. The conidia are dark brown, spiral-like shape in chains, thick-walled, rugose, and globose. Chlamydospores were not observed in the culture, and no identifiable sexual morph was present (Paiva et al. 2023). If the branch lengths are also considered (Figure 1; Paiva et al. 2023), then there is also a case to be made for recognizing *Aeminium* as a sole genus in *Aeminiaceae*, rather than introducing additional genera in *Neodevriesiaceae* and *Extremaceae*.

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Paiva DS, Trovão J, Fernandes L, Mesquita N et al. 2023 – Expanding the microcolonial black fungi *Aeminiaceae* family: *Saxispiralis lemnorum* gen. et sp. nov. (*Mycosphaerellales*), isolated from deteriorated limestone in the Lemos Pantheon, Portugal. Journal of Fungi 9, 916.

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Note 1321 *Ramosiphorum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ramosiphorum L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced *Ramosiphorum* to accommodate *R. polyporicola* L.W. Hou, L. Cai & Crous as the type species based on morphology and phylogeny of ITS, LSU, *rpb2* and *tef1-α* sequence data. Phylogenetically *Ramosiphorum* formed a sister clade to *Lasionectriella* and *Ochronectria* within *Bionectriaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*). In this genus, the mycelium consists of branched, septate, hyaline, rough- and thin-walled hyphae. Conidiophores are either aggregated as sporodochial-like, or unbranched, hyaline, and smooth-walled. Conidiogenous cells are monophialidic, cylindrical, or subulate, hyaline, and thick- and smooth-walled. The conidia are aseptate, hyaline, thin- and smooth-walled, or thick- and rough-walled. Chlamydospores and sexual morph have not been observed. The strains of *Ramosiphorum* previously labeled as "*Nectriopsis oropensoides*" have morphological characteristics that indicate they are distinct species. Unlike the conidiophores of *N. oropensoides*, which are described as monophialidic and unbranched or occasionally branched (Samuels 1988), all strains examined in Hou et al. (2023) consistently produced branched conidiophores, sometimes forming aggregated sporodochia. Therefore, they reidentified all cultures listed as "*Nectriopsis oropensoides*" and introduced *Ramosiphorum* with three new species. The genus is known from Japan, China, and Venezuela. *Ramosiphorum* species are found on polypores, on the basidiocarp of *Echinoporia hydnophora*, on dead decorticated wood on the ground, and on bark of dead trees (Hou et al. 2023).

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Hou LW, Giraldo A, Groenewald JW, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105, 23–203.
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Note 1322 *Tasmaniomyxa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Tasmaniomyxa S.J. Lloyd, Leontyev, G. Moreno, López-Vill. & Schnittler

The monotypic genus *Tasmaniomyxa* was erected by Lloyd et al. (2023) to accommodate *T. umbilicata* S.J. Lloyd, Leontyev, G. Moreno, López-Vill. & Schnittler as the type species based on morphological characters and phylogeny (SSU, *tef1-α*, and *coI*). *Tasmaniomyxa umbilicata* was discovered on decomposed wood, on large logs, stumps, moss, and leaf litter in Australia, Tasmania, and New Zealand. In the type species, stalked sporocarps are available. The peridium is membranous and persistent. The capillitium, a network of tubular structures, is attached to the peridium with funnel-shaped ends. This capillitium is composed of thin, flaccid threads that are poorly branched and do not form a rigid network. The columella is cylindrical and opaque. No lime deposits were observed. Overall, the characteristics of this myxomycete suggest a unique and distinct morphology as compared to other myxomycetes. Both morphological and molecular evidence suggest that *Tasmaniomyxa* could be seen as the link connecting the primitive, limeless *Physarales* with more recent calcareous species within the group. Due to the lack of clear morphological characteristics and available phylogenetic information, it is believed that *Tasmaniomyxa* does not fit into any known families and may potentially belong to a distinct, unidentified family. The uncertain phylogenetic relationships among various species in the traditional genera *Lamproderma* and *Physarum* prevent the classification of this new genus into a specific family. Thus, *Tasmaniomyxa* is regarded as a member of the order *Physarales* without a designated family (Lloyd et al. 2023). The unique characteristics of the newly discovered species allow it to be classified under a new genus, showcasing a peculiar blend of traits from the *Lamprodermataceae* and *Didymiaceae*. While the appearance of the fruiting bodies of *Tasmaniomyxa* initially resembles that of *Lamproderma*, with both genera featuring stalked sporocarps and spherical sporotheca covered in a shiny, membranous peridium, the similarities end there. The capillitium of *Tasmaniomyxa* is more akin to that of *Didymiaceae*, consisting of soft, flaccid threads that lack the rigid three-dimensional network seen in *Lamproderma*. Additionally, the capillitial threads in *Tasmaniomyxa* share characteristics with *Didymiaceae*, such as a rough surface, a hollow structure, and spindliform nodules. Notably, the ornamentation of the spores, featuring large grouped and small scattered warts, is a shared trait between *Tasmaniomyxa* and *Didymiaceae*, setting them apart from *Lamproderma*, which does not exhibit pigmented plasmodia (Lloyd et al. 2023). Despite not exhibiting all the typical traits of this family, the genus falls somewhere between the stalked species of *Lamproderma* and *Diderma* in terms of its evolutionary placement (Lloyd et al. 2023).

Reference

Lloyd SJ, Leontyev DV, Moreno G, Villalba ÁL et al. 2023 – *Tasmaniomyxa umbilicata*, a new genus and new species of myxomycete from Tasmania. Mycologia 116(1), 170-183.

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Note 1323 *Valtocarpus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Valtocarpus Gmoshinskiy, Prikhodko, Bortnikov, Shchepin & Novozh.

Valtocarpus was erected by Gmoshinskiy et al. (2023) under *Stemonitidaceae* (*Stemonitidales*, *Columellidia*, *Myxogastria*, *Eumycetozoa*, *Amoebozoa*) to accommodate two species based on morphology and phylogenetic analyses using concatenated nrSSU, mtSSU, *tef1-α* sequences. The genus is typified by *V. trechisporus* (Berk. ex Torrend) Gmoshinskiy, Prikhodko, Bortnikov, Shchepin & Novozh and *V. megaloplegmus* Gmoshinskiy, Prikhodko, Bortnikov, Shchepin & Novozh are the other accepted species. The sporophores form pseudoaethalia composed of densely packed sporangia. The sporangial stalks are hollow and tough, while the columella is irregular and branched. The capillitium extends from the columella, forming a loosely structured network with spindliform swellings and multiple free ends. The spores are dark brown, and reticulate, with a network of continuous vertical ridges on their surface. Fruiting occurs in forests near sphagnum bogs or waterlogged forests on mosses like *Sphagnum* and *Polytrichum*, as well as small twigs and leaf litter. Phylogenetically, *Stemonitis flavogentia* and *Stemonitopsis aequalis* formed a sister clade to *Valtocarpus* (Gmoshinskiy et al. 2023). *Symphytocarpus trechisporus* (Berk.) Nann. -Brem. is more commonly found in Europe and North America. Initially, this taxon was identified as a variety named *Stemonitis fusca* var. *trechispora* by Berk. ex Torrend (Torrend 1908). However, Macbride (1992) observed consistent differences in various specimens regarding their appearance, colour, network structure, and spores, leading to the proposal of elevating the taxon to a species level as *Stemonitis trechispora* (Berk.) T. Macbr. (Macbride 1922). On the other hand, Lister (1925) considered that it is a poorly defined variety of *Stemonitis fusca* Roth. Subsequently, this taxon was included in their newly described genus as *Symphytocarpus trechisporus* (Ing & Nannenga-Bremekamp 1967). Finally, it was proposed to reassign *S. trechisporus* and *Amaurochaete trechispora* to *Valtocarpus* (Gmoshinskiy et al. 2023).

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Note 1324 *Shiqia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Shiqia C.L. Hou, Q.T. Wang & P.F. Cannon

Shiqia was introduced to accommodate two species, *S. menziesii* (Dearn. & Barthol.) C.L. Hou & P.F. Cannon and *S. yuexiensis* (C.L. Hou & M. Piepenbr.) C.L. Hou, Q.T. Wang & P.F. Cannon. based on morphological characters and phylogenetic analyses using combined nrLSU and mtSSU sequences (Wang et al. 2023). These are new combinations for *Melasmia menziesiae* Dearn. & Barthol. (*Shiqia menziesii*) and *Rhytisma yuexiense* Hou & M. Piepenbr (*Shiqia yuexiensis*). The genus is typified by *Shiqia yuexiensis*, which was found on fallen leaves of *Rhododendron ovatum* in China (Wang et al. 2023). Usually, 1–3 large stromata develop on the adaxial side of each living leaf. The ascomata develop on dead leaves, often causing pronounced bulging, and open through a somewhat irregular longitudinal split. Lips are absent. Paraphyses are filiform, often hooked or twisted at the apex. Ascospores are filiform and lack gelatinous sheaths. *Shiqia* species are parasites on deciduous *Rhododendron* species and are distantly linked to *Densorhytisma* species that infect semi-evergreen *Rhododendron* species. Furthermore, there are differences in the morphological characteristics of stromata between the two genera. *Shiqia* spp. have large spots as stromata, while *Densorhytisma* stromata are small and densely developed on a leaf (Wang et al. 2023). *Shiqia* is placed under *Rhytismataceae* (*Rhytismatales*, *Leotiomycetes*, *Pezizomycotina*, *Ascomycota*).

Reference

Wang QT, Guo MJ, Lv T, Zhou H et al. 2023 – Phylogeny and taxonomy of *Rhytisma*-like species worldwide. Fungal Diversity 120(1), 77–119.

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Note 1325 *Alloacremonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloacremonium L.W. Hou, L. Cai & Crous

Alloacremonium was established by Hou et al. (2023) to accommodate two species, *A. humicola* L.W. Hou, L. Cai & Crous and *A. ferrugineum* L.W. Hou, L. Cai & Crous based on a concatenated alignment of ITS, LSU, *rpb2*, and *tef*-1α sequences and morphological characteristics. The genus was typified by *A. humicola*, which was isolated from agricultural soil in the Netherlands. In *Alloacremonium*, the mycelium is composed of branched, septate, hyaline, and smooth, thin-walled hyphae. Conidiophores are hyaline, smooth-walled, solitary, unbranched, or poorly branched. Conidiogenous cells are enteroblastic, lateral or terminal, subulate, hyaline, and thick, smooth-walled. Conidia are aseptate, ellipsoid, oblong to short cylindrical, straight, eguttulate, and arranged in slimy heads. Chlamydospores and sexual morph have not been observed. The taxonomic placement of *Alloacremonium* is in *Bionectriaceae*, *Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, and *Ascomycota*. Phylogenetically, the two species of *Alloacremonium* belong to a distinct lineage and are separated from other genera (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

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(Edited by **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1326 *Corollosporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Corollosporella E. Azevedo, P. Correia & M.F. Caeiro

Correia et al. (2023) established *Corollosporella* to accommodate *C. anglusa* (Abdel Wahab & Nagah) E. Azevedo, P. Correia & M.F. Caeiro as the type species based on morphology and phylogenetic analyses using ITS and/or LSU sequence data. The second species is *C. ramulosa* (Meyers & Kohlm) E. Azevedo, P. Correia & M.F. Caeiro. The type species was discovered in Egypt. These two species are new combinations of *Corollospora anglusa* Abdel-Wahab & Nagah (*C. anglusa*) and *C. ramulosa* (Meyers & Kohlm) E.B.G. Jones & Abdel-Wahab (*C. ramulosa*). However, Correia et al. (2024) corrected the genus and the species combination because of invalid indications on the pages where the basionyms of the corresponding type species were validly published. Both sexual and asexual morphs have been observed for *Corollosporella*. In the asexual morph, conidiophores are simple or branched, multiseptate, and hyaline. Conidiogenous cells are proliferated and sympodial at the apex or monoblastic. Conidia are septate, hyaline, branched, and filamentous, breaking down into smaller segments or conidia that form a system of axes. In the sexual morph, ascomata are solitary or gregarious, superficial, ostiolate, papillate, and black. The peridium comprises thick-walled brown cells, consisting of two layers: the outer layer consists of polygonal, roundish cells, while the inner layer consists of flat cells. Asci are eight-spored, ellipsoidal, unitunicate, and early deliquescent. Ascospores are fusiform to ellipsoidal, one-septate, and hyaline. *Corollosporella* is classified within *Halosphaeriaceae* (*Microascales*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*). *Corollosporella anglusa* (the type species) and *C. ramulosa* are grouped distinctly from *Corollospora sensu stricto*. *Corollosporella anglusa* differs from *Corollospora* species due to its smaller, leathery ascomata and narrower one-septate ascospores with shorter polar spines. The asexual form of *Variscosporina anglusa* is characterized by the production of conidia composed of filaments branching rectangularly, breaking into bi-celled or occasionally single-celled segments. These segments are hyaline, cylindrical, septate, and constricted at the septa, and the fungus produces numerous chlamydospores in culture (Correia et al. 2023).

References

Correia P, Azevedo E, Caeiro MF. 2023 – Redefining the genus *Corollospora* based on morphological and phylogenetic approaches. Journal of Fungi 9(8), 841.

Correia P, Azevedo E, Caeiro MF. 2024 – Correction: Correia et al. Redefining the genus *Corollospora* based on morphological and phylogenetic approaches. J. Fungi 2023, 9, 841. Journal of Fungi 10(1), 39.

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Note 1327 *Corollosporopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Corollosporopsis M.F. Caeiro, P. Correia & E. Azevedo

Corollosporopsis was established to accommodate *C. portsaidica* (Abdel-Wahab & Nagah.) M.F. Caeiro, P. Correia & E. Azevedo as the type species based on morphology and phylogenetic analyses using ITS and/or LSU sequence data. The species was found in both Egypt and Saudi Arabia. *Corollosporopsis* includes six species but only *Corollosporopsis portsaidica*, formally introduced as *Corollospora portsaidica* Abdel-Wahab & Nagah., was introduced as a new combination (Correia et al. 2023). However, they corrected the new genus and new combination due to invalid indication of the pages where the basionyms of the corresponding type species (Correia et al. 2024). *Corollosporopsis portsaidica* is distinguished from *Corollospora* species by its smaller, black ascocarps with thin peridial walls consisting of a single layer of cells. The ascospores are one-septate, showing constriction at the central septum; the two cells are similar in size and shape or slightly different, initially hyaline but turning brown when they mature. These unique morphological characteristics and the molecular data presented, support the reclassification of the new genus *Corollosporopsis* (Correia et al. 2023). In the sexual morph, ascomata are solitary, globose, ostiolate, papillate, black, and carbonaceous. Pseudoparenchymatous cells are thick and polygonal. Asci are eight-spored, broadly fusoid and unitunicate, and contain one-septate, fusiform, hyaline or brown, smooth-walled ascospores. The primary appendages are singular, located at the ends of the spores, resembling spines or thorns. Secondary appendages are formed through the breaking and shedding of the exospore, appearing as double frills or ribbon-like structures at the equator, with polar extensions forming tubes or sheets. The asexual morph has not been determined. *Corollosporopsis* is classified within *Halosphaeriaceae*, (*Microascales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Ascomycota*) (Correia et al. 2023).

References

Correia P, Azevedo E, Caeiro MF. 2023 – Redefining the Genus *Corollospora* based on morphological and phylogenetic approaches. Journal of Fungi 9(8), 841.

Correia P, Azevedo E, Caeiro MF. 2024 – Correction: Correia et al. Redefining the genus *Corollospora* based on morphological and phylogenetic approaches. J. Fungi 2023, 9, 841. Journal of Fungi 10(1), 39.

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Note 1328 *Mesophoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Mesophoma H.B. Zhang, A.L. Yang & L. Chen

Yang et al. (2023a) established *Mesophoma* to accommodate two species based on morphology and phylogenetic analyses using LSU, ITS, *rpb2*, and *tub2* sequence data. The type species is *Mesophoma speciosa* H.B. Zhang, A.L. Yang & L. Chen, and another species is *M. ageratinae* H.B. Zhang, A.L. Yang & L. Chen. The type species was isolated from the roots of *Ageratina adenophora* in China. *Mesophoma* is classified in *Didymellaceae*, *Pleosporales*, *Dothideomycetes*, *Ascomycota*. In the asexual morph, conidiomata of *Mesophoma* are pycnidial, solitary or aggregated, and globose to subglobose. The pycnidial wall consists of two to six layers of angular cells (*textura angularis*). Conidiogenous cells are phialidic, hyaline, smooth-walled, and ampulliform to doliiform. Conidia are aseptate, smooth, thin-walled, guttulate, and hyaline. Phylogenetically, *Mesophoma* forms a distinct clade separate from other genera within the *Didymellaceae*. Morphologically, the conidia of *Mesophoma* are smaller than those of *Stagonosporopsis* and *Boeremia*. Conidia of *Heterphoma* typically have 0–1 (occasionally 2) septa, whereas most *Mesophoma* conidia are typically without septa (Yang et al. 2023a).

Reference

Yang AL, Chen L, Cheng L, Li JP et al. 2023a – Two novel species of *Mesophoma* gen. nov. from China. Current Microbiology 80(4), 129.

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Note 1329 *Monohydropisphaera*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Monohydropisphaera L.W. Hou, L. Cai & Crous

The monotypic genus *Monohydropisphaera* was introduced with *M. fusigera* (Berk. & Broome) L.W. Hou, L. Cai & Crous, as the type species based on morphology and phylogeny (a concatenated data set of LSU, ITS, *rpb2* and *tef*-1α sequences) (Hou et al. 2023). The type species was found in dead tops of *Bambusa vulgaris* (*Poaceae*) in France. The mycelium is composed of branched, septate, hyaline to pale brown, and smooth hyphae. In the sexual morph, perithecia are solitary or crowded, superficial, subglobose- and reddish-brown. The perithecial wall comprises two parts: an outer region consisting of thick-walled, globose to ellipsoid cells, and an inner region composed of thin-walled, elongated, flattened cells. Asci are unitunicate, clavate with rounded apices, lacking a ring, and containing eight aseptate, fusoid, hyaline ascospores arranged biseriately. In the asexual morph, conidiophores are macronematous, mononematous, unbranched, elongated, and hyaline to light brown. Conidiogenous cells are integrated, monophialidic, and terminal. Conidia are aseptate with smooth to verrucose, and hyaline walls. *Caespitomonium squamicola* is the closest clade to *Monohydropisphaera* based on a concatenated alignment of LSU, ITS, *rpb2*, and *tef*-1α sequences. The taxonomic placement of *Monohydropisphaera* is in *Bionectriaceae*, *Hypocreales*, *Sordariomycetes*. *Monohydropisphaera fusigera* was initially identified as *Hydropisphaera fusigera* (Lechat & Courtecuisse 2010). It is distinguished from *Hydropisphaera sensu stricto* in the multi-locus phylogenetic analysis and includes more strains and loci. The aseptate ascospores of *Monohydropisphaera* exhibit coarse, somewhat wavy striations, setting them apart from other genera within the *Bionectriaceae* (Hou et al. 2023).

References

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

Lechat C, Courtecuisse R. 2010 – A new species of *Ijuhya*, *I. antillana*, from the French West Indies. Mycotaxon 113, 443.

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Note 1330 *Neoostropa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoostropa Y.Y. Yang, A.R. Gomes de Farias & K.D. Hyde

The monotypic genus *Neoostropa* was erected to accommodate *N. castaneae* Y.Y. Yang, A.R. Gomes de Farias & K.D. Hyde as the type species, based on morphology and phylogenetic analyses of ITS, LSU, and SSU sequence data (Gao et al. 2024). The type species was found on the dead stem of *Castanea henryi* in China. *Neoostropa* is classified under *Stictidaceae* (*Ostropales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*). The ascomata are solitary, multilocular, immersed, and perithecial. Ostioles are surrounded by crystals. Paraphyses are aseptate, branched, hyaline, and filamentous. Asci are cylindrical and long, with thickened caps. Ascospores are hyaline, aseptate, and guttulate. The asexual structure has not been observed. *Neoostropa* is positioned as a separate clade in the phylogenetic analysis, located between *Ostropomyces* and *Ostropa* with strong support. However, *Neoostropa* differs in appearance from these genera due to its characteristics of multilocular ascomata, aseptate, and guttulate ascospores. BLASTn analysis of *N. castaneae* revealed that its ITS sequence exhibited similarity to *Ostropomyces pruinosellus* and *O. thailandicus*. The results of a multigene phylogenetic analysis using a combined dataset (ITS, LSU, and mtSSU sequence data) indicated that *N. castanea* formed a unique clade within *Stictidaceae*, distinct from *O. thailandicus* with strong statistical support. Morphologically, *N. castaneae* differs from *O. pruinosellus* and *O. thailandicus* in terms of its aseptate and guttulate ascospores, as well as the appearance of its ascomata. Additionally, *N. castaneae* is a saprotrophic species not involved in lichenization. However, the ascomata on the branch surface are not easily visible, emerging with a pruinose appearance (Gao et al. 2024).

Reference

Gao Y, Thiyagaraja V, Eungwanichayapant PD, Roberto Gomes de Farias A et al. 2024 – Two new *Stictidaceae* species from grasslands in Yunnan province, China. New Zealand Journal of Botany 9, 1–5.

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Note 1331 *Batistomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Batistomyces Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced *Batistomyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two lichenized species based on morphology and phylogeny using SSU and LSU sequence data. This genus is typified by *B. hyalinus* (Kalb & Vězda) Xavier-Leite, M. Cáceres & Lücking (*Tricharia hyalina* Kalb & Vězda) while *B. pallidus* (Vězda) Xavier-Leite, M. Cáceres & Lücking is the other accepted species. In *Batistomyces*, the thallus is continuous and contains numerous, dense, short stiff, and black setae. The apothecia are sessile to substipitate, biatorine, and translucent. The ascospores are varied. The hyphophores are setiform and black. The diahyphae are moniliform. *Tricharia hyalina* was initially thought to be part of the *Tricharia vainioi* group, but molecular analysis revealed that it was unrelated to that clade or *Tricharia* s.str., necessitating the introduction of a new genus. *Tricharia hyalina* was previously distinguished from *T. vainioi* and similar species by its densely arranged, short, and stiff setae, which could serve as a potential identifying trait. However, further sequencing of additional taxa within the *T. vainioi* group is needed to confirm this hypothesis (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1332 *Bezerroplaca*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Bezerroplaca Xavier-Leite, M. Cáceres & Lücking

Bezerroplaca was established under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate five lichenized fungal species based on morphology and phylogeny using SSU and LSU sequence data (Xavier-Leite et al. 2023). The genus was typified by *B. lucernifera* (Kalb & Vězda) Xavier-Leite, M. Cáceres & Lücking. In this genus, the thallus is continuous and verrucose with scattered white setae. The apothecia are adnate, emarginate (*Echinoplaca* type), and brown-black. The ascospores are muriform. The hyphophores are setiform and white with a darkened apex. The diahyphae are filiform with spermatozoid terminal segments (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1333 *Caleniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Caleniella Xavier-Leite, M. Cáceres & Lücking

Caleniella, a genus within *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*), was established to accommodate two lichenized fungal species. The genus is typified by *C. triseptata* (Vain.) Xavier-Leite, M. Cáceres & Lücking and *C. maculans* (Zahlbr.) Xavier-Leite, M. Cáceres & Lücking are the other species. This taxonomic delineation was based on comprehensive morphological assessments and robust phylogenetic analyses utilizing SSU, LSU, and ribosomal RNA sequence data. (Xavier-Leite et al. 2023). *Caleniella* has a continuous and verrucose thallus and lacks setae. The apothecia are erumpent and zeorine (*Calenia* type). The ascospores are small and three-septate. *Caleniella triseptata* is related to *Caleniopsis* and *Aulaxina*, but it shows significant differences in thallus and apothecial structure and does not have hyphophores. The primary distinction from *Calenia* s.str., which is not closely linked, lies in the small ascospores with three septa (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1334 *Monocalenia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Monocalenia Xavier-Leite, M. Cáceres & Lücking

The monotypic genus *Monocalenia* was established within *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, Pezizomycotina, *Ascomycota*) with *M. monospora* (Vězda) Xavier-Leite, M. Cáceres & Lücking as the type species. This taxonomic designation was based on comprehensive morphological analyses and phylogenetic studies utilizing SSU and LSU ribosomal RNA sequence data (Xavier-Leite et al. 2023). This lichenized genus is characterized by having a continuous and smooth thallus that lacks setae. The apothecia are erumpent and zeorine (*Calenia* type) with epithelial algae. The ascospores are singular and muriform. Hyphophores were not observed. *Monocalenia* is closely related to *Asterothyrium* rather than the broader *Calenia* group. The most similar species, *Calenia lueckingii*, shares characters like epithecial algae and muriform ascospores but differs by having a finely verrucose thallus and apothecia without pruina. Molecular data indicate that *Calenia lueckingii* is more closely related to *Calenia* s.str. than to *Monocalenia monospora* (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1335 *Pseudocalenia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pseudocalenia Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) established the monotypic genus *Pseudocalenia* within *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to house *P. solorinoides* (Lücking) Xavier-Leite, M. Cáceres & Lücking (*Calenia solorinoides* Lücking). This classification was based on morphological characteristics and phylogenetic analyses utilizing SSU and LSU sequence data. The thallus of this lichenized genus is dispersed, bullate, and lacks setae. The apothecia are immersed in the bullate thallus patches. Ascospores are single and muriform. The hyphophores are shortly setiform and white with a blackened apex. Diahyphae have terminal segments that are fusiform to clavate. *Pseudocalenia* can be distinguished from *Calenia s.lat*. by its unique morphology. Phylogenetically, *Pseudocalenia* aligns more closely related to *Roselviria* and *Santricharia* than *Calenia s.lat*.. The presence of immersed, emarginate apothecia, similar to those in *Solorinella* species is a key characteristic. Although *Pseudocalenia* shares some morphological traits with the unrelated *Calenia bullatinoides* and *Bullatina aspidota*, these similarities suggest multiple independent evolutionary events within *Gomphillaceae* (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1336 *Roselviria*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Roselviria Xavier-Leite, M. Cáceres & Lücking

Roselviria was erected by Xavier-Leite et al. (2023) under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *Roselviria purulhensis* (Lücking & Barillas) Xavier-Leite, M. Cáceres & Lücking (=*Aderkomyces purulhensis* (Lücking & Barillas) Lücking, Sérus. & Vězda) as the type species, based on morphology and phylogenetic analysis using SSU and LSU sequence data. Another species is *R. lobulimarginata* (Sipman & Lücking) Xavier-Leite, M. Cáceres & Lücking. The thallus of this lichenized genus exhibits continuity, transitioning into coarse verrucosity, adorned with black setae, and accompanied by a dark brown prothallus. The apothecia adhere to and sit sessile, displaying a lecideine structure with dark brown pruina. The ascospores are muriform, while the hyphophores turn setiform and black. The diaphyphae assume a moniliform. In a molecular analysis (Xavier-Leite et al. 2022) *Roselviria* is distinct from *Aderkomyces* s.str., characterized by pale chroodiscoid apothecia and short setiform hyphophores. Despite Lücking et al. (2005) considering apothecial morphology unimportant for classification, molecular data suggest otherwise and reveal that the sterile white setae, linking *Roselviria* to *Aderkomyces* s.str., evolved independently multiple times within the family.

References

Lücking R, Sérusiaux E, Vězda A. 2005 – Phylogeny and systematics of the lichen family *Gomphillaceae* (*Ostropales*) inferred from cladistic analysis of phenotype data. The Lichenologist 37(2), 123–170.

Xavier-Leite AB, Cáceres MES, Aptroot A, Moncada B et al. 2022 – Phylogenetic revision of the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) suggests post-K–Pg boundary diversification and phylogenetic signal in asexual reproductive structures. Molecular Phylogenetics and Evolution 168, 107380.

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1337 *Nothoamylascus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoamylascus R.A. Healy & M.E. Sm.

Healy et al. (2023) established the monotypic genus *Nothoamylascus* within *Pezizaceae* (*Pezizales*, *Pezizomycetidae*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) based on morphological characteristics and phylogenetic analyses of LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. The genus is typified by *N. erubescens* R.A. Healy & M.E. Sm., discovered in Chile and Argentina. The ascoma is a ptychothecium and hypogeous. The excipulum consists of *textura angularis* or *textura globulosa* cells. The gleba is constructed of asci and paraphyses. The asci are cylindrical. Ascospores are globose and ornamented with truncated spines. Mitotic spore mats are found in small clusters either epigeous on soil or hypogeous, appearing white with pinkish-brown areas. The spore mass of *N. erubescens* is pink in its early stage and turns yellow upon maturation. The mitotic spores are predominantly smooth to slightly warty, with a globose to subglobose. The mitotic spore mats of *N. erubescens* are distinct from those created by *Amylascus* due to the reddish-brown strands of hyphae within an otherwise white mitotic spore mat. When mature, the mitotic spores are light yellow, similar to those of *Amylascus* species. Future collections will be necessary to fully document the variation in *N. erubescens*, especially the visual characteristics of the fresh ascomata, which, like many other taxa mentioned, seem to be uncommon (Healy et al. 2023). Phylogenetically, *Nothoamylascus* formed a distinct clade by using LSU, *tef1-α*, *rpb1*, and *rpb2* sequence data.

Reference

Healy RA, Truong C, Castellano MA, Bonito G et al. 2023 – Re-examination of the Southern Hemisphere truffle genus *Amylascus* (*Pezizaceae*, *Ascomycota*) and characterization of the sister genus *Nothoamylascus* gen. nov. Persoonia 51(1), 125–151.

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Note 1338 *Pseudocorniculariella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocorniculariella L.L. Liu & Z.Y. Liu

Liu et al. (2023b) introduced *Pseudocorniculariella* under *Microthyriaceae* (*Microthyriales*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate a single species based on morphology and phylogenetic analyses using ITS and LSU sequence data. *Pseudocorniculariella* is typified by *P. guizhouensis* L.L. Liu & Z.Y. Liu. The type species was isolated from decaying submerged twigs in a Chinese lake. In the asexual morph, conidiomata are effuse, solitary to gregarious, and reticular. Conidiophores are hyaline, cylindrical, branched, and reduced to conidiogenous cells. Conidiogenous cells are hyaline, indeterminate, smooth, and moderately thick-walled. Conidia are solitary, hyaline, and smooth. The sexual morph has not been observed. Morphologically, *P. guizhouensis* is similar to *Corniculariella rhamni* in its possession of subconical conidiomata with hyaline and filiform conidia. However, *P. guizhouensis* differs in having stromatic conidiomata and polyphialidic conidiogenous cells. Phylogenetically (using ITS and LSU sequence data), *Pseudocorniculariella* formed a distinct clade (Liu et al. 2023b).

Reference

Liu L, Yang J, Zhou S, Gu X et al. 2023b – Novelties in *Microthyriaceae* (*Microthyriales*), two new asexual genera with three new species from freshwater habitats in Guizhou Province, China. Journal of Fungi 9(2), 178.

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Note 1339 *Pseudodiscina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodiscina X.C. Wang & W.Y. Zhuang

Wang et al. (2023) introduced *Pseudodiscina* under *Discinaceae* (*Pezizales*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses using ITS, LSU, and *tef1-α*, and LSU sequence data. This genus is typified by *P. melaleucoides* (Seaver) X.C. Wang & W.Y. Zhuang and *P. yunnanensis*, X.C. Wang, Zhu L. Yang & W.Y. Zhuang is the other accepted species. In the sexual morph, ascomata are cupulate or discoid, and stipitate. The hymenium appears dark brown to blackish when dry. The stipe is subcylindrical and internally hollow. The asci are operculate and eight-spored, appearing subcylindrical. Ascospores are ellipsoidal to broadly ellipsoidal, non-apiculate, bi-guttulate, and have a rough surface. In the multi-locus phylogenetic analysis (using ITS, LSU, and *tef1-α* sequence data), *Pseudodiscina* clustered with *Discina* and *Pseudoverpa*. *Pseudodiscina* differs from other genera in *Discinaceae* by having extreme margin reflexed apothecial. Nevertheless, more extensive sampling and analysis of additional genes are necessary to fully understand the evolutionary history of *Discinaceae* (Wang et al. 2023).

Reference

Wang XC, Yang ZL, Chen SL, Bau T et al. 2023 – Phylogeny and taxonomic revision of the family *Discinaceae* (*Pezizales, Ascomycota*). Microbiology Spectrum 11(3), e00207–23.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Subodini N. Wijesinghe)**

Note 1340 *Pseudoverpa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudoverpa (P.A. Moreau, Bellanger & Loizides) X.C. Wang & W.Y. Zhuang

Wang et al. (2023) introduced *Pseudoverpa* under *Discinaceae* (*Pezizales*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate a single species based on morphology and phylogenetic analyses using ITS, LSU, and *tef1-α*, and LSU sequence data. This genus is typified by *P. anthracobia* (Loizides, P.A. Moreau & Bellanger) X.C. Wang & W.Y. Zhuang, found in a burned forest in Cyprus (Wang et al. 2023). Ascomata are campaniform or cerebriform and stipitate with blackish hymenium. The stipe is smooth, white, and hollow. The asci are operculate, commonly containing eight spores, and are subcylindrical. The ascospores are ellipsoidal, smooth, and mostly bi-guttulate. *Pseudoverpa* is similar to *Gyromitra* and *Paragyromitra*. This genus is distinguished from other genera in *Discinaceae* by having somewhat campanulate apothecia. Nevertheless, a more extensive sampling and analysis of additional genes is necessary to fully understand the evolutionary history of *Discinaceae*.

Reference

Wang XC, Yang ZL, Chen SL, Bau T et al. 2023 – Phylogeny and taxonomic revision of the family *Discinaceae* (*Pezizales*, *Ascomycota*). Microbiology Spectrum 11(3), e00207–23.

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(Edited by **Subodini N. Wijesinghe)**

Note 1341 *Pulvinaticonidioma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Pulvinaticonidioma X. Tang, Jayaward., J.C. Kang & K.D. Hyde

The monotypic genus *Pulvinaticonidioma* was erected by Tang et al. (2023) under *Diaporthaceae* (*Diaporthales*, *Diaporthomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *P. hyalinum* X. Tang, Jayaward., J.C. Kang & K.D. Hyde, based on morphological characters and phylogenetic analyses using ITS, LSU, *tef1-α*, and *rpb2* sequence data. The type species was isolated from the fruits of *Dipterocarpaceae* in Thailand. Only the asexual morph has been observed. Conidiomata are solitary, pycnidial, subglobose, unilocular, and thick-walled. Conidiophores are hyaline and reduced to conidiogenous cells. Conidiogenous cells are phialidic, cylindrical to ampulliform, smooth-walled, and hyaline. Conidia are hyaline, cylindrical, straight, unicellular, and aseptate. Phylogenetically (a combined dataset of ITS, LSU, *tef1-α*, and *rpb2* sequence data), *Pulvinaticonidioma* is closely related to *Chrysomorbus*. Both genera have a coelomycetous asexual morph. However, *Pulvinaticonidioma* can be distinguished from *Chrysomorbus* by its unique characteristics of conidiomata and conidia (Tang et al. 2023).

Reference

Tang X, Lu YZ, Dissanayake LS, Goonasekara ID et al. 2023 – Two new fungal genera (*Diaporthales*) found on *Dipterocarpaceae* in Thailand. Frontiers in Microbiology 14, 1169052.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Subodini N. Wijesinghe)**

Note 1342 *Subellipsoidispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Subellipsoidispora X. Tang, Jayaward., J.C. Kang & K.D. Hyde

The monotypic genus *Subellipsoidispora* was established by Tang et al. (2023) under *Diaporthaceae* (*Diaporthales*, *Diaporthomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *S. guttulata* X. Tang, Jayaward., J.C. Kang & K.D. Hyde, based on morphology and phylogenetic analyses using a combined dataset of ITS, LSU, *tef1-α*, and *rpb2* sequence data. The type species was found on the dead bark of *Dipterocarpaceae* in Thailand. Only the sexual morph has been observed. Ascomata are perithecial, erumpent, scattered, and solitary. The hamathecium is composed of cylindrical, unbranched, smooth, hyaline, and septate paraphyses. Asci are eight-spored, unitunicate, with a J-, apical ring, and evanescent. Ascospores are one-septate, guttulate, and smooth-walled. In a phylogenetic analysis using a combined dataset of ITS, LSU, *tef1-α*, and *rpb2* sequence data, *Subellipsoidispora* grouped with *Coryneaceae* and is positioned as a distinct lineage closely related to *Hyaloterminalis* and *Talekpea*. *Subellipsoidispora* shares similarities with *Coryneum*, *Hyaloterminalis*, and *Talekpea*. While both *Subellipsoidispora* and *Coryneum* have a sexual morph characteristic of ascomycetes, *Talekpea* and *Hyaloterminalis* have an asexual morph typical of hyphomycetes. However, *Subellipsoidispora* differs from *Coryneum* species in terms of ascomata, asci, and ascospores (Tang et al. 2023).

Reference

Tang X, Lu YZ, Dissanayake LS, Goonasekara ID et al. 2023 – Two new fungal genera (*Diaporthales*) found on *Dipterocarpaceae* in Thailand. Frontiers in Microbiology 14, 1169052.

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Note 1343 *Dematiomelanomma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dematiomelanomma Wanas., Y. Gao, H. Gui & K.D. Hyde

Gao et al. (2023) introduced *Dematiomelanomma* under *Melanommataceae* (*Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *D. yunnanense* Y. Gao, Wanas., H. Gui & K.D. Hyde as the type species based on morphology and phylogenetic analyses using ITS, LSU, SSU, *tef1-α*, and *rpb2* sequence data. The type species was isolated from decaying stalks of *Rubus parvifolius* and *Hypericum monogynum* in China. Both sexual and asexual morphs have been observed. In the sexual morph, ascomata are solitary or gregarious, superficial, globose to subglobose, and ostiolate. The peridium is multi-layered. Asci are eight-spored, bitunicate, fissitunicate, and cylindrical to cylindric-clavate. Ascospores are uniseriate and smooth-walled with a mucilaginous sheath. In the asexual morph (synanamorphic), conidiomata are pycnidial, solitary or gregarious, ostiolate and with a multi-layered wall. Macroconidiogenous cells are enteroblastic smooth-walled, and hyaline with ellipsoidal to fusiform and curved to straight macroconidia. Microconidiogenous cells are present or absent. Microconidia are present or absent, hyaline and rounded to oblong or ellipsoidal. Phylogenetically, *Dematiomelanomma* formed a sister clade with *Muriformistrickeria*, *Melanocamarosporioides*, and *Melanodiplodia*, but it differs from these three genera in sexual and asexual morphs. The sexual form of *Dematiomelanomma* shows morphological similarities to other genera within *Melanommataceae* due to the presence of muriform ascospores (Gao et al. 2023).

Reference

Gao Y, Zhong T, Bhat JD, de Farias ARG et al. 2023 – Pleomorphic *Dematiomelanomma yunnanense* gen. et sp. nov. (*Ascomycota, Melanommataceae*) from grassland vegetation in Yunnan, China. MycoKeys 98, 273.

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Note 1344 *Dendroporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Dendroporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Dendroporia* under *Polyporaceae* (*Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate *D. cinereofusca* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji as the type species based on morphology and phylogenetic analyses using LSU and ITS sequence data. The type species was isolated from fallen angiosperm trunks in China. Basidiocarps are annual, resupinate, and adnate. The hyphal system is dimitic. Generative hyphae are with clamp connections. Cystidia are absent. The cystidioles, dendrohyphidia, and large rhomboid crystals are present. Basidiospores are ellipsoid, truncate, thick, and smooth-walled. Phylogenetically (using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data), *Dendroporia* formed a sister clade with *Sparsitubus* and *Tropicoporia*. *Tropicoporia* can be distinguished from *Dendroporia* based on its pore surface color ranging from buff-yellow to grayish-orange, skeletal hyphae that are not dextrinoid. Basidiospores that are dextrinoid. *Sparsitubus* can be distinguished from *Dendroporia* by its basidiocarps, which vary from effused-reflexed to pileate, and its basidiospores, which are ornamented and lack truncation. (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Subodini N. Wijesinghe)**

Note 1345 *Macrosporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Macrosporia B.K. Cui & Xing Ji

The monotypic genus *Macrosporia* (*Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) was established by Ji et al. (2023) to accommodate *M. nanlingensis* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji based on morphology and phylogeny. *Macrosporia nanlingensis* was found on a dead angiosperm tree in China. Basidiocarps are annual, resupinate, and adnate. The subiculum is cream to buff. The hyphal system is trimitic and generative hyphae have clamp connections. Cystidia are absent, but cystidioles are present. Basidiospores are ellipsoid, truncate, hyaline, thick, and smooth-walled (Ji et al. 2023). *Macrosporia* formed a sister clade with three genera *Abundisporus*, *Niveoporia*, and *Perenniporia* *subtephropora* using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Macrosporia nanlingensis* was identified as a distinct clade separate from the *Perenniporia sensu stricto* clade. It can be distinguished morphologically from *Perenniporia sensu stricto* by having annual and resupinate basidiocarps, larger basidiospores, and cinnamon-buff pore surfaces (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu* lato (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1346 *Minoporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Minoporus B.K. Cui & Xing Ji

The monotypic genus *Minoporus* (*Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) was erected by Ji et al. (2023) to accommodate *M. minor* (Y.C. Dai & H.X. Xiong) B.K. Cui & Xing Ji based on morphology and phylogeny using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Minoporus* was isolated from the fallen branch of *Acer* and *Quercus* in China. Basidiocarps are annual, pileate, and solitary. Context is white to cream in color and corky. The hyphal system is dimitic and generative hyphae have clamp connections. Cystidia and cystidioles are absent. Basidiospores are ellipsoid, truncate, hyaline, thick-walled, smooth-walled, and dextrinoid. Phylogenetically, *Minoporus* formed a sister clade with *Neoporia* and is distant from the *Perenniporia sensu stricto* using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Neoporia* displays resupinate basidiocarps, dextrinoid skeletal hyphae, and non-truncate basidiospores, whereas *Perenniporiella* is characterized by dextrinoid skeletal hyphae and non-truncate basidiospores. *Minoporus minor*, unlike species of *Perenniporia sensu stricto*, is characterized by its annual, pileate basidiocarps with a cream to pale buff pileal surface. Additionally, it possesses a dimitic hyphal system that includes weakly amyloid skeletal hyphae. (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D. Hyde** & **Subodini N. Wijesinghe**)

Note 1347 *Aptrootidea*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aptrootidea Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced *Aptrootidea* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate six lichenized fungal species based on morphological characters and phylogeny using the combined LSU and SSU sequence data. This genus is typified by *A. marginata* (Lücking) Xavier-Leite, M. Cáceres & Lücking. The thallus is foliicolous, either continuous or dispersed, with an uneven to verrucose texture, and may have short, dark setae that typically grow on a translucent prothallus. The apothecia are adnate (or erumpent), appearing spot-like, with a chocolate-brown to brown-black disc and lacking a proper margin, although the type species may have a thin thalline margin. The excipulum consists of hyphae. The hypothecium is prosoplectenchymatous and pale. The epithecium is dark brown. Ascospores show varying degrees of septation. The hyphophores have not been observed. The defined genus is likely to be heterogeneous, comprising the type species (the only species with a known sequence) and a group of five other species believed to be closely related to the type based on phylogenetic analysis. *Echinoplaca marginata* was already distinguished from other *Echinoplaca* species upon its initial description, hence its distinct placement in the molecular phylogeny was not unexpected. The inclusion of the other five species here is tentative, based on the phylogenetic analysis. These species were previously identified as a separate group by Lücking et al. (2005) through a cladistic study and may potentially represent a distinct genus, although none of them have been sequenced yet. *Aptrootia triseptata* also shares some similarities with species currently classified under the genus *Verruciplaca* (Xavier-Leite et al. 2023).

References

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Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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(Edited by **Subodini N. Wijesinghe)**

Note 1348 *Aulaxinella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aulaxinella Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced *Aulaxinella* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate three lichenized fungal species based on morphology and phylogeny using SSU and LSU sequence data. This genus is typified by *A. minuta* (R. Sant.) Xavier-Leite, M. Cáceres & Lücking while *A. corticola* (Kalb & Vězda) Xavier-Leite, M. Cáceres & Lücking and *A. multiseptata* (R. Sant.) Xavier-Leite, M. Cáceres & Lücking are the other accepted species. The thallus of *Aulaxinella* is continuous, featuring a dark brown prothallus, and is usually small in size. The apothecia are erumpent and zeorine, with a carbonized thalline margin lacking algae (*Aulaxina* type), and also small. The ascospores are varied. The hyphophores are setiform, black, and produced in clusters on algal-free thallus patches. The diahyphae are palmate. The molecular phylogenetic analysis revealed that the genus is biphyletic, as *Caleniopsis* falls between *Aulaxina minuta* aggregate and *Aulaxina* s. str. *Caleniopsis* differs from *Aulaxina sensu lato* due to its uncarbonized apothecia with a thicker, distinctly zeorine margin (*Calenia* type). An alternative suggestion is to incorporate *Caleniopsis* into a revised *Aulaxina* to keep the *A. minuta* aggregate within that genus. However, this proposal lacks justification from the molecular data, as both the *A. minuta* aggregate and *Caleniopsis* show long branches, indicating a significantly separate evolutionary history. While *Caleniopsis* is confirmed as a sister to *Aulaxina sensu stricto*, the placement of *A. minuta* aggregate at the base of this group is not supported (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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(Edited by **Subodini N. Wijesinghe)**

Note 1349 *Uvarisporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank,

Uvarisporella J. Yang, Jian K. Liu & K.D. Hyde

Yang et al. (2023b) introduced *Uvarisporella* as a monotypic genus under *Tilachlidiaceae* (*Hypocreales*, *Sordariomycetes*, *Ascomycota*) to accommodate *U. aquatica* J. Yang, Jian K. Liu & K.D. Hyde (Species Fungorum 2024). *Uvarisporella aquatica* was reported as a saprobe from a decaying twig from freshwater in China. The generic placement was confirmed by a polyphasic approach using morphological and single locus (LSU) phylogeny (Yang et al. 2023b). No sexual morph has been reported, only the hyphomycetous asexual morph. Colonies on the host surface were scattered and effuse, consisting of conidiophores with conidial mass on the apex. The conidiophores are macronematous or mononematous, smooth-walled, erect, cylindrical, septate, unbranched, and brown. Conidiogenous cells are polyblastic and terminal, they percurrently proliferate with the swollen apex producing new conidiogenous cells enteroblastically. Conidia are clustered in masses and they are guttulate, uniseptate, globose to subglobose or obovoid, brown, with a minute marginal frill (Yang et al. 2023b). Although *Uvarisporella* morphologically resembles *Exserticlava* they can be distinguished by their conidiogenous cell characters. This distinction is supported by molecular phylogenetic analysis.

References

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Entry by Veenavee Sulakkana H. Silva, Center of Excellence in Fungal Research, Mae Fah Luang University, Chiang Rai 57100, Thailand.

(Edited by **Antonio Roberto Gomes de Farias** & **Subodini N. Wijesinghe**)

Note 1350 *Banksiamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Banksiamyces G. Beaton

The tough, dark coloured apothecia of *Banksiamyces* have been compared with macromorphologically similar fungi in *Tympanis* and *Encoelia* (Berkeley & Broome 1887, Dennis 1958). In proposing the new genus *Banksiamyces*, Beaton & Weste (1982) discussed morphological features that differed from these genera, but were uncertain about its family placement. ITS and *rpb2* sequences from Mertin et al. (2022) and ITS sequences from PDD 105253 (GenBank KM880187) show that the genus belongs to one of the paraphyletic *Rutstroemiaceae* clades. Fruiting bodies have been found only on cones of *Banksia* species and Mertin et al. (2022) showed that at least two of the species occur as seed endophytes in *Banksia*. The GenBank accession

MK584974 (voucher HKAS 90000, from China, from an unknown host), identified as *Banksiamyces*, represents a different genus in *Rutstroemiaceae* (unpubl. data).

References

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Note 1351 *Bispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bispora Corda

By comparing the morphological and molecular traits of species traditionally included in *Bisporella*, the genus was shown to be polyphyletic, with many “typical” members of the genus belonging instead to *Calycina* in *Pezizellaceae* (Mitchell et al. 2022). The type species *Bisporella pallescens* is conclusively linked with its asexual morph, *Bispora antennata*, and the genus *Bisporella* is abandoned as a later synonym of the monotypic genus *Bispora* (previously applied only to asexual fungi) and placed as sister to *Hymenoscyphus* in *Helotiaceae* (Mitchell et al. 2022). The previous Outline treated *Bispora* as *Ascomycota* incertae sedis (Wijayawardene et al. 2022). There are 24 *Bispora* names listed in Index Fungorum (http://www.indexfungorum.org/names/Names.asp), but how many of these match *B. antennata* phylogenetically is not known.

References

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(Edited by **Vinodhini Thiyagaraja** & **Maryam T. Noorabadi**)

Note 1352 *Paracorollospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Paracorollospora E. Azevedo, P. Correia & M.F. Caeiro

Correia et al. (2023) introduced *Paracorollospora* to accommodate *P. angusta* as the type species and included *P. luteola*, and *P. marina*, which initially belonged to *Corollospora*. These three marine saprobic species belong to *Halosphaeriaceae* (*Microascales*, *Sordariomycetes*, *Ascomycota*). The sexual morph is characterized by superficial, papillated, carbonaceous and black ascomata with a two-layered peridium and without paraphyses. Asci are fusiform to subcylindrical and early deliquescing, containing eight fusiform, septate, and hyaline ascospores with short, spiniform primary appendages at each end and polar long secondary appendages equatorial around the central septa. Asexual morph exhibits hyaline, thin, and smooth conidiophores with terminal conidiogenous cells that form sympodial or irregularly sympodial with denticules. Conidia are multiseptated and strongly constricted at the septa, forming a C-shape to a slightly sigmoid shape (Correia et al. 2023).

The pairwise distances of *Paracorollospora* species with *C. maritima* (the type species of *Corollospora*) were confirmed through molecular analyses by revealing 18–19% differences in ITS and 7–8% in LSU (Correia et al. 2023). *Paracorollospora* also differs from *Corollospora* in having different morphology of ascospores and conidia (Correia et al. 2023). The genus has a worldwide distribution and the species have been isolated from Sweden (Tibell et al. 2019, Velez et al. 2022), Denmark (Jones & Pang 2021), Portugal (Sridhar et al. 2012), Great Britain (Haythron et al. 1980), Japan (Nakagiri & Tokura 1987), and India (Borse et al. 2013, Correia et al. 2023).

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Note 1353 *Papillospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Papillospora Réblová, in Réblová & Nekvindová, 2023

Papillospora was introduced by Réblová & Nekvindová (2023), to accommodate chloridium-like asexual morphs (*Chloridium sensu lato*) in *Chaetosphaeriaceae* (*Chaetosphaeriales*) based on ITS, LSU, and *tef1-α* sequence data. Phylogenetically, *Papillospora* is sister to *Achrochaeta* (Réblová et al. 2021b) and it is related to *Caliciastrum* and *Caligospora* (Réblová & Nekvindová 2023). The asexual morph is characterized by setae which are erect, unbranched, cylindrical, septate, brown, terminal cells cylindrical, clavate or inflated, subhyaline to hyaline, apically broadly rounded, and sterile. Conidiophores are macronematous, mononematous, solitary, erect, straight or gently curved, cylindrical, unbranched, or sparsely branched, and brown. Conidia are ellipsoidal to slightly asymmetrical, hyaline, aseptate, smooth, and adhering in slimy heads. *Papillospora* develops perithecial ascomata which are non-stromatic, superficial, globose to subglobose, setose, and setae similar to those accompanying conidiophores. The ostiolar canal is periphysate and the ascomatal wall is two-layered, brittle, and carbonaceous. They produce unitunicate asci which are cylindrical to clavate, short-stipitate with an apical ring non-amyloid consisting of 8 ascospores. Ascospores are hyline, fusiform, transversely septate, hyaline. The type species, *Papillospora hebetiseta* (Réblová & W. Gams) Réblová, (= *Chaetosphaeria hebetiseta* Réblová & W. Gams) has a morphological resemblance to *Stilbochaeta brevisetula* (Hughes & Kendrick 1968, Réblová et al. 2021a). However, they can be distinguished by *S. brevisetula* producing smooth-walled ascospores, and simple conidiophores growing in tufts with setae and falcate, septate conidia adorned with terminal setulae (Réblová & Nekvindová 2023). *Papillospora* has been reported as a saprobe on decaying *Fagus sylvatica* wood and other unidentified hosts from Ukraine and the USA (Réblová & Gams 2000, Huhndorf et al 2001).

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Note 1354 *Petriomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Petriomyces Thitla & Suwannar

The monotypic genus *Petriomyces* was introduced by Thitla et al. (2023) under *Herpotrichiellaceae* (*Chaetothyriales*, *Eurotiomycetes*) to accommodate *P. obovoidisporus* Thitla, Kumla & Suwannar, as the type species. *Petriomyces obovoidisporus* was isolated from sandstone in Sukhothai province, Thailand. Only the asexual morph has been reported and is characterized by branched, septate, hyaline mycelia. Conidiophores are long, semi-micronematous, branched, subhyaline to pale brown, smooth, thin-walled, septate, and produced vertically from the hyphae. Conidiogenous cells are intercalary or terminal, sympodial, polyblastic, sub-conspicuous to conspicuous. Conidiogenous loci are thin-walled, subcylindrical, and sub-denticulate. Conidia are obovoid or pyriform, aseptate, hyaline to subhyaline, and hilum conspicuous (Thitla et al. 2023). Among the rock-inhabiting fungi (herpotrichiellacious fungi), *Rhinocladiella* is similar to *Petriomyces* by having polyblastic, sympodial conidial formation, and aseptate conidia (Thitla et al. 2023). However, *Rhinocladiella* differs from *Petriomyces* by having thick-walled and brown conidiophores (Thitla et al. 2023). Based on the multigene phylogeny (ITS, LSU and SSU), *Petriomyces* formed a well-supported sister clade to *Atrokylindriopsis setulose* and *Exophiala siamensis* in *Herpotrichiellaceae* which were isolated from an unidentified broadleaf tree and rocks, respectively (Thitla et al. 2023). *Atrokylindriopsis setulose* differs from *Petriomyces* by having monophialidic conidiogenesis with setulate conidia (Ma et al. 2015). *Exophiala siamensis* differs from *Petriomyces* by having short conidiophores, subspherical conidia, and pale brown chlamydospores (Thitla et al. 2022).

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Note 1355 *Peribolosporomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Peribolosporomycetes Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow

Peribolosporomycetes was introduced by Witfeld et al. (2023) to accommodate *Peribolospora* species. A phylogeny of 38 protein-coding genes, orthology analysis, and septal pore type analysis revealed a new genus, *Peribolospora*, with *P. baueri* Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow as the type species, within *Peribolosporaceae*, *Peribolosporales*, and *Peribolosporomycetes*. Phylogenetically, *Peribolosporomycetes* forms a sister lineage to all other members of *Ustilaginomycotina* (Witfeld et al. 2023). Currently, *Peribolosporomycetes* consists of only one order, *Peribolosporales*.

Reference

Witfeld F, Guerreiro MA, Nitsche F, Wang QM et al. 2023 – *Peribolosporomycetes* class. nov.: description of a new heat resistant and osmotolerant basidiomycete lineage, represented by *Peribolospora* gen. nov., *P. kevripleyi* sp. nov., and *P. baueri* sp. nov. Mycological Progress 22, 30.

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Note 1356 *Peribolosporales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Peribolosporales Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow

The monotypic order *Peribolosporales* was introduced by Witfeld et al. (2023) to accommodate *Peribolosporaceae* Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow. A phylogeny of 38 protein coding genes, orthology analysis, and septal pore type analysis revealed a new genus, *Peribolospora*, with *P. baueri* Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow as the type species within *Peribolosporaceae*. *Peribolosporales* consists of one family, *Peribolosporaceae*. The taxonomic placement for *Peribolosporales* is within *Peribolosporomycetes* and this class forms a sister lineage to all other members of *Ustilaginomycotina* (Witfeld et al. 2023). The members of this order form hyaline, triangular chlamydospores, distally produced on coiled hyphae, and ovoid and sympodial conidia. Basidiomata and basidiospores have not been observed. The septal pore is simple, without thickened septum membranes (Witfeld et al. 2023). The species of *Peribolosporales* were originally found in forest soils associated with coniferous stands in Canada.

Reference

Witfeld F, Guerreiro MA, Nitsche F, Wang QM et al. 2023 – *Peribolosporomycetes* class. nov.: description of a new heat resistant and osmotolerant basidiomycete lineage, represented by *Peribolospora* gen. nov., *P. kevripleyi* sp. nov., and *P. baueri* sp. nov. Mycological Progress 22, 30.

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Note 1357 *Peribolosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Peribolosporaceae Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow

The monotypic family *Peribolosporaceae* was introduced by Witfeld et al. (2023) to accommodate *Peribolospora* Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow as the monotypic genus based on phylogeny of 38 protein-coding genes, orthology analysis, and septal pore type analysis. The type species is *P. baueri* Witfeld, M.A. Guerreiro, H.D.T. Ngyuen & Begerow and *P. kevripleyi* Witfeld, M. A. Guerreiro, H.D.T. Nguyen, Begerow is the other accepted species of the genus. The taxonomic placement for this genus is within a newly described family, *Peribolosporaceae*, order, *Peribolosporales*, and class, *Peribolosporomycetes*. The *Peribolosporomycetes* is a sister lineage to all other members of *Ustilaginomycotina* (Witfeld et al. 2023). *Peribolosporaceae* consists of one genus with two species that form hyaline, triangular chlamydospores, distally produced on coiled hyphae, and ovoid and sympodial conidia. Basidiomata and basidiospores have not been observed. The septal pore is simple, without thickened septum membranes (Witfeld et al. 2023). Both species were originally found in forest soils associated with coniferous stands in Canada.

Reference

Witfeld F, Guerreiro MA, Nitsche F, Wang QM et al. 2023 – *Peribolosporomycetes* class. nov.: description of a new heat resistant and osmotolerant basidiomycete lineage, represented by *Peribolospora* gen. nov., *P. kevripleyi* sp. nov., and *P. baueri* sp. nov. Mycological Progress 22, 30.

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Note 1358 *Parahypoxylon*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parahypoxylon M. Cedeño-Sanchez, E. Charria-Girón & M. Stadler

This genus was segregated from *Hypoxylon* by Cedeño-Sanchez et al. (2023a), based on a combination of molecular phylogenetic and chemotaxonomic data to accommodate *H. papillatum*, a species that had already shown an aberrant position in the phylogeny by Wendt et al. (2018), where it appeared basal in the *Hypoxylaceae* clades in a phylogeny inferred from ITS, LSU, *rpb2* and *tub2* data. Its teleomorphic (stromata with KOH-extractable pigments; dark brown ellipsoid ascospores; discoid amyloid apical apparatus) and anamorphic (nodulisporium-like conidiophores) characters are the same as in most species of *Hypoxylon* and other genera in the family. Phylogenetically closest relative is *Durotheca*, which lacks apparent stromatal pigments that are extractable with KOH. The characteristic secondary metabolites of *Parahypoxylon* are yet unidentified azaphilones of the cohaerin type that are similar to those of the genus *Jackrogersella*. The genus contains two species, *P. papillatum* which is almost exclusively found in temperate North America, and the African monotypic species, *P. ruwenzoriense*. Both species form stromata on dead angiosperm wood, but are probably saprotrophic with an endophytic stage in their life cycle, as is usually the case with the members of this family. A peculiar feature of the ex-epitype strain was recently found in a study comparing the genomes of over 50 members of the *Hypoxylaceae*. Cedeño-Sanchez et al. (2024) found that the genome contains an extraordinary number of paralogs one of which turned out to be due to the presence of a pseudogene. Consequently, if the taxonomy of this and other fungi were allowed to be based on molecular data alone, mycologists who believe in DNA-only taxonomy would have created two different orders out of the data that are present in the same genome. The aforementioned study, as well as concurrent work by others (cf. Bradshaw et al. 2023) showed that it is nonsense to base species segregation based on differences in the ITS or LSU regions because of the frequently occurring polymorphisms of the rDNA cistron. Sequencing of the same strain is therefore often not reproducible.

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Note 1359 *Houtenomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Houtenomyces Crous & Osieck

Crous et al. (2023c) introduced *Houtenomyces* as a monotypic genus to accommodate *H. caricicola* Crous & Osieck in *Plectosphaerellaceae*, *Glomerellales*, *Hypocreomycetidae*, *Sordariomycetes* based on morphology, phylogenetic analysis of LSU sequence data and a megablast search of NCBIs GenBank nucleotide database of ITS, LSU, and *rpb2* sequence data. The genus is characterized by solitary, erect, septate conidiophores, integrated, terminal, phialidic conidiogenous cells with periclinal thickening, and subcylindrical, truncate, 1-septate, conidia aggregated in a mucoid mass. *Houtenomyces* is a saprobe isolated from *Carex disticha* (*Cyperaceae*) and has been reported in the Netherlands (Crous et al. 2023c).

Reference

Crous PW, Osieck ER, Shivas RG, Tan YP et al. 2023c – Fungal Planet description sheets: 1478–1549. Persoonia 50, 158–310.

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Note 1360 *Xenoidriella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xenoidriella Crous

Crous et al. (2023c) introduced *Xenoidriella* in *Microdochiaceae* (*Xylariales*, *Xylariomycetidae*, *Sordariomycetes*, *Ascomycota*) to accommodate a single species isolated from leaf of *Cinnamomum camphora* (*Lauraceae*) in Western Cape Province, South Africa based on morphology and phylogenetic analyses. *Xenoidriella* is typified by *X. cinnamomi* Crous, characterized by solitary, sub-cylindrical conidiophores that arise from superficial hyphae, with terminal and integrated conidiogenous cells forming a rachis of denticulate loci, and hyaline, smooth, fusoid conidia, with medianly 1-septate, tapering towards subacutely rounded apex and truncate hilum (Crous et al. 2023c). Phylogenetic analysis of combined ITS, LSU, SSU, *rpb2*, and *tef1-α* sequence data (Crous et al. 2023c) showed that *X. cinnamomi* is close to *Ciliosporella italica*, *Guayaquilia cubensis*, and *Neoidriella desertorum*. *Xenoidriella* is a hyphomycete, while *Ciliosporella italica* is a coelomycete with a conidial appendage. *Guayaquilia* has macronematous, tree-like conidiophores, (0–)1-septate navicular conidia, and thick-walled, 1-septate, brown chlamydospores that distinguish it from *Xenoidriella* (Hernández-Restrepo et al. 2016a, Magdama et al. 2020). Additionally, *X. cinnamomi* can be distinguished from *N. desertorum* by possessing 1-septate conidia and the absence of chlamydospores (Crous et al. 2023c). *Xenoidriella* is monotypic, further investigation through the collection of additional fresh specimens and DNA sequence data could contribute to a more comprehensive understanding of its diversity and molecular phylogenies.

References

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Note 1361 *Neoleptodontidium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoleptodontidium Crous & Jurjević

Crous et al. (2023a) introduced *Neoleptodontidium* in *Xylariales incertae sedis* (*Xylariomycetidae*, *Sordariomycetes*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses. *Neoleptodontidium aquaticum* Crous & Jurjević was designated as the type species, isolated from hydroponic water in the USA. Phylogenetically, *Neoleptodontidium* is closely related to *Leptodontidium aciculare* (Crous et al. 2023a), which produces similar phialides (Rao & De Hoog 1986). Therefore, Crous et al. (2023a) justified *L. aciculare* within *Neoleptodontidium* and introduced it as *N. aciculare* (V. Rao & de Hoog) Crous (≡ *Leptodontidium aciculare* V. Rao & de Hoog), which was isolated from rotten wood in India. *Neoleptodontidium* has solitary, subcylindrical, medium brown conidiophores, the lower part finely roughened, septate, frequently rejuvenating through terminal phialide, forming a new phialide above the older phialide, where a rosette of conidia remains attached in a mucoid mass. Conidiogenous cells are terminal phialidic openings with flared collarette, and at times, they also have lateral phialidic openings on conidiogenous cells. The conidia are hyaline, smooth, guttulate, aseptate, subcylindrical, apex obtuse, straight to slightly curved, tapering to subobtuse hilum, aggregating in mucoid mass (Crous et al. 2023a). Based on phylogenetic analysis of combined ITS and SSU, *Neoleptodontidium* clustered in *Xylariales* and closely related to *Oxydothidaceae*, *Castanediellaceae*, and *Barrmaeliaceae*, however, the familial placement remains unclear (Crous et al. 2023a). Future research could focus on collecting additional samples to verify their classification.

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Note 1362 *Heteroverticillium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heteroverticillium S.L. Han, L. Cai & P. Zhao

Li et al. (2023d) introduced a monotypic genus *Heteroverticillium* in *Nectriaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*) to accommodate a pathogenic species based on morphology and phylogenetic analyses. The genus is typified by *H. phytelephatis* S.L. Han, L. Cai & P. Zhao, isolated from infected nuts of *Phytelephas macrocarpa* intercepted at China Customs (Dalian). The genus is characterized by hyaline, smooth-walled, septate, branched hyphae with inconspicuously swollen septa. Conidiophores arise laterally from somatic hyphae and verticillately branching at 2–3 levels with a terminal whorl of 1–5 phialides and 1–2 lower nodes of 1–3 phialides, rarely with single phialides. The phialides are monophialide, subulate, smooth- and thin-walled with inconspicuous or absent periclinal thickening. Conidia are hyaline, smooth- and thin-walled, aseptate, ellipsoidal to slightly reniform (Li et al. 2023d). Future research could focus on its importance in quarantine, and collecting additional samples to comprehensively describe the diversity of *Heteroverticillium*.

Reference

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Note 1363 *Botryosorus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Botryosorus Jing X. Ji, Okane & Kakish.

The monotypic genus *Botryosorus* was introduced by Ji et al. (2023) with *B. deformans* (Berk. & Broome) Jing X. Ji, Okane & Kakish as the type species. *Blastospora betulae* was phylogenetically distinct from both *Bl. itoana* and *Bl. smilacis*, as well as from other genera. *Botryosorus* and *Botryosorus deformans* were used to classify *Bl. betulae* based on recent International Code of Nomenclature decisions/recommendations/requirements (Ji et al. 2023). *Botryosorus* differs from *Blastospora* by the spermogonial type and wall thickness of urediniospores and teliospores (Cummins & Hiratsuka 2003, Ji et al. 2023). *Botryosorus deformans* has been reported from several hosts in Japan, such as *Thuja occidentalis*, *Thuja standishii*, *Thujopsis dolabrata* var. *dolabrata*, and *Thujopsis dolabrata* var. *hondae* (Berkeley 1878, Shirai 1889, Kusano 1904, 1908, Ito 1950, Hiratsuka et al. 1992, Kakishima et al. 1993). *Botryosorus* was classified in *Zaghouaniaceae* (*Pucciniales*, *Pucciniomycetes*, *Basidiomycota*) based on multi-locus phylogenetic analysis of combined ITS and LSU sequences and distinct morphology (Ji et al. 2023).

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Note 1364 *Nannengaella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Nannengaella J.M. García-Martín, J.C. Zamora & Lado

García-Martín et al. (2023) introduced *Nannengaella* under *Physaraceae* (*Physarales*, *Myxomycetes*, *Amoebozoa*) to accommodate ten species of myxomycetes based on morphology and phylogenetic analyses. This genus is typified by *N. globulifera* (Bull.) J.M. García-Martín, J.C. Zamora & Lado (basionym *Sphaerocarpus globulifer* Bull.). Due to its strongly calcified stalk (when present), columella (or sporophore base) and peridium, and several molecular motifs, *Nannengaella* differs from other adjacent genera (Lado 2005-2024, García-Martín et al. 2023). The type of fructification is a character of little taxonomic value, they can be sporocarpic and stipitate (*N. leucopus*, *N. mellea*, *N. sulphurea*, and *N. globulifera*), plasmodiocarpic and sessile (*N. alpestris*, *N. alpina*, *N. plicata*), vermicular plasmodiocarps (*N. contexta* and *N. lakhanpalii*), and aethalioid (*N. laevis*). Commonly reported associations with forest floor litter and various types of woody debris (Novozhilov et al. 2022b). Molecular analyses of the multi-locus dataset (nSSU, mtSSU, *tef-1α*, and *tub*), have confirmed *Nannengaella* belongs to a monophyletic group and is the most distinct group within the large '*Physaraceae s.str.*' clade (García-Martín et al. 2023). Future research on additional phylogenetically informative gene regions is required to increase the resolution of phylogenetic trees and better understand the evolution of morphological characters across the genera of *Physarales* (Fiore-Donno et al. 2008, Leontyev et al. 2019, García-Martín et al. 2023).

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Note 1365 *Banningia*

Web-links: Index Fungorum,,Facesoffungi, MycoBank, GenBank

Banningia **Y.P. Tan & G.S. Pegg**

Tan & Pegg (2023) introduced *Banningia* under *Saccotheciaceae* (*Dothideales*, *Dothideomycetes*, *Ascomycota*) to accommodate a single species, *B. maryelizabethiae* as type species. *Banningia maryelizabethiae* was isolated from the branch of *Corymbia citriodora* (*Myrtaceae*) in Australia. However, this genus was described based only on phylogeny and it formed a distinct phylogenetic clade. It has only an ITS gene and no morphological description, so this genus needs to be collected to obtain more data to further validate its taxonomic position.

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Note 1366 *Niveoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Niveoporia B.K. Cui & Xing Ji

Niveoporia (*Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) was established to accommodate *N. russeimarginata* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji as the type species based on morphology and phylogeny using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data (Ji et al. 2023). *Niveoporia russeimarginata* was isolated from a fallen angiosperm trunk in China (Ji et al. 2023). *Niveoporia decurrata* (Corner) B.K. Cui & Xing Ji, and *N. subrusseimarginata* B.K. Cui & Xing Ji are the other accepted species. Basidiocarps are perennial and resupinate to pileate. The pores are round. Context is buff to fawn. The hyphal system is dimitic and generative hyphae have clamp connections. Cystidia are absent while cystidioles are present. Basidiospores are ellipsoid, truncate, hyaline, thick-walled, and smooth. Phylogenetically, *Abundisporus* formed a sister clade to *Niveoporia* using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data (Ji et al. 2023).

Reference

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Note 1367 *Pseudotubeufia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudotubeufia J. Ma & Y.Z. Lu

Ma et al. (2023b) introduced *Pseudotubeufia* under *Tubeufiaceae* (*Tubeufiales*, *Pleosporomycetidae, Dothideomycetes, Pezizomycotina*, *Ascomycota*) to accommodate *P. hyalospora* J. Ma & Y.Z. Lu as the type species based on morphology and phylogenetic analyses using ITS, *tef1-α*, and *rpb2* sequence data. *Pseudotubeufia laxispora* J. Ma & Y.Z. Lu is the other accepted species. The species have been found on decaying wood in a freshwater stream in China. Only the asexual morph has been observed. The asexual morph is a helicosporous hyphomycete, the hyphae are septate, branched, and smooth. The conidiophores are macronematous, mononematous, cylindrical, and septate. The conidiogenous cells are integrated, sympodial, irregularly cylindrical, and denticulate. Conidia are solitary, helicoid, rounded at the tip, coiled 2–3 times, septate, guttulate, and hyaline. The conidiophores, conidiogenous cells, and conidia are smooth-walled. *Pseudotubeufia* shares similarities with *Tubeufia* due to its flexuous, cylindrical conidiophores, cylindrical and denticulate conidiogenous cells that are hyaline to pale brown, and the presence of hyaline helicoid conidia. Despite their morphological similarities, phylogenetic analysis using ITS, *tef1-α*, *rpb2* sequence data reveals that *Pseudotubeufia* is more closely related to species in *Dematiohelicoma* and *Helicomyces* than to those in *Tubeufia*. *Dematiohelicoma* is distinguishable from *Pseudotubeufia* by its erect conidiophores and multi-septate conidia, which are brown to dark brown. In contrast, *Pseudotubeufia* differs from *Helicomyces* by having distinctively repeatedly geniculate conidiogenous cells (Ma et al. 2023b).

Reference

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Note 1368 *Pseudotrichaptum*

Web-links: Index Fungorum, Facesoffungi, Mycobank, GenBank

Pseudotrichaptum Y.C. Dai, Yuan Yuan & Meng Zhou

Based on morphological and phylogenetic analyses, Zhou et al. (2023a) erected *Pseudotrichaptum* to accommodate *P. laricinum* (P. Karst.) Y.C. Dai, Yuan Yuan & Meng Zhou. *Pseudotrichaptum* is characterized by its coriaceous pilei with purplish lamellate hymenophore, duplex context, and allantoid basidiospores, which could be confused with *Trichaptum* spp. due to its purplish hymenophore. *Pseudotrichaptum laricinum* is a combination based on *Trichaptum laricinum* which was originally described as *Lenzites laricinus* P. Karst. from Siberia, Russia. Macrae & Aoshima (1966) listed synonyms of *T. laricinum* and confirmed the sequence of RLG-

4665 and RLG-6936 (GenBank: U63471 & U63477) represent the real *T. laricinum* (Ryvarden & Gilbertson 1994, Vlasák & Vlasák 2017, Kossmann et al. 2021). The molecular phylogeny of *Pseudotrichaptum* based on the multi-locus dataset (ITS+nLSU+mtSSU+nSSU+*tef1-α*) indicates that this genus does not affiliate with any existing families and is considered under *Hymenochaetales incertae sedis* (Zhou et al. 2023a). Additional sampling from other regions of the world are required to further resolve the diversity of *Pseudotrichaptum* species.

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Note 1369 *Melanascomaceae*

Web-links: Index Fungorum, Facesoffungi, Mycobank

Melanascomaceae Fryar & D.E.A. Catches.

Melanascomaceae was erected as a new family, *incertae sedis*, in *Diaporthomycetidae* by Fryar & Catheside (2023) based on combined ITS, LSU, and *tef1-α* sequences. This family includes the type genus *Melanascoma*, in addition to *Proliferophorum* and *Paraproliferophorum*. *Melanascoma* is known only from its sexual morph while *Proliferophorum* and *Paraproliferophorum* are known only from hyphomycetous asexual morphs (Phookamsak et al. 2019, Crous et al. 2022a, Fryar & Catheside 2023,). Conidiophores are macronematous, mononematous, sub-cylindrical to cylindrical, unbranched or branched, erect, olivaceous brown to dark brown, light brown at the apex, septate, and smooth or ornamented. The conidiogenous cells are holoblastic, polyblastic, terminal, and sub-hyaline to brown while the conidia are fusiform to cylindrical, sub -hyaline to brown, 0–3-septate when mature, guttulate, and smooth. The only known sexual morph of *Melanascomaceae, Melanascoma panespora*, has perithecial ascomata that are non-stromatic, and subglobose with a straight neck. The ascomatal wall is textura angularis and dark brown. Paraphyses are persistent, cylindrical, septate, and unbranched. The asci are unitunicate, eight-spored, apex with a non-amyloid apical ring. The ascospores are ellipsoid, septate, ornamented, without appendages or sheath (Fryar & Catcheside 2023). Hyde et al. (2021a) revealed that *Proliferophorum* diverged from *Platyrachelon* around 76 MYA, which falls within the family range (50–130 MYA). Analyses by Fryar & Catcheside (2023) further demonstrated that the clade including *Melanascoma*, *Proliferophorum* and *Paraproliferophorum* is sister to *Platyrachelon* and forms a distinct lineage, the family *Melanascomaceae*.

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Note 1370 *Melanascoma*

Web-links: Index Fungorum, Facesoffungi, Mycobank, GenBank

Melanascoma Fryar & D.E.A. Catches.

Melanascoma was introduced by Fryar & Catcheside (2023) as a monotypic genus to accommodate *M. panespora* as the type species. Based on phylogenetic analyses of combined ITS, LSU, and *tef1-α* sequences, *Melanascoma*, along with *Proliferophorum* and *Paraproliferophorum* formed a new family, *Melanascomaceae*, within *Diaporthomycetidae* (Fryar & Catcheside 2023). The type species has been reported as a saprobe on dead wood in a freshwater stream in southern Australia (Fryar & Catcheside 2023). *Melanascoma* is currently known only for its sexual morph which is characterized by perithecial ascomata, which are non-stromatic, immersed, subglobose with a straight neck, and dark brown. The ascomatal wall is of textura angularis, and is dark brown. Paraphyses are persistent, cylindrical, septate, and unbranched. Asci are unitunicate, pedicellate, eight-spored, and have an apex with a non-amyloid apical ring. Ascospores are ellipsoid, hyaline, septate, ornamented, and without appendages or a sheath.

Reference

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Note 1371 *Bryorutstroemia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bryorutstroemia Sochorová & Baral

Baral et al. (2023b) established *Bryorutstroemia* to accommodate the only species, long-known as *Helotium fulvum* Boud. (Boudier 1897), combining a broad scope of phenetical traits and phylogenetic analyses, as a new member in the family *Rutstroemiaceae* (*Helotiales*, *Leotiomycetes*, *Ascomycota*). The genus differs from the most similar and closest relatives *Clarireedia*, *Rustroemia* and *Torrendiella* (all apothecial ascomycetes) by its bryophilic lifestyle, and by the inamyloid ascal apex, which is thick-walled in dead state as in the other members of the family. Molecular analysis based on three DNA regions, *viz*. ITS, LSU and *tef1-α*, have shown that *Bryorutstroemia* clustered in *Rutstroemiaceae sensu lato*. Because both *Sclerotiniaceae* and *Rutstroemiaceae* were paraphyletic when compared from a morphological point of view, future studies are needed to better understand the phylogenetic structure of the group by expanding phylogenetic sampling on more sclerotiniaceous species, and including more DNA regions in phylogenetic analyses.

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Note 1372 *Blaszkowskia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Blaszkowskia G.A. Silva & Oehl

The monospecific genus *Blaszkowskia* with *B. deserticola* was proposed by Silva et al. (2023) mainly based on comparisons and phylogenetic analyses of sequences of the ITS region and partial LSU nrDNA of the fungus originally described as *Glomus deserticola* (Trappe et al. 1984), and then transferred to the genus *Septoglomus* in *Glomeraceae* (Oehl et al. 2011). These analyses accommodated *B. deserticola* in a clade sister to the *Septoglomus* clade. The genus was later transferred to *Viscospora* by Tedersoo et al. (2024) according to a phylogeny reconstructed based on eDNA long reads. The recognition of *Blaszkowskia* as a separate genus would render *Viscospora* paraphyletic, leaving several orphan taxa in the *Septoglomus*-*Viscospora* clade. At this time, we retain *Blaszkowskia* as a valid genus. Further analysis involving additional molecular markers and newly discovered neighbor species will help to clarify the validity of the genus. The etymology of the genus is a tribute to Dr. Janusz Błaszkowski for his contribution to the identification of new taxa of AM fungi. *B. deserticola* differs from *Septoglomus* species in the features of the subtending hypha, which is funnel-shaped and remains pigmented along its length, by having a thin septum closing the spore pore at the spore base, and by the formation of several septa in the subtending hyphal lumen below the spore base.

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Note 1373 *Parahumicola*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parahumicola T.O. Condé, Y.L.G. Dutra & O.L. Pereira

Parahumicola was introduced by Condé et al. (2023) based on molecular analysis of ITS, LSU, *rpb2*, and *tub2* sequence data with unique morphological characteristics in *Chaetomiaceae* (Condé et al. 2023). This monotypic genus is typified by *P. guana* T.O. Condé, Y.L.G. Dutra & O.L. Pereira, which was found in a bat guano sample in the Gruta Monte Cristo cave, Brazil (Condé et al. 2023). *Parahumicola* produces considerably larger aleurioconidia which resemble humicola-like conidia (Wang et al. 2019b). It differs from other genera in *Chaetomiaceae* by its unique type of conidia which are differentiated from conidiophores and have a truncated base, prominent apex, and a conspicuous germ pore (Hambleton et al. 2005, Condé et al. 2023). *Parahumicola* may be saprobic and future research could continually focus on pristine environments that have not yet been extensively investigated to determine the diversity of the genus.

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Note 1374 *Paragyromitra*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paragyromitra X.C. Wang & W.Y. Zhuang

Wang et al. (2023) introduced *Paragyromitra* under *Discinaceae* (*Pezizales*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate five species based on morphological characteristics and a concatenated phylogeny using ITS, LSU, and *tef1-α* sequence data. The genus is typified by *P. infula* (Schaeff.) X.C. Wang & W.Y. Zhuang. Ascomata are saddle-like and stipitate. The type species has been found across a wide range in the Northern Hemisphere. The stipe is subcylindrical and internally hollow. Asci are operculate, eight-spored, and subcylindrical. Ascospores are hyaline, smooth, bi-guttulate, and non-apiculate. Morphologically *Paragyromitra* closely resembles *Gyromitra*. However, *Paragyromitra* can be differentiated by its typically saddle-like ascomata. However, a more comprehensive examination and study of more genes are required to comprehend the evolutionary history of *Discinaceae* (Wang et al. 2023).

Reference

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Note 1375 *Sporocybomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Sporocybomyces H. Maia

Xavier-Leite et al. (2023) introduced *Sporocybomyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate a lichenized fungus based on morphological characters and phylogeny using SSU and LSU sequence data. The genus is typified by *S. pulcher* H. Maia. = *Sporocybomyces leucotrichoides* (Vain.) Xavier-Leite, M. Cáceres & Lücking. The thallus is continuous, finely verrucose, and typically devoid of sterile setae. The apothecia are adnate and appear spot-like (*Echinoplaca* style). The ascospores are large with transverse septation to muriform. The hyphophores are short, setiform, blunt, and white with darkened apices. The diaphyphae are filamentous, featuring clavate to sausage-like, and multi-septate end segments. Phylogenetically, *Sporocybomyces* is distinct from the *Echinoplaca leucotrichoides* clade (Xavier-Leite et al. 2022).

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Note 1376 *Irregularispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Irregularispora W. Dong, K.D. Hyde & Doilom

Dong et al. (2023) introduced *Irregularispora* under *Stictidaceae* (*Ostropales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *I. olivacea* W. Dong, K.D. Hyde, C.F. Liao & Doilom as the type species, based on morphology and phylogenetic analyses using LSU, ITS, SSU, and *rpb2* sequence data. The type species was found on a dead stem of *Artemisia argyi* in China. The sexual morph has not been observed. The colonies are effuse, dense, velvety, and black on the host. Conidiophores are often reduced. Conidiogenous cells are obscured, subcylindrical, and sub-hyaline to pale brown. Conidia are solitary, irregular, septate, and rough- and thin-walled. Phylogenetically, *Glomerobolus* formed a sister clade with *Irregularispora*. *Glomerobolus* possesses a reproductive structure known as a hyphoma, and a recent morphological analysis based on taxonomic information indicates that none of the current asexual genera share similar morphology with *Irregularispora* (Dong et al. 2023).

Reference

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Note 1377 *Vezdamyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Vezdamyces Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced *Vezdamyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analysis using ITS and LSU sequence data. This genus is typified by *V. vulgaris* (Müll. Arg.) Xavier-Leite, M. Cáceres & Lücking and *V. albopruinosus* (Lücking) Xavier-Leite, M. Cáceres & Lücking are the other species. The thallus is lichenized, continuous, finely verrucose, and lacks sterile setae. The apothecia are adnate to sessile and biatorine. The excipulum is paraplectenchymatous. The ascospores are single and muriform. The hyphophores are shortly setiform and white with an incrustation of crystals. The diahyphae are moniliform with clavate to spermatozoid segments. Molecular evidence also confirms the differentiation of the form characterized by white-pruinose apothecial margins as an independent genus. It indicates the presence of an additional, as-of-yet-unidentified species originating from Brazil (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1378 *Santricharia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Santricharia Xavier-Leite, M. Cáceres & Lücking

The monotypic genus *Santricharia* was erected by Xavier-Leite et al. (2023) under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *S. farinosa* (R. Sant.) Xavier-Leite, M. Cáceres & Lücking based on morphology and phylogenetic analysis using SSU and LSU sequence data. This lichenized genus has a continuous thallus, becomes coarsely verrucose, and with black setae and a dark brown prothallus. The apothecia adhere to being sessile, are lecideine, and have dark brown pruina. The ascospores are muriform. The hyphophores are setiform and black. The diaphyphae are moniliform. This genus incorporates a species originally categorized under *Tricharia* s. str. However, this species seems to have no connection to *Tricharia* s. str. and is closely related to *Rubrotricha*, despite sharing very few distinctive characteristics. The main distinguishing characteristic of *Santricharia*, when contrasted with all species categorized under *Tricharia* s. str., is its distinctive lecideine apothecia embellished with a thick, dark chocolate-brown pruina (Xavier-Leite et al. 2023).

Reference

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1379 *Adelphomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Adelphomyces Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced *Adelphomyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate three lichenized fungal species based on morphology and phylogeny using a combined SSU and LSU sequence data. The genus is typified by *A. epithallinus* (Lücking) Xavier-Leite, M. Cáceres & Lücking while *A. cochlearifer* (Lücking & Sérus.) Xavier-Leite, M. Cáceres & Lücking and *A. parvulus* (Hafellner & Vězda) Xavier-Leite, M. Cáceres & Lücking are the other species. Apothecia are sessile (*Gyalideopsis*-like), have a biatorine structure, with a distinct margin. The excipulum consists of hyphae densely arranged in a hyphal structure. The hypothecium is prosoplectenchymatous and appears pale. The epithecium is not visible. Ascospores are very small and have one-three septa. In cases where hyphophores are observed, they are setiform, black, with a widened apex, and are either rostrate or spathulate. Diahyphae is inserted at the apex, branch out extensively, have a moniliform structure, and exhibit colorless and ellipsoid to drop-shaped segments. The species in this genus were previously categorized within *Gyalideopsis* s. lat., which has been determined to be a highly polyphyletic group through cladistic and molecular phylogenetic analyses. In a prior cladistic study, the grouping of the three lichenicolous species was strongly supported (Lücking et al. 2005), and based on molecular analysis by Xavier-Leite et al. (2022) which showed the type species to be distinct from other *Gyalideopsis* representatives, we have included the two unsequenced taxa. However, this classification requires verification through molecular data (Xavier-Leite et al. 2023).

References

Lücking R, Sérusiaux E, Vězda A. 2005 – Phylogeny and systematics of the lichen family *Gomphillaceae* (*Ostropales*) inferred from cladistic analysis of phenotype data. The Lichenologist 37(2), 123–170.

Xavier-Leite AB, Cáceres MES, Aptroot A, Moncada B et al. 2022 – Phylogenetic revision of the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) suggests post-K–Pg boundary diversification and phylogenetic signal in asexual reproductive structures. Molecular Phylogenetics and Evolution 168, 107380.

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1380 *Psathyromyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Psathyromyces Bat. & Peres

Xavier-Leite et al. (2023) introduced *Psathyromyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two lichenized fungal species based on morphology and phylogeny using SSU and LSU sequence data. The genus is typified by *P. rosacearum* Bat. & Peres. = *P. heterellus* (Stirt.) Xavier-Leite, M. Cáceres & Lücking. *Psathyromyces planus* (Vězda) Xavier-Leite, M. Cáceres & Lücking is another species. The thallus is continuous and smooth with white setae. The apothecia are flattened, biatorine, and orange. The ascospores are small and muriform. The hyphophores are long, white, and setiform, with arrow-like, and blackened apex. The diaphyphae are moniliform. This genus is revived to accommodate *Aderkomyces heterellus* aggregate, distinct from *Aderkomyces* s. str. (Xavier-Leite et al. 2022) and differs in apothecial colour, notably in the elongated, arrow hyphophores (Lücking et al. 2005).

References

Lücking R, Sérusiaux E, Vězda A. 2005 – Phylogeny and systematics of the lichen family *Gomphillaceae* (*Ostropales*) inferred from cladistic analysis of phenotype data. The Lichenologist 37(2), 123–170.

Xavier-Leite AB, Cáceres MES, Aptroot A, Moncada B et al. 2022 – Phylogenetic revision of the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) suggests post-K–Pg boundary diversification and phylogenetic signal in asexual reproductive structures: molecular Phylogenetics and Evolution 168, 107380.

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1381 *Microxyphiomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Microxyphiomyces Bat., Valle & Peres

Xavier-Leite et al. (2023) introduced *Microxyphiomyces* under *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate ten lichenized species based on morphological characters and phylogeny using SSU and LSU sequence data. The genus is typified by *M. manaosensis* Bat., Valle & Peres. The thallus is continuous and smooth with black setae. The apothecia are sessile, biatorine, rarely erumpent, and chroodiscoid. The ascospores are transversely septate to muriform. The hyphophores are setiform, sometimes branched or hooked, and black. The diaphyphae are filiform to moniliform. The primary distinguishing characteristics include the smooth thallus and delicate setae, contrasting with the rough thallus and sturdy setae of *Tricharia* s. str. It is important to highlight that the current definition of the genus encompasses three distinct morphological forms: *Microxyphiomyces* s. str., characterized by biatorine apothecia and unbranched hydrophones; the *Tricharia lancicarpa* group with chroodiscoid apothecia; and the *Tricharia elegans* cluster exhibiting unique and branched-hooked hyphophores (Sérusiaux 1984). Notably, species within the *Tricharia elegans* group have not undergone sequencing, so their classification under *Microxyphiomyces* is provisional. *Tricharia lancicarpa* differs from *Microxyphiomyces* s. str., like the distinction between *Roselviria* and *Spinomyces*. In our evolutionary analysis, *Tricharia lancicarpa* forms a well-supported sister clade to *Microxyphiomyces* s. str. Therefore, the molecular evidence justifies recognizing *Microxyphiomyces* as a distinct genus (Xavier-Leite et al. 2023).

References

Sérusiaux E. 1984 – Three new species of *Tricharia* (Lichenes, *Asterothyriaceae)* from New Guinea. Mycologia 76(1), 108–114.

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MEs. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*, *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1382 *Spinomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Spinomyces Bat. & Peres ex Xavier-Leite, M. Cáceres & Lücking

Xavier-Leite et al. (2023) introduced the monotypic genus *Spinomyces* within *Gomphillaceae* (*Graphidales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate six lichenized fungal species, based on morphological characteristics and phylogenetic analysis using SSU and LSU sequence data. The genus is typified by *S. albostrigosus* (R. Sant.) Xavier-Leite, Cáceres & Lücking. The thallus is foliicolous, continuous, with sterile white setae. The apothecia are sessile and biatorine, with the disc typically displaying various colours, predominantly yellowish to red-brown. The excipulum is composed of hyphal, colourless tissue, while the hypothecium is prosoplectenchymatous and also colourless. The epithecium is not distinctly visible. Ascospores are generally single and muriform. The hyphophores are setiform with a usually widened, white apex. Diahyphae are moniliform and inserted apically, with segments that are fusiform. The species currently classified under *Spinomyces* were previously placed in *Aderkomyces* (Lücking et al. 2005). However, molecular data revealed *Aderkomyces* to be polyphyletic (Xavier-Leite et al. 2022). The redefined *Aderkomyces* (s. str.) can be distinguished from *Spinomyces* by its consistently applanate to adnate, somewhat emarginate, and dark greyish brown apothecia (Xavier-Leite et al. 2023).

References

Lücking R, Sérusiaux E, Vězda A. 2005 – Phylogeny and systematics of the lichen family *Gomphillaceae (Ostropales*) inferred from cladistic analysis of phenotype data. The Lichenologist 37(2), 123–170.

Xavier-Leite AB, Cáceres MES, Aptroot A, Moncada B et al. 2022 – Phylogenetic revision of the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) suggests post-K–Pg boundary diversification and phylogenetic signal in asexual reproductive structures. Molecular Phylogenetics and Evolution 168, 107380.

Xavier-Leite AB, Goto BT, Lücking R, Cáceres MES. 2023 – New genera in the lichenized family *Gomphillaceae* (*Ascomycota*: *Graphidales*) focusing on neotropical taxa. Mycological Progress 22(12), 88.

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Note 1383 *Minimispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Minimispora W. Dong & K.D. Hyde

Dong et al. (2023) introduced the monotypic genus *Minimispora* within *Phomatosporaceae* (*Phomatosporales*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *M. superficialis* W. Dong & K.D. Hyde, based on morphology and phylogenetic analysis using LSU, SSU, and ITS sequence data. The type species was found on submerged wood in a lotic stream in China. The sexual morph of *Minimispora* has scattered, superficial, globose, black, unilocular, and thin-walled ascomata. There are numerous paraphyses, including cylindrical, hyaline, and septate. Asci are eight-spored, unitunicate, cylindrical, and thin-walled. Ascospores are uniseriate, straight, hyaline, and aseptate. The asexual morph has not been observed. Phylogenetically, *Paramicrothyrium chinensis* and *Microdochium sclerotiorum* form sister clades with *Minimispora*. *Minimispora* can be differentiated from the closely related genus *Lanspora* based on differences in the characteristics of ascomata, the shapes of asci and ascospores, and appendages. While *Minimispora* shares similarities with *Tenuimurus* by having cylindrical, thin-walled asci and uniseriate, ellipsoidal, hyaline ascospores, it is differentiated by its superficial ascomata, unlike the immersed ascomata found in *Tenuimurus* that develop under a small blackened clypeus. Unlike other genera in *Phomatosporaceae*, *Minimispora* exclusively displays superficial ascomata, while the latter primarily have immersed ascomata or ones that become erumpent (Dong et al. 2023).

Reference

Dong W, Hyde KD, Jeewon R, Liao CF et al. 2023 – Mycosphere notes 449–468: saprobic and endophytic fungi in China, Thailand, and Uzbekistan. Mycosphere 14(1), 2208–2262.

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Note 1384 *Conicotenuis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Conicotenuis W. Dong & K.D. Hyde

Dong et al. (2023) introduced the monotypic genus *Conicotenuis* under *Phomatosporaceae* (*Phomatosporales*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *C. fusiformis* W. Dong & K.D. Hyde based on morphology and phylogenetic analysis using LSU, SSU, and ITS sequence data. The type species was found on submerged wood in a lotic stream in China. In the sexual morph, ascomata are scattered, conical, black, unilocular, and glabrous. Paraphyses are sparse, hypha-like, septate, and hyaline. Asci are eight-spored, unitunicate, cylindrical, and pedicellate. Ascospores are fusiform, aseptate, hyaline, thin-walled, and with bipolar apiculis. The asexual morph has not been observed. *Conicotenuis fusiformis* bears resemblance to *Phomatospora biseriata* in ascomata, asci, and ascospores. Nevertheless, they can be differentiated by the arrangement of ascospores in the asci and the shape and ornamentation of ascospores. The multi-locus phylogenetic analysis indicates that they are situated in separate lineages within *Phomatosporaceae*. *Paramicrodochium gracile* formed a sister clade based on combined ITS, LSU, *rpb2*, and *tef1-α* sequence data (Dong et al. 2023).

Reference

Dong W, Hyde KD, Jeewon R, Liao CF et al. 2023 – Mycosphere notes 449–468, saprobic and endophytic fungi in China, Thailand, and Uzbekistan. Mycosphere 14(1), 2208–2262.

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Note 1385 *Umbellus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Umbellus Xue W. Wang & L.W. Zhou

Wang & Zhou (2023) introduced *Umbellus* under *Umbellaceae* (*Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, *Basidiomycota*) to accommodate four species based on morphology and phylogenetic analysis using nSSU, mtSSU, ITS, LSU, and *rpb2* sequence data. The genus is typified by *U. sinensis* Xue W. Wang & L.W. Zhou, isolated from a fallen branch of an angiosperm in China. Basidiomes are annual, adnate, and resupinate. The hyphal system is monomitic and generative hyphae have clamp connections. Basidia have four sterigmata. Basidiospores are hyaline, smooth, thin-walled, and indextrinoid. Additionally, *Umbellus* can be identified by the capitate cystidia that have umbrella-shaped crystalline heads. Initially, it was believed that only three species *T. corneri*, *T. hamatus*, and *T. umbraculus*, possessed such cystidia. Consequently, despite the absence of molecular sequences for these three species they have been reclassified under *Umbellus* due to their distinct cystidia, which are exclusive to this genus (Wang & Zhou 2023).

Reference

Wang XW, Zhou LW. 2023 – *Umbellaceae* fam. nov. (*Hymenochaetales*, *Basidiomycota*) for *Umbellus sinensis* gen. et sp. nov. and three new combinations. Journal of Fungi 10(1), 22.

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(Edited by **Subodini N. Wijesinghe)**

Note 1386 *Pseudohyphodermella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudohyphodermella Shan Shen, S.L. Liu & L.W. Zhou

Shen et al. (2023) introduced *Pseudohyphodermella* under *Phanerochaetaceae* (*Polyporales*, *Incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate *P. poroides* (Y.C. Dai & C.L. Zhao) Shan Shen, S.L. Liu & L.W. Zhou as the type species based on morphology and phylogenetic analyses using ITS, LSU, *rpb1*, *rpb2*, and *tef1-α* regions. The type species was found on a fallen trunk of *Alniphyllum fortune* in China. Basidiomes are annual, resupinate, and efused. The hymenophoral surface is poroid cream to orange. The hyphal system is monomitic and generative hyphae have simple septa. Cystidia are absent. Basidia are clavate. Basidiospores are broadly ellipsoid, inamyloid, indextrinoid, and acyanophilous. Generative hyphae, basidia, and basidiospores are hyaline and thin-walled. Phylogenetic analysis with ITS and LSU sequence data shows that *Geliporus* and *Odontoefibula* formed sister clades with *Pseudohyphodermella*. In the *Donkia* clade of *Phanerochaetaceae*, the presence of a poroid hymenophoral surface sets *Pseudohyphodermella* and *Geliporus* apart from other genera. Additionally, the tissues of *Pseudohyphodermella* remain unchanged in KOH, with broadly ellipsoid basidiospores, while *Geliporus* exhibits tissues that darken in KOH and cylindric to oblong-ellipsoid basidiospores (Shen et al. 2023).

Reference

Shen S, Liu SL, Zhou LW. 2023 – Taxonomy of *Hyphodermella*: a case study to show that simple phylogenies cannot always accurately place species in appropriate genera. IMA Fungus 14(1), 11.

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(Edited by **Subodini N. Wijesinghe)**

Note 1387 *Rhizoperenniporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Rhizoperenniporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Rhizoperenniporia* under *Polyporaceae* (*Polyporales*, *Incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate *R. japonica* (Yasuda) B.K. Cui & Xing Ji as a monotypic species based on morphology and phylogenetic analysis using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Rhizoperenniporia japonica* was found on rotten wood of *Vitex* and a fallen trunk of *Lonicera* in China. Basidiocarps are annual to perennial and resupinate. The dissepiments are thick and entire. The subiculum is thin and creamy. The hyphal system is dimitic and generative hyphae have clamp connections. Skeletal hyphae and basidiospores are dextrinoid. Cystidia are absent, but cystidioles and rhizomorphs are present. Basidiospores are ellipsoid, truncate, hyaline, thick-walled, and smooth. Phylogenetically, *Perenniporiopsis* is a sister clade with *Rhizoperenniporia* based on the analysis using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Phizoperenniporia japonica* displays basidiocarps with rhizomorphs that distinguish it from other species of *Perenniporia sensu stricto* (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1388 *Sordariochalara*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Sordariochalara W.P. Wu & Y.Z. Diao

The monotypic genus *Sordariochalara* was erected by Wu & Diao (2023) under *Sordariales* (*Sordariomycetidae*, *Sordariomycetes* *Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate *S. vaccinii* (Carris) W.P. Wu & Y.Z. Diao based on morphology and phylogenetic analysis using 28S rDNA and ITS sequence data. The type species was isolated from *Vaccinum macrocarpon* in the USA. The sexual morph has not been observed. Stroma and setae are absent. Conidiophores are cylindrical, septate, smooth or verrucose, and often with sympodial proliferation. Phialides are lageniform, pale brown, and smooth. The collarettes are obconical and funnel-shaped. Conidia are extruded in long chains, aseptate, hyaline, and smooth-walled. The phragmospores are cylindrical, apex rounded, septate, and solitary. The phylogenetic analysis using

LSU and ITS sequence data revealed that *Chalara vaccinii* does not belong to the *Leotiomycetes* group. Due to its distinct morphology and very limited similarity to any other known *Sordariomycetes* member, a new genus *Sordariochalara* was established for this fungus. The distinguishing characteristics of this genus include phialides with short collarettes and clavate conidia, setting it apart from other species within *Chalara* (Wu & Diao 2023).

Reference

Wu W, Diao Y. 2023 – The chalara-like anamorphs of *Leotiomycetes*. Fungal Diversity 119(1), 213–490.

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(Edited by **Subodini N. Wijesinghe)**

Note 1389 *Tropicoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Tropicoporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Tropicoporia* under *Polyporaceae* (*Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate four species based on morphological characteristics and phylogenetic analysis using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. This genus, typified by *T. aridula* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji, was found on a fallen angiosperm trunk in China. The other three species are *T. brasiliensis* (C.R.S. de Lira, A.M.S. Soares, Ryvarden & Gibertoni) B.K. Cui & Xing Ji, *T. centraliafricana* (Decock & Mossebo) B.K. Cui & Xing Ji, and *T. vanhulleae* (Decock & Ryvarden) B.K. Cui & Xing Ji. Basidiocarps are annual to perennial and mainly resupinate. The hyphal system is dimitic to trimitic and generative hyphae have clamp connections. Basidiospores are generally ellipsoid to subglobose, truncate, hyaline, thick-walled, smooth, and dextrinoid. *Tropicoporia* was considered closely related to *Sparsitubus*, before being tentatively grouped with *Dendroporia*, although this grouping had a weak support based on phylogeny using ITS, *tef1-α*, and *rpb2* sequence data. *Sparsitubus* is distinguished from *Tropicoporia* by its effused-reflexed to pileate basidiocarps, along with asperulate and non-truncate basidiospores. On the other hand, *Dendroporia* differs from *Tropicoporia* due to its pore surface being grey to pale brown, dextrinoid skeletal hyphae, and non-dextrinoid basidiospores (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1390 *Truncatoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Truncatoporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Truncatoporia* under *Polyporaceae* (*Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate two species based on morphology and phylogenetic analysis using ITS, nLSU, mtSSU, *tef1-α*, and *tub1* sequence data. This genus is typified by *T. truncatospora* (Lloyd) B.K. Cui & Xing Ji, which was isolated from a living tree of *Quercus* in China. *Truncatoporia pyricola* (Y.C. Dai & B.K. Cui) B.K. Cui & Xing Ji is the other accepted species. Basidiocarps are annual to perennial, resupinate to pileate, and corky. After drying, the pore surface appears buff to pale yellowish buff, with round to angular pores. The dissepiments are thin and entire. The hyphal system is dimitic to trimitic and the generative hyphae have clamp connections. Skeletal hyphae and basidiospores are dextrinoid. Basidiospores are ellipsoid, truncate, hyaline, thick-walled, and smooth. Molecular analysis of the multi-locus dataset (ITS, nLSU, mtSSU, *tef1-α*, and *tub1*) has confirmed that *Truncatoporia* is a sister clade with *Xanthoperenniporia* and distinct from the *Perenniporia sensu stricto* clade (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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(Edited by **Subodini N. Wijesinghe)**

Note 1391 *Polydomus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polydomus S. Ashrafi & W. Maier

Ashrafi et al. (2023) established the monotypic genus *Polydomus* to accommodate *P. karssenii* Ashrafi, Maciá-Vicente & W. Maier based on morphology and phylogenetic analysis using ITS, LSU, SSU, *rpb2,* and *tef1-α* sequence data. The type species was isolated from surface-disinfected eggs of the nematode *Heterodera flipjevi* in Turkey and surface-disinfected roots of the *Microthlaspi perfoliatum* (*Brassicaceae*) in Germany and Bulgaria. The type species did not form any fruiting bodies or spores under various cultural conditions. The sexual spores and conidia have not been observed. The colonies exhibited a range of colours, from olivaceous to pale creamy green, with radial striations. *Equiseticola* and *Ophiosphaerella* formed sister clades to *Polydomus* based on molecular analyses of the multi-locus dataset (ITS, LSU, SSU, and *tef1-α* sequence data). The sexual morph of *P. karssenii* has not been identified, and no asexual form has been reported for the species of *Ophiosphaerella* or *Equiseticola*, except for *O. agrostidis* with conidiomata and conidia production. However, these structures were not seen in *P. karssenii*, making it challenging to compare morphologically with closely related genera or species. *Polydomus karssenii* is distinguished by its production of chlamydospore-like and vesicle-like structures, hyphal coils and anastomoses, and absence of conidia formation, characteristics not observed in its close relatives. Ecologically, *P. karssenii* can be differentiated from other discussed fungi by its host range and lifestyle. *Polydomus karssenii* was found living with plant parasitic nematodes as a fungus that parasitizes their eggs, or living inside plant roots as endophytes (Ashrafi et al. 2023).

Reference

Ashrafi S, Wennrich JP, Becker Y, Maciá-Vicente JG et al. 2023 – *Polydomus karssenii* gen. nov. sp. nov. is a dark septate endophyte with a bifunctional lifestyle parasitising eggs of plant parasitic cyst nematodes (*Heterodera* spp.). IMA fungus 14(1), 6.

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(Edited by **Subodini N. Wijesinghe)**

Note 1392 *Nephridiochytrium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Nephridiochytrium Radek & Strassert

Radek et al. (2023) introduced the monotypic genus *Nephridiochytrium* under *Nephridiophagaceae* (*Nephridiophagales*, *Chytridiomycetes*, *Chytridiomycota*) to accommodate *N. forficulae* Radek & Strassert based on morphology and phylogenetic analyses using SSU and LSU sequence data. The type species was isolated from the Malpighian tubes of *Forficula auricularia* in France. Phylogenetic analysis revealed that *N. forficulae* formed a distinct branch within *Nephridiophagaceae*. In the Malpighian tubule, various techniques such as differential interference microscopy (DIC), Giemsa staining, scanning electron microscopy (SEM), and transmission electron microscopy (TEM) are used to observe vegetative plasmodia, young sporogenic plasmodia, and mature sporogenic plasmodia. Young spores have a thin, transparent spore wall with a nucleus positioned near a cell pole or centrally. Some plasmodia contain large mature spores, while others have smaller, younger spores. Giemsa staining reveals residual nuclei of the plasmodium between mature spores. The flattened oval spores have a rim and a central spore opening on one side. In ultrathin sections, the Malpighian tubule displays various stages of infection, including small, uni-nucleate merozoites, vegetative plasmodia with several nuclei, sporogenic plasmodia, and mature spores. The tubule's epithelium contains concretions. Young sporogenic plasmodia consist of young spores with a thin spore wall, one nucleus, endoplasmic reticulum, and mitochondria. Mature sporogenic plasmodia have residual nuclei and mature spores with centrally located nuclei and thick spore walls. A cross-section of a mature spore reveals five layers in the spore wall, while a longitudinal section of a mature spore shows the thin-walled cap of the spore opening (Radek et al. 2023).

Reference

Radek R, Wurzbacher C, Strassert JF. 2023 – New nephridiophagid genera (*Fungi*, *Chytridiomycota*) in a mallow beetle and an earwig. MycoKeys 100, 245.

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(Edited by **Subodini N. Wijesinghe)**

Note 1393 *Malpighivinco*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Malpighivinco Radek & Strassert

Radek et al. (2023) introduced the monotypic genus *Malpighivinco* within *Nephridiophagaceae* (*Nephridiophagales*, *Chytridiomycetes*, *Chytridiomycota*) to accommodate *M. podagricae* Radek & Strassert, based on morphological characteristics and phylogenetic analyses using SSU and LSU sequence data. The type species was isolated from the Malpighian tubules of *Podagrica malvae* in Italy. Phylogenetic analysis confirmed that *M. podagricae* forms a distinct branch within *Nephridiophagaceae*. Morphological studies using differential interference contrast (DIC) microscopy and Giemsa staining revealed the presence of both young sporogenic plasmodia and mature sporogenic plasmodia within and outside the Malpighian tubules. It showed nuclei of vegetative plasmodia and young spores with varying contrast levels. The spore development stages observed included thin-walled young spores, mature spores with a central spore opening, and mature spores with a five-layered thick spore wall. Ultra-thin sections further displayed uni-nucleated mature spores and vegetative nuclei within the mother cytoplasm, highlighting the intricate structure and developmental stages of nephridiophagid. This detailed morphological and phylogenetic analysis underscores the unique characteristics and distinct lineage of *M. podagricae* within *Nephridiophagaceae* (Radek et al. 2023).

Reference

Radek R, Wurzbacher C, Strassert JF. 2023 – New nephridiophagid genera (*Fungi, Chytridiomycota*) in a mallow beetle and an earwig. MycoKeys 100, 245.

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(Edited by **Subodini N. Wijesinghe)**

Note 1394 *Pseudolepraria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudolepraria Kukwa, Jabłońska, Kosecka & Guzow-Krzem.

Kukwa et al. (2023) introduced the monotypic genus *Pseudolepraria* within *Ramalinaceae* (*Lecanorales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Ascomycota*) to accommodate *P. stephaniana* (Elix, Flakus & Kukwa) Kukwa, Jabłońska, Kosecka & Guzow-Krzem. This classification was based on morphological characteristics and phylogenetic analyses using ITS, SSU, LSU, and *rpb2* sequence data. The type species was discovered on the bark of trees in Bolivia. *Pseudolepraria* is characterized by a thick, unstratified thallus composed of granules resembling soredia. These granules contain 4-O-methylleprolomin, salazinic acid, zeorin, and an unidentified terpenoid. Phylogenetically, *Pseudolepraria* forms a distinct clade within *Ramalinaceae*, supported by analyses of ITS, SSU, LSU, and *rpb2* sequences. Morphologically and chemically, *Pseudolepraria* closely resembles *Lepraria* s. str., particularly in thallus structure and the presence of secondary metabolites like salazinic acid and terpenoids. However, *Pseudolepraria* is distinguished by the presence of 4-O-methylleprolomin, a diphenyl ether previously identified only in a single species of *Pannaria*. Additionally, *Pseudolepraria* exhibits unique habitat preferences, further differentiating it from *Lepraria* s. str. (Kukwa et al. 2023).

Reference

Kukwa M, Kosecka M, Jabłońska A, Flakus A et al. 2023 – *Pseudolepraria*, a new leprose genus revealed in *Ramalinaceae* (*Ascomycota, Lecanoromycetes, Lecanorales*) to accommodate *Lepraria stephaniana*. MycoKeys 96, 97.

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(Edited by **Subodini N. Wijesinghe)**

Note 1395 *Paralentithecium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Paralentithecium H.W. Shen, K.D. Hyde & Z.L. Luo

Based on morphology and phylogeny, Shen et al. (2023) erected *Paralentithecium* to accommodate *P. aquaticum* (Ying Zhang, J. Fourn. & K.D. Hyde) H.W. Shen & Z.L. Luo as the type species within *Lentitheciaceae*, *Pleosporales*, *Pleosporomycetidae*). *Paralentithecium suae* H.W. Shen, K.D. Hyde & Z.L. Luo is the other species of the genus. The phylogenetic analysis was conducted using combined LSU, SSU, ITS, and *tef1-α* sequence datasets. *Paralentithecium* species are saprobes found on submerged decaying wood in a freshwater lake. The asexual morph has not been observed. Ascomata are clustered, scattered, and subglobose or ellipsoidal with thick, hyaline, branched, and septate pseudoparaphyses. Asci are 8-spored, clavate to subcylindrical with hyaline, 1-septate, and smooth ascospores. *Paralentithecium* is placed in an independent clade within *Lentitheciaceae* (Shen et al. 2023).

Reference

Shen HW, Bao DF, Boonmee S, Su XJ et al. 2023 – Lignicolous freshwater fungi from Plateau lakes in China (I), morphological and phylogenetic analyses reveal eight species of *Lentitheciaceae*, including new genus, new species and new records. Journal of Fungi 9(10), 962.

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Note 1396 *Owingsia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Owingsia I. Saar, Voitk & Thorn

Owingsia, belonging to *Physalacriaceae*, was established by Voitk et al. (2023) to accommodate species formerly included in the *Marasmius* sect. Epiphylli Kühner. The original protologue of *Agaricus umbellifer* L. was erroneously connected with the basidiolichen *Lichenomphalia umbellifera*, while the epithet “umbellifera” was misapplied to the *Lichenomphalia* species, causing several major conflicts with Linnaeus’s species concept. The monotypic genus, *Owingsia*, is typified by *O. umbellifera* (L.) Voitk et al. (2023). It is characterized by small whitish basidiomata, reduced to distant lamellae without collarium, a long central, pruinose, insititious stipe, non-dextrinoid, thin-walled basidiospores, with hymenial cystidia and pileocystidia and hymeniform pileipellis. *Owingsia umbellifera* is saprotrophic and colonizes leaf litter, small branches, twigs, bark, and occasionally dead wood. It is known from the Northern Hemisphere, including North America and Eurasia. The original description also contained some nomenclatural errors (especially the rejection of a lectotypification for *Agaricus umbellifer*). This and other lesser nomenclatural errors were corrected in the Supplement (Voitk et al. 2022, 2023).

References

Voitk A, Thorn G, Saar I. 2022 – *Lichenomphalia umbellifera*: fungible and infungible epithets and species concepts. Mycotaxon 137(4-Supplement 1), 1–48.

Voitk A, Thorn G, Saar I. 2023 – *Lichenomphalia umbellifera*: fungible and infungible epithets and species concepts. Mycotaxon 137(4), 629–668.

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Note 1397 *Parafuscohypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parafuscohypha L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced *Parafuscohypha* under *Bionectriaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate *P. proliferata* L.W. Hou, L. Cai & Crous based on morphology and phylogenetic analyses using ITS and LSU sequence data. The type species was isolated from a dead twig of *Acer* *pseudoplatanus* (*Aceraceae*) in the Netherlands (Hou et al. 2023). *Parafuscohypha* has been described with only asexual morph. The mycelium is constructed of branched, septate, and hyaline hyphae. Conidiophores are erect and straight or slightly bent with enteroblastic, terminal, and lateral conidiogenous cells. Conidia are aseptate, straight, hyaline, and smooth-walled. Chlamydospores are absent. *Parafuscohypha* formed a sister clade with *Plectosphaerella kunmingensis* based on a concatenated alignment of LSU, ITS, and *rpb2* sequences. Additionally, *Parafuscohypha* is a sister clade with *Fuscohypha expansa* based on a concatenated alignment of LSU, ITS, *rpb2*, and *tef-1α* sequences. Morphologically, *Parafuscohypha* is similar to *Fuscohypha*, but differs from *Parafuscohypha* by having unbranched or verticillate branched conidiophores.

Reference

Hou LW, Giraldo A, Groenewald JZ, Summerbell RC et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

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(Edited by **Subodini N. Wijesinghe)**

Note 1398 ***Ageratinicola***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ageratinicola L. Lu, K.D. Hyde & Tibpromma 2023

The monotypic genus *Ageratinicola* was established by Senanayake et al. (2023) to accommodate *A. kunmingensis* L. Lu, K.D. Hyde & Tibpromma based on combined ITS, SSU, and LSU sequence data. The taxonomic placement of the type species is in *Ageratinicolaceae* (*Pleosporales*, *Pleosporomycetidae*, *Ascomycota*) (Senanayake et al. 2023). The type species was collected on dead stems of *Ageratina adenophora* in China. Only the asexual structures have been observed. Conidiomata are pycnidial, globose to subglobose, and solitary or aggregated, with multi-layered walls. Conidiophores are reduced to conidiogenous cells, which are enteroblastic, doliiform or cylindrical-shaped, and hyaline. Conidia are multi-shaped, smooth-walled, and with or without mucilaginous sheath. *Ageratinicola* and *Foliophoma* form sister clades with *Ageratinicola* based on combined ITS, LSU, and SSU sequence data. *Ageratinicola* can be distinguished from *Foliophoma* species by its brown and muriform conidia.

Reference

Senanayake IC, Rossi W, Leonardi M, Weir A et al. 2023 – Fungal diversity notes 1611–1716, taxonomic and phylogenetic contributions on fungal genera and species emphasis in south China. Fungal Diversity 12, 1–243.

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(Edited by **Subodini N. Wijesinghe)**

Note 1399 ***Alloeutypa***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloeutypa Hai X. Ma, Z.E. Yang & Yu Li

Ma et al. (2023a) introduced *Alloeutypa* under *Diatrypaceae* (*Xylariales*, *Xylariomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses using ITS and *tub2* sequence data. The genus is typified by *A. milinensis* Hai X. Ma, Z.E. Yang & Yu Li and *A. flavovirens* (Pers.) Hai X. Ma & Z.E. Yang is the other accepted species. The type species was isolated from dead branches of an angiosperm in China. Stromata are scattered on the host, pustulate, and superficial. Endostroma is constructed of the outer layer of black, small, and dense with globose to subglobose perithecium. Paraphyses are elongate, hyaline, filiform, unbranched, and septate. Asci are eight-spored, unitunicate, and clavate-shaped with allantoid, aseptate, and slightly curved ascospores. Asexual structures have not been determined. *Alloeutypa* can be easily distinguished from *Eutypa sensu stricto* due to its unique characteristics, such as the green interior of the stromata and its discrete, *Diatrype*-like appearance (Ma et al. 2023a).

Reference

Ma HX, Yang ZE, Song ZK, Qu Z et al. 2023a – Taxonomic and phylogenetic contributions to *Diatrypaceae* from southeastern Tibet in China. Frontiers in Microbiology 14, 1073548.

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(Edited by **Subodini N. Wijesinghe)**

Note 1400 *Bonitomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Bonitomyces Crous

Bonitomyces is a monotypic genus, with *B. buffelskloofinus* Crous as the type species. The genus was erected by Crous et al. (2023b) based on morphology and phylogenetic analysis using ITS and LSU sequence data. The type species was isolated from dead twigs of unidentified trees in South Africa (Crous et al. 2023b). Sporangiophores are in clusters, erect, unbranched, hyaline, and smooth with globose and multi-spored sporangia. Sporangiospores are hyaline, smooth-walled, globose to ellipsoid or reniform, and aseptate. Chlamydospores are abundant, globose, and thick-walled. *Bonitomyces buffelskloofinus* is closely related to *Dissophora globulifera*. All *Dissophora* species have been found in forest litter and soil (Vandepol et al. 2020), which aligns with the ecological niche of *B. buffelskloofinus*. It forms clusters of sporangiophores similar to those reported for *D. globulifera* by Vandepol et al. (2020), but seems to belong to a genus that falls between *Dissophora* and *Benniella*. The taxonomic placement of this genus is uncertain within *Mortierellaceae*, *Mortierellales*.

References

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51(1), 280–417.

Vandepol N, Liber J, Desirò A, Hyunsoo Na et al. 2020 – Resolving the *Mortierellaceae* phylogeny through synthesis of multi-gene phylogenetics and phylogenomics. Fungal Diversity 104, 267–289.

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Note 1401 *Caliciastrum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Caliciastrum Réblová

The monotypic genus *Caliciastrum* was established under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate *C. bicolor* Réblová based on morphology and phylogenetic analyses of ITS, LSU, and *tef1-α* sequence data (Réblová & Nekvindová 2023). The type species *C. bicolor* was found on decorticated wood of a fallen branch of *Acer macrophyllum* in Canada. Both sexual and asexual morphs have been observed. In the asexual morph, setae are erect, unbranched, cylindrical-shaped, and septate. Conidiophores are macronematous, mononematous, solitary, erect, and unbranched with terminal, integrated conidiogenous cells. Conidia are hyaline, aseptate, and smooth. In the sexual morph, ascomata are perithecial, superficial, and non-stromatic. Setae are similar to the asexual characters. Paraphyses are persistent, branching, and anastomosing. Asci are unitunicate, cylindrical-clavate, and eight-spored. Ascospores are ellipsoidal-fusiform and transversely septate. Morphologically, *Caliciastrum* stands out from other family members due to its unique characteristics, such as septate and bicolorous ascospores. Its cup-shaped, setose ascomata associated with a chloridium-like asexual morph also place *Caliciastrum* within *Chaetosphaeriaceae*. Based on the phylogenetic analysis of concatenated ITS, LSU, and *tef1-α* sequence dataset, *Craspedodidymum elatum* and *Caligospora* form sister clades with *Caliciastrum* (Réblová & Nekvindová 2023).

Reference

Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in the *Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106(1), 199–258.

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(Edited by **Subodini N. Wijesinghe)**

Note 1402 *Chloridiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chloridiopsis Réblová

Réblová & Nekvindová (2023) introduced *Chloridiopsis*, which includes two species; the type species, *C. constrictospora* and *C. syzygii*, within *Vermiculariopsiellaceae*, (*Vermiculariopsiellales*, *Incertae sedis*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) based on morphological characteristics and phylogenetic analysis using ITS, LSU, *rpb2*, and *tef1-α*. These two species are closely related to *Chloridiopsiella preussi* (Gams & Holubová-Jechová 1976), forming a moderately supported clade within the *Vermiculariopsiellales* (Réblová & Nekvindová 2023). Despite the apparent similarities, *Chloridiopsis* species indicate significant morphological differences in their conidiophores, phialides, and conidia. The sexual morphologies for these species have not been documented. These species have been found as saprobes, thriving on leaf litter from various *Syzygium* species in South Africa and Cuba (Réblová & Nekvindová 2023). *Chloridiopsis* is characterized by its distinctive conidia, which are oblong to cylindrical and slightly constricted in the middle. In culture conditions, this species develops setiform, dark brown conidiophores that form in clusters, alongside shorter and paler conidiophores. This growth pattern aligns with observations made in natural settings, as documented by Crous et al. (1995). While *C. constrictospora* bears a strong resemblance to *C. syzygii*, they can be differentiated based on the genetic variations observed in their ITS, *tef1-α*, and *rpb2* sequence data (Réblová & Nekvindová 2023). These two species are closely related, representing sibling species within a strongly supported monophyletic clade (Réblová & Nekvindová 2023). Differentiating these two species in culture presents a challenge, as both exhibit similar morphological characteristics. They both produce dark, setiform conidiophores, accompanied by smaller and paler conidiophores. Additionally, they share a similar conidial morphology, characterized by oblong to cylindrical hyaline conidia, with overlapping sizes (Réblová & Nekvindová 2023). The conidia of *C. constrictospora* are characterized by a regular constriction in the middle, which distinguishes them from those of *C. syzygii*, where such constriction is less commonly observed on both sides. DNA comparisons between these two species reveal distinct genetic identities, as evidenced by the sequence identity percentages; 90.5% sequence identity in the ITS region, 88% in *tef1-α*, and 96.5% in *rpb2*, supporting their classification as separate species (Réblová & Nekvindová 2023).

References

Crous PW, Wingfield MJ, Kendrick WB. 1995 – Foliicolous dematiaceous hyphomycetes from *Syzygium cordatum*. Canadian Journal of Botany 73, 224–234.

Gams W, Holubová-Jechová V. 1976 – *Chloridium* and some other dematiaceous *Hyphomycetes* growing on decaying wood. Studies in Mycology 13, 1–99.

Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in the *Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106, 199–258.

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Note 1403 *Conoloma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Conoloma Zhu L. Yang & G.S. Wang

Wang et al. (2023) introduced the monotypic genus *Conoloma* based on morphological characters and phylogenetic analyses using ITS, LSU, *rpb2*, and *tef1-α* sequence data. The genus is classified under *Phyllotopsidaceae* (*Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*). The type species, *C. mucronatum* (Zhu L. Yang & G.S. Wang) Zhu L. Yang & G.S. Wang was found on rotten wood above the ground or buried in China. Basidioma is a tricholomoid with cylindrical to clavate basidia. Basidiospores are small, globose to ellipsoid, hyaline, smooth, and non-amyloid. Cheilocystidia and clamp connections are present (Wang et al. 2023). Phylogenetically, *Conoloma* formed a sister clade with *Tricholomopsis*. Morphologically, *Conoloma* is distinguished from *Tricholomopsis* by having a mucronate umbo of the pileus, a fibrillose annuliform-shaped zone on the upper part of the stem, and smaller cheilocystidia.

Reference

Wang GS, Cai Q, Hao YJ, Chen ZH et al. 2023 – Phylogenetic and taxonomic updates of *Agaricales*, with an emphasis on *Tricholomopsis*. Mycology 8, 1–30.

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(Edited by **Subodini N. Wijesinghe)**

Note 1404 *Absconditonia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Absconditonia Suija & van den Boom

Suija & Van den Boom (2023) introduced *Absconditonia* under *Stictidaceae* (*Ostropales*, *Ostropomycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two species according to morphology and phylogeny analyses using ITS, LSU, and SSU sequence data. The genus is typified by *A. rubra* (van den Boom, M. Brand & Suija) Suija & van den Boom, and the second species is *A. sublignicola* Suija & van den Boom. *Absconditonia* is similar to *Absconditella*, but is distinguished by its highly branched-anastomosed paraphyses and excipulum that includes radial hyphae (Yadav et al. 2023a). Based on phylogenetic analysis, *A. rubra* forms a separate lineage from the core *Absconditella* group and is closely related to *Xyloschistes*, *Ingvariella*, and *Cryptodiscus*. Van den Boom et al. (2015) highlighted several morphological and ecological characteristics that distinguish *A. rubra* from the traditional concept of *Absconditella*. *Absconditella rubra* has septate and highly branched paraphyses, while true *Absconditella* species typically have simple, less distinct septate paraphyses that may branch only in the upper part. The excipulum of *A. rubra* consists of radial hyphae, while in true *Absconditella* species, it is usually parallel or cellular in structure. Additionally, *A. rubra* displays orange to reddish pigmentation in its apothecial sections, which differs from the typically unpigmented true *Absconditella* species, except for a rare species, *A. fossarum*, with similar pigmentation features. *Absconditella fossarum* differs in ascospore size and septation as compared to *Absconditonia rubra*. Despite lacking molecular data for *Absconditella fossarum*, its excipulum and paraphyses structures align more closely with true *Absconditella* species rather than *A. rubra*. There is a lack of information about the asexual morph of *Absconditella*, but pycnidia have been observed in *A. rubra* (Van den Boom et al. 2015). Typically, *Absconditella* species are found with algal films on short-lived substrates like bryophytes, wood, plant debris, or unstable soil, while *A. rubra* inhabits long-lasting substrates such as bark of living broad-leaved trees (Yadav et al. 2023a). Furthermore, through analysis of ITS sequences, a new *Absconditella*-like species (*A. sublignicola*) has been identified within this group. This new species closely resembles *Absconditella lignicola* but differs in having smaller ascomata, unique ascospores, and conglutinated paraphyses (Yadav et al. 2023a).

References

Suija A, Van den Boom P. 2023 – Phylogenetic relationships, taxonomic novelties, and combinations within *Stictidaceae* (*Ostropales*, *Lecanoromycetes*, *Ascomycota*), focus on *Absconditella*. Mycological Progress 22(6), 46.

Van den Boom P, Brand AM, Suija A. 2015 – A new species of *Absconditella* from western and central Europe with a key to the European members. Phytotaxa 238(3), 271–7.

Yadav S, Singh G, Rajwar S, Verma SK et al. 2023a – *Nyssopsoraceae*, a new family of *Pucciniales* to accommodate *Nyssopsora* spp. Current Research in Environmental & Applied Mycology 13(1), 523–549. Doi 10.5943/cream/13/1/20

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(edited by **Kevin D. Hyde**)

Note 1405 *Entrophosporales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Entrophosporales Błaszk., Sánchez-García, B.T. Goto & Magurno

Błaszkowski et al. (2022) erected *Entrophosporales* under *Glomeromycetes* (*Glomeromycotina* and *Mucoromycota*) to accommodate *Entrophosporaceae* (Oehl and Sieverd.), emend. Błaszk., Sánchez-García, B.T. Goto, and Magurno based on phylogenomic, phylogenetic, and morphological analyses. The phylogenomic analyses showed that the order *Entrophosporales* is closely related to a clade with *Diversisporale*s and *Glomeraceae*. Members of this order produce one or two types of spores (entrophosporoid, glomoid, or both types). Entrophosporoid spores are formed in the necks of sporiferous saccules, mainly in soil and occasionally in roots. These spores have two walls, with spore wall 1, forming the spore surface, consisting of short-lived to semi-permanent layers and a permanent pigmented layer. The second wall is composed of three hyaline layers. Glomoid spores are formed at tips of sporogenous hyphae arising from the entrophosporoid morph or extraradical mycorrhizal hyphae. These spores have one wall with two to five layers, and the innermost layer is often flexible and colourless or brightly coloured. The subtending hypha has a lighter wall than the spore wall and is frequently funnel-shaped at the base of the spore. Both entrophosporoid and glomoid species produce mycorrhiza with arbuscules, vesicles, and intra- and extraradical hyphae that stain dark in Trypan blue. The type genus and type species are *Entrophospora* R.N. Ames and R.W. Schneid., emend. Błaszk., Sánchez-García, Fernández, B.T. Goto and Magurno and *Entrophospora infrequens* (I.R. Hall) R.N. Ames and R.W. Schneid., emend. Błaszk., Sánchez-García, Fernández, B.T. Goto, and Magurno., respectively. The strongly conserved entrophosporoid morph of *E. infrequens* was provided with a newly designated epitype and was shown to represent a group of cryptic species with the potential to produce different glomoid morphs. Glomoid spores of *Entrophospora infrequens* differ from those of other glomoid spore-producing *Entrophospora* species in terms of spore size and shape, phenotypic and histochemical characteristics of spore walls, and the genetic composition of the 45S nuc rDNA region and the *rpb1* gene (Błaszkowski et al. 2022). The glomoid morph of *E. infrequence* originated from under *Limonium sinuatum* from the initial community located in Spain, and the entrophosporoid one from under *Juniperus communis* growing in a pine forest in inland dunes of Poland.

Reference

Błaszkowski J, Sánchez-García M, Niezgoda P, Zubek S et al. 2022 – A new order, *Entrophosporales*, and three new *Entrophospora* species in *Glomeromycota*. Frontiers in Microbiology 13, 962856.

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Note 1406 *Multisporidea*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Multisporidea Kalb & Aptroot

Kalb & Aptroot (2021) erected *Multisporidea* to accommodate the type species *M. nitida* Kalb & Aptroot and *M. conidiophora* Aptroot according to morphology (Aptroot et al. 2022). The type species was found on bark in rainforest remnants in Réunion (Kalb & Aptroot 2021). Pycnidia have not been observed. The thallus is described as being dull, whitish to pale pinkish brown, with a thickness ranging from about 0.05 to 0.1 mm and sometimes bordered by a black hypothallus up to 0.3 mm wide. The algae present are chlorococcoid. The apothecia are sessile, with a strongly narrowed base, varying in shape from turbinate to almost having a stalk, and can be round or irregularly lobate. They are typically found individually or in dense clusters with some connecting discs. The disc is initially flat and glossy, later becoming somewhat convex and chocolate brown, without a powdery coating. The edge is dark chocolate brown to black, slightly raised compared to the disc, glossy, with a wavy appearance and noticeable warty ornamentations. The excipulum is dark brown and connects to a thin dark brown hypothecium. The epihymenium is brown and up to approximately 15 µm high, while the hymenium has a slight brownish tint and is around 125 µm high. The ascus has a thickened tip with a small central tubular amyloid structure above the ascospores, resembling the *Malmideaceae*-type. Ascospores are produced in numbers ranging from 16 to 32 per ascus, globose, and hyaline, with a thick wall and lacking appendages or a gelatinous sheath (Kalb & Aptroot 2021). The taxonomic placement of this genus is *Malmideaceae* (*Lecanorales*, *Lecanoromycetidae*, *Lecanoromycetes*, *Pezizomycotina*, *Ascomycota*) (Kalb & Aptroot 2021, Aptroot et al. 2022).

References

Aptroot A, de Souza MF, dos Santos LA, Junior IO et al. 2022 – New species of lichenized fungi from Brazil, with a record report of 492 species in a small area of the Amazon Forest. The Bryologist 125(3), 435– 467.

Kalb K, Aptroot A. 2021 – New lichens from Africa. Archive for Lichenology 28, 1–12.

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Note 1407 *Nothophaeomoniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothophaeomoniella Crous

Crous et al. (2021c) erected the monotypic genus *Nothophaeomoniella* under *Phaeomoniellaceae* (*Phaeomoniellales*, *Chaetothyriomycetidae*, *Eurotiomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *N. ekebergiae* Crous based on morphological characters and phylogenetic analyses using ITS, LSU, *tef1-α* (first part) and *tub2* sequences. The type species was found on leaves of *Ekebergia pterophylla* (*Meliaceae*) in South Africa. Conidiomata are pycnidial, black, globose, with central ostiole, and separate or aggregated. The wall is six to eight layers of brown *textura angularis*. Conidiophores are reduced to conidiogenous cells, ampulliform, lining the inner cavity, hyaline to pale brown, smooth, and phialidic. Conidia are solitary, aseptate, hyaline, smooth, and ellipsoid. The sexual structure has not been identified. The relationship between *Nothophaeomoniella* and '*Phaeomoniella*' *pinifoliorum* signifies a separate genus from *Phaeomoniella*, with *P. chlamydospora* as the type species. Based on the phylogenetic analysis with LSU sequences, *N. ekebergiae* formed a sister clade with *Xenocylindrosporium kirstenboschense* (Crous et al. 2021c).

Reference

Crous PW, Cowan DA, Maggs-Kölling G, Yilmaz N et al. 2021c – Fungal Planet description sheets: 1182–1283. Persoonia 46, 313.

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(Edited by **Kevin D Hyde**)

Note 1408 *Monosporoschisma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Monosporoschisma W.P. Wu & Y.Z. Diao

The monotypic genus *Monosporoschisma* was erected to accommodate *M. elegans* W.P. Wu & Y.Z. Diao under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) based on morphology (Wu & Diao 2022). *Monosporoschisma elegans* was found on dead material of an unidentified palm in China. Colonies are superficial, effuse, black, and are hairy to setose. In the asexual morph, capitate hyphae are present, erect, simple, sterile, brown, and septate. Conidiophores are subcylindrical, erect, single, or small clusters with capitate hyphae, septate, and dark brown to blackish. Conidiogenous cells are integrated, terminate, monophialidic, brown to dark brown, and cylindrical. The conidia are ellipsoidal, and oblong with rounded ends, 3-septate, with the central cells ranging from brown to dark brown, and the end cells pale brown to brown, featuring a distinct scar at the base. The sexual morph has not been seen (Wu & Diao 2022). The type species found on decaying palm leaves bears a resemblance to *Fusichalara* S. Hughes & Nag Raj, *Sporoschisma* Berk. & Broome, and *Sporoschismopsis* Hol.-Jech., but differs from them in conidiogenesis. In *Fusichalara*, *Sporoschisma*, and *Sporoschismopsis*, the conidiogenous cells feature a differentiated venter and collarette, with the conidiogenous loci deeply embedded at the base of long collarettes. In *M. elegans* the conidiogenous cells have typical phialides possessing inconspicuous collarettes, and only a small part of the conidia is situated within the collarettes. Additionally, *Fusichalara* and *Sporoschismopsis* lack capitate hyphae (Wu & Diao 2022). *Monosporoschisma elegans* shares some similarities with *Paradischloridium ychafrei* and *Endophragmia microaquatica* in conidiogenesis and conidial morphology. However, the latter two species do not form capitate hyphae. The conidial appearance of *M. elegans* also draws comparisons to *Duosporium cyperi*. but in *D. cyperi*, the conidiogenous cells exhibit sympodial proliferations, and the conidiogenous loci are narrow holes encircled by a distinct scar. A live strain for molecular analysis was not obtained, and the assignment of *M. elegans* to *Chaetosphaeriaceae* is based on morphological traits such as the presence of capitate hyphae, phialidic conidiogenous cells, and conidiogenesis (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 1409 *Oblongohyalospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Oblongohyalospora Tennakoon, C.H. Kuo & K.D. Hyde

Tennakoon et al. (2021b) erected the monotypic genus *Oblongohyalospora* under *Oblongohyalosporaceae* (*Botryosphaeriales*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *O. macarangae* Tennakoon, C.H. Kuo & K.D. Hyde based on morphology and phylogenetic analyses using LSU sequence data. Only the asexual morph has been observed. The hyphae are superficial, straight, dark brown, irregular, and have no appressoria. Pycnothyria are superficial, scattered, rounded to oval, fattened, brown to black, and opened by stellate fissures. The upper wall consists of an uneven arrangement of dark cells, with cells at the edge branching out and developing superficial hyphae. Conidiogenous cells are evanescent. Conidia are unicellular, hyaline, distinct two to three large guttules, straight or slightly curved, and smooth-walled. The type species was isolated from dead leaf petioles of *Macaranga tanarius* (*Euphorbiaceae*) in Taiwan Island. In the phylogenetic tree, *Oblongohyalospora* species form a distinct clade that falls between *Asterotexaceae* and *Neobuelliellaceae*. The link between the sexual and asexual forms of *Asterotexaceae* and *Neobuelliellaceae* has not been confirmed, as no asexual forms have been identified in any species (Tennakoon et al. 2021b).

Reference

Tennakoon DS, Kuo CH, Maharachchikumbura SS, Thambugala KM et al. 2021b – Taxonomic and phylogenetic contributions to *Celtis formosana*, *Ficus ampelas*, *F. septica*, *Macaranga* *tanarius* and *Morus australis* leaf litter inhabiting microfungi. Fungal Diversity 108(1), 1–215.

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Note 1410 *Muriformispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Muriformispora N.I. de Silva, S. Lumyong & K.D. Hyde

De Silva et al. (2022) introduced *Muriformispora* to accommodate *M. magnoliae* N.I. de Silva, S. Lumyong & K.D. Hyde as a monotypic genus based on morphology and phylogenetic analyses using LSU, SSU, ITS, *tef1-α*, and *rpb2* sequence data. The asexual structure has not been seen. Ascomata are black, globose to subglobose, solitary, scattered, uni-loculate, and ostiolate. The ostiole is central. The peridium comprises several layer cells. The hamathecium is constructed of dense, filamentous, and cellular pseudoparaphyses with indistinct septa. Asci are eight-spored, bitunicate, fissitunicate, pyriform, and pedicellate. Ascospores are overlapping, one to three seriate, four to five transverse septate, and two to three longitudinal septate. The type species was isolated from dead twigs of *Magnolia* (*Magnoliaceae*) in China. *Muriformispora* is classified under *Neohendersoniaceae* (*Pleosporales*, *Dothideomycetes*, *Pleosporomycetidae*, *Pezizomycotina*, *Ascomycota*). The phylogenetic analyses (a combined LSU, SSU, ITS, *tef1-α*, and *rpb2* sequence data) reveal that *Muriformispora* forms a distinct, monophyletic clade separate from five genera (*Brevicollum*, *Crassiparies*, *Medicopsis*, *Neohendersonia*, *Neomedicopsis*) in the *Neohendersoniaceae*. *Neohendersonia* and *Neomedicopsis* are known for their characteristics in asexual forms. By examining the morphological traits of sexual forms across species in the *Neohendersoniaceae*, *Muriformispora* stands out from *Brevicollum*, *Crassiparies*, and *Medicopsis* due to its broadly ellipsoidal and muriform ascospores. *Muriformispora* also possesses pyriform, pedicellate asci that are apically rounded with a furcate to obtuse end, which differ from the cylindrical or clavate asci of *Brevicollum*, *Crassiparies*, and *Medicopsis*. The ascomata structures of *Brevicollum*, *Crassiparies*, and *Medicopsis* contrast with those of *Muriformispora*. For instance, *Medicopsis* features stromata with underdeveloped interiors that emerge from the bark with an ostiolar canal, exhibiting circular to irregular shapes housing globose to subglobose, ostiolate perithecia. In contrast, *Brevicollum* has scattered, sometimes grouped two to three, immersed ascomata that are erumpent at the ostiolar neck, varying from globose to depressed globose. *Crassiparies* displays scattered, immersed ascomata erumpent at the ostiolar neck, as subglobose, ostiolate structures. *Muriformispora* displays black, globose to subglobose, single-chambered, solitary ascomata that are scattered, partially immersed, with ostioles and black spots on the host surface (De Silva et al. 2022).

Reference

De Silva NI, Hyde KD, Lumyong S, Phillips AJ et al. 2022 – Morphology, phylogeny, host association and geography of fungi associated with plants of *Annonaceae*, *Apocynaceae*, and *Magnoliace*ae. Mycosphere 13(1), 955–1076.

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Note 1411 *Oblongohyalosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Oblongohyalosporaceae Tennakoon, C.H. Kuo, S. Hongsanan & K.D. Hyde

Tennakoon et al. (2021b) erected the monotypic family *Oblongohyalosporaceae* under *Botryosphaeriales* (*Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *Oblongohyalospora* Tennakoon, C.H. Kuo & K.D. Hyde based on morphological characteristics and phylogeny using LSU sequence data. The only species of *Oblongohyalospora* is *O. macarangae* Tennakoon, C.H. Kuo & K.D. Hyde and only the asexual morph has been observed. Colonies are present as small dark brown to black dots. The hyphae are superficial, straight to substraight, dark brown, irregular, and easily detachable from the host, without observed appressoria. Pycnothyria are superficial, scattered, rounded to oval, swollen, brown to black, and opening through stellate fissures. The upper wall consists of an irregular arrangement of dark cells, with cells at the edge branching out and forming superficial hyphae. Conidiogenous cells are evanescent. Conidia are unicellular, oblong, hyaline, and have smooth walls. The type species was isolated from dead petioles of *Macaranga tanarius* (*Euphorbiaceae*) in Taiwan Island. In the phylogenetic tree, the family *Oblongohyalosporaceae* forms a distinct clade that falls between *Asterotexaceae* and *Neobuelliellaceae*. The link between the sexual and asexual forms of *Asterotexaceae* and *Neobuelliellaceae* has not been confirmed, as no asexual forms have been identified in any species (Tennakoon et al. 2021b).

Reference

Tennakoon DS, Kuo CH, Maharachchikumbura SS, Thambugala KM et al. 2021b – Taxonomic and phylogenetic contributions to *Celtis formosana*, *Ficus ampelas*, *F. septica*, *Macaranga tanarius* and *Morus australis* leaf litter inhabiting microfungi. Fungal Diversity 108(1), 1–215.

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Note 1412 *Naidispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Naidispora Xin Hua Liu

Liu et al. (2021b) introduced the monotypic genus *Naidispora* to accommodate *N. caidianensis* Xin Hua Liu as the type species based on morphology and phylogenetic analyses using SSU sequence data. The type species was found in the Coelomocyte of oligochaete *Branchiura sowerbyi* in China. Numerous opaque, white xenomas are evident in infected hosts. All stages of the parasite life exhibit monokaryotic nuclei. The progression of parasite stages (meronts and sporonts) happens in conjunction with host cells. Occasionally, transparent sporophorous vesicles can be seen in the latter stages of sporogenesis (sporoblast formation) but degenerate as they mature into spores. The division of multinucleate sporogonial plasmodia takes place through budding resembling rosettes. Subsequently, sporoblasts advance into single-nucleus spores. *Naidispora* constituted a distinct clade in the phylogenetic tree based on SSU sequence data. The taxonomic placement of *Naidispora* is in an uncertain position in *Microsporidia*, (*Protozoa*) (Liu et al. 2021b).

Reference

Liu X, Stentiford GD, Ren S, Yuan X et al. 2021b – *Naidispora caidianensis* n. gen. n. sp. infecting coelomocytes of oligochaete *Branchiura sowerbyi* (*Oligochaeta*, *Naididae*) in China. Journal of Invertebrate Pathology 191, 107768.

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Note 1413 *Johnstoniella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Johnstoniella C.L. Hou & P.F. Cannon

Wang et al. (2023) erected *Johnstoniella* C.L. Hou & P.F. Cannon based on the morphological characters and phylogenetic analyses using mtSSU and nrLSU sequence data. The genus is typified by *J. yunnanensis* C.L. Hou, Q.T. Wang & P.F. Cannon, collected from dead leaves of *Lonicera* in China. *Johnstoniella lonicerae* (Henn.) C.L. Hou, Q.T. Wang & P.F. Cannon and *J. xylostei* C.L. Hou, Q.T. Wang & P.F. Cannon are the other two species. Stromata emerge on live leaves, slightly protruding above the leaf surface, scattered, and varying in shape. Ascomata reach maturity on dead leaves towards the end of spring or the start of the following summer, opening through a single, somewhat longitudinal split. Occasionally, lip cells are present. Paraphyses are filiform and typically enveloped in thin gelatinous coverings. The ascospores are also filiform, with barely noticeable gelatinous sheaths. Based on the combined mtSSU and nrLSU sequences, *Johnstoniella* formed a sister clade with *Fanglania hubeiense* and is distant from other *Rhytisma*-like species in the phylogenetic tree. *Johnstoniella* is classified under *Rhytismataceae* (*Rhytismatales*, *Leotiomycetes*, *Pezizomycotina*, *Ascomycota*) (Wang et al. 2023).

Reference

Wang QT, Guo MJ, Lv T, Zhou H et al. 2023 – Phylogeny and taxonomy of *Rhytisma*-like species worldwide. Fungal Diversity 120(1), 77–119.

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Note 1414 *Macroporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Macroporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Macroporia* under *Mycosphaerellaceae* (*Polyporaceae*, *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate *M. macropora* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji as the type species based on morphology and phylogenetic analyses using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. *Macroporia* contains three other species, *M. lacerata* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji, *M. subrhizomorpha* (Xue W. Wang, L.W. Zhou & X.M. Tian) B.K. Cui & Xing, and *M. tibetica* (B.K. Cui & C.L. Zhao) B.K. Cui & Xing Ji. Basidiocarps are annual, resupinate, and adnate. The subiculum is thin, and cream. The hyphal system is dimitic, and generative hyphae have clamp connections. Cystidia are absent and cystidioles are usually present. Basidiospores are ellipsoid, truncate, hyaline, thick-walled, and smooth. Species within the clade *Macroporia* typically exhibit larger pores compared to *Perenniporia*. Based on phylogenetic analysis using ITS, nLSU, mtSSU, *tef1-α*, and *tub1* sequence data, *Macroporia* formed a sister clade with *Perenniporiella* (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

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Note 1415 *Minivolcanus*

Web links: Index Fungorum, Facesoffungi, MycoBank

Minivolcanus Fryar & D.E.A. Catches.

Minivolcanus (*Morosphaeriaceae*, *Pleosporales*, *Pleosporomycetidae*) was introduced by Fryar et al. (2023) to accommodate *M. unicellularis* Fryar & D.E.A. Catches. as the type species based on morphology and phylogenetic analysis using ITS, LSU, and *tef1-α* sequence data. The type species was collected from decaying wood submerged in freshwater in Australia. Conidiomata are pycnidial, globose to ellipsoid, black, and ostiolate, with hyaline, ellipsoid, and thick-walled cells. Conidiogenous cells are hyaline, cylindrical, and holoblastic. The conidia are hyaline with sheath and without appendages. The sexual morph has not been observed. *Minivolcanus* formed a sister clade to *Aquilomyces* and *Clypeoloculus* based on combined ITS, LSU, and *tef1-α* sequence data analysis. *Minivolcanus unicellularis* is similar to phoma or phoma-like anamorphs (mostly *Pleosporales*). The conidia of *M. unicellularis* closely resemble those of *Hongkongmyces* species (Fryar et al. 2023).

Reference

Fryar SC, Reblova M, Catcheside DE. 2023 – Freshwater fungi from southern Australia: *Minivolcanus unicellularis* gen. et. sp. nov. and *Achrochaeta rivulata* sp. nov. Australian Journal of Taxonomy 40, 1–9.

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(Edited by **Subodini N. Wijesinghe)**

Note 1416 *Multiverruca*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Multiverruca H.Y. Wang, Y.F. Han & Z.Q. Liang

Wang et al. (2023) introduced the monotypic genus *Multiverruca* under *Latoruaceae* (*Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *M. sinensis* H.Y. Wang, Y.F. Han & Z.Q. Liang as the type species based on morphology and phylogenetic analyses using ITS and LSU sequence data. The type species was isolated from soil in China. Conidiophores are reduced to conidiogenous cells. Conidiogenous cells are solitary on the mycelium and erect. Conidia are acrogenous, brown, verruculose, mostly cymbiform, and septate. The sexual morph has not been observed. Phylogenetically, *Latorua* formed a sister clade with *Multiverruca* based on a concatenated ITS and LSU dataset. *Multiverruca* and *Latorua* both have conidiophores reduced to conidiogenous cells, but *Latorua* stands out because it has clavate conidiogenous cells on its mycelium. Additionally, its conidia have a small, globose apical cell and are constricted at the septa, with the second and third cells being more swollen than the base cell (Wang et al. 2023).

Reference

Wang HY, Zhang ZY, Ren YL, Shao QY et al. 2023 – *Multiverruca sinensis* gen. nov., sp. nov., a thermotolerant fungus isolated from soil in China. International Journal of Systematic and Evolutionary Microbiology 73(2), 005734.

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Note 1417 *Muriseptatomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Muriseptatomyces Crous

The monotypic genus *Muriseptatomyces* was established by Crous et al. (2023c) under *Lindgomycetaceae* (*Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *M. restionacearum* Crous based on morphology and phylogenetic analyses using ITS, SSU, LSU, and *tef1-α* sequence data. The type species *M. restionacearum* was found on culms of *Restionaceae* in South Africa. Ascomata are immersed, subglobose, brown with long necks. Asci are eight-spored, bitunicate, fissitunicate, and cylindrical-clavate. Ascospores are one–two-seriate, verruculose, thick-walled, and encased in a gelatinous sheath. The asexual morph has not been observed (Crous et al. 2023c).

Reference

Crous PW, Osieck ER, Shivas RG, Tan YP et al. 2023c – Fungal Planet description sheets: 1478–1549. Persoonia 50(1), 158–310.

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Note 1418 *Mycogloiocolax*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycogloiocolax Schoutteten & Rödel

Schoutteten et al. (2023) introduced the monotypic genus *Mycogloiocolax* within *Mycogloiocolacaceae* (*Incertae sedis*, *Microbotryomycetes*, *Basidiomycota*) to accommodate *M. gerardii* Schoutteten & Rödel as the type species. It was discovered on the basidiome of *Xenasmatella tulasnelloidea* in Germany. This classification is based on morphological characteristics and phylogenetic analyses utilizing a concatenated dataset of ITS, LSU, SSU, *rpb1*, *rpb2*, *tef1-α*, and *cyt-b* sequences. Given the widespread distribution of the host fungus, it is likely that this mycoparasite has a broader geographical range than currently recognized and may be present in other European countries. Basidiomata are hyphidia, and cystidia are absent. The hyphae are hyaline, thin-walled, smooth, and clamped at all septa. Basidia are cylindrical to tubular-clavate, basally clamped, and thin-walled. Basidiospores are fusiform to amygdaliform, asymmetric, smooth, and hyaline. Conidia are ellipsoid to subfusiform and thin-walled. Colacosomes are scattered, with no vesicular gall-like cells observed (Schoutteten et al. 2023).

Reference

Schoutteten N, Yurkov A, Leroux O, Haelewaters D et al. 2023 – Diversity of colacosome-interacting mycoparasites expands the understanding of the evolution and ecology of *Microbotryomycetes*. Studies in Mycology 106(1), 41–94.

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Note 1419 *Neorhytisma*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neorhytisma M. Piepenbr., T.A. Hofm., Gronefeld & C.L. Hou

Wang et al. (2023) introduced the monotypic genus *Neorhytisma* M. Piepenbr., T.A. Hofm., Gronefeld & C.L. Hou based on morphology and phylogenetic analyses using mtSSU and nrLSU sequence data. The genus is typified by *N. panamense* (C.L. Hou, T. Trampe & M. Piepenbr.) M. Piepenbr., T. A. Hofm., Gronefeld & C.L. Hou. Based on the combined SSU and LSU sequence analysis, *Neorhytisma* formed a sister clade with *Triblidium caliciiforme* and is distant from other *Rhytisma*-like species. *Neorhytisma panamense* differs fundamentally from *Triblidium caliciiforme* because the latter is assumed to be a saprotrophic taxon that produces fruiting bodies on bark. Conidiomata are present on the upper surface of green leaves, where the ascomata emerge directly. The ascomata are circular to elliptical, opening through a predominantly longitudinal split. Typically, multiple ascomata aggregate to form black spots with a diameter of up to 4 mm. Lips are absent. Paraphyses are filiform. The ascospores are narrowly ellipsoidal to ovoid, each encased in a thick gelatinous sheath (Wang et al. 2023). *Neorhytisma* is classified under *Rhytismataceae* (*Rhytismatales*, *Leotiomycetes*, *Pezizomycotina*, *Ascomycota*).

Reference

Wang QT, Guo MJ, Lv T, Zhou H et al. 2023 – Phylogeny and taxonomy of *Rhytisma*-like species worldwide. Fungal Diversity 120(1), 77–119.

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Note 1420 *Ocellisimilis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ocellisimilis J. Yang, L.L. Liu & K.D. Hyde

The monotypic genus *Ocellisimilis* was established by Yang et al. (2023b) to accommodate *O. clavata* L.L. Liu, J. Yang, K.D. Hyde & Z.Y. Liu as the type species, based on morphological characteristics and phylogenetic analysis of LSU, ITS, SSU, *tef1-α*, and *rpb2* sequence data. *Ocellisimilis clavata* was discovered on decaying twigs submerged in freshwater in China. The asexual morph has not been observed. Ascomata are immersed, perithecial, thick-walled, subglobose to conical. Pseudoparaphyses are numerous, cellular, hyaline, branched, and septate. Asci are cylindrical to clavate, eight-spored, and bitunicate, containing clavate, golden brown, multi-septate ascospores. Despite forming a distinct clade with other members of *Lindgomycetaceae*, *O. clavata* is easily distinguishable due to its unique combination of morphological traits, including immersed ascomata, slit-like appearance on the host surface, and clavate, golden brown ascospores. This differentiates *O. clavata* from other species within *Lindgomycetaceae*. Notably, the clavate ascospores of *Lolia dictyospora* exhibit similarities to those of *O. clavata* (Yang et al. 2023b).

Reference

Yang J, Liu LL, Jones EG, Hyde KD et al. 2023b – Freshwater fungi from karst landscapes in China and Thailand. Fungal Diversity 119(1), 1–212.

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Note 1421 ***Paramirandina***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paramirandina L.L. Liu & Z.Y. Liu

Liu et al. (2023b) introduced *Paramirandina* under *Microthyriaceae* (*Microthyriales*, *Incertae sedis*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses using ITS and LSU sequence data. The genus is typified by *P. aquatica* L.L. Liu & Z.Y. Liu, isolated on a decaying branch submerged in a stream in China. *Paramirandina cymbiformis* J. Yang & Z.Y. Liu is the other accepted species. Colonies are hairy, scattered, and yellowish-brown to brown. Mycelium is constructed of septate, brown to hyaline, and smooth-walled hyphae. Conidiophores are macronematous, mononematous, cylindrical, smooth-walled, and multi-septate. Conidiogenous cells are polyblastic, integrated, and terminal. Conidia are holoblastic, fusiform, hyaline, and smooth-walled. The sexual morph has not been determined. Based on a concatenated dataset of ITS and LSU sequence data, *Paramirandina* formed a sister clade to *Keqinzhangia aquatica*. Morphologically, *Paramirandina* differs from *Keqinzhangia* based on conidial shape. *Paramirandina* also shares similarities with *Heliocephala* and *Mirandina* (Liu et al. 2023b).

Reference

Liu L, Yang J, Zhou S, Gu X et al. 2023b – Novelties in *Microthyriaceae* (*Microthyriales*): two new asexual genera with three new species from freshwater habitats in Guizhou Province, China. Journal of Fungi 9(2), 178.

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Note 1422 ***Paraneoaraneomyces***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Paraneoaraneomyces Zhi Y. Zhang & Y.F. Han

Zhang et al. (2023d) introduced *Paraneoaraneomyces* under *Clavicipitaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Ascomycota*) to accommodate a single species based on morphology and phylogenetic analyses using SSU, ITS, LSU, *rpb2*, and *tef1-α* sequence data. The genus is typified by *P. sinensis* Zhi Y. Zhang & Y.F. Han, isolated from soil in China. Hyphae are hyaline, smooth, branched, and septate. Phialides are solitary, straight to flexuous, smooth, and hyaline. Conidia are cymbiform to reniform, smooth-walled, and one-celled. The sexual morph has not been observed. *Paraneoarabneomyces* can be distinguished from other genera within *Clavicipitaceae* by its unique conidial characteristics. The conidia are cymbiform to reniform and adhere to the apex of the phialides, often forming small, round heads at the tips of the phialides. The phialides are single, straight, or slightly curved, and grow from the aerial or regimental hyphae. A concatenated dataset of SSU, ITS, LSU, *rpb2*, and *tef1-α* sequences confirmed that *Paraneoaraneomyces* formed a sister clade with *Neoaraneomyces* (Zhang et al. 2023d).

Reference

Zhang ZY, Feng Y, Tong SQ, Ding CY et al. 2023d – Morphological and phylogenetic characterisation of two new soil-borne fungal taxa belonging to *Clavicipitaceae* (*Hypocreales, Ascomycota*). MycoKeys 98, 113.

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Note 1423 *Pigmentatineomassaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pigmentatineomassaria Wijes., Camporesi & K.D. Hyde

The monotypic genus *Pigmentatineomassaria* was erected to accommodate *P. italica* Wijes., Camporesi & K.D. Hyde as the type species based on morphology and a combined DNA data set of the LSU, SSU, *tef1-α*, and *rpb2* sequences (Wijesinghe et al. 2023b). *Pigmentatineomassaria italica* was found on a dead branch of *Cornus mas* in Italy. The asexual morph has not been observed. Ascomata are pseudothecial, solitary, scattered, and uniloculate. Peridium is pseudoparenchymatous and thick. Asci are 8-spored, bitunicate, fissitunicate, and cylindrical-clavate, and contain one to two-seriate, fusoid to ellipsoid, one-septate (immature), hyaline and to three-septate (mature), yellowish to brown ascospores (Wijesinghe et al. 2023b). In the phylogenetic analyses based on LSU, SSU, *tef1-α*, and *rpb2* sequence data, *Pigmentatineomassaria* formed a sister clade with *Neomassaria*. The genus is similar to *Neomassaria* by characters such as central ostiolate and coriaceous ascomata, *textura angularis* cells of the peridium, branched and cellular pseudoparaphyses, bitunicate and short pedicellate asci with eight fusoid to ellipsoid ascospores. It differs from *Neomassaria* based on the characters of ascomata (with a distinct dark clypeus), and ascospores (septation and colour) at the different stages (Wijesinghe et al. 2023b). The taxonomic placement of this genus is within *Neomassariaceae* (*Pleosporales*, *Pleosporomycetidae*, *Pezizomycotina*, *Ascomycota*).

Reference

Wijesinghe SN, Samarakoon MC, Camporesi E, Hyde KD et al. 2023b – Over the footprints of Italian mycology with emphasis on plant-associated *Ascomycota*. Current Research in Environmental & Applied Mycology (Journal of Fungal Biology) 13(1), 162–276.

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Note 1424 *Pleoardoris*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pleoardoris Pinchi-Davila & Porras-Alfaro

Pleoardoris was established by Pinchi-Davila et al. (2023) based on both phylogenetic analysis (using ITS, LSU, SSU, *act*, *cmdA*, and *tub* sequence data as well as extensive Illumina sequencing) and morphological characteristics. The type species, *P. graminearum* Pinchi-Davila & Porras-Alfaro, was isolated from roots of native grasses in USA, specifically *Andropogon gerardii*, *Bouteloua dactyloides*, *Bouteloua eriopoda*, *Bouteloua gracilis*, and *Schizachyrium scoparium* (Pinchi-Davila et al. 2023). The sexual morph has not been observed. *Pleoardoris* has pycnidial conidiomata and septate, hyaline hyphae. Conidiophores are reduced to conidiogenous cells, which are ampulliform to subulate, hyaline, smooth, and phialidic. The conidia are one-celled, ovate to ellipsoidal, and thin-walled. Both conidiogenous cells and conidia are hyaline and smooth. Chlamydospores are globose to subglobose and hyaline to dark brown (Pinchi-Davila et al. 2023). *Pleoardoris* is closely related to *Didymocrea*, *Bimuria*, and *Kalmusia*. Compared to *Pleoardoris*, *Bimuria* has two- or three-spored asci, *Didymocrea* has unitunicate asci with two-celled spores, and *Kalmusia* has pigmented ascomata with verrucose ascospores. When grown on Quinoa and Kiwicha agar, *Pleoardoris* forms asexual, light brown pycnidium-like conidiomata, hyaline hyphae, and chlamydospores. The taxonomic placement of the genus is within *Didymosphaeriaceae*, *Pleosporales*, *Pleosporomycetidae*, which reflects its distinct phylogenetic and morphological characteristics.

Reference

Pinchi-Davila XJ, Vargas-Hernández D, Romero-Jiménez MJ, Jumpponen A et al. 2023 – *Pleoardoris graminearum*, gen. et sp. nov., a new member of *Pleosporales* from North American Plains, its biogeography and effects on a foundation grass species. Mycologia 115(6), 749–767.

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Note 1425 *Spicatispora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spicatispora Réblová

Spicatispora was established under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses using ITS, LSU, and *tef1-α* sequence data. The genus is typified by *S. fennica* (P. Karst.) Réblová (Réblová & Nekvindová 2023). The type species was discovered on decaying wood of *Abies alba*, *Picea abies*, and aged stromata of *Eutypa* sp. in the Czech Republic, Finland, and Ukraine (Réblová & Nekvindová 2023). Colonies are effuse, hairy, and constructed of conidiophores and ascomata. Conidiophores are macronematous, mononematous, cylindrical, and unbranched. Conidiogenous cells are terminal, integrated, cylindrical to narrowly lageniform. Conidia are aseptate and smooth. In the sexual morph, ascomata are perithecial, superficial, non-stromatic. Paraphyses are persistent and branched. Asci are unitunicate, cylindrical, and eight-spored. Ascospores are elongate-fusiform, transversely septate, and hyaline. *Fusichloridium* and *Capillisphaeria* are closely related genera to *Spicatispora* based on the analysis using a concatenated dataset of ITS, LSU, and *tef1-α* sequence data (Réblová & Nekvindová 2023).

Reference

Réblová M, Nekvindová J. 2023 – New genera and species with chloridium-like morphotype in the *Chaetosphaeriales* and *Vermiculariopsiellales*. Studies in Mycology 106(1), 199–258.

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Note 1426 *Subuliphorum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Subuliphorum L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced the monotypic genus *Subuliphorum* under *Clavicipitaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes* *Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate *S. camptosporum* (W. Gams) L.W. Hou, L. Cai & Crous as the type species based on morphology and concatenated phylogeny of LSU, ITS and *rpb2* sequences. The type species was found on an insect in Cuba and on soil in Germany and South Africa. A sexual morph has not been observed. Conidiophores are erect, straight or curved, unbranched or basitonously branched. Conidiogenous cells are enteroblastic, monophialidic, subulate, and hyaline. Conidia are aseptate, hyaline, and eguttulate. Chlamydospores are not present. Phylogenetically, it forms a separate lineage at the base of *Clavicipitaceae* (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Summerbell RC et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

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Note 1427 *Testudinimyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Testudinimyces C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed

The monotypic genus *Testudinimyces* was introduced Pratt et al. (2023) under *Neocallimastigaceae* (*Neocallimastigomycetes*, *Neocallimastigomycotina*, *Neocallimastigomycota*) to accommodate *T. gracilis* C.J. Pratt, E.E. Chandler, N.H. Youssef & Elshahed as the type species based on morphology and phylogenetic analyses using ITS, LSU, and *rpb1* sequence data. The type species was isolated from fecal samples of the Burmese star tortoise in Oklahoma (Pratt et al. 2023). This genus with a filamentous, anaerobic taxon is characterized by its polycentric thallus development, thin nucleated hyphae, globose sporangia, and monoflagellated zoospores. It forms dense growth in the cellobiose-containing liquid medium.

Reference

Pratt CJ, Chandler EE, Youssef NH, Elshahed MS. 2023 – *Testudinimyces gracilis* gen. nov, sp. nov. and *Astrotestudinimyces divisus* gen. nov, sp. nov., two novel, deep-branching anaerobic gut fungal genera from tortoise faeces. International Journal of Systematic and Evolutionary Microbiology 73(5), 005921.

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Note 1428 *Triseptatospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Triseptatospora Konta & K.D. Hyde

Konta et al. (2023) introduced the monotypic genus *Triseptatospora* under *Astrosphaeriellaceae* (*Pleosporales*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) based on morphological characters and phylogenetic analyses using a combined dataset of ITS, LSU, SSU, and *tef1-α* sequence data. The genus is typified by *T. calami* Konta & K.D. Hyde, found on dead petioles of *Calamus* in Thailand. Ascomata are raised, scattered to gregarious, superficial and numerous. Pseudoparaphyses are hyaline, numerous, filiform, and trabeculate. Asci are bitunicate, consisting of 2–3-seriate, 6–8 ascospores that are hyaline, fusiform, and 3-septate. The asexual morph has not been observed. *Triseptatospora calami* and *Aquatospora cylindrical* share common features, but *T. calami* has coriaceous ascomata containing 3-septate, fusiform ascospores, enveloped by a delicate mucilaginous sheath. *Triseptatospora* can be distinguished from other genera in the *Astrosphaeriellaceae* and *Lindgomycetaceae* by its unique morphological characteristics of sexual morph. Phylogenetically, *Triseptatospora* forms a sister clade with *Acrocordiopsis*, based on a combined dataset of LSU, SSU, and *tef1-α* sequence data (Konta et al. 2023).

Reference

Konta S, Tibpromma S, Karunarathna SC, Samarakoon MC et al. 2023 – Morphology and multigene phylogeny reveal ten novel taxa in *Ascomycota* from terrestrial palm substrates (*Arecaceae*) in Thailand. Mycosphere 14(1), 107–152.

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Note 1429 *Vasilyeva*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Vasilyeva S.H. Long, Wijayaw. & Q.R. Li

Li et al. (2023b) introduced *Vasilyeva* under *Diatrypaceae* (*Xylariales*, *Xylariomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate a single species based on morphological characteristics and phylogenetic analyses using ITS and *tub* sequence data. The genus is typified by *V. cinnamomi* S.H. Long, Wijayaw. & Q.R. Li and was found on wood chips of *Cinnamomum cinnamomi* in China. Only the sexual morph has been observed. Perithecia have a long beak and are circular to oblate. Asci are eight-spored, unitunicate, and clavate to long-cylindrical with allantoid and sub-hyaline to hyaline ascospores. In the phylogenetic analysis using a concatenated dataset of ITS and *tub* sequences, *Vasilyeva* formed a distinct clade (Li et al. 2023b).

Reference

Li QR, Long SH, Lin Y, Wu YP et al. 2023b – Diversity, morphology, and molecular phylogeny of *Diatrypaceae* from southern China. Frontiers in Microbiology 14, 1140190.

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Note 1430 *Verruciconidia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Verruciconidia L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced *Verruciconidia* under *Bionectriaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) to accommodate seven species based on morphology and phylogenetic analyses using ITS and LSU sequence data. The genus is typified by *V. verruculosa* (W. Gams & Veenb. Rijks) L.W. Hou, L. Cai & Crous, which was isolated from agricultural soil in the Netherlands. The mycelium consists of branched, septate, and rough, thin-walled hyphae. Conidiophores are unbranched, or poorly branched, and hyaline. Conidiogenous cells are monophialidic and hyaline. Conidia are aseptate, rounded at both ends, straight, hyaline, and eguttulate or guttulate. Chlamydospores and sexual structures have not been observed. *Verruciconidia* species are distinct from other genera in *Bionectriaceae* due to producing conidia with warty surfaces, except *V. erythroxyli*, *V. persicina*, and *V. unguis*, which produce smooth-walled conidia (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Summerbell RC et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

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Note 1431 *Neoacrodontium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoacrodontium Crous & Decock

Crous et al. (2022a) established *Neoacrodontium* under *Amplistromataceae* (*Amplistromatales*, *Incertae sedis*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *N. gallicum* Crous & Decock as the type species using both morphological characteristics and phylogenetic analyses utilizing LSU and ITS sequence data. The second species is *N. hydnicola* (Peck) Crous & Decock. The mycelium consists of subhyaline to pale olivaceous, smooth, thin-walled, septate, and branched hyphae. Conidiophores are erect, brown at the base, branched subverticillately, and septate. Conidiogenous cells are integrated, featuring a flask-form basal part with a long, flexible extension. Conidia are solitary, subhyaline, subglobose, and base with unthickened truncate scar. The sexual morph has not been observed. The type species was isolated from bore dust of *Xestobium rufovillosum* feeding on *Quercus* wood in France. *Neoacrodontium* (*Amplistromataceae*) is genetically different from similar-looking genera like *Acrodontium* (*Teratosphaeriaceae*) and *Xenoacrodontium* (*Xenoacrodontiaceae*). *Neoacrodontium gallicum* and the strain CBS 349.55 (origin unknown, growing on a keratinous substrate), previously identified as *Acrodontium hydnicola*, have been reclassified under the same genus, indicating their taxonomic congruence (Crous et al. 2022a).

Reference

Crous PW, Boers J, Holdom D, Steinrucken TV et al. 2022a – Fungal Planet description sheets: 1383–1435. Persoonia 48(1), 261–371.

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(edited by **Kevin D. Hyde**)

Note 1432 *Pseudodiploosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudodiploosporeaceae

Sun et al. (2023) established *Pseudodiploosporaceae* under *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *Pseudodiploospora* Jing Z. Sun, X.Z. Liu & H.W. Liu. according to morphology and phylogeny using a combined SSU, ITS, LSU, *tef1-α*, and *rpb2* sequence data. The type genus is *Pseudodiploospora* Jing Z. Sun, X.Z. Liu & H.W. Liu. In the asexual morph, colonies on the natural surface appear diffuse and whitish. The mycelia are either superficial or submerged. The hyphae are characterized by their branching structure, septate, and hyaline appearance. Conidiophores are micronematous, mononematous, erect, simple, straight or slightly flexuous, smooth, aseptate to septate, and hyaline. Conidiogenous cells are holoblastic, polyblastic, sympodial, loci conspicuous, terminal, and intercalary in conidiophores, and hyaline, with denticles. Ramoconidia and secondary ramoconidia are often generated, cylindrical or fusiform, aseptate or septate, truncate at the base, with terminal scars. Conidia are subcylindrical-ellipsoidal, slightly pointed at both ends, and smooth-walled. The sexual morph has not been identified (Sun et al. 2023, Yu et al. 2024). Sun et al. (2023) introduced *Pseudodiploosporaceae* within *Hypocreales* to include *Pseudodiploospora* and *Zelopaecilomyces*. Initially described as having various types of conidiophores by Sun et al. (2023), phylogenetic analyses by Yu et al. (2024) raised doubts about *Zelopaecilomyces*. Sun et al. (2023) revealed that *Zelopaecilomyces* may have formed accidentally through the combination of genetic material from *Pseudodiploospora longispora* and a *Penicillium* species, based on SSU, ITS, LSU, *tef1-α*, and *rpb2* sequence data. As a result, Yu et al. (2024) proposed that *Zelopaecilomyces* should be discarded and its name no longer used. This revision means that *Pseudodiploosporeaceae* now contains only the genus *Pseudodiploospora*, with updated defining characteristics. *Pseudodiploospora* includes four species: *P. cubensis*, *P. fungicola*, *P. longispora*, and *P. zinnia* (Yu et al. 2024). These species are found on organic matter, plant surfaces, and the fruiting bodies of other fungi in Canada, China, Cuba, and Japan. (Yu et al. 2024).

References

Sun J, Yu S, Lu Y, Liu H et al. 2023 – Proposal of a new family *Pseudodiploösporeaceae* fam. nov. (*Hypocreales*) based on phylogeny of *Diploöspora longispora* and *Paecilomyces penicillatus*. Mycology 14(1), 60–73.

Yu FM, Jayawardena RS, Luangharn T, Zeng XY et al. 2024 – Species diversity of fungal pathogens on cultivated mushrooms: a case study on morels (*Morchella*, *Pezizales*). Fungal Diversity 125(1), 157–220.

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Note 1433 *Neolophiotrema*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neolophiotrema G.C. Ren & K.D. Hyde

The monotypic genus *Neolophiotrema* was erected to accommodate *N. xiaokongense* G.C. Ren & K.D. Hyde according to morphology and phylogeny (combined SSU, LSU, ITS, *tef1-α*, and *rpb2* sequences). The type species was found on dead wood in China. The genus is classified under *Anteagloniaceae*, *Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota* (Ren et al. 2021). The asexual morph has not been observed. Ascomata are scattered, immersed, coriaceous, and globose to subglobose with a central ostiole. Ostioles are short papillate and produce pink pigment in the inner layer of the ostioles. The peridium is thin- to thick-walled and its outer wall comprises several layers. The hamathecium involves numerous, anastomosing, hyaline, filiform, branched and septate, cellular pseudoparaphyses. Asci are eight-spored, bitunicate, fissitunicate, cylindrical clavate, and pedicellate. Ascospores are overlapping uni- to biseriate, one(–three)-septate, hyaline, smooth-walled, and enclosed by a wide gelatinous sheath (Ren et al. 2021). Based on phylogenetic analysis using a concatenated sequence of SSU, LSU, ITS, *tef1-α*, and *rpb2*, *Anteaglonium* formed a sister clade with *Neolophiotrema*. *Neolophiotrema xiaokongense* shares similar ascospore characteristics with *Angustimassarina*, *Fissuroma*, *Keissleriella*, *Lophiotrema*, *Pseudocoleophoma*, *Sarimanas*, and *Stagonospora*, but phylogenetically they are distinct. *Anteaglonium* can be distinguished from *Neolophiotrema* by its hysterothecial ascomata, carbonaceous peridium, and obovoid two-celled ascospores that have obtuse or fusiform ends, some with acuminate apices, while *Neolophiotrema* has coriaceous ascomata and broadly fusiform ascospores with rounded ends. *Neolophiotrema* differs from *Flammeascoma*, which has trabeculate pseudoparaphyses and carbonaceous ascomata, by having coriaceous ascomata and narrow cellular pseudoparaphyses. *Neolophiotrema* differs from *Purpureofaciens*, which has olivaceous ellipsoidal ascospores, by having hyaline overlapping, bi-seriate, broadly fusiform ascospores. *Neolophiotrema xiaokongense* is similar to *Anteaglonium rubescens* and *Purpureofaciens aquatica* based on its ability to produce purple pigments in media (Ren et al. 2021).

Reference

Ren GC, Wanasinghe DN, Monkai J, Hyde KD et al. 2021 – Introduction of *Neolophiotrema xiaokongense* gen. et sp. nov. to the poorly represented *Anteagloniaceae* (*Pleosporales*, *Dothideomycetes*). Phytotaxa 482(1), 25–35.

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(edited by **Kevin D. Hyde**)

Note 1434 *Raveneliopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Raveneliopsis Ebinghaus & Dianese

Raveneliopsis was erected by Ebinghaus et al. (2023a) to accommodate two species under *Raveneliaceae* (*Pucciniales*, *Pucciniomycetes*, *Pucciniomycotina*, *Basidiomycota*) based on morphological characters and phylogenetic analyses using LSU, SSU, and *co3* sequence data. Uredinia and telia are densely surrounded by stout, incurved peripheral paraphyses, forming basket-like sori. Urediniospores are profusely formed, and superficially ornamented with spirally arranged notched ridges. Teliospores are aggregated in sub-hemispherical convex ravenelioid spore heads, sometimes showing characteristic botryose appendages. The genus is typified by *R. cenostigmatis* (Berndt & F.O. Freire) Ebinghaus & Dianese. The second species is *R. spiralis* (J.F. Hennen & Cummins) Ebinghaus & Dianese. *Newinia* formed a sister clade with *Raveneliopsis* based on a combined dataset of 28S, 18S, and CO3 sequences. Both species were found on the leaves of *Cenostigma macrophyllum* in Brazil. Also, both species are new combinations of *Ravenelia cenostigmatis* and *Ravenelia spiralis*, respectively. Four other *Ravenelia* species found on *Cenostigma* share similar traits such as striate urediniospores, incurved paraphyses, and basket-like sori, suggesting they may belong to this genus. However, differences in teliospore morphology and host associations distinguish them from *Raveneliopsis* species (Ebinghaus et al. 2023a).

Reference

Ebinghaus M, Dos Santos MD, Tonelli GS, Macagnan D et al. 2023a – *Raveneliopsis*, a new genus of ravenelioid rust fungi on *Cenostigma* (*Caesalpinioideae*) from the Brazilian Cerrado and Caatinga. Mycologia 115(2), 263–76.

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(Edited by **Kevin D. Hyde**)

Note 1435 *Riisgaardia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Riisgaardia W.P. Wu & Y.Z. Diao

Wu & Diao (2022) introduced *Riisgaardia* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *R. longispora* W.P. Wu & Y.Z. Diao as the type species based on morphology and phylogenetic analyses using LSU and ITS sequence data. Three species are accepted, namely *R. longispora* W.P. Wu & Y.Z. Diao, *R. obclavata* (W.P. Wu) W.P. Wu & Y.Z. Diao, and *R. vermiculata* (Cooke) W.P. Wu & Y.Z. Diao (Wu & Diao 2022). The colonies are effuse, hypophyllous, and brown. The mycelium is superficial and constructed of septate and brown to dark brown hyphae. Conidiophores are reduced to conidiogenous cells which are discrete, determinate, lageniform, subcylindrical, ampulliform, short, simple, brown to black, and truncate at the apex. Conidial ontogeny is holoblastic, with one locus per conidiogenous cell, delimitated by one septum, maturation by diffuse wall-building, and secession is schizolytic. Conidia are solitary, straight or slightly curved, conical-truncate at the base, euseptate, pale brown to brown, smooth, and subhyaline at the apex. The sexual morph has not been observed (Wu & Diao 2022). *Riisgaardia* shares similarities with *Stanjehughesia* and the synanamorph of *Zanclospora* in terms of lacking conidiophores, featuring dark brown to black conidiogenous cells with a truncated apex, and having cylindrical, obclavate to obclavate-rostrate, multiseptate conidia. Morphologically, they are difficult to differentiate. In the combined ITS and LSU phylogenetic tree, distinct groupings emerge. *Riisgaardia* species, along with other sporidesmium-like species, form a cluster. These species are characterized by lateral phialides and hyaline conidia. Conversely, the type species of *Stanjehughesia*, *S. hormiscioides*, clusters with *Exserticlava* and *Stephembruneria*, which all share brown-colored and septate conidia (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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(Edited by **Kevin D. Hyde**)

Note 1436 *Neotainosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neotainosphaeria W.P. Wu & Y.Z. Diao

Wu & Diao (2022) introduced the monotypic genus *Neotainosphaeria* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *N. microsperma* W.P. Wu & Y.Z. Diao based on morphological characters and phylogenetic analyses using LSU and ITS sequence data. The type species was found on dead branches of an unidentified plant in China. Colonies are effuse, hairy, and dark brown. The mycelium is partly superficial and partly immersed, constructed of pale brown to brown, branched, and septate hyphae. Conidiophores are macronematous, simple, erect, dark brown to reddish-brown, with four to six-septa. Conidiogenous cells are integrated, terminal, monophialidic, cylindrical, thick- and rough-walled. Conidia are holoblastic, acrogenous, solitary, globose to subglobose, and hyaline with two–three slender appendages. The sexual morph has not been observed. Morphologically, *Neotainosphaeria* shows similarities to certain species of *Codinaeella* and *Tainosphaeria* in terms of their globose to ellipsoidal conidia. However, it differs in several key aspects. It produces rough-walled, monophialidic conidiogenous cells with inconspicuous collarettes. Its conidia are globose to subglobose, rough, and thick-walled, typically bearing two to three setulae. While it shares some similarities with *Calceispora* and *Bahusutrabeeja sensu lato*, it can be distinguished by its monophialidic conidiogenous cells with narrower sporulation loci and inconspicuous collars. Additionally, its conidia are rough- and thick-walled, with setulae along the sides (Wu & Diao 2022). *Brachydictyochaeta* formed a sister clade based on a combined sequence of ITS and LSU sequence data. Morphologically, *Neotainosphaeria microsperma* shows similarities to *Bahusutrabeeja dwaya*, *Brachydictyochaeta globosa*, and *Brachydictyochaeta bunyensis*. However, it can be distinguished by the presence of a smooth-walled conidiogenous cell with a wide sporulation locus and conidia bearing multiple appendages, which are observed in *Brachydictyochaeta dwaya* and *B. globosa*. Additionally, it can be distinguished by its smaller conidia (7–10 µm in diameter) in *Brachydictyochaeta bunyensis* (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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(Edited by **Kevin D. Hyde**)

Note 1437 *Strattoniaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Strattoniaceae S.K. Huang, Maharachch. & K.D. Hyde

Huang et al. (2021) introduced *Strattoniaceae* to accommodate *Strattonia* Cif. as the type genus based on morphology and phylogenetic analyses using concatenated LSU, ITS, *tub* and *rpb2* sequence data of *Sordariales*. The genus is typified by *Strattonia tetraspora* (R. Stratton) Cif. (syn. *Fimetaria tetraspora*) and was found on rotten paper in the Dominica Republic (Huang et al. 2021). Both sexual and asexual morphs have been observed. Ascomata are perithecial, coriaceous to membranaceous, pyriform to subglobose, brown to black, hairy, and ostiolate, with a black papilla and periphysate. Paraphyses are filiform-ventricose, and septate. Asci are four–eight-spored, unitunicate, cylindrical, and apex truncate or rounded, with a J-apical ring. Ascospores are uniseriate, fusiform to obovoid, hyaline to subhyaline, one-septate near the base, rarely finely guttulate. The pedicel is short, conical, or cylindrical, hyaline, collapsing when dry, and surrounded by a gelatinous sheath. The gelatinous sheath is rounded or irregular, swelling in water, and invaginated at the pedicel, with indentations. The asexual morph is hyphomycetous and phialophora-like. Conidiophores arise from aerial hyphae, erect, inflated at the base. Phialides are monophialidic, smooth-walled, hyaline, cylindrical, unbranched or branched. Conidia are hyaline to pale yellow, ellipsoidal to oval, aseptate, and smooth-walled (Huang et al. 2021). The taxonomic placement of *Strattoniaceae* is in *Sordariales*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota* (Huang et al. 2021).

Reference

Huang SK, Hyde KD, Mapook A, Maharachchikumbura SS et al. 2021 – Taxonomic studies of some often-over-looked *Diaporthomycetidae* and *Sordariomycetidae*. Fungal Diversity 111, 443–572.

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(Edited by **Kevin D. Hyde**)

Note 1438 *Parabahusutrabeeja*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parabahusutrabeeja W.P. Wu & Y.Z. Diao

The monotypic genus *Parabahusutrabeeja* was erected by Wu & Diao (2022) to accommodate *P. minima* W.P. Wu & Y.Z. Diao as the type species based on morphology and phylogenetic analyses using LSU and ITS sequence data. The type species was found on dead leaves of *Cinnamomum* in China. *Parabahusutrabeeja* formed a distinct clade in the phylogenetic tree based on LSU and ITS sequence data (Wu & Diao 2022). The sexual morph has not been identified. Colonies are effuse, hairy, and dark brown. The mycelium is partly superficial and partly immersed, consisting of pale brown to brown, branched, septate hyphae. Conidiophores are macronematous, solitary, simple, erect, dark brown, septate, and thick-walled. Conidiogenous cells are integrated, terminal, monophialidic, cylindrical, and dark brown. Conidia are produced in chains or clustered at the tips of conidiogenous cells, acrogenous, solitary, globose to subglobose, hyaline, and smooth. *Parabahusutrabeeja* is morphologically similar to *Codinaeella* and *Bahusutrabeeja*, but can be distinguished by its monophialidic conidiogenous cells with inconspicuous collarette and globose to subglobose conidia with only one apical setula (Wu & Diao 2022). The conidia of *Parabahusutrabeeja* are typically arranged in chains or loosely aggregated around the tips of conidiogenous cells, rather than in a wet spore mass. *Parabahusutrabeeja* is classified under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity, 116(1), 1–546.

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(Edited by **Kevin D. Hyde**)

Note 1439 *Vamsapriyaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Vamsapriyaceae Y.R. Sun, Yong Wang bis & K.D. Hyde

Sun et al. (2021) established *Vamsapriyaceae* to accommodate *Vamsapriya* Gawas & Bhat as the type genus based on morphology and phylogeny (a combined dataset of ITS, LSU, *rpb2*, and *tub2*, sequence data). The genus is typified by *V. indica* Gawas & Bhat. *Vamsapriya* species are typically found in tropical and subtropical areas, with most living on land as saprobes. Other genera in *Vamsapriyaceae* are *Diabolocovidia*, *Didymobotryum*, *Podosporium*, and *Tretophragmia*. Although molecular data was not available to determine the phylogenetic relationships of *Podosporium* and *Tretophragmia*, their morphological characteristics resemble those of *Didymobotryum* and *Vamsapriya*, showing brown to dark, simple, straight synnemata, conidiogenous cells with a single point of attachment for conidia, and solitary, obclavate, multi-septate, dark brown conidia. As a result, *Podosporium* and *Tretophragmia* are tentatively classified within the *Vamsapriyaceae* due to their similar morphology. Further genetic sequencing is necessary to determine their phylogenetic relationships conclusively. In *Vamsapriyaceae*, ascomata are solitary, scattered, immersed, subglobose, black, and ostiolate. Peridium is thin-walled and brown. Paraphyses are hyaline and septate. Asci are eight-spored, unitunicate, cylindrical, and short pedicellate, with a J+ apical ring. Ascospores are apiosporous, fusiform to broad fusiform, and hyaline. In the asexual morph, colonies on natural substrate effuse, black, and velvety. Mycelium is immersed, septate, and branched. Synnemata are present or absent. When present (*Didymobotryum*, *Podosporium*, *Tretophragmia*, *Vamsapriya*), synnemata are erect, rigid, dark brown, and made of compact parallel conidiophores which are erect, straight or curved, cylindrical, dark brown, and septate. Conidiogenous cells are mono- or polytretic, integrated, terminal, clavate to cylindrical, and brown. Conidia are either catenate or solitary, acrogenous, pigmented, multi-shaped, and septate. When absent (*Diabolocovidia*, adapted from Crous et al. (2020b)), conidiophores are micronematous, flexuous, and mainly reduced to a terminal conidiogenous cell. Conidiogenous cells are monoblastic, subcylindrical to clavate, pale brown, and smooth. Conidia are catenate, acrogenous, brown, ellipsoid to obovoid, thin-walled, and aseptate. The taxonomic placement of *Vamsapriyaceae* is in *Sordariomycetes*, *Pezizomycotina*, *Ascomycota* (Sun et al. 2021).

References

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Sun YR, Liu NG, Samarakoon MC, Jayawardena RS et al. 2021 – Morphology and phylogeny reveal *Vamsapriyaceae* fam. nov. (*Xylariales, Sordariomycetes*) with two novel *Vamsapriya* species. Journal of Fungi 7(11), 891

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Note 1440 *Perilachnea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Perilachnea Van Vooren

Van Vooren et al. (2021) introduced *Perilachnea* under *Pyronemataceae* (*Pezizales*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *P. hemisphaerioides* (Mouton) Van Vooren as the type species based on morphological characteristics and phylogeny (using a combined sequence of ITS, LSU, *rpb2*, and *tef1-α*). There are six species in the genus (Van Vooren et al. 2021, 2022). The genus includes two new combinations of *Trichophaea hemisphaerioides* and *T. flavobrunnea*. The type species is frequently found on burned soil and charcoal, occasionally on nutrient-rich soil, and is extensively spread throughout Europe, particularly in mountainous regions. Beyond Europe, it has been documented in Canada, Israel, Kazakhstan, Turkey, and the United States. Ascomata are epigeous, apothecial, sessile, and deeply cupuliform or discoid, with the external surfaces covered by sparse brown hairs. The margin is hairy. The excipulum is two-layered. Hairs are superficial and septate with a simple base. Asci are operculate, narrowing toward the base, arising from croziers, inamyloid, and eight-spored. Paraphyses are slender and contain small lipid bodies. Ascospores are uniseriate, ellipsoid, hyaline, bi- or pluriguttulate, and smooth or finely dotted (Van Vooren et al. 2021). The species are saprobic, thriving on conifer litter and woody debris or on enriched or burnt soil. The asexual morph is unknown, but germinating ascospores have been observed in *P. hemisphaerioides* and *P. flavobrunnea*. *Perilachnea* is similar in appearance to *Humaria hemisphaerica* and some species, with ascospores that may have two or more oil droplets and a surface that is either smooth or very finely dotted. In contrast to species of *Trichophaea sensu stricto,* all *Perilachnea* species have paraphyses that contain small lipid bodies, primarily located in the top cell.

References

Van Vooren N, López FV, Carbone M, Lindemann U et al. 2021 – Exploring the European *Trichophaea*-like discomycetes (*Pezizales*) using morphological, ecological and molecular data. Ascomycete. org 13(1), 5–48.

Van Vooren N, Valencia FJ, Carbone M, Vega M. 2022 – Exploring the European *Trichophaea*-like discomycetes (*Pezizales*) using morphological, ecological and molecular data. Part 3: Discoveries in *Perilachnea*. Ascomycete.org 14(1), 7–17

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(Edited by **Kevin D. Hyde**)

Note 1441 *Adustoporiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Adustoporiaceae Audet

Adustoporiaceae was established to accommodate *Adustoporia* as the type genus based on morphological characteristics and combined sequence dataset of LSU, SSU, SSU, *tef1-α*, *rpb1*, and *rpb2* (Audet 2018a, Liu et al. 2023d). The type species is *Adustoporia sinuosa* (Fr.) Audet. Basidiocarps range from annual to perennial, appearing resupinate to effused-reflexed, with a texture varying from corky to woody. The hymenophores are poroid. The hyphal system can be monomitic or dimitic, with generative hyphae that have clamp connections. Cystidia are not present, while cystidioles may or may not be present. Basidiospores are allantoid, cylindrical to oblong ellipsoid, sometimes slightly curved, colourless, thin-walled, smooth, and test negative for IKI and CB (Liu et al. 2023d). This type of fungi causes a brown rot. The taxonomic placement of *Adustoporiaceae* is in *Polyporales*, *Agaricomycetes*, *Agaricomycotina*, and *Basidiomycota*. Six genera are recognized in *Adustoporiaceae*, namely *Adustoporia*, *Amyloporia*, *Austroporia*, *Lentoporia*, *Resinoporia*, and *Rhodonia* (Liu et al. 2023d). *Adustoporia*, *Lentoporia*, and *Resinoporia* were recently created by Audet (2017a,b,c), followed by the proposal of new families *Adustoporiaceae*, *Amyloporiaceae*, *Lentoporiaceae*, and *Rhodoniaceae* (Audet 2018b,c,d,e). In phylogenetic analyses, these six genera were found to be closely related, sharing similar characteristics such as basidiocarps that are resupinate to effused-reflexed, generative hyphae with clamp connections, and basidiospores that are allantoid or cylindrical to oblong-ellipsoid. Previously, these genera were often grouped under *Antrodia sensu lato*. While they could be distinguished at the genus level, they could not be separated at the family level based on morphological characters and phylogenetic analysis. Therefore, only the family *Adustoporiaceae* is supported based on nomenclatural priority, with *Amyloporiaceae*, *Lentoporiaceae*, and *Rhodoniaceae* considered synonyms of *Adustoporiaceae* (Liu et al. 2023d).

References

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Audet S. 2017b – New genera and new combinations in Antrodia sl or Polyporus sl, or new families in the *Polyporales*. Mushrooms nomenclatural novelties 7, 1–2.

Audet S. 2017c – New genera and new combinations in *Antrodia* sl or *Polyporus* sl, or new families in the *Polyporales*. Mushrooms nomenclatural novelties 11, 1.

Audet S. 2018a – Mushrooms Nomenclatural Novelties. Available online: http://www.indexfungorum.org/Publications/PDF/Mushrooms%20nomenclatural%20novelties%20no.%2012.pdf (accessed on 10 November 2023).

Audet S. 2018b – New genera and new combinations in *Antrodia* s.l. or *Polyporus* s.l., or new families in the *Polyporales*. Mushrooms nomenclatural novelties 12, 1–6.

Audet S. 2018c – New genera and new combinations in *Antrodia* s.l. or *Polyporus* s.l., or new families in the *Polyporales*. Mushrooms nomenclatural novelties 13, 1–6.

Audet S. 2018d – New genera and new combinations in *Antrodia* s.l. or *Polyporus* s.l., or new families in the *Polyporales*. Mushrooms nomenclatural novelties 15, 1–4.

Audet S. 2018e – New genera and new combinations in *Antrodia* s.l. or *Polyporus* s.l., or new families in the *Polyporales*. Mushrooms nomenclatural novelties 17, 1–5.

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118(1), 1–94.

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Note 1442 *Gyrotrichaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Gyrotrichaceae Hern.-Restr. & Crous

Hernández-Restrepo et al. (2022) established *Gyrotrichaceae* to accommodate *Gyrothrix* (Corda) Corda as the type genus based on morphology and phylogenetic analyses using ITS, LSU, *rpb2*, and *tub2* sequence data. The new family *Gyrotrichaceae* is classified under *Xylariales* (*Xylariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Hernández-Restrepo et al. 2022). *Gyrotrichaceae* includes five genera, namely *Gyrothrix*, *Neogyrothrix*, *Pseudoceratocladium*, *Pseudocircinotrichum*, and *Xenoanthostomella* (Hernández-Restrepo et al. 2022). In *Gyrotrichaceae*, the colonies are effused, thin, velvety, and mouse grey to black-colored. Mycelium is partly superficial, and constructed of septate, subhyaline to olivaceous-coloured hyphae. Setae are erect, straight or flexuous, simple or branched, and septate, smooth to verrucose. Conidiogenous cells are polyblastic, obclavate to lageniform, hyaline to subhyaline, and thin-walled. Conidia are adherent, dry, cylindrical to fusiform-shaped, and hyaline. Ascomata are immersed, black, coriaceous, and clustered (rarely solitary). The ostiole is papillate with a central periphysate canal. The peridium has two to multiple cell layers with pale brown cells of textura irregulars. The paraphyses are slightly longer than the asci, numerous, filamentous, and septate. Asci are eight-spored, unitunicate, cylindrical, with a discoid, apical ring, J+ in Melzer's reagent. Ascospores are uni- to biseriate, ellipsoidal, unicellular, and smooth-walled (sometimes with mucilaginous sheath) (Hernández-Restrepo et al. 2022).

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Note 1443 *Fuscocatenula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Fuscocatenula Réblová & A.N. Mill.

Fuscocatenula was erected by Réblová et al. (2021) to accommodate *F. submersa* (Z.L. Luo, K.D. Hyde & H.Y. Su) Réblová & A.N. Mill. as the type species by phylogeny (based on the combined ITS and 28S sequences) and morphology. Colonies are effuse, hairy, brown, with mycelium partly immersed and partly superficial. Conidiophores are macronematous, mononematous, solitary, erect, and unbranched. Conidiogenous cells are integrated, terminal, monophialidic, cylindrical to lageniform, and brown. Conidia are cuneiform to obovoid, aseptate, and produced in a basipetal chain. The collarettes are funnel-shaped and brown. The sexual morph has not been observed (Réblová et al. 2021). *Fuscocatenula* is classified under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*). Five species are accepted namely *F. bambusicola*, *F. chinensis*, *F. nabanhensis*, *F. submersa*, and *F. variegata* (Réblová et al. 2021, Wu & Diao 2022, Liu et al. 2023a). The type species was found on submerged decaying wood in a stream in China (Réblová et al. 2021). All species are found in China (Réblová et al. 2021, Wu & Diao 2022, Liu et al. 2023a). Phylogenetically (based on the combined ITS and 28S sequences), it formed a sister clade with *Chaetosphaeria* (Réblová et al. 2021, Wu & Diao 2022). Despite their morphological similarities, *Fuscocatenula* is being proposed as a separate genus from *Catenularia*. The conidia of *Fuscocatenula* are obovoid and possess distinct characteristics that set them apart from those of *Catenularia*. *Fuscocatenula* conidia lack the angular shapes seen in *Catenularia* and instead feature small, circular, thin-walled pale areas at the corners. During their maturation process, *Fuscocatenula* conidia start as hyaline and gradually turn pale brown while still in a chain. This is different from *Catenularia*, where conidia mature quickly and are usually pigmented when released. Although capitate hyphae are a distinguishing feature in *Catenularia*, they are not reliable for differentiating between *Fuscocatenula* and *Catenularia* (Réblová et al. 2021, Wu & Diao 2022). Based on a study by Réblová et al. (2021), *Chaetosphaeria submersa* Z.L. Luo, K.D. Hyde & H.Y. Su and *Catenularia variegata* H.H. Li & X.G. Zhang have been reclassified as *F. submersa* and *F. variegata*, respectively.

References

Liu JW, Hu YF, Cui RQ, Castañeda-Ruíz RF et al. 2023a – New species of *Catenularia* and *Fuscocatenula* from Xishuangbanna, China. Mycotaxon 137(4), 669–677.

Réblová M, Nekvindová J, Miller AN. 2021 – Phylogeny and taxonomy of *Catenularia* and similar fungi with catenate conidia. MycoKeys 81, 1.

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity. 116(1), 1–546.

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Note 1444 *Heinzbutinia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heinzbutinia Z.W. de Beer & M. Procter

De Beer et al. (2022) introduced *Heinzbutinia* to accommodate *H. grandicarpa* (Kowalski & Butin) Z.W. de Beer & M. Procter as the type species based on morphology and phylogenetic analyses using ITS, LSU, *tef1-α*, and *rpb2* sequence data. Three species have been identified, namely *H. grandicarpa* (Kowalski & Butin) Z.W. de Beer & M. Procter, *H. microspora* (Arx) Z.W. de Beer & M. Procter, and *H. solheimii* (Strzałka & Jankowiak) Z.W. de Beer & M. Procter. All three species are reclassification of *Ophiostoma grandicarpum* (Kowalski & Butin) Rulamor, *O.*

microsporum Arx, and *O. solheimii* Strzałka & Jankowiak (De Beer et al. 2022). Both sexual and asexual morphs are known. Ascomata are subglobose to globose and have a black base. The necks are black, cylindrical, and curved. Ostiolar hyphae are absent. Asci are elongated ovoid or clavate-shaped, and evanescent. Ascospores are hyaline, one-celled, orange segment-like in side view, and ellipsoid in face view. The asexual structure is *Sporothrix*-like. Conidiophores are micronematous, macronematous, mononematous, simple or branched, and hyaline. Conidiogenous cells are sympodial and denticulate. Conidia are hyaline, one-celled, ellipsoid, often curved, reniform, secondary conidia that develop from swollen ellipsoidal conidia, can be oblong, straight, or curved (De Beer et al. 2022). Phylogenetically, *Heinzbutinia* formed a distinct clade from other genera. In larger phylogenetic trees, the two species consistently grouped as a distinct lineage separate from all other genera in the *Ophiostomatales*. Both species have long necks on their ascomata more than 1 mm in length, produce asexual forms resembling *Sporothrix*, and have reniform-shaped ascospores. They were both found on hardwood trees. Due to their unique placement in the phylogenetic tree, as well as their distinctive physical characteristics and ecological niche, the *O. grandicarpum* complex was classified into *Heinzbutinia* (De Beer et al. 2022). This species is closely related to and shares a well-supported lineage with *H. grandicarpa* and *H. microspora* (Jankowiak et al. 2019). The family taxonomic classification of *Heinzbutinia* is uncertain, but it is placed in *Ophiostomatales* (*Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (De Beer et al. 2022).

References

De Beer ZW, Procter M, Wingfield MJ, Marincowitz S et al. 2022 – Generic boundaries in the *Ophiostomatales* reconsidered and revised. Studies in Mycology. 101(1), 57–120.

Jankowiak R, Bilański P, Strzałka B, Linnakoski R et al. 2019 – Four new *Ophiostoma* species associated with conifer-and hardwood-infesting bark and ambrosia beetles from the Czech Republic and Poland. Antonie van Leeuwenhoek 112, 1501–1521.

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Note 1445 *Lasiosphaeridaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Lasiosphaeridaceae S.K. Huang, Maharachch. & K.D. Hyde

Huang et al. (2021) introduced *Lasiosphaeridaceae* under *Sordariales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *Lasiosphaeris* Clem., as a monotypic genus based on morphology and phylogenetic analyses using a combined LSU, ITS, *tub2* and *rpb2* sequence data. The type species is *Lasiosphaeris hispida* (Tode) Clem., and the genus contains three species, namely *L. arenicola*, *L. hirsuta*, and *L.hispida*. The type species was found on dead wood in Germany and USA. *L. arenicola* (R. Hilber) S.K. Huang & K.D. Hyde is a new combination of *Cercophora arenicola* R. Hilber (Huang et al. 2021). Ascomata are perithecial, solitary, subglobose to obpyriform, black, ostiolate, tuberculate, and/or enclosed by brown-coloured, septate setae or hairs. Asci are eight-spored, unitunicate, and cylindrical. Ascospores are cylindrical to geniculate or sigmoid, and aseptate to multi-septate. The asexual morph is hyphomycetous and phialophora-like. Conidia are oval to globose and hyaline. The families *Lasiosphaeridaceae* and *Zygospermellaceae*, which were established for only one and two genera, respectively, have been a subject of debate due to limited sampling and inadequate taxonomic practices. Recent phylogenetic studies by Kruys et al. (2015) and Marin-Felix et al. (2020) have shown that both clades, which were previously considered independent families by Huang et al. (2021), are closely related. Huang et al. (2021) prematurely classified these families as separate lineages, but Marin-Felix & Miller (2022) included them in the *Schizotheciaceae* clade in their Bayesian analysis. It is necessary to include more taxa and sequences in future studies to confirm if *Lasiosphaeridaceae* and *Zygospermellaceae* are truly independent lineages within *Schizotheciaceae*. Therefore, Marin-Felix & Miller (2022) have chosen to reject these families for now and refer to them collectively as *Lasiosphaeriaceae* s. lato until further research can provide more data for analysis.

References

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Kruys Å, Huhndorf SM, Miller AN. 2015 – Coprophilous contributions to the phylogeny of *Lasiosphaeriaceae* and allied taxa within *Sordariales* (*Ascomycota*, *Fungi*). Fungal Diversity 70, 101–113.

Marin-Felix Y, Miller AN, Cano-Lira JF, Guarro J et al. 2020 – Re-evaluation of the order *Sordariales*: Delimitation of *Lasiosphaeriaceae* s. str., and introduction of the new families *Diplogelasinosporaceae, Naviculisporaceae*, and *Schizotheciaceae*. Microorganisms 8(9), 1430.

Marin-Felix Y, Miller AN. 2022 – Corrections to recent changes in the taxonomy of the *Sordariales*. Mycological Progress 21(8), 69.

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Note 1446 *Neoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoporia B.K. Cui & Xing Ji

Ji et al. (2023) introduced *Neoporia* under *Polyporaceae* (*Polyporales*, *Incertae sedis*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate three species based on morphology and phylogenetic analyses using ITS, LSU, SSU, *tef1-α*, and *tub1* sequence data. Basidiocarps are annual and resupinate. The subiculum is cream to buff. The genus is typified by *N. rhizomorpha* (B.K. Cui, Y.C. Dai & Decock) B.K. Cui & Xing Ji and two other species are accepted, namely *N. bostonensis* (C.L. Zhao) B.K. Cui & Xing Ji, and *N. koreana* (Y. Jang & J.J. Kim) B.K. Cui & Xing. The hyphal system is dimitic, and generative hyphae have clamp connections. Basidiospores are ellipsoid, non-truncate, hyaline, thick-walled, and smooth. The type species was found on a fallen angiosperm branch in China. Based on a concatenated ITS, LSU, SSU, *tef1-α*, and *tub1*, *Minoporus* formed a sister clade with *Neoporia*. In terms of morphological characteristics, *Neoporia* is distinct from *Perenniporia sensu stricto* due to its dimitic hyphal system and basidiospores that are not truncated (Ji et al. 2023).

Reference

Ji X, Sun YF, Wu DM, Gao N et al. 2023 – An updated phylogenetic assessment and taxonomic revision of *Perenniporia sensu lato* (*Polyporales, Basidiomycota*). Journal of Fungi 9(2), 173.

Entry by Mehrdad Alizadeh, Department of Plant Pathology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran

Note 1447 *Neoschizothecium*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoschizothecium S.K. Huang & K.D. Hyde

Huang et al. (2021) established *Neoschizothecium* based on morphology (only with sexual morph) to accommodate ten species and phylogenetic analyses based on combined LSU, SSU, *rpb2*, and *tef1-α* sequence data of *Sordariomycetes*. The genus is typified by *N. curvisporum* (Cain) S.K. Huang & K.D. Hyde. (Huang et al. 2021). Ascomata are perithecial, solitary, scattered or gregarious, superficial to semi-immersed, pyriform, olivaceous-brown to dark brown, and semi-transparent. Peridium consists of membranaceous, pale brown cells of textura angularis. Paraphyses are cylindrical and septate. Asci are eight–multi-spored, unitunicate, cylindrical, and evanescent. Ascospores are ellipsoidal to broadly fusiform, aseptate, slender, hyaline pedicel, umbonate apex, and verrucose, with an apical germ pore (Huang et al. 2021). *Neoschizothecium* is classified under *Neoschizotheciaceae* (*Sordariales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Huang et al. 2021, Marin-Felix & Miller 2022). *Neoschizothecium*, with *N. curvisporum* as its type species, was established to accommodate *Schizothecium* species outside the *Podosporaceae*. *Neoschizothecium* was erected as the type genus of the new family *Neoschizotheciaceae* by Huang et al. (2021). Based on Marin-Felix & Miller (2022), the introduction of *Neoschizothecium* to house former *Schizothecium* species is deemed unnecessary. Additionally, introducing *N. minicauda* to replace *Podospora minicauda* is questionable since the strain used in the phylogenetic study was not studied for its morphology and does not represent the type material. Further research is needed before transferring this species to *Schizothecium*. The nine new combinations proposed under *Neoschizothecium* for former *Schizothecium* species are also considered unnecessary for the same reasons that the family *Neoschizotheciaceae* is invalid (Marin-Felix & Miller 2022). Although Huang et al. (2021) referred to *N. curvisporum* as a new combination of *Schizothecium curvisporum* (Cain) N. Lundq., Marin-Felix & Miller (2022) mentioned that *N. curvisporum* is a superfluous synonym of *Schizothecium curvisporum* (Cain) N. Lundq.

References

Huang SK, Hyde KD, Mapook A, Maharachchikumbura SS et al. 2021 – Taxonomic studies of some often over-looked *Diaporthomycetidae* and *Sordariomycetidae*. Fungal Diversity 111, 443–572.

Marin-Felix Y, Miller AN. 2022 – Corrections to recent changes in the taxonomy of the *Sordariales*. Mycological Progress 21(8), 69.

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Note 1448 *Nothoeucasphaeria*

Web links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoeucasphaeria Crous

The monotypic genus *Nothoeucasphaeria* was established by Crous et al. (2023b) to accommodate *N. buffelskloofina* Crous under *Niessliaceae*, *Hypocreales* based on morphological characteristics and combined ITS, LSU, *act*, *rpb2*, *tef1-α*, and *tub2* sequence data. *Nothoeucasphaeria buffelskloofina* was isolated from dead twigs in South Africa. Both sexual and asexual morphs have been observed. Ascomata are superficial, perithecial, and smooth-walled. Asci are subcylindrical to narrowly fusoid, eight-spored, and stipitate. Ascospores are hyaline, smooth, guttulate, fusoid-ellipsoid, and septate. Conidiophores are erect, subcylindrical, smooth, hyaline, and one to two-septate. Conidia are solitary, hyaline, smooth, and aseptate. In *Niessliaceae*, *Nothoeucasphaeria* is closely related to three genera *Eucasphaeria*, *Neoeucasphaeria*, and *Rosasphaeria*, but differs by having superficial and pale orange perithecia, three-septate ascospores, and an acremonium-like anamorph (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51(1), 280–417.

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Note 1449 *Paraceratocladiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paraceratocladiella W.P. Wu & Y.Z. Diao

Wu & Diao (2022) established *Paraceratocladiella* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*) to accommodate two species based on morphology and phylogenetic analyses using LSU and ITS sequence data. The two species are *P. polysetosa* (R.F. Castañeda) W.P. Wu & Y.Z. Diao and *P. seychellarum* (Whitton, McKenzie & K.D. Hyde) W.P. Wu & Y.Z. Diao. Only the asexual structure has been identified. Colonies are effuse, brown to dark brown, and hairy. The mycelium is partly immersed and superficial, constructed of brown, septate, and smooth-walled hyphae. Setae are solitary or aggregated, branched, cylindrical, erect, straight, or flexuous, smooth or verruculose, and septate. Conidiophores are hyphae-like, irregularly branched, septate, flexuous, and ascendant. The conidiogenous cells are monophialidic or polyphialidic, mostly intercalary, lageniform, and ampulliform. The conidia are in slimy heads, ovoid, cylindrical, and ellipsoidal, aseptate, hyaline, smooth- and thin-walled, with both ends rounded. The type species *P. polysetosa* was found on dead leaves of *Rhododendron* in China. *Paraceratocladiella* shares morphological similarities with species in *Paraceratocladium*, but stands out due to its development of branched setae, the presence of spike-like structures at intervals on the conidiophores, and the characteristic shape of its conidia, which are ovoid, cylindrical, ellipsoidal, and lack septa, ending in rounded ends. This distinction is confirmed by molecular phylogenetic analysis (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity, 116(1), 1–546.

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Note 1450 *Velenovskya*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Velenovskya Albanese, Boragine, M. Carbone & P. Alvarado

The monotypic genus *Velenovskya* was established by Albanese et al. (2022) to accommodate *V. vacini* (Velen.) Albanese, Boragine, M. Carbone & P. Alvarado (syn. *Plicariella vacini* Velen.) based on morphology and phylogenetic analyses using LSU, *rpb2*, and *tub2* sequence data. The asexual structure is unknown. Apothecia are discoid or irregular in outline, and smooth to cerebriform-shaped. Ascospores are initially hyaline then yellow-brownish at maturity, and ornamented. Asci are operculate, much deeper at the top, eight-spored with croziers. Paraphyses are cylindrical, septate, bifurcated, and rarely trifurcated. The ectal excipulum is composed of *textura angularis*. The subhymenium consists of thin and dense *textura intricata*. In addition to its distinct clade in the phylogenetic tree (a combined dataset of LSU, *rpb2*, and *tub2* sequence data), it separates from *Plicariella* by having ellipsoid ascospores, and from *Peziza* s. str. by having heavily ornamented light-brownish-colored ascospores when fully mature. The taxonomic placement of *Velenovskya* is in *Pezizaceae*, *Pezizales*, *Pezizomycetes* (Albanese et al. 2022).

Reference

Albanese A, Boragine M, Carbone M, Alvarado P. 2022 – *Velenovskya*, a new genus in the family *Pezizaceae* to accommodate *Plicariella vacini*. Ascomycete.org 14(3), 109–115

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Note 1451 *Parawilcoxina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parawilcoxina Van Vooren

Van Vooren et al. (2022) introduced *Parawilcoxina* under *Pyronemataceae* (*Pezizales*, *Pezizomycetidae*, *Pezizomycetes*, *Ascomycota*) to accommodate *P. inexpectata* Valencia, Van Vooren & M. Vega as a monotypic species based on morphological characters and phylogeny (using a concatenated sequence of ITS, LSU, *rpb2*, and *tef1-α*). The asexual form has not been identified. Ascomata are epigeous, apothecial, sessile, slightly cupuliform, disciform to discoid, whitish to pale greyish, with an external surface enclosed by small brown hairs. The excipulum is two-layered. Hairs are superficial, straight, and septate, with a simple base. Ascospores are uniseriate or irregularly biseriate, ellipsoid to narrow ellipsoid, hyaline, guttulate, and smooth. Asci are operculate, narrowing toward the base, arising from croziers, inamyloid, and eight-spored. Paraphyses involve vacuolar bodies. The type species, *P. inexpectata*, was collected from wet soil, in a riparian forest, among small bryophytes in Spain. Based on its morphological characteristics, it was hypothesized that this species might be related to *Trichophaea* or possibly *Wilcoxina*, given the presence of certain hairs with a basal cluster of rounded cells. However, the genetic evaluations surprisingly showed that it grouped within the same clade as *Anthracobia*/*Trichophaea* but in a distinct branch. This outcome led to the suggestion of establishing the new genus *Parawilcoxina* (Van Vooren et al. 2022). *Parawilcoxina* distinguishes itself from *Wilcoxina* through vacuolar bodies in the paraphyses, its classification as a saprobe, and its unique genetic profile (Van Vooren et al. 2022).

Reference

Van Vooren N, López FV, Carbone M, Lindemann U et al. 2022 – Exploring the European *Trichophaea*-like discomycetes (*Pezizales*) using morphological, ecological and molecular data. Ascomycete. org 13(1), 5–48.

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Note 1452 *Zanclosporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Zanclosporiella W.P. Wu & Y.Z. Diao

Wu & Diao (2022) erected the monotypic genus *Zanclosporiella* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*) to accommodate *Z. minuta* (F.A. Fernández & Huhndorf) W.P. Wu & Y.Z. Diao based on morphology and phylogenetic analyses using LSU and ITS sequence data. The type species is a saprobe on decorticated branches in Panama. Ascomata are globose to sub-globose, dark brown, superficial on a thin subiculum, and distinctly papillate.

Ascomatal apex are papillate and opaque. The paraphyses are unbranched, septate, and tapering. Asci are eight-spored, cylindric-clavate, short-stalked, unitunicate, and thin-walled. Ascospores are hyaline, fusiform to narrow-ellipsoid, and one-septate. Conidiophores are setiform, solitary, erect, unbranched, multiseptate, and brown. Conidiogenous cells are mono- or poly-phialides, ovoid, and brown. The collarettes are small and funnel-shaped. Conidia are narrow fusiform, hyaline, and one-celled (Wu & Diao 2022). *Zanclosporiella* is closely related to *Zanclospora* in phylogenetic analysis (ITS and LSU sequences) but has distinct characteristics. It is defined by hyaline, fusiform to narrow-ellipsoid ascospores without septa, and an anamorph similar to *Zanclospora* with thread-like conidiophores and several phialides on one side along the middle, producing hyaline, spindle-shaped conidia. It differs from *Zanclospora* by its aseptate ascospores and unilateral arrangement of phialides on one side of the conidiophores (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 1453 *Postiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Postiaceae B.K. Cui, Shun Liu & Y.C. Dai

Liu et al. (2023d) erected *Postiaceae* under *Polyporales* (*Agaricomycetes*, *Basidiomycota*) to accommodate *Postia* Fr. as the type genus based on morphology and phylogeny using ITS, nLSU, nSSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* sequence data. Phylogenetically, *Postiaceae* forms a sister clade with *Dacryobolaceae*. Basidiocarps are annual, stipitate, pileate, or effused-reflexed to resupinate, corky, and fragile to woody hard when dry. Hymenophores are poroid. The hyphal system is monomitic and generative hyphae are clamped, IKI−, and CB−. Cystidia are occasionally present, and cystidioles are present or absent. Basidiospores are allantoid to cylindrical to oblong to ellipsoid-shaped, colourless, thin- to thick-walled, smooth, IKI−, occasionally CB+. The members of this family cause a brown rot. In terms of phylogenetic relationships, the species within *Postia sensu lato* clustered together to create a unified lineage with moderate to high support. The findings aligned with earlier phylogenetic research on *Postia sensu lato* (Pildain & Rajchenberg 2013, Justo et al. 2017, Shen et al. 2019). According to Liu et al. (2023d), 16 genera are recognized within *Postiaceae*.

References

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Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118(1), 1–94.
Pildain MB, Rajchenberg M. 2013 – The phylogenetic position of *Postia* s.l. (*Polyporales*, *Basidiomycota*) from Patagonia, Argentina. Mycologia 105, 357–367.
Shen LL, Wang M, Zhou JL, Xing JH et al. 2019 – Taxonomy and phylogeny of *Postia*. Multi-gene phylogeny and taxonomy of the brown-rot fungi: *Postia* (*Polyporales*, *Basidiomycota*) and related genera. Persoonia 42(1), 101–26.

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Note 1454 *Quasiramulariaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Quasiramulariaceae R. Kirschner, M. Kolařík & M. Piepenbr.

Kolařík et al. (2021) introduced *Quasiramulariaceae* under *Quasiramulariales* (*Ustilaginomycotina*, *Basidiomycota*) to accommodate *Quasiramularia* I-Chin Wei & R. Kirschner as the monotypic genus according to morphology and phylogeny by LSU, SSU, and *rpb2* sequences. The type species is *Quasiramularia phakopsoricola* I-Chin Wei & R. Kirschner. It is a ramularia-like hyphomycete discovered on the uredinia of *Phakopsora ampelopsidis* on leaves of wild *Ampelopsis brevipedunculata* and cultivated *Parthenocissus tricuspidata* in several cities in Taiwan Island. *Quasiramularia* is similar to anamorphic *Ramularia* Unger, but differs by conidiogenous loci lacking the ring-shaped hollow between the central dome and the marginal ring typical of *Ramularia* species (Kolařík et al. 2021). In the type species, hyphae and conidiophores develop as white to dirty white powdery pustules on rust uredinia found on the underside of living leaves. The conidiophores arise from the uredinia, appearing loosely erect to decumbent, effuse, subcylindrical, septate, and hyaline or subhyaline. Conidiogenous cells are typically located at the terminal end, occasionally at the subterminal or lateral positions, somewhat cylindrical, or slightly swollen. The conidia are catenulate, shaped like ellipses, ovals, or somewhat cylindrical-fusiform, and rounded to slightly pointed ends with thickened hila that are slightly darkened (Kolařík et al. 2021).

Reference

Kolařík M, Wei IC, Hsieh SY, Piepenbring M et al. 2021 – Nucleotide composition bias of rDNA sequences as a source of phylogenetic artifacts in *Basidiomycota*—a case of a new lineage of a uredinicolous *Ramularia*-like anamorph with affinities to *Ustilaginomycotina*. Mycological Progress 20, 1553–1571.

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Note 1455 *Urinopezia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Urinopezia Van Vooren

Van Vooren (2023) erected the monotypic genus *Urinopezia* based on morphology and phylogeny using ITS and LSU sequence data. The genus is typified by *U. tarembergensis* (Moyne, Stöckli, C. Page & Van Vooren) Van Vooren and is classified under *Pezizaceae* (*Pezizales*, *Pezizomycetes*, *Ascomycota*). The type species was found on substrates enriched by urine in France and Switzerland. *Urinopezia* is characterized by epigeous and cupulate ascomata; operculate, eight-spored (with croziers) asci; guttulate, and smooth ascospores; and without a known asexual morph. Phylogenetically, *U. tarembergensis* is positioned in a distinct clade that is closely related to both *Peziza* s. stricto and the "violacea" lineage (Van Vooren 2023).

Reference

Van Vooren N. 2023 – Nomenclatural novelties in *Pezizales*. Part 3. Ascomycete.org 15(2), 77–80.

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(Edited by **Kevin D. Hyde**)

Note 1456 *Cryptocalicium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryptocalicium Etayo, Olariaga & M. Prieto

Cryptocalicium was introduced to accommodate a single saprobic species *C. blascoi* within the newly established *Cryptocaliciaceae* (*Cryptocaliciales*, *Cryptocaliciomycetidae*, *Eurotiomycetes*). The genus formed a sister clade to *Coryneliomycetidae* and *Eurotiomycetidae* in the multigene (LSU, SSU, ITS, mtSSU, *rpb1*, *rpb2*, and *mcm7*) phylogenetic analyses (Prieto et al. 2021). The presence of clavate asci, with a pedicel, bitunicate, and evanescent also supports the placement of this genus between these two subclasses. Further, *C. blascoi* shares a similar saprotrophic nutritional mode with *Mycocaliciomycetidae* but differs in having cylindrical asci without iodine reactions. The calicioid species possess unique morphological features such as tiny fruiting bodies and dark violet pigment granules that turn blue-green in KOH (Prieto et al. 2021).

Reference

Prieto M, Etayo J, Olariaga I. 2021 – A new lineage of mazaediate fungi in the *Eurotiomycetes*: *Cryptocaliciomycetidae* subclass. nov., based on the new species *Cryptocalicium blascoi* and the revision of the ascoma evolution. Mycological Progress 20(7), 889–904.

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(Edited by **Maryam T. Nooabadi)**

Note 1457 *Neotainosphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neotainosphaeria W.P. Wu & Y.Z. Diao

Wu & Diao (2022) introduced the monotypic genus *Neotainosphaeria* under *Chaetosphaeriaceae* (*Chaetosphaeriales*, *Sordariomycetes*, *Ascomycota*) to accommodate *N. microsperma* W.P. Wu & Y.Z. Diao based on morphological characters and phylogenetic analyses using LSU and ITS sequence data. The type species was found on dead branches of unidentified plants in China. Colonies are effuse, hairy, and dark brown. The mycelium is partly superficial and partly immersed, constructed of pale brown to brown, branched, and septate hyphae. Conidiophores are macronematous, simple, erect, dark brown to reddish brown, and four–six-septate. The conidiogenous cells are integrated, terminal, monophialidic, cylindrical, thick- and rough-walled. Conidia are holoblastic, acrogenous, solitary, globose to subglobose, and hyaline with two–three slender appendages. The sexual structure has not been seen. *Neotainosphaeria* shows similarities to certain species of *Codinaeella* and *Tainosphaeria* in terms of their globose to ellipsoidal conidia. However, it differs by producing rough-walled, monophialidic conidiogenous cells with inconspicuous collarette, and globose to subglobose, rough, and thick-walled conidia that have two-three setulae. It also has resemblances to *Calceispora* and *Bahusutrabeeja* s. lat, but can be set apart from them by its monophialidic conidiogenous cells with narrower sporulation loci that have inconspicuous collars, as well as rough and thick-walled conidia featuring setulae on the sides (Wu & Diao 2022). *Brachydictyochaeta* formed a sister clade based on a combined sequence of ITS and LSU sequence data. Morphologically, *N. microsperma* shows similarities to *Bahusutrabeeja dwaya*, *Bahusutrabeeja globosa*, and *Bahusutrabeeja bunyensis*, but it can be identified by the presence of a smooth-walled conidiogenous cell with a wide sporulation loci and conidia with multiple appendages in *B. dwaya* and *B. globosa*, while *B. bunyensis* has smaller conidia (Wu & Diao 2022).

Reference

Wu W, Diao Y. 2022 – Anamorphic chaetosphaeriaceous fungi from China. Fungal Diversity 116(1), 1–546.

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Note 1458 *Quadrisporella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Quadrisporella Senwanna, Cheewangkoon & K.D. Hyde

The monotypic genus, *Quadrisporella* was erected by Senwanna et al. (2021) to accommodate *Q. heveae* Senwanna, Cheewangkoon & K.D. Hyde based on morphological characters and analyses of a combined LSU, SSU, ITS, and *tef1-α* sequence data. The type species was isolated from a branch of *Hevea brasiliensis* (*Euphorbiaceae*) in Thailand. Only the sexual morph has been observed. Ascomata are black, without a subiculum, superficial to semi-immersed, solitary or scattered, and carbonaceous. Ostiole is central. The peridium is thick-walled with uneven thickness, poor development at the base, becoming slightly thicker on the sides towards the apex, and consisting of two layers of cells; an outer layer with thick walls made of black, fragile carbonaceous cells, and an inner layer that is hyaline and composed of pseudoparenchymatous cells arranged in a textura angularis pattern. Hamathecium contains cylindrical to filiform and septate pseudoparaphyses. Asci are four-spored, bitunicate, cylindrical- and pedicellate. Ascospores are irregular, oblong to broadly fusiform, hyaline, one-septate, constricted at the septum, guttulate, and smooth-walled. Phylogenetically, *Setoapiospora thailandica* is the closest clade to *Q. heveae*. Morphologically, *Quadrisporella* exhibits several resemblances to *Setoapiospora* with its superficial to semi-submerged, carbonaceous ascomata that manifest as dark brown to black spots on the host surface, as well as hyaline ascospores. Nonetheless, *Quadrisporella* distinguishes itself with ascomata lacking external setae, 4-spored asci, and oblong to broadly fusiform, hyaline ascospores that possess a single septum at the middle. The taxonomic placement of *Quadrisporella* is in *Muyocopronaceae*, *Muyocopronales*, *Dothideomycetes*, *Ascomycota* (Senwanna et al. 2021).

Reference

Senwanna C, Mapook A, Samarakoon MC, Karunarathna A et al. 2021 – Ascomycetes on Para rubber (*Hevea brasiliensis*). Mycosphere 12(1), 1334–1512.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

Note 1459 *Pachysolenaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pachysolenaceae M. Groenew., Hittinger, Opulente & A. Rokas

Pachysolenaceae was established by Groenewald et al. (2023) to accommodate *Pachysolen* Boidin & Adzet as the type genus and *Pachysolen tannophilus* Boidin & Adzet as the type species based on morphological characters, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). Family-specific protein OG0016373 is characterized by a unique trait where the CUG codon is translated into alanine, deviating from the common translation of leucine. This divergence has been identified through phylogenetic analyses that utilize DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α*. Additionally, budding occurs multilaterally, with a narrow base for support, and the ascospores exhibit a distinctive hemispherical or hat-shaped morphology (Groenewald et al. 2023). *Pachysolenaceae* is classified within *Alaninales*. Groenewald et al. (2023) introduced some specific genera included in the *Alaninales*: *Nakazawaea*, *Pachysolen*, and *Peterozyma*. These genera were once part of the *Saccharomycetales* incertae sedis (Kurtzman et al. 2011) as their taxonomic placements were uncertain for many years. Recent research has revealed that these genera collectively form a distinct group where the translation of the CUG codon into alanine, rather than leucine, is a shared characteristic (Krassowski et al. 2018). This unique trait has led to the recognition of the CUG-Ala clade as a monophyletic group (Riley et al. 2016). The biotechnological significance of *Nakazawaea peltata* lies in its production of a β-glucosidase enzyme, which when combined with purified cellulase, aids in the breakdown of cellulose. Additionally, this species is known for its efficient production of xylitol, a popular artificial sweetener. *Pachysolen tannophilus* is valuable for its ability to convert crude glycerol into ethanol, and strains of this species can transition from glucose to effectively fermenting xylose (Groenewald et al. 2023). The taxonomic placement of the family is *Alaninales* (*Pichiomycetes*, *Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023).

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Krassowski T, Coughlan AY, Shen XX, Zhou X et al. 2018 – Evolutionary instability of CUG-Leu in the genetic code of budding yeasts. Nature Communications 9, 1887.

Riley R, Haridas S, Wolfe KH et al. 2016 – Comparative genomics of biotechnologically important yeasts. Proceedings of the National Academy of Sciences 35, 9882–9887.

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(Edited by **Kevin D Hyde**)

Note 1460 *Pichiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pichiaceae M. Groenew., Hittinger, Opulente & A. Rokas

Pichiaceae was erected to accommodate *Pichia* E.C. Hansen as the type genus. According to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type species is *Pichia membranifaciens* (E.C. Hansen) E.C. Hansen. *Pichiomycetes* encompasses several orders, including *Alaninales*, *Pichiales*, and *Serinales*. The family-specific protein families OG0005494 and OG0005374 are identified within the orders *Alaninales*, *Pichiales*, and *Serinales* (Groenewald et al. 2023). Phylogenetic analyses in these orders utilize DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α* to study the evolutionary relationships within this group (Daniel et al. 2014). Some genera that were formerly designated within the *Saccharomycetales incertae sedis* (Kurtzman et al. 2011) and have now been incorporated into the order *Pichiales*. This includes genera from the family *Pichiaceae*, as well as the recently introduced genus *Allodekkera* by Jutakanoke et al. (2017). Additionally, while *Komagataella* was originally classified in the family *Phaffomycetaceae* by Kurtzman et al. (2011), genome-scale analyses have indicated its reassignment to the order *Pichiales*. The taxonomic placement of *Pichiaceae* is *Pichiales* (*Pichiomycetes*, *Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023).

References

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Jutakanoke R, Endoh R, Takashima M, Ohkuma M et al. 2017 – *Allodekkera sacchari* gen. nov., sp. nov., a yeast species in the *Saccharomycetales* isolated from a sugar factory. International Journal of Systematic and Evolutionary Microbiology 67(2), 250–255.

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(Edited by **Kevin D Hyde**)

Note 1461 *Sporopachydermiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sporopachydermiaceae M. Groenew., Hittinger, Opulente & A. Rokas

Sporopachydermiaceae was established to accommodate *Sporopachydermia* Rodr. Mir. as the type genus according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type species is *Sporopachydermia lactativora* Rodr. Mir. *Sporopachydermiaceae* is classified under *Sporopachydermiales* (*Sporopachydermiomycetes*, *Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023). The family-specific protein families mentioned, OG0028621, OG0028581, OG0028722, and OG0028736, have been studied through phylogenetic analyses employing DNA sequences that encode LSU, mtSSU, and *cox2* sequences (Kurtzman & Robnett 2007). For reproduction, the members of this family employ a method of asexual reproduction involving multilateral budding on a narrow base, with the absence of pseudohyphae and true hyphae formation noted. In terms of metabolic characteristics, glucose fermentation is either absent or weak, and nitrate assimilation is not observed. The organism assimilates myo-inositol as its sole carbon source. Additionally, it is capable of forming Coenzyme Q-9 (Groenewald et al. 2023).

References

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Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1462 *Alloascoideales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloascoideales M. Groenew., Hittinger, Opulente & A. Rokas

Alloascoideales was erected to accommodate *Alloascoideaceae* Kurtzman & Robnet as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Alloascoideales* is classified under *Alloascoideomycetes* (*Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023). The type genus and type species are *Alloascoidea* Kurtzman & Robnett and *Alloascoidea hylecoeti* (L.R. Batra & Francke-Grosm.) Kurtzman & Robnett, respectively (Groenewald et al. 2023). Within the order-specific protein family OG0009556 and OG0024318, phylogenetic analyses have been conducted utilizing DNA sequences encoding LSU, SSU, *tef1-α*, *rpb1*, and *rpb2* (Kurtzman & Robnett 2013). The characteristic reproductive methods observed in this order include multilateral budding and the formation of pseudohyphae and septate hyphae. Blastoconidia are formed on hyphae and may either be sessile or arise from denticles (Groenewald et al. 2023).

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Kurtzman CP, Robnett CJ. 2013 – *Alloascoidea hylecoeti* gen. nov., comb. nov., *Alloascoidea africana* comb. nov., *Ascoidea tarda* sp. nov., and *Nadsonia starkeyi-henricii* comb. nov., new members of the *Saccharomycotina* (*Ascomycota)* FEMS Yeast Research 13, 423–432.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1463 *Dipodascales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dipodascales M. Groenew., Hittinger, Opulente & A. Rokas

Dipodascales was introduced to accommodate *Dipodascaceae* Engl. & E. Gilg as the type family according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Dipodascales* is classified under *Dipodascomycetes* (*Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023). The type genus and type species are *Dipodascus* Lagerh. and *Dipodascus albidus* Lagerh, respectively (Groenewald et al. 2023). Within the order-specific protein family OG0005588, OG0005810, and OG0006132, phylogenetic analyses have been conducted utilizing DNA sequences encoding LSU, mtSSU, and *cox2* sequences (Kurtzman & Robnett 2007). Notably, this order contains dimorphic yeasts capable of producing arthroconidia (Groenewald et al. 2023). *Dipodascaceae* and *Trichomonascaceae* are included in *Dipodascales* (Groenewald et al. 2023).

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Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1464 *Lipomycetales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lipomycetales M. Groenew., Hittinger, Opulente & A. Rokas

Lipomycetales was erected to accommodate *Lipomycetaceae* E.K. Novák & Zsolt as the type family based on morphological characteristics, physiological features, and a combined single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and type species are *Lipomyces* Lodder & Kreger and *Lipomyces starkeyi* Lodder & Kreger, respectively. *Lipomycetales* is classified under *Lipomycetes*, *Saccharomycotina*, *Ascomycota* (Groenewald et al. 2023). *Lipomycetaceae* is the only family in the *Lipomycetales*. The genera that have been identified in the *Lipomycetales* are *Babjevia*, *Dipodascopsis*, *Kockiozyma*, and *Lipomyces* (with the asexual morph known as *Myxozyma*, Groenewald et al. 2023). The diagnosis of *Lipomycetales* was based on order-specific protein families OG0010973, OG0011052, OG0008472, OG0097159 OG0009553 and phylogenetic analyses, utilizing DNA sequences that encode SSU, LSU, mtSSU, and *tef1-α* (Kurtzman et al. 2007). These taxa can produce intracellular lipids and extracellular starch-like compounds. They do not engage in fermentation, and they do not assimilate nitrate (Groenewald et al. 2023).

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(Edited by **Kevin D Hyde**)

Note 1465 *Alaninales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alaninales M. Groenew., Hittinger, Opulente & A. Rokas

Alaninales was erected to accommodate *Pachysolenaceae* M. Groenew., Hittinger, Opulente & A. Rokas as the type family according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). This family is typified by *Pachysolen* Boidin & Adzet as type genus and *Pachysolen tannophilus* as type species. Order-specific protein family OG0016373 is characterized by a unique trait where the CUG codon is translated into alanine, deviating from the common translation of leucine. This divergence has been identified through phylogenetic analyses that utilize DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α*. Additionally, budding occurs multilaterally, with a narrow base for support, and the ascospores exhibit a distinctive hemispherical or hat-shaped morphology (Groenewald et al. 2023). The taxonomic placement of this order is *Pichiomycetes* (*Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023). The family *Pachysolenaceae* is classified within the order *Alaninales*. This study identifies specific genera included in the *Alaninales*: *Nakazawaea*, *Pachysolen*, and *Peterozyma*. These genera were once part of the *Saccharomycetales* incertae sedis (Kurtzman et al. 2011) as their taxonomic placements were uncertain for many years. Recent research has revealed that these genera collectively form a distinct group where the translation of the CUG codon into alanine, rather than leucine, is a shared characteristic. This unique trait has led to recognizing the CUG-Ala clade as a monophyletic group (Riley et al. 2016). The biotechnological significance of *Nakazawaea peltata* lies in its production of a β-glucosidase enzyme, which, when combined with purified cellulase, aids in the breakdown of cellulose. Additionally, this species is known for its efficient production of xylitol, a popular artificial sweetener. On the other hand, *Pachysolen tannophilus* is valuable for its ability to convert crude glycerol into ethanol. Furthermore, studies have demonstrated that strains of this species can transition from glucose to effectively fermenting xylose (Groenewald et al. 2023).

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Note 1466 *Pichiales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pichiales M. Groenew., Hittinger, Opulente & A. Rokas

Pichiales was established to accommodate *Pichiaceae* M. Groenew., Hittinger, Opulente & A. Rokas as the type family according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Pichiaceae* is typified by *Pichia* E.C. Hansen and *Pichia membranifaciens* (E.C. Hansen) E.C. Hansen as type genus and type species, respectively. *Pichiomycetes* encompasses several orders, including *Alaninales*, *Pichiales*, and *Serinales*. The order-specific protein families OG0005494 and OG0005374 are identified within *Pichiales* (Groenewald et al. 2023) The Phylogenetic analyses were conducted using DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α* to study evolutionary relationships within *Pichiales* (Daniel et al. 2014). This includes genera from *Pichiaceae* and the newly introduced genus *Allodekkera* by Jutakanoke et al. (2017). Originally, *Komagataella* was classified in *Phaffomycetaceae* by Kurtzman et al. (2011). However, genome-scale analyses have since indicated its reassignment to *Pichiales*. The taxonomic placement of this order is *Pichiomycetes*, *Saccharomycotina*, and *Ascomycota* (Groenewald et al. 2023). The genera included in the *Pichiales*, based on current and previous studies, are as follows: *Allodekkera*, *Ambrosiozyma*, *Brettanomyces* (teleomorph *Dekkera*), *Citeromyces*, *Komagataella*, *Kregervanrija*, *Kuraishia*, *Martiniozyma*, *Ogataea*, *Pichia*, and *Saturnispora* (Groenewald et al. 2023).

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(Edited by **Kevin D Hyde**)

Note 1467 *Serinales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Serinales M. Groenew., Hittinger, Opulente & A. Rokas

Serinales was introduced to accommodate *Metschnikowiaceae* Kamieński ex Doweld as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and species are *Metschnikowia* Kamienski and *Metschnikowia bicuspidata* (Metschn.) Kamienski, respectively. Families included in the *Serinales* are *Cephaloascaceae*, *Debaryomycetaceae*, and *Metschnikowiaceae* (Groenewald et al. 2023). The type genus and type species are *Metschnikowia* T. Kamieński and *Metschnikowia bicuspidata* (Metschn.) Kamieński., respectively (Groenewald et al. 2023). The taxonomic placement of *Serinales* is *Pichiomycetes* (*Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023). A distinctive feature of the *Serinales* is the presence of the order-specific protein family OG0004743. Within this order, the CUG codon is translated into a serine, deviating from the typical translation of leucine found in most organisms (Riley et al. 2016). This unique characteristic sets the *Serinales* apart and helps distinguish them within the broader classification of *Saccharomycotina* (Groenewald et al. 2023).

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(Edited by **Kevin D Hyde**)

Note 1468 *Phaffomycetales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phaffomycetales M. Groenew., Hittinger, Opulente & A. Rokas

Phaffomycetales was erected to accommodate *Phaffomycetaceae* Y. Yamada et al. as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and species are *Phaffomyces* Y. Yamada and *Phaffomyces* opuntiae (Starmer et al.) Y. Yamada, respectively. The *Phaffomycetales* include the *Phaffomycetaceae* and *Wickerhamomycetaceae*. According to Groenewald et al. (2023), the genera identified within the *Phaffomycetales* are *Barnettozyma*, *Cyberlindnera*, *Phaffomyces*, *Starmera*, and *Wickerhamomyces*. The taxonomic position of *Phaffomycetales* is in *Saccharomycetes* (*Saccharomycotina*, *Ascomycota*). Included orders in *Saccharomycetes* are *Ascoideales*, *Phaffomycetales*, *Saccharomycetales*, and *Saccharomycodales* (Groenewald et al. 2023). The diagnosis of *Phaffomycetales* is based on the presence of order-specific protein families OG0006529 and OG0006543 (Groenewald et al. 2023). Phylogenetic analyses are performed using DNA sequences encoding SSU, LSU, *tef1-α*, *rpb1*, and *rpb2*, following the methods described by Kurtzman & Robnett (2013b).

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Note 1469 *Saccharomycodales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Saccharomycodales M. Groenew., Hittinger, Opulente & A. Rokas

Saccharomycodales was established to accommodate *Saccharomycodaceae* Kudryavtsev as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and type species are *Saccharomycodes* E.C. Hansen and *Saccharomycodes ludwigii* (E.C. Hansen) E.C. Hansen, respectively (Groenewald et al. 2023). The diagnosis of *Saccharomycodales* relies on the presence of order-specific protein families OG0011566, OG0011567, OG0011580, OG0011587, and OG0011592 and phylogenetic analyses using DNA sequences encoding mtSSU, ITS, LSU, *tef1-α*, and *cox2*, as described by Kurtzman et al. (2011). Key characteristics of *Saccharomycodales* include bipolar budding, non-assimilation of nitrate, a negative diazonium blue B reaction, and the presence of coenzyme CoQ-6 (Groenewald et al. 2023). *Saccharomycodales* comprises *Saccharomycodaceae,* which includes the genera *Hanseniaspora* (=*Kloeckera*) and *Saccharomycode* (Groenewald et al. 2023).

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Note 1470 *Sporopachydermiales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sporopachydermiales M. Groenew., Hittinger, Opulente & A. Rokas

Sporopachydermiales was erected to accommodate *Sporopachydermiaceae* M. Groenew., Hittinger, Opulente & A. Rokas as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and type species are *Sporopachydermia* Rodr. Mir. and *Sporopachydermia lactativora* Rodr. Mir., respectively (Groenewald et al. 2023). The diagnosis of *Sporopachydermiales* involves the identification of specific protein families: OG0028621, OG0028581, OG0028722, and OG0028736. and phylogenetic analysis relies on DNA sequences encoding LSU, mtSSU, and *cox2*, as detailed by Kurtzman & Robnett (2007). Asexual reproduction occurs through multilateral budding on a narrow base, without the formation of pseudohyphae or true hyphae. Glucose fermentation is typically absent or weak, nitrate is not assimilated, and myo-inositol is assimilated. Furthermore, Coenzyme Q-9 formation is observed (Groenewald et al. 2023). The order *Sporopachydermiales* is classified under *Sporopachydermiomycetes* (*Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023).

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Kurtzman CP, Robnett CJ. 2007 – Multigene phylogenetic analysis of the *Trichomonascus*, *Wickerhamiella* and *Zygoascus* yeast clades, and the proposal of *Sugiyamaella* gen. nov. and 14 new species combinations. FEMS Yeast Research 7, 141–151.

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Note 1471 *Trigonopsidales*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Trigonopsidales M. Groenew., Hittinger, Opulente & A. Rokas

Trigonopsidales was introduced to accommodate *Trigonopsidaceae* Lachance & Kurtzman as the type family based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type genus and type species are *Trigonopsis* Schachner and *Trigonopsis variabilis* Schachner, respectively. *Trigonopsidales* is classified under

Trigonopsidomycetes, *Saccharomycotina*, *Ascomycota* (Groenewald et al. 2023). *Trigonopsidales* was identified based on specific protein families including OG0008190 and OG0008482, which serve as distinctive genetic markers. Phylogenetic analyses utilize DNA sequences encoding LSU, mtSSU, and *cox2*, as extensively documented by Kurtzman & Robnett (2007) and Lachance & Kurtzman (2013). *Trigonopsidaceae* is a key component in *Trigonopsidales*, encompassing notable genera such as *Botryozyma* (teleomorph *Ascobotryozyma*), *Tortispora*, and *Trigonopsis*. (Groenewald et al. 2023).

References

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Note 1472 *Alloascoideomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Alloascoideomycetes M. Groenew., Hittinger, Opulente & A. Rokas

Alloascoideomycetes was erected to accommodate *Alloascoideales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order (Groenewald et al. 2023). The type family, genus and type species in this order are *Alloascoideaceae* Kurtzman & Robnet, *Alloascoidea* Kurtzman & Robnett and *Alloascoidea hylecoeti* (L.R. Batra & Francke-Grosm.) Kurtzman & Robnett, respectively. The diagnosis of *Alloascoideomycetes* involves the recognition of class-specific protein families OG0009556 and OG0024318. Key morphological features include multilateral budding and the development of pseudohyphae and septate hyphae. Blastoconidia are formed on hyphae and can either be sessile or emerge from denticles. Notably, sugars within this group are not fermented (Groenewald et al. 2023). To understand the evolutionary relationships within *Alloascoideomycetes*, phylogenetic analyses utilize DNA sequences encoding LSU, SSU, *tef1-α*, *rpb1*, *rpb2* as detailed in the research by Kurtzman & Robnett (2013a).

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Note 1473 *Dipodascomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Dipodascomycetes M. Groenew., Hittinger, Opulente & A. Rokas

Dipodascomycetes was introduced to accommodate *Dipodascales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The class *Dipodascomycetes* is classified under *Saccharomycotina*, and *Ascomycota* (Groenewald et al. 2023). The type family, type genus and type species are *Dipodascaceae* Engl. & E. Gilg, *Dipodascus* Lagerh. and *Dipodascus albidus* Lagerh, respectively (Groenewald et al. 2023). In *Dipodascomycetes*, the diagnosis includes class-specific protein families OG0005588, OG0005810, and OG0006132. This class is characterized by dimorphic yeasts capable of producing arthroconidia (Groenewald et al. 2023). Phylogenetic analyses have been conducted using DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α* as Kurtzman et al. (2007) described.

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Note 1474 *Lipomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lipomycetes M. Groenew., Hittinger, Opulente & A. Rokas1

Lipomycetes was introduced to accommodate *Lipomycetales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Lipomycetes* only includes *Lipomycetales*. The identification of *Lipomycetes* is based on class-specific protein families OG0010973, OG0011052, OG0008472, OG0009553 (Groenewald et al. 2023). Phylogenetic analyses incorporate various DNA sequences, including LSU, nSSU, mtSSU, and *tef1-α* (Kurtzman et al. 2007). The type family, type genus and type species are *Lipomycetaceae* E.K. Novak & Zsolt, *Lipomyces* Lodder & Kreger and *Lipomyces starkeyi* Lodder & Kreger, respectively (Groenewald et al. 2023). *Lipomycetes* strains are characterized by the production of intracellular lipids and extracellular starch-like compounds. They do not engage in fermentation, and nitrate assimilation is not observed. It is known that the higher levels of genomic diversity in *Saccharomycotina* stem from an acceleration of the evolutionary rate that occurred within the subphylum, after the divergence of *Lipomycetaceae* from the rest of the *Saccharomycotina*. This acceleration can also be observed in the genetic divergence that exists between the *Lipomycetes* and the rest of the *Saccharomycotina* classes (Groenewald et al. 2023). *Lipomycetes* is classified under *Saccharomycotina*, *Ascomycota* (Groenewald et al. 2023).

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Note 1475 *Pichiomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pichiomycetes W.P. Wu & Y.Z. Diao

Pichiomycetes was introduced to accommodate *Pichiales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order according to morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). *Pichiomycetes* encompasses several orders, including *Alaninales*, *Pichiales*, and *Serinales*. The order-specific protein families OG0005494 and OG0005374 are identified within the *Alaninales*, *Pichiales*, and *Serinales* (Groenewald et al. 2023). Phylogenetic analyses in these orders utilize DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α* were conducted to study the evolutionary relationships within this group (Daniel et al. 2014). The new order is typified by *Pichiaceae* M. Groenew., Hittinger, Opulente & A. Rokas, *Pichia* E.C. Hansen, *Pichia membranifaciens* (E.C. Hansen) E.C. Hansen as type family, type genus, and type species, respectively (Groenewald et al. 2023). Some genera that were formerly designated within the *Saccharomycetales incertae sedis* by Kurtzman et al. (2011) have now been incorporated into the order *Pichiales*. This includes genera from *Pichiaceae*, as well as the recently introduced genus *Allodekkera* by Jutakanoke et al. (2017). Additionally, while *Komagataella* was originally classified in *Phaffomycetaceae* by Kurtzman et al. (2011), genome-scale analyses have indicated its reassignment to the order *Pichiales*. The taxonomic placement of this class is *Saccharomycotina* and *Ascomycota* (Groenewald et al. 2023).

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Note 1476 *Sporopachydermiomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sporopachydermiomycetes M. Groenew., Hittinger, Opulente & A. Rokas

Sporopachydermiomycetes was introduced to accommodate *Sporopachydermiales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order based on morphological characteristics, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The diagnosis of *Sporopachydermiomycetes* involves the identification of class-specific protein families OG0028621, OG0028581, OG0028722, and OG0028736. Phylogenetic analyses were conducted using DNA sequences that encode LSU, SSU, and *cox2* sequences, as documented by Kurtzman & Robnett (2007). The type family, type genus and type species are *Sporopachydermiaceae* M. Groenew., Hittinger, Opulente & A. Rokas, *Sporopachydermia* Rodr. Mir. and *Sporopachydermia lactativora* Rodr. Mir., respectively (Groenewald et al. 2023). Asexual reproduction occurs through multilateral budding on a narrow base. Glucose fermentation was either absent or weak, and nitrate assimilation was not observed. The assimilation of myo-inositol as the sole carbon source was noted and Coenzyme Q-9 was produced (Groenewald et al. 2023). The class *Sporopachydermiomycetes* is classified under *Saccharomycotina* (*Ascomycota*) (Groenewald et al. 2023).

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Note 1477 *Trigonopsidomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Trigonopsidomycetes M. Groenew., Hittinger, Opulente & A. Rokas

Trigonopsidomycetes was introduced to accommodate *Trigonopsidales* M. Groenew., Hittinger, Opulente & A. Rokas as the type order based on morphological characteristics, physiological characteristics and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). The type family, type genus and type species are *Trigonopsidaceae* Lachance & Kurtzman, *Trigonopsis* Schachner, and *Trigonopsis variabilis* Schachner, respectively. The identification of the class *Trigonopsidomycetes* involves class-specific protein families OG0008190 and OG0008482. Phylogenetic analyses are conducted using DNA sequences encoding LSU, SSU, and *cox2* sequences, following the methodologies described by Kurtzman & Robnett (2007). *Trigonopsidaceae* is the only family within *Trigonopsidales*. The genera included in

Trigonopsidales are *Botryozyma* (with the teleomorph *Ascobotryozyma*), *Tortispora*, and *Trigonopsis*, as detailed by Groenewald et al. (2023). *Trigonopsidomycetes* is classified under *Saccharomycotina*, within the phylum *Ascomycota* (Groenewald et al. 2023).

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Note 1478 *Nothotrichosporon*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothotrichosporon Crous, M. Groenew. & Jurjević

Crous et al. (2023c) introduced the monotypic genus *Nothotrichosporon* under *Trichosporonaceae* (*Trichosporonales*, *Tremellomycetes*, *Agaricomycotina*, *Basidiomycota*) to accommodate *N. aquaticum* Crous, M. Groenew. & Jurjević based on morphology and phylogenetic analyses using ITS and LSU sequence data. *Nothotrichosporon aquaticum* was isolated from open water in the USA. The genus is characterized by hyaline, smooth, and thin-walled hyphae; hyaline, smooth, guttulate, thin-walled, and subcylindrical arthroconidia; hyaline, smooth, guttulate, thin-walled, and ellipsoid secondary conidia. *Effuseotrichosporon* was identified as a single species lineage consisting of *Trichosporon vanderwaltii* within the *Trichosporonacea*. It is distinguished by true hyphae that break apart into arthroconidia. The collection is similar to *Effuseotrichosporon* based on blast searches for ITS, but is phylogenetically different, leading to its placement in *Nothotrichosporon* (Crous et al. 2023c).

Reference

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Note 1479 *Nothoacremonium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoacremonium L.W. Hou, L. Cai & Crous

Hou et al. (2023) introduced *Nothoacremonium* to accommodate three species based on morphology and phylogenetic analyses using LSU, ITS, and *rpb2* (Hou et al. 2023). This genus is typified by *N. exiguum* (W. Gams) L.W. Hou, L. Cai & Crous (=*Acremonium exiguum* W. Gams), which was isolated from *Tubulicium dussii* (*Hydnodontaceae)* on *Dicksonia antarctica* (*Dicksoniaceae*) in Sri Lanka. The other two species are *N. subcylindricum* L.W. Hou, L. Cai & Crous and *N. vesiculophorum* L.W. Hou, L. Cai & Crous. The mycelium consists of branched, septate, hyaline, smooth-, thin-walled hyphae with erect, hyaline, and smooth-walled conidiophores. Conidiogenous cells are enteroblastic, cylindrical, hyaline, and thick, smooth-walled producing aseptate, ellipsoidal, straight, and hyaline conidia. Chlamydospores and sexual morph have not been observed. Although *Nothoacremonium* shares morphological similarities with *Acremonium*, their main point of differentiation is in the results of phylogenetic analysis (Hou et al. 2023). *Nothoacremonium exiguum* is a new combination that was previously known as *Acremonium exiguum*. Phylogenetic studies show that it belongs to a well-supported lineage within the genus *Nothoacremonium* and is closely linked to *N. vesiculophorum*. The taxonomic placement of the genus is in *Nothoacremoniaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes Sordariomycetidae*, *Pezizomycotina*, *Ascomycota*) (Hou et al. 2023).

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Note 1480 *Isthmosporiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Isthmosporiella Crous

The monotypic genus *Isthmosporiella* was established by Crous et al. (2023b) to accommodate *I. africana* Crous based on morphological characteristics and phylogenetic analysis (ITS, LSU, and *rpb*2 sequences). The type species was isolated from dead twigs of a tree in South Africa. The mycelium is hyaline, smooth, branched, and septate. Conidiophores are reduced to conidiogenous cells, which are erect, solitary, hyaline, smooth, and sub-cylindrical in shape. Conidia are arranged in unbranched acropetal chains, four to eight, and fusoid-ellipsoid to clavate in shape. *Isthmosporiella* shares a phylogenetic relationship with *Nagrajchalara*, *Hyaloscypha*, and *Eupezizella*, but it exhibits distinct morphological features with them (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51(1), 280–417.

Entry by Mehrdad Alizadeh, Department of Plant Pathology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran

(Edited by **Maryam T. Noorabadi** & **Subodini N. Wijesinghe**)

Note 1481 *Ducellieriales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ducellieriales Buaya & Thines

Ducellieriales was introduced by Buaya & Thines (2023) to accommodate *Ducellieriaceae* M.W. Dick as the type family according to morphological characteristics and phylogeny by nrSSU sequences. Members of this order are obligate biotrophic parasites of *Pinus* and *Picea* pollen grains. They develop a holocarpic thallus, which forms a hollow sphere at discharge. At maturity, they create a multicellular hollow spherical aggregate. Individual cells possess a thin, colorless wall, ornamented with warts and spines directed outward. Each cell produces a single zoospore, which is biflagellate and heterokont. The type genus and type species are *Ducellieria* Teiling and

Ducellieria chodatii (F. Ducell.) Teiling, respectively. The taxonomic position of family *Ducellieriales* is classified under *Oomycetes* (*Oomycota*) (Buaya & Thines 2023).

Reference

Buaya AT, Thines M. 2023 – *Ducellieriales* ord. nov. and evidence for a novel clade of endobiotic pollen-infecting "lagenidiaceous" *Peronosporomycetes*. Fungal Systematics and Evolution 12, 247–254.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1482 *Xenodactylariales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Xenodactylariales D.F. Bao, K.D. Hyde & Z.L. Luo

Xenodactylariales was erected by Bao et al. (2023) to accommodate *Xenodactylariaceae* Crous as the type family based on morphological characteristics, divergence time estimates and phylogeny by combined LSU, SSU, ITS, *tef1-α* and *rpb2* sequences. In the phylogenetic analysis, *Xenodactylariaceae* clustered within *Hypocreomycetidae* as a distinct lineage closely related to *Torpedosporales*, corroborating the findings of Hyde et al. (2020a). *Xenodactylariaceae* features subcylindrical, hyaline, septate conidia that form branched chains. In contrast, the characteristics of *Torpedosporales* differ significantly; their conidia are solitary and helicoid. For instance, *Juncigenaceae* produces single, brown, helicoid conidia, while the conidia of *Torpedosporaceae* are solitary, irregularly helicoid, and muriform (Bao et al. 2023). Members of this family inhabit plant tissue as endophytes. Their mycelium consists of smooth, hyaline, branched, and septate hyphae. They reduce conidiophores to conidiogenous cells on the hyphae, which stand erect or flexuous and are hyaline and smooth-walled, featuring one to several denticulate apical loci. Conidia occur in branched chains, appearing hyaline, smooth-walled, subcylindrical, and septate. The taxonomic position of *Xenodactylariales* is classified under *Hypocreomycetidae*, (*Sordariomycetes, Ascomycota*) (Bao et al. 2023).

References

Bao DF, Hyde KD, Maharachchikumbura SS, Perera RH et al. 2023 – Taxonomy, phylogeny and evolution of freshwater *Hypocreomycetidae* (*Sordariomycetes*). Fungal Diversity 121(1), 1–94.

Hyde KD, Dong Y, Phookamsak R, Jeewon R et al. 2020a – Fungal diversity notes 1151–1276: taxonomic and phylogenetic contributions on genera and species of fungal taxa. Fungal Diversity 100, 5–277.

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(Edited by **Kevin D Hyde**)

Note 1483 *Xanthonectriaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Xanthonectriaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde

Xanthonectriaceae was established by Perera et al. (2023) to accommodate *Xanthonectria* J. Fourn. & P.-A. Moreau. as the type genus according to morphology and phylogeny using the combined sequence dataset of ITS, LSU, *rpb2*, *tef1-α* and *tub2* of *Hypocreales*. Another species is *Bullanockia* Crous. The members of this family thrive saprobically on dead plant material in terrestrial or freshwater habitats, functioning as a plant pathogen. In its sexual form, it produces ascomata that appear perithecial and superficial, either solitary or grouped, sometimes fused. These structures display a globose shape and exhibit colours ranging from pale yellow to bright yellow or bright orange, remaining KOH− and LA−, with a glabrous surface. Paraphyses present filamentous forms, containing orange, oily droplets. Asci develop with eight spores, are unitunicate, and assume fusiform to clavate shapes, lacking an apical ring. Ascospores emerge as long fusiform, 3–9-septate, hyaline, and spinulose. In its asexual phase, the organism adopts a hyphomycetous form, resembling *Acremonium*. Here, simple conidiophores arise from hyphae or sporodochia. These conidiophores emerge as macronematous, mononematous, unbranched, and straight or flexuous, presenting as hyaline and smooth-walled. Conidiogenous cells remain monophialidic and terminal, featuring an unfared collarette, also hyaline and smooth-walled. The conidia appear aseptate, ranging from narrowly ellipsoidal to subcylindrical, and are held in small, slimy drops at the tips of phialides or form dry chains. Sporodochial conidiophores cluster together, arising from hyphae. Their conidiogenous cells lack a collarette, while conidia remain aseptate, hyaline, and smooth-walled, often held in large slimy drops. The taxonomic position of *Xanthonectriaceae* is *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Perera et al. 2023).

Reference

Perera RH, Hyde KD, Jones EBG, Maharachchikumbura SSN et al. 2023 – Profile of *Bionectriaceae, Calcarisporiaceae, Hypocreaceae, Nectriaceae, Tilachlidiaceae, Ijuhyaceae* fam. nov., *Stromatonectriacea*e fam. nov. and *Xanthonectriaceae* fam. nov. Fungal Diversity 118, 95–271.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1484 *Vankyiozymaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Vankyiozymaceae Q.M. Wang

Vankyiozymaceae was erected to accommodate *Vankyiozyma* Q.-M. Wang as the type genus according to morphological traits and phylogenetic analysis using the combined sequence dataset of ITS, LSU (D1/D2), SSU, *rpb1*, *rpb2*, and *tef1-α* (Jiang et al. 2024). The genus was typified by *Vankyiozyma motuoensis* Q.-M. Wang. The diagnosis of the family *Vankyiozymaceae* relies on the genus *Vankyiozyma*. In *Vankyiozymaceae,* sexual reproduction has not been seen. Colonies exhibit a yellowish, rough texture. The presence of budding cells indicates a form of asexual reproduction, while the absence of pseudohyphae and hyphae suggests a limited morphological development. Additionally, ballistoconidia formation has also not been observed. The family *Vankyiozymaceae* is classified under *Georgefischeriales, Exobasidiomycetes, Ustilaginomycotina*, and *Basidiomycota*.

Reference

Jiang YL, Bao WJ, Liu F, Wang GS et al. 2024 – Proposal of one new family, seven new genera and seventy new basidiomycetous yeast species mostly isolated from Tibet and Yunnan provinces, China. Studies in Mycology 109, 57–153.

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(Edited by **Kevin D Hyde**)

Note 1485 *Trichaptaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Trichaptaceae Y.C. Dai, Yuan Yuan & Meng Zhou

Trichaptaceae was established to accommodate *Trichaptum* Murrill as the type genus according to morphological characteristics and phylogeny by the combined dataset of ITS, LSU, SSU, and *tef1-α* sequences (Zhou et al. 2023a). Members of this family thrive on angiosperm wood, inhabit tropical and subtropical regions, and promote white rot. Basidiomata develop from annual to perennial forms, displaying mostly a pileate or effused-reflexed shape. The pileal surface presents a strongly strigose to hispid texture. The hymenophore varies from poroid to irpicoid, daedaleoid, or lamellate, exhibiting a brownish hue with a slight violet tint. The context reveals a distinctly duplex structure. The hyphal system operates dimitically, featuring generative hyphae with clamp connections. Cystidia appear in a ventricose to subulate form, while basidiospores range from cylindrical to ellipsoid, exhibiting a hyaline, thin-walled, and smooth appearance, testing IKI– and CB. *Trichaptaceae* is classified under *Hymenochaetales*, *Basidiomycota* (Zhou et al. 2023a).

Reference

Zhou M, Dai YC, Vlasák J, Liu HG et al. 2023a – Updated systematics of *Trichaptum* s.l. (*Hymenochaetales*, *Basidiomycota*). Mycosphere 14(1), 815–917.

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(Edited by **Kevin D Hyde**)

Note 1486 *Synnematotriadelphiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Synnematotriadelphiaceae Mapook & K.D. Hyde

Synnematotriadelphiaceae was established to accommodate *Synnematotriadelphia* Chuaseehar., Somrith., Nuankaew & Boonyuen as the type genus based on morphological characteristics and phylogeny using the combined dataset of ITS, LSU, SSU, and *rpb2* sequence data of the *Microascales* order (Mapook et al. 2023). Members of the family *Synnematotriadelphiaceae* thrive as saprobes on decayed palm petioles. In their sexual morph, they remain undetermined, while in the asexual morph, they exhibit hyphomycetous characteristics. Colonies spread effusively on natural substrates, displaying a hairy texture as they develop synnemata or hair-like structures in synthetic media. The mycelium forms a partly superficial network, consisting of hyaline to subhyaline or olivaceous, septate, and branched hyphae. Conidiomata appear synnematous, standing erect and can be simple or branched, varying from solitary to gregarious, and are determinate, cylindrical, or clavate in shape, presenting colours from brown to blackish-brown. The parallel hyphae of the synnemata are septate and pale brown, with terminal short branches that bear single or fasciculate conidiogenous cells. Conidiogenous cells emerge from metulae located on the sides of synnemata and display holoblastic, monoblastic characteristics—either solitary or aggregated with shapes ranging from oblong to clavate or spherical to subspherical and colours from subhyaline to olivaceous. Conidia are pleomorphic and solitary, manifesting as acrogenous forms produced in two or three different conidial types on synnemata. These conidia are septate, featuring transverse septa, and their coloration varies from hyaline to pigmented, with wall thickness varying from thin to thick. The type species, *Synnematotriadelphia stilboidea*, was found on a dead leaf petiole of *Roystonea regia* in Cuba.

Synnematotriadelphiaceae is classified under *Microascales* (*Sordariomycetes*, *Ascomycota*) (Mapook et al. 2023). *Triadelphiacea* and *Graphiaceae* formed sister clades with *Synnematotriadelphiaceae* combined dataset of ITS, LSU, SSU and *rpb2* sequence data of *Microascales* (Mapook et al. 2023).

Reference

Mapook A, Hyde KD, Huanraluek N, Boonmee S. 2023 – Addition to *Microascales* (*Sordariomycetes*, *Ascomycota*), *Synnematotriadelphiaceae* fam. nov., *Triadelphia mukdahanensis* sp. nov. (*Triadelphiaceae*) and the validation of *Graphiaceae*. Studies in Fungi 8. 10.

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Note 1487 *Stromatonectriaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Stromatonectriaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde

The monotypic family *Stromatonectriaceae* was introduced by Perera et al. (2023) to accommodate *Stromatonectria* Jaklitsch & Voglmayr as the type genus based on morphology and phylogeny using the concatenated sequence dataset of ITS, LSU, *rpb2*, *tef1-α* and *tub2* of *Hypocreales*. Members of this family thrive as saprobic organisms and act as plant pathogens on woody substrates. They produce pulvinate stromata that erupt from the bark, displaying variability in shape and colour, ranging from yellow to orange, red, or purple, and they do not respond to KOH. In their sexual morph, ascomata form perithecial structures, either immersed or superficial, densely crowding atop the stroma surface. These spheroid, soft-textured ascomata are resistant to KOH. The hamathecium features periphyses, while paraphyses accompany the structure. Asci generate eight spores, with a unitunicate structure, often clavate or fusoid, and they lack an apical ring. Ascospores arrange themselves in bi-seriate fashion, presenting as ellipsoid, oblong, or fusoid shapes; they are 1-septate, hyaline, and may appear yellowish or rosy, exhibiting smooth walls. Conidiomata assume a gyrostroma-like form, pycnidial in nature, appearing on the stroma surface as semiglobose or pulvinate with multiple locules. Short hairs often cover their surface. Conidiogenous cells produce conidia using a phialidic process, with phialides adopting subulate or narrowly lageniform shapes. The conidia remain aseptate, exhibiting cylindrical or allantoid forms, hyaline coloration, and smooth walls. The family *Stromatonectriaceae* is classified under *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Perera et al. 2023). *Stromatonectriaceae* forms a monophyletic clade that is closely related to *Tilachlidiaceae* and is supported by moderate statistical evidence. The centrum characteristics, as well as the asci and ascospores of *Stromatonectria*, are typical of both *Bionectriaceae* and *Nectriaceae*. The KOH-negative stromata and ascomata of *Stromatonectria* resemble those found in *Bionectriaceae*. However, a distinct feature of *Stromatonectria* is the production of gyrostroma-like, pycnidial conidiomata, which is not seen in *Bionectriaceae* taxa (Perera et al. 2023).

Reference

Perera RH, Hyde KD, Jones EBG, Maharachchikumbura SSN et al. 2023 – Profile of *Bionectriaceae, Calcarisporiaceae, Hypocreaceae, Nectriaceae, Tilachlidiaceae, Ijuhyaceae* fam. nov., *Stromatonectriacea*e fam. nov. and *Xanthonectriaceae* fam. nov. Fungal Diversity 118, 95–271.

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Note 1488 *Polycephalomycetaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Polycephalomycetaceae Y.P. Xiao, Y.B. Wang, T.C. Wen, H. Yu & K.D. Hyde

The family *Polycephalomycetaceae* was erected by Xiao et al. (2023) to accommodate *Polycephalomyces* Kobayasi according to morphological traits and phylogenetic analysis using concatenation of LSU, SSU, ITS, *tef1-α*, *rpb1* and *rpb2* sequence data. Members of this family parasitize *Ophiocordyceps* spp., *Elaphomyces* sp., myxomycetes, and insects. While it shares similarities with *Ophiocordycipitaceae* and *Clavicipitaceae*, *Polycephalomycetaceae* is distinct in that its members specifically parasitize *Ophiocordyceps* and *Elaphomyces*. Additionally, they are known for producing either congregated or solitary conidiophores, with one or two types of phialides, along with conidia (Xiao et al. 2023). They produce ascomata that are stromatic, cylindrical, pallid to yellowish, and stipitate. The stipes appear cylindrical, either simple or branched, with rhizomorphs that may be present or absent, forming inflated fertile parts. They create fertile parts that are distinct from the stipe, globose to ellipsoid in shape, congregating into ascomata that are capitate, featuring protruding ostiolar papillae. The perithecia embed themselves or position superficially, taking on an ovoid to flask shape. The peridium thickens to consist of three layers. Asci develop as unitunicate, narrowly cylindrical, hyaline structures with an apical cap. Ascospores remain filiform, hyaline, and multiseptate, often disarticulating into secondary spores. Secondary spores manifest as cylindrical to globose, hyaline, and smooth-walled. In the asexual morph, they exhibit hyphomycetous characteristics. Mycelia congregate, forming flat colonies on the surface of the host, or develop synnemata originating from the host. The synnemata appear stipitate, vary from single to numerous, and may be branched or unbranched, displaying colours from white to yellow, with or without an enlarged fertile part at the top or laterally. They enlarge conidial masses, which typically appear globose or clavate, yellowish to yellow, and concentrate conidia at the tips of stipes. Conidiophores contain 1–6 phialides, which congregate and may be branched or unbranched and divergent. Conidiogenous cells remain phialidic and hyaline. Phialides exist in one or two types, appearing congregated or solitary as intercalary and terminal structures. Conidia form in one or two types, being cylindrical, fusoid, or globose, hyaline, smooth-walled, and one-celled, with conidial masses either presented or absent (Xiao et al. 2023). The family *Polycephalomycetaceae* is classified under *Hypocreales* (*Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Xiao et al. 2023).

Reference

Xiao YP, Wang YB, Hyde KD, Eleni G et al. 2023 – *Polycephalomycetaceae*, a new family of clavicipitoid fungi segregates from *Ophiocordycipitaceae*. Fungal Diversity 120(1), 1–76.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1489 *Nyssopsoraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nyssopsoraceae Sanjay & Raghv. Singh

Nyssopsoraceae was introduced to accommodate *Nyssopsora* Arthur as the type genus and *Nyssopsora echinata* (Lév.) Arthur as the type species according to morphological characteristics and phylogeny by ITS, LSU, SSU, and *cox3* sequences (Yadav et al. 2023b). In the family *Nyssopsoraceae*, spermogonia remained unidentified. When present, aecia display a uredinioid form and lack paraphyses, with aeciospores echinulate. Uredinia originate subepidermally and emerge erumpently, housing urediniospores that are borne singly on pedicels, and also echinulate, with germ pores not visible. Telia, similarly subepidermal and erumpent, contain teliospores borne singly on pedicels and composed of 1–4 cells (predominantly 3-celled). These teliospores vary in shape from spherical to subspherical (1-celled), dumbbell (2-celled), linear to triquetrous (3-celled), and T-shaped to tetrahedron (4-celled), with pigmented walls and 1–4 germ pores. Basidia remain external (Yadav et al. 2023b).

The family *Nyssopsoraceae* is classified under *Pucciniomycetes* (*Pucciniomycotina*, *Basidiomycota*) (Yadav et al. 2023b). The members of *Nyssopsoraceae* are classified as a sister clade to *Pucciniaceae* Chevall., though this relationship shows very low statistical support. *Pucciniaceae* can be easily differentiated from *Nyssopsoraceae* by their characteristic teliospores, which typically consist of 1 or 2 cells (Yadav et al. 2023b).

Reference

Yadav S, Singh G, Rajwar S, Verma SK et al. 2023b – *Nyssopsoraceae*, a new family of *Pucciniales* to accommodate *Nyssopsora* spp. Current Research in Environmental & Applied Mycology (Journal of Fungal Biology) 13(1), 523–549.

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(Edited by **Kevin D Hyde**)

Note 1490 *Nothoacremoniaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoacremoniaceae L.W. Hou, L. Cai & Crous

The monotypic family *Nothoacremoniaceae* was erected to accommodate *Nothoacremonium* L.W. Hou, L. Cai & Crous as the type genus according to morphological characteristics and phylogeny using the concatenated sequence dataset of LSU, ITS and *rpb2* sequences). In the family *Nothoacremoniaceae*, mycelium branches form septate structures with hyaline, smooth, and thin-walled hyphae. Conidiophores are erect, standing straight or bending irregularly at the base, remain unbranched or develop irregularly basitonous side branches, featuring one–two septa at the base, presenting hyaline, smooth-walled cell walls that usually thicken compared to vegetative hyphae. Conidiogenous cells manifest enteroblasically, either monophialidic or polyphialidic, positioned laterally or terminally, remaining unbranched or branching basitonously, taking on cylindrical, acicular, or subulate shapes, appearing hyaline, with thick, smooth walls, showing inconspicuous periclinal thickening and a collarette at the conidiogenous locus; short sterile outgrowths emerge; occasionally, polyphialides present with two conidiogenous loci. Conidia form aseptate structures, ellipsoidal, cylindrical, or fusoid, aligning straight, hyaline, with a mix of thin and thick smooth-walled textures, being eguttulate or containing small guttules, clustering in slimy heads or extending in long chains. Chlamydospores and sexual morphs have not been seen. The family *Nothoacremoniaceae* is classified under *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1491 *Neoeriomycopsidaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoeriomycopsidaceae Crous

Neoeriomycopsidaceae was introduced to accommodate *Neoeriomycopsis* as the type genus based on morphology and phylogeny using the combined sequence dataset of the *Sordariomycetes* ITS, LSU, and *rpb2* nucleotides (Crous et al. 2023b). The family is typified by *Neoeriomycopsis aristata* (B. Sutton & Hodges) Crous & M.J. Wingf. The taxonomic position of *Neoeriomycopsidaceae* is *Pararamichloridiales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*). In the family *Neoeriomycopsidaceae*, mycelium forms hyaline, smooth, branched, septate hyphae. Conidiophores arise solitary or cluster into sporodochia, producing slimy conidial masses. These masses exhibit a subcylindrical, erect, flexuous, branched, and septate structure. Conidiogenous cells develop terminally and intercalarily, appearing subcylindrical, hyaline, smooth, and polyblastic, sporting several sympodial denticles that remain unthickened and undarkened. Conidia manifest as hyaline, septate, thin-walled, smooth, fusoid, and slightly curved, tapering toward the apex with an unbranched appendage (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51, 280–417.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1492 *Neoarthropsidaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoarthropsidaceae Torres-Garcia & Gené

Neoarthropsidaceae was introduced to accommodate *Neoarthropsis* Torres-Garcia, Cano & Gené as the type genus based on morphology and phylogeny using the combined sequence dataset of ITS, and LSU (Torres-Garcia et al. 2023b). In the family *Neoarthropsidaceae*, the colonies appear white, yellowish, or cream. The asexual morph resembles arthropsis, chrysosporium, and myriodontium. The sexual morph features gymnothecial ascomata, which are superficial and may appear single or aggregated, taking on a white, globose form with or without appendages. The peridium consists of a network of loosely interwoven, undifferentiated, septate, branched, hyaline hyphae, either thin- or thick-walled, with helical peridial appendages when present. Asci form as unitunicate, 8-spored, evanescent structures, appearing clustered or chained globose, subglobose, or oval. Ascospores develop as one-celled, globose, subglobose, or oblate entities, varying from hyaline to subhyaline, occasionally yellowish or pale brown, and exhibit smooth, punctate, or punctate-reticulate walls, with or without a sheath (Torres-Garcia et al. 2023b). The family *Neoarthropsidaceae* is classified under *Onygenales* (*Eurotiomycetidae*, *Eurotiomycetes*, *Pezizomycotina*, *Ascomycota*). The family includes five genera, namely *Albidomyces*, *Apinisia*, *Arachnotheca*, *Myriodontium*, and *Neoarthropsis*. The species within the family can be ecologically classified as saprobic. They typically reside in soil, though they may occasionally be found in animal dung or plant debris. Additionally, they can survive in aquatic environments, including freshwater and marine sediments (Torres-Garcia et al. 2023b).

Reference

Torres-Garcia D, Gené J, García D, Cano-Lira JF. 2023b – Insights into some onygenalean fungi from freshwater sediments in Spain and description of novel taxa. Journal of Fungi (12), 1129.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1493 *Neoacremoniaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neoacremoniaceae L.W. Hou, L. Cai & Crous

Neoacremoniaceae was introduced to accommodate *Neoacremonium* L.W. Hou, L. Cai & Crous as the type genus based on morphological characteristics and phylogeny using the combined sequence dataset of LSU, ITS and *rpb2* sequences (Hou et al. 2023). The family *Neoacremoniaceae* is classified under *Hypocreales* (*Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Hou et al. 2023). *Neoacremoniaceae* formed a sister clade with *Climacocystaceae* based on phylogeny using the combined sequence dataset of LSU, ITS and *rpb2* sequences (Hou et al. 2023). The mycelium comprises branched, septate, smooth, and thin-walled hyphae. Conidiophores appear solitary or aggregated and rise directly from submerged or superficial hyphae, as well as ropes formed by mycelium. They may occasionally branch basitonously or remain unbranched, proliferating sympodially. These structures are hyaline, septate, and smooth-walled, with cell walls that are typically thicker than those of vegetative hyphae. Conidiogenous cells exhibit an enteroblastic nature and are either mono- or polyphialidic, taking on lageniform, subcylindrical, or subulate forms. They are hyaline and display thin or thick, smooth walls, with either conspicuous or inconspicuous periclinal thickening and cylindrical collarettes at the conidiogenous loci; polyphialides may occasionally possess 2–3 conidiogenous loci. Conidia appear aseptate and can be cylindrical, ellipsoid, ovoid, wide fusoid, or spindle-shaped. They are straight, hyaline, with thin, smooth walls, eguttulate, and arrange themselves into chains or slimy heads. Chlamydospores develop laterally on short stalks and are single, globose to sub-globose, hyaline, with smooth, thick walls. The sexual morph remains unknown (Hou et al. 2023). The family currently contains only *Neoacremonium*, as represented by *N. distortum*. A fully supported clade, comprising five acremonium-like species and *Parapyrenis maritima*, is positioned basal to the *Nectriaceae* and is distinct from all other known families within the *Hypocreales* (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1494 *Mycogloiocolacaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycogloiocolacaceae Schoutteten & Yurkov

Mycogloiocolacaceae was erected by Schoutteten et al. (2023) to accommodate *Mycogloiocolax* Schoutteten & Rödel as the type genus based on morphological characteristics and phylogenetic analyses using a concatenated dataset of ITS, LSU, SSU, *rpb1*, *rpb2*, *tef1-α*, and *cyt-b* sequences. *Mycogloiocolacaceae* is classified under *Microbotryomycetes* (*Pucciniomycotina*, *Basidiomycota*) (Schoutteten et al. 2023). The family features species with a dimorphic life cycle, displaying both filamentous morphs that are mycoparasitic and reliant on host presence. Key characteristics include transversally septate basidia and colacosomes. Diagnosis and nomenclature for this family center around the genus, *Mycogloiocolax* (Schoutteten et al. 2023). In *Mycogloiocolax*, basidiomata, hyphidia, and cystidia are absent. The hyphae are hyaline, thin-walled, smooth, and clamped at all septa. Basidia are cylindrical to tubular-clavate in shape, and basally clamped, thin-walled. Basidiospores are fusiform to amygdaliform in shape, asymmetric, smooth, and hyaline. Conidia are ellipsoid to subfusiform, and thin-walled. Colacosomes are scattered, with no vesicular gall-like cells seen (Schoutteten et al. 2023). The type species, *Mycogloiocolax gerardii* Schoutteten & Rödel, was found on the basidiome of *Xenasmatella tulasnelloidea* in Germany (Schoutteten et al. 2023).

Reference

Schoutteten N, Yurkov A, Leroux O, Haelewaters D et al. 2023 – Diversity of colacosome-interacting mycoparasites expands the understanding of the evolution and ecology of *Microbotryomycetes*. Studies in Mycology 106(1), 41–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1495 *Ijuhyaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ijuhyaceae R.H. Perera, E.B.G. Jones, Maharachch. & K.D. Hyde

Ijuhyaceae was erected by Perera et al. (2023) to accommodate *Ijuhya* Starbäck as the type genus based on morphology and phylogeny using the concatenated sequence dataset of ITS, LSU, *rpb2*, *tef1-α* and *tub2* of *Hypocreales*. Another genus is *Kallichroma* Kohlm. & Volkm.-Kohlm. The members of this family colonize wood and herbaceous debris, thriving on fresh plant material. They are sometimes fungicolous or parasitic on nematodes. Ascomata form perithecial structures, appearing solitary or grouped, often astromatic. They develop a thin basal subiculum, with a superficial, globose to subglobose shape that does not collapse or pinch laterally upon drying. Colours range from white to pale yellow, sienna, dull orange, orange-yellow, or brownish-orange. The ascomatal apex may appear faintly or acutely papillate, typically fat and discoid; the disk consists of intertwined hyphae that evolve into triangular fasciculate hairs, creating an apical crown, though some may lack hairs or present short, sinuous forms. The peridium can consist of a single stratum or occasionally three strata. The hamathecium comprises septate, branched, filamented apical paraphyses that merge with periphyses, appearing evanescent. Asci contains 6–8 spores, are unitunicate, and range from clavate to widely fusiform, appearing evanescent with rounded apices and lacking an apical ring. Ascospores arrange irregularly in biseriate or multiseriate patterns, forming fasciculate structures that vary from clavate to fusiform to long fusiform. They can be one- to multiseptate or muriform, appearing straight to slightly curved, guttulate, hyaline, and smooth-walled to striate or spinulose, occasionally exhibiting strong cyanophilous properties. In the asexual morph, the fungi adopt a hyphomycetous, Acremonium-like form. Conidiophores arise from somatic hyphae, appearing monophialidic and mononematous, straight with one basal septum, hyaline, and smooth-walled. Conidia occur either solitary or aggregated at the phialide tip, ellipsoidal to cylindrical, aseptate, with or without a visible abscission scar, guttulate, hyaline, and smooth-walled. Microsclerotia rarely form, but when they do, they often appear ellipsoidal to cylindrical oblong or occasionally globose, with orange to brownish-orange or brick-red hues. *Ijuhyaceae* is classified under *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Perera et al. 2023).

Reference

Perera RH, Hyde KD, Jones EBG, Maharachchikumbura SSN et al. 2023 – Profile of *Bionectriaceae, Calcarisporiaceae, Hypocreaceae, Nectriaceae, Tilachlidiaceae, Ijuhyaceae* fam. nov., *Stromatonectriaceae* fam. nov. and *Xanthonectriaceae* fam. nov. Fungal Diversity 118, 95–271.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1496 *Cornuvesicaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Cornuvesicaceae D.F. Bao, K.D. Hyde & Z.L. Luo

Cornuvesicaceae was introduced to accommodate *Cornuvesica* C.D. Viljoen, M.J. Wingf. & K. Jacobs as the type genus according to morphology, phylogenetical analysis (using combined LSU, SSU, ITS, *tef1-α* and *rpb2* sequence data), and divergence time estimates (Bao et al. 2023). Ascomata are superficial, scattered or clustered together, dark brown to black colouration. The peridium remains firm, exhibiting pseudoparenchymatous characteristics and *textura epidermoidea* to *angularis*. Ostiole hyphae converge and adhere compactly to each other, pale brown to hyaline. Paraphyses terminate in obtuse apices and converge to form a narrow opening or slightly protrude beyond the apical part of the neck. Asci become evanescent, deliquescing at an early stage. Ascospores are falcate, straight or slightly curved, 1-septate, subhyaline, and surrounded by a hyaline sheath with both ends attenuated. The structure resembles *Thielaviopsis* and displays two distinct ranges of conidial dimensions. Microconidiophores abound, appearing straight, unbranched or branched, hyaline or rarely pale brown, and are smooth and septate. Macro-conidiophores occur less commonly than those of smaller size, forming on hyphae that originate from the perithecium, and are straight, unbranched or branched, pale brown to brown, smooth-walled, and septate. Micro-conidiogenous cells are phialidic, with an indistinct collarette, hyaline or occasionally pale brown, discrete or integrated, intercalary or terminal, cylindrical and gradually tapering to the apex. Macro-conidiogenous cells are phialidic, with an indistinct collarette, pale brown, discrete or integrated, intercalary or terminal, cylindrical and gradually tapering to the apex. Micro-conidia hyaline, oblong with truncate ends, aseptate, and smooth-walled, organizing in chains endogenously. Macro-conidia hyaline and doliiform, aseptate, smooth-walled, and also form chains endogenously (Bao et al. 2023). *Cornuvesicaceae* is classified under *Microascales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Bao et al. 2023).

Reference

Bao DF, Hyde KD, Maharachchikumbura SS, Perera RH et al. 2023 – Taxonomy, phylogeny and evolution of freshwater *Hypocreomycetidae* (*Sordariomycetes*). Fungal Diversity 121(1), 1–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1497 Chrysonectriaceae

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Chrysonectriaceae L.W. Hou, L. Cai & Crous

Chrysonectriaceae was established to accommodate *Chrysonectria* Lechat & J. Fourn as the type genus based on morphological characteristics and phylogeny using the combined sequence dataset of LSU, ITS and *rpb2* sequences (Hou et al. 2023). Ascomata develop as superficial, non-stromatic, sub-globose structures that do not collapse upon drying. They are pale orange, changing in 3% KOH and lactic acid, and are overlain by golden yellow hyphal elements. Asci are 8-spored, cylindrical to fusoid, with a refractive apical apparatus. Ascospores subfusoid to narrowly clavate, two-celled, and smooth. In the asexual morph, mycelium consists of branched, septate, hyaline, smooth, thin-walled hyphae. Conidiophores solitary or aggregated, (sub-)erect, mostly curved, and irregularly wavy. They arise directly from submerged or superficial hyphae and branch verticillately, in 1–3 whorls of 1–3 phialides per node. Some conidiophores rarely remain unbranched and reduced to single phialides, septate at the base and middle, hyaline, thick-, and smooth-walled. Their cell walls usually exceed the thickness of those in vegetative hyphae. Phialides branch laterally or terminally and are cylindrical or subulate, straight or curved at the base, hyaline, and thick, with smooth walls. They have conspicuous periclinal thickening with a cylindrical collarette at the conidiogenous loci; polyphialides with two conidiogenous loci occasionally appear. Conidia aseptate, subglobose, broadly ellipsoid, straight, hyaline, thick-, and smooth-walled, eguttulate, and arranged in slimy heads. Abundant yellow crystals are found throughout, while chlamydospores are not observed. *Climacocystaceae* is classified under *Hypocreales* (*Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, and *Ascomycota* (Hou et al. 2023). *Neoacremoniaceae* formed a sister clade with *Climacocystaceae* based on phylogeny using the combined sequence dataset of LSU, ITS and *rpb2* sequences (Hou et al. 2023). Phylogenetic analysis using combined ITS–LSU sequences along with ITS, LSU, and *rpb2* sequences indicates that species of *Chrysonectria* form a distinct branch separate from all known families. The morphological and phylogenetic differences observed in *Chrysonectria* further verify its uniqueness among the recognized nectriaceous families within *Hypocreales* (Hou et al. 2023).

Reference

Hou LW, Giraldo A, Groenewald JZ, Rämä T et al. 2023 – Redisposition of acremonium-like fungi in *Hypocreales*. Studies in Mycology 105(1), 23–203.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People’s Republic of China
(Edited by **Kevin D Hyde**)

Note 1498 *Campylosporaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Campylosporaceae D.F. Bao, K.D. Hyde & Z.L. Luo

Campylosporaceae was introduced to accommodate *Campylospora* Ranzoni as the type genus according to morphology, phylogenetical analysis (using combined LSU, SSU, ITS, *tef1-α* and *rpb2* sequence data), and divergence time estimates (Bao et al. 2023). The asexual genus *Campylospora* comprises entirely freshwater species. The taxa feature tetraradiate, hyaline conidia made up of two parts: deltoid and allantoid, both of which exhibit diverging branches at the ends. The presence of tetraradiate conidia with diverging branches represents a typical characteristic of freshwater fungi, aiding in the attachment of conidia to the substrate and their dispersal. Members of this family thrive saprobically on submerged leaves or act as endophytes in plants. The sexual morph remains undetermined. Colonies have hyaline to pale brown hyphae with variously shaped inflated cells. Conidiophores are lateral or, rarely, terminal or intercalary, cylindrical or somewhat nodose, mostly simple or rarely sparsely branched. Conidiogenous cells integrated, typically proliferating sympodially. Conidia tetraradiate, hyaline, composed of two parts: deltoid and allantoid, both showing two diverging branches at the ends. The deltoid part appears triangular to pyramidal, with basal cells featuring rounded ends; the apical cells of both parts remain rounded, and the branches stay aseptate (Bao et al. 2023). *Campylosporaceae* is classified under *Hypocreomycetidae* families incertae sedis (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Bao et al. 2023).

Reference

Bao DF, Hyde KD, Maharachchikumbura SS, Perera RH et al. 2023 – Taxonomy, phylogeny and evolution of freshwater *Hypocreomycetidae* (*Sordariomycetes*). Fungal Diversity 121(1), 1–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1499 *Ascocodinaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ascocodinaceae Vizzini, Consiglio & P. Alvarado

Ascocodinaceae was established to accommodate *Ascocodina* C.D. Viljoen, M.J. Wingf. & K. Jacobs as the type genus according to morphology, phylogenetic analysis (using combined LSU, SSU, ITS, *tef1-α* and *rpb2* sequence data), and divergence time estimates (Bao et al. 2023). Perithecia form directly on the hymenial surface, arranging gregariously and positioning themselves superficially to semi-immersed, gray to black, translucent brown in 3% KOH, ovoidal with an acute apex and collapse deeply through lateral pinching when dry. Stiff, erect, acute, unbranched, and septate black setae arise as modified cells from the upper half of the perithecium and have thick walls. The perithecial wall is translucent brown under transmitted light, with thin-walled cells of *textura epidermoidea* at the surface. The perithecial apex consists of enlarged cells. The ostiolar canal remains periphysate, while the periphyses connect continuously with the paraphyses. Paraphyses abound among and overreach mature asci, being infrequently branched, septate, and slightly enlarged at the tip. Asci are cylindrical with eight spores; the apex features a thin ring pierced by a pore. Ascospores lie uniseriate with overlapping ends, ellipsoidal to fusiform, slightly curved, and multi-septate, with central cells translucent brown and end cells hyaline and smooth-walled. In the asexual morph, conidiophores macronematous, mononematous, stiff, erect, unbranched, and black; they resemble the sterile setae morphologically, each bearing a single terminal integrated conidiogenous cell. These conidiogenous cells operate monophialidically, enteroblastically, and proliferate percurrently or sympodially; their tips remain not fared, exhibiting slight periclinal thickening at the conidiogenous locus. Conidia broadly ellipsoidal, cylindrical, or inequilateral, often slightly curved, 0–1 septate, hyaline, lacking a visible basal abscission scar, smooth-walled, held in a drop of hyaline slime at the tip of each conidiophore (Bao et al. 2023). *Ascocodinaceae* is classified under *Glomerellales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Bao et al. 2023).

Reference

Bao DF, Hyde KD, Maharachchikumbura SS, Perera RH et al. 2023 – Taxonomy, phylogeny and evolution of freshwater *Hypocreomycetidae* (*Sordariomycetes*). Fungal Diversity 121(1), 1–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1500 *Aphroditeolaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Aphroditeolaceae Vizzini, Consiglio & P. Alvarado

The monotypic family *Aphroditeolaceae* was established to accommodate *Aphroditeola* Redhead & Manf as the type genus according to morphology and phylogenetical analysis using nucleotide sequence data of six loci (ITS, LSU, SSU, *rpb1*, *rpb2* and *tef1-α*) (Vizzini et al. 2024). In the family, basidiomes emerge as pileostipitate structures, with the pileus depressed into an infundibuliform shape. The hymenophore folds dichotomously, creating forked patterns. Cystidia remain absent, while basidiospores appear colourless, faintly amyloid, and indextrinoid. Clamp connections manifest, these organisms thrive terricolously in forested environments (Vizzini et al. 2024). *Aphroditeolaceae* is classified under *Agaricales* (*Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Vizzini et al. 2024). Phylogenetically, *Pterulaceae*, *Radulomycetaceae*, and *Stephanosporaceae* are sister clades to the *Aphroditeolaceae* (Vizzini et al. 2024).

Reference

Vizzini A, Alvarado P, Consiglio G, Marchetti M et al. 2024 – Family matters inside the order *Agaricales*: systematic reorganization and classification of incertae sedis clitocyboid, pleurotoid and tricholomatoid taxa based on an updated 6-gene phylogeny. Studies in Mycology 107(1), 67–148.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1501 *Albomorchellophilaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Albomorchellophilaceae F.M. Yu, K.D. Hyde & Q. Zhao

The monophyletic family *Albomorchellophilaceae* was introduced to accommodate *Albomorchellophila* F.M. Yu, K.D. Hyde & Q. Zhao as the type genus according to morphological characteristics and phylogeny using the combined sequence dataset based on combined LSU, ITS, *tef1-α* and *rpb2* (Yu et al. 2024). In the asexual morph sporulation occurs in the aerial mycelium, where flask-shaped conidiogenous cells develop. Occasionally, these conidiogenous cells remain inconspicuous, displaying narrow scars on the mycelium surface. Conidia ovoid, hyaline with smooth walls. The sexual morph has not been seen (Yu et al. 2024). Besides the phylogenetic differences, *Albomorchellophilaceae* distinguishes itself from other families in *Hypocreales* through its degenerated conidiophores and sporulation. *Albomorchellophilaceae* is classified under *Hypocreales* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Yu et al. 2024). The type species *Albomorchellophila morchellae* F.M. Yu, K. D. Hyde & Q. Zhao is distributed in China, inhabiting the fruiting bodies of cultivated *Morchella*. Phylogenetically, *Albomorchellophila* formed a sister clade with *Calcarisporium* (*Calcarisporiaceae*). Morphologically, *Albomorchellophila* distinguishes itself from *Calcarisporium* through the degeneration of conidiophores into conidiogenous cells, the existence of phialidic conidiogenous cells, and the presence of ellipsoidal, oval to subglobose conidia (Yu et al. 2024).

Reference

Yu FM, Jayawardena RS, Luangharn T, Zeng XY et al. 2024 – Species diversity of fungal pathogens on cultivated mushrooms: a case study on morels (*Morchella*, *Pezizales*). Fungal Diversity 125(1), 157–220.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1502 *Acremoniopsidaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Acremoniopsidaceae M. Li, Raza & L. Cai

Acremoniopsidaceae was erected to accommodate *Acremoniopsis* A. Giraldo, Gené & Guarro as the type genus according to morphological characteristics and phylogeny using the combined sequence dataset of ITS, LSU, SSU, *rpb2* and *tef1-α* (Liu et al. 2023). Emerging conidiophores, either simple or branched, extend laterally or terminally from vegetative hyphae or ropes of hyphae, either straight or flexuous. Conidiogenous cells develop phialidic structures, appearing solitary and cylindrical to subulate, with smooth, thin, hyaline walls. They proliferate monophialidically or sympodially, forming polyphialides that taper towards the apex. Conidia form as unicellular, smooth, thin-walled, hyaline, and globose or subglobose structures, arranging themselves in heads. The sexual morph remains unobserved. (Li et al. 2023a). *Acremoniopsidaceae* is classified under *Acremoniopsidaceae* (*Hypocreales*, *Hypocreomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Li et al. 2023a). Li et al. (2023a) proposed the establishment of family *Acremoniopsiaceae* to include four genera: *Acremoniopsis*, which was previously classified as incertae sedis; *Collarina*, formerly part of *Clavicipitaceae*; and two new genera, *Nothoacremoniopsis* and *Phaeocollarina*. Phylogenetic analyses using multi-locus sequences demonstrated that *Acremoniopsiaceae* forms a distinct clade within *Hypocreales*, separate from other recognized families in that order (Li et al. 2023a).

Reference

Li M, Raza M, Song S, Hou L et al. 2023a – Application of culturomics in fungal isolation from mangrove sediments. Microbiome 11(1), 272.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1503 *Gamszarella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gamszarella Crous

Gamszarella (*Cordycipitaceae*, *Hypocreales*, *Hypocreomycetidae*) was established by Crous et al. (2023) to accommodate *G. buffelskloofina* Crous as the type species based on morphological characteristics and phylogenetic analysis (ITS, LSU, *rpb2*, and *tef1-α* sequences). *Gamszarella buffelskloofina* was isolated from a dead insect on the leaf litter of an unidentified tree in South

Africa. *Gamszarella* includes three species, namely *G. antillana* (R.F. Castañeda & G.R.W. Arnold) Crous, *G. buffelskloofina*, and *G. magnispora* (Z.F. Zhang & L. Cai) Crous. The mycelium is hyaline, smooth, branched, and has septate hyphae with arranged conidiophores. Conidiogenous cells are hyaline, smooth, and sub-cylindrical in shape with an apical taper. Conidia are hyaline, smooth, guttulate, aseptate, and subcylindrical in shape. *Gamszarella buffelskloofina* is most closely related to *G. magnispora* in terms of phylogeny, but it differs by having smaller conidia (Crous et al. 2023b).

Reference

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51(1), 280–417.

Entry by Mehrdad Alizadeh, Department of Plant Pathology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran

(Edited by **Maryam T. Noorabadi** & **Subodini N. Wijesinghe**)

Note 1504 *Neocylindroseptoria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Neocylindroseptoria Thambug. & K.D. Hyde

Crous & Groenewald (2017) expanded the generic description of *Dothiora*, indicating that morphologically, *Dothiora* Fr. (= *Neocylindroseptoria* = *Neophaeocryptopus*) are similar. However, phylogenetically, *Neocylindroseptoria* is not supported as a synonym of *Dothiora*. Several taxa from other genera have been classified under *Dothiora*, making *Neophaeocryptopus* Wanas. et al. monophyletic with other strains of *Dothiora*. Thus, for the time being, it is accepted to synonymize *Neophaeocryptopus* under *Dothiora*. Hongsanan et al. (2020a) however, treated *Neocylindroseptoria* Thambug. & K.D. Hyde as a separate genus within *Dothideaceae* based on their phylogenetic analysis. Consequently, the classification proposed by Hongsanan et al. (2020a) for *Neocylindroseptoria* is accepted.

References

Crous PW, Groenewald JZ. 2017 – Genera of Fungi – G4: *Camarosporium* and *Dothiora*. IMA Fungus 8, 131–152.

Hongsanan S, Hyde KD, Phookamsak R, Wanasinghe DN et al. 2020a – Refined families of *Dothideomycetes*: *Dothideomycetidae* and *Pleosporomycetidae*. Mycosphere 11, 1553–2107.

Entry by Dhanushka Wanasinghe, Center for Mountain Futures, Kunming Institute of Botany, Chinese Academy of Sciences, Honghe County 654400, People's Republic of China

(Edited by **Maryam T. Noorabadi**)

Note 1505 *Neoleptosporellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Neoleptosporellaceae J.F. Zhang, Y.Y. Chen & Jian K. Liu

Neoleptosporellaceae was introduced to accommodate *Neoleptosporella* Phukhmams. & K.D. Hyde as the type genus according to morphological characteristics and phylogeny (Groenewald et al. 2023). The members of this family are saprophytes on culm of herbaceous plants. Ascomata are solitary and immersed, brown to black, coriaceous texture, and subglobose to depressed globose, ostiolate and clypeate. The peridium comprises dark brown to black cells of *textura angularis* that emerge outwardly with the host epidermal cells. The hamathecium features numerous, branched, septate, cellular paraphyses. The asci remain unitunicate and broadly cylindrical, possessing a pedicellate form along with a J-, wedge-shaped, subapical ring. The ascospores are fasciculate, fusiform, C-shaped, or sigmoid configurations, non-septate, with acute ends and a guttulate appearance. The asexual structure has not been observed (Zhang et al. 2023a). *Neoleptosporellaceae* is classified under *Sordariomycetidae* (*Sordariomycetes*, *Ascomycota*) (Groenewald et al. 2023). *Neoleptosporellaceae* is phylogenetically related to *Helminthosphaeriaceae*, showing moderate bootstrap support (Zhang et al. 2023a).

Reference

Groenewald M, Hittinger CT, Bensch K, Opulente DA et al. 2023 – A genome-informed higher rank classification of the biotechnologically important fungal subphylum *Saccharomycotina*. Studies in Mycology 105(1), 1–22.

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122, 1–160.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1506 *Planisphaeria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Planisphaeria J.F. Zhang, Jian K. Liu & K.D. Hyde

Planisphaeria was erected to accommodate *P. reniformispora* J.F. Zhang & K.D. Hyde as the type species based on morphology and phylogeny using LSU, SSU, *tef1-α* and *rpb2* sequences data of species in *Sordariomycetes* (Zhang et al. 2023a). Another species is *P. karsti*. Ascomata are perithecial, immersing into and erumpenting through the host tissue, broadly cracking at the apex, gregarious or scattered, depressed subglobose to obpyriform with a fattened base. They exhibit a coriaceous texture, ranging from dark brown to black, sometimes staining the substrate in brown to dark brown, ostiolate in a clypeate form. The ostiole remains central, lined with abundant, hypha-like, non-septate periphyses within the ostiolar canal. The peridium composes two strata: the outer stratum consists of thick-walled, red-brown to brown pseudoparenchymatous cells merging with the host tissue, while the inner stratum contains hyaline, thin-walled, elongated cells of textura angularis to prismatica. The hamathecium features filform paraphyses, slightly longer than the asci, which dissolve or persist with age. The asci remain unitunicate, eight-spored, broadly clavate, short pedicellate, and apically round with or without apical rings. The ascospores overlap in bi- to tri-seriate arrangements, hyaline, non-septate, reniform or narrowly ovoid, rarely in irregular shapes, thick-walled, with or without a mucilaginous sheath. The asexual morph has not been seen (Zhang et al. 2023). *Planisphaeria* is in *Planisphaeriaceae* (*Planisphaeriales*, *Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Zhang et al. 2023a). The type species was isolated from the dead branch of unidentified woody plan in China (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122, 1–160.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1507 *Planisphaeriaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Planisphaeriaceae J.F. Zhang, Jian K. Liu & K.D. Hyde

Planisphaeriaceae was established to accommodate *Planisphaeria* J.F. Zhang, Jian K. Liu & K.D. Hyde and *Planisphaeria reniformispora* J.F. Zhang & K.D. Hyde as the type genus and type species, respectively, according to morphology and phylogeny using LSU, SSU, *tef1-α* and *rpb2* sequences data of species in *Sordariomycetes* (Zhang et al. 2023a). Another species is *P. karsti*. *Planisphaeriaceae* is classified under *Planisphaeriales* (*Sordariomycetidae*, *Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Zhang et al. 2023a). Ascomata form perithecial structures that are immersed in the host tissue and erupt through it, cracking broadly at the apex, either gregarious or scattered. They range in shape from depressed subglobose to obpyriform, flattened at the base, with a coriaceous texture and vary from dark brown to black, ostiolate and clypeate. The central ostiole features a periphysate structure, and the peridium is composed of two strata: the outer stratum comprises thick-walled, red-brown pseudoparenchymatous cells that merge with the host tissue, while the inner stratum consists of sub-hyaline to hyaline, thin-walled, elongated cells of *textura angularis*. Paraphyses, resembling hyphae, persist or become absent with age and are slightly longer than the asci, which are unitunicate, cylindric-clavate-shaped, and short pedicellate, occurring with or without an apical ring. Ascospores remain hyaline, non-septate, and take on reniform or narrowly ovoid shapes, with rare irregular shapes, thick walls, and either straight or curved, with or without a mucilaginous sheath. The asexual structure remains unknown (Zhang et al. 2023). The members of this family are saprophytes on dead woody plants (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122, 1–160.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1508 *Planisphaeriales*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Planisphaeriales J.F. Zhang, Jian K. Liu & K.D. Hyde

Planisphaeriales was introduced to accommodate *Planisphaeriaceae* J.F. Zhang, Jian K. Liu & K.D. Hyde as the type family according to morphology and phylogeny using LSU, SSU, *tef1-α* and *rpb2* sequences data of species in *Sordariomycetes* (Zhang et al. 2023a). *Planisphaeria* J.F. Zhang, Jian K. Liu & K.D. Hyde and *Planisphaeria reniformispora* J.F. Zhang & K.D. Hyde are the type genus and type species, respectively, for the order *Planisphaeriales*. *Planisphaeriales* is classified under *Sordariomycetidae* (*Sordariomycetes*, *Pezizomycotina*, *Ascomycota*) (Zhang et al. 2023a). Ascomata are perithecial, either immersed or erumptent through the host tissue. They have broadly cracked apices and can be gregarious or scattered. They range in shape from depressed subglobose to obpyriform, characterized by fattened bases. The texture remains coriaceous and exhibits brown to black coluors, appearing clypeate and periphysate. The peridium comprises several layers of subhyaline to hyaline, thin-walled elongated cells of *textura angularis* that merge with red-brown pseudoparenchymatous cells. Paraphyses either dissolve or persist as they age. The asci maintain a unitunicate, clavate, and pedicellate structure, featuring apical rings in some cases. The ascospores are hyaline and non-septate, and are reniform or narrowly ovoid, occasionally displaying irregular forms, straight or curved, with some having a mucilaginous sheath. The asexual morphology is unknown. The members of this order are saprophytes on dead woody plants (Zhang et al. 2023a).

Reference

Zhang JF, Liu JK, Hyde KD, Chen YY et al. 2023a – Ascomycetes from karst landscapes of Guizhou Province, China. Fungal Diversity 122, 1–160.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1509 *Odonticiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Odonticiaceae e L.W. Zhou & Xue W. Wang

Odonticiaceae was introduced by Wang et al. (2023) to accommodate *Odonticium* Parmasto as the type genus with *O. romellii* (S. Lundell) Parmasto as the type species based on morphology and phylogeny using nSSU, ITS, nLSU, mtSSU, *tef1α*, *rpb1*, and *rpb2* sequences. The accepted genera in this family are *Leifia* and *Odonticium* (Wang et al. 2023). Basidiomes arise annually and appear as resupinate, effused, thin, and ceraceous structures. The hymenophore shows a smooth tuberculate surface with colours that range from white to yellowish. The hyphal system remains monomitic, featuring generative hyphae that include clamp connections, hyaline and thin-walled. Cystidia occur in various forms, such as metuloids, gloeocystidia, or leptocystidia, alongside echinulate cells that typically emerge. Basidia narrowly to broadly clavate, with each possessing four sterigmata. Basidiospores ellipsoid, cylindrical, or allantoid, hyaline, thin-walled, and smooth, filled with oily contents while remaining inamyloid and acyanophilous (Wang et al. 2023). *Odonticiaceae* is classified under *Hymenochaetales* (*Agaricomycetes*, *Basidiomycota*) (Wang et al. 2023).

Reference

Wang XW, Liu SL, Zhou LW. 2023 – An updated taxonomic framework of *Hymenochaetales* (*Agaricomycetes, Basidiomycota*). Mycosphere 14(1), 452–496.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1510 *Peniophorellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Peniophorellaceae L.W. Zhou, Xue W. Wang & S.L. Liu

The monotypic family *Peniophorellaceae* was erected to accommodate *Peniophorella* P. Karst. as the type genus and *P. pubera* (Fr.) P. Karst. as the type species based on morphology and phylogeny using nSSU, ITS, nLSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* sequences (Wang et al. 2023). Basidiomes arise annually and appear as resupinate, effused, thin, and ceraceous structures. The hymenophore displays a smooth to tuberculate surface, exhibiting colours from white to yellowish. The hyphal system remains monomitic, featuring generative hyphae with clamp connections, which appear hyaline and thin-walled. Cystidia are present in various forms, including metuloids, gloeocystidia, or leptocystidia, alongside echinulate cells that typically appear. Basidia narrow to broadly clavate, each with four sterigmata. Basidiospores are ellipsoid, cylindrical, or allantoid, hyaline, thin-walled, and smooth, filled with oily contents, remaining inamyloid and acyanophilous (Wang et al. 2023). *Peniophorellaceae* is classified under *Hymenochaetales* (*Agaricomycetes*, *Basidiomycota*) (Wang et al. 2023).

Reference

Wang XW, Liu SL, Zhou LW. 2023 – An updated taxonomic framework of *Hymenochaetales* (*Agaricomycetes, Basidiomycota*). Mycosphere 14(1), 452–496

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1511 *Resiniciaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Resiniciaceae L.W. Zhou & Xue W. Wang

The monotypic family *Resiniciaceae* was erected to accommodate *Resinicium* Parmasto as the type genus and *R. bicolor* (Alb. & Schwein.) Parmasto as the type species based on morphology and phylogeny using nSSU, ITS, nLSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* sequences (Wang et al. 2023). Basidiomes develop annually and present as resupinate, effused, and adnate structures. The hymenophore exhibits a smooth texture and can appear grandinioid, odontioid, or hydnoid, ranging in colour from white to yellowish. The hyphal system remains monomitic, with generative hyphae commonly featuring clamp connections and thin-walled structures. Cystidia exist in two forms: halocystidia, which are cylindrical with a capitate apex, and astrocystidia, adorned at the apex with a stellate cluster of hyaline crystals. Basidia clavate and possess four sterigmata. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, hyaline, inamyloid, and acyanophilous. (Wang et al. 2023). *Resiniciaceae* is classified under *Hymenochaetales* (*Agaricomycetes*, *Basidiomycota*) (Wang et al. 2023).

Reference

Wang XW, Liu SL, Zhou LW. 2023 – An updated taxonomic framework of *Hymenochaetales* (*Agaricomycetes, Basidiomycota*). Mycosphere 14(1), 452–496.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1512 *Sideraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Sideraceae L.W. Zhou & Xue W. Wang

The monotypic family *Sideraceae* was introduced to accommodate *Sidera* Miettinen & K.H. Larss. as the type genus and *S. lenis* (P. Karst.) Miettinen as the type species according to morphological characteristics and phylogeny using SSU, ITS, LSU, mtSSU, *tef1α*, *rpb1*, and *rpb2* sequences (Wang et al. 2023). Basidiomes are annual to perennial and resupinate. Hymenophore is hydnoid or poroid, and white to yellowish. The hyphal system is monomitic or dimitic, with crystals usually abundant in subiculum and sometimes in the trama. Generative hyphae have clamp connections and are thin-walled. The skeletal hyphae are relatively loosely arranged, straight, and without branches. Cystidia are absent. Cystidioles are present and thin-walled. Basidia are clavate to cylindrical-shaped, with four sterigmata. Basidiospores are ellipsoid to cylindrical-shaped, smooth, thin-walled, hyaline, inamyloid, and acyanophilous (Wang et al. 2023). *Sideraceae* is classified under *Hymenochaetales* (*Agaricomycetes, Basidiomycota*) (Wang et al. 2023).

Reference

Wang XW, Liu SL, Zhou LW 2023 – An updated taxonomic framework of *Hymenochaetales* (*Agaricomycetes, Basidiomycota*). Mycosphere 14(1), 452–496.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China.

(Edited by **Kevin D Hyde**)

Note 1513 *Skvortzoviaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Skvortzoviaceae L.W. Zhou & Xue W. Wang

The monotypic family *Skvortzoviaceae* was introduced by Wang et al. (2023) to accommodate *Skvortzovia* Bononi & Hjortstam as the type genus and *S. furfurella* (Bres.) Bononi & Hjortstam as the type genus based on phylogeny (nSSU, ITS, nLSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2*) and morphology. The family *Skvortzoviaceae* is classified under *Hymenochaetales* (*Agaricomycetes*, *Basidiomycota*). In the family *Skvortzoviaceae*, basidiomes are annual, resupinate, and effused. The hymenophore is smooth, exhibiting grandinioid and odontioid characteristics, with colours ranging from cream to yellowish. The hyphal system is monomitic, consisting of generative hyphae that are typically thin-walled and often feature clamp connections. Cystidia are tubular with an obtuse apex, hyaline, and thin-walled. Basidia are clavate to cylindrical, each with four sterigmata. Basidiospores are cylindrical or allantoid, smooth, thin-walled, hyaline, inamyloid, and acyanophilous (Wang et al. 2023).

Reference

Wang XW, Liu SL, Zhou LW. 2023 – An updated taxonomic framework of *Hymenochaetales* (*Agaricomycetes, Basidiomycota*). Mycosphere 14(1), 452–496.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1514 *Paranthracobia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Paranthracobia Van Vooren & Valade

The monotypic genus *Paranthracobia* was introduced by Van Vooren & Valade (2023) under *Pyronemataceae* (*Pezizales*, *Pezizomycetidae*, *Pezizomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *P. rehmii* (Brumm.) Valade & Van Vooren according to morphology and molecular data using ITS and LSU sequences. *Anthracobia rehmii* Brumm. was reclassified to *Paranthracobia rehmii* (Vooren & Valade 2023, Van Brummelen 1984). Ascomata are epigeous and apothecial, with a sessile, slightly cupuliform to discoid shape whitish, pale grayish, orangish, or ochre-brown, adorned with small brown hairs. The excipulum consists of a two-layered structure, with a textured medullary layer and an ectal layer. The hairs are ± superficial, septate, with a simple base, short, straight. Ascospores are uniseriate, ellipsoid or fusoid, and smooth, with asci that are operculate and eight-spored. This saprobic species thrives on burnt substrates, though its asexual morph remains unknown (Van Vooren & Valade 2023). The type species is infrequently documented and can be found in burnt soil and charcoal, occasionally growing on the mature ascomata of *Rhizina undulata*. It has been recorded in France, Germany, Norway, and Ukraine (Van Vooren & Valade 2023).

References

Van Vooren N, Valade F. 2023 – Exploring the European *Trichophaea*-like discomycetes (*Pezizales*) using morphological, ecological and molecular data. Part 4: new insights in *Trichophaea* s. str. and *Paranthracobia* gen. nov. Ascomycete.org, 15(4), 113–134.

Van Brummelen J. 1984 – Notes on cup fungi – 2. Persoonia 12(3), 327–334.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D. Hyde**)

Note 1515 *Umbellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Umbellaceae Xue W. Wang & L.W. Zhou

The monotypic family *Umbellaceae* was erected to accommodate *Umbellus* Xue W. Wang & L.W. Zhou and *U. sinensis* Xue W. Wang & L.W. Zhou based on morphology and phylogeny using nSSU, ITS, LSU, mtSSU, and *rpb2* sequence data (Wang & Zhou 2023). The family is classified under *Umbellaceae* (*Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, *Basidiomycota*) (Wang & Zhou 2023). Morphologically, *Umbellaceae* is similar to *Chaetoporellaceae*, *Hyphodontiaceae*, and *Schizoporaceae*, characterized by resupinate basidiomes and a light-hued hymenophoral surface. However, it uniquely possesses capitate cystidia featuring large umbrella-shaped crystalline heads. In the family *Umbellaceae,* basidiomes are annual, adnate and resupinate. The hymenophore varies from smooth to grandinioid, odontioid, with a colour range from white to cream. The margin thins out and has an arachnoid texture, concolorous or paler than the subiculum. The hyphal system is monomitic, exhibiting generative hyphae with clamp connections. Cystidia are dimorphic, 1: originating from the subhymenium and may be either more or less enclosed in the hymenium or project strongly for most of their length. They are cylindrical, unevenly thick-walled with narrow or wide lumens, rooted at the base, tapering gradually, and broadly rounded at the apex, topped with a large umbrella-shaped crystalline head. 2: originating laterally on subicular hyphae exhibit similar morphology to those from the sub-hymenium, albeit smaller and with slightly thick-walled stalks. The basidia are subclavate to clavate-cylindrical, barrel-shaped, or suburniform, featuring a basal clamp connection and four sterigmata. Basidiospores are oblong-ellipsoid or broadly ellipsoid, hyaline, smooth, thin-walled, indextrinoid, inamyloid, and acyanophilous (Wang & Zhou 2023).

Reference

Wang XW, Zhou LW. 2023 – *Umbellaceae* fam. nov. (*Hymenochaetales, Basidiomycota*) for *Umbellus sinensis* gen. et sp. nov. and three new combinations. Journal of Fungi 10(1), 22.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1516 *Nothoroussoella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Nothoroussoella M. Li & L. Cai

The monotypic genus *Nothoroussoella* was introduced by Li et al. (2023) under *Roussoellaceae* (*Pleosporales*, *Pleosporomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *N. irregularis* M. Li & L. Cai according to morphology and phylogeny using a concatenated dataset of ITS, LSU, SSU, *rpb2* and *tef1-α* sequences. The asexual morph features conidiomata that appear pycnidial, semi-immersed, and either scattered or aggregated. These structures are globose to subglobose, becoming oval to irregularly shaped when confluent, brown to dark brown colouration. The conidiomata are unilocular and covered by abundant long hyphal outgrowths. Each conidioma possesses one papillate ostiole, which sometimes elongates into a short neck. The pycnidial wall exhibits a pseudoparenchymatous structure, multi-layered, with the outer layers composed of brown, flattened, polygonal cells. Conidiogenous cells are phialidic, appearing hyaline to light yellow and feature a smooth texture. They can be ampulliform, lageniform, or subconical in shape. The conidia are ellipsoidal to oblong, characterized by thin and smooth walls, initially hyaline but becoming pale brown over time. These conidia are aseptate and guttulate. The sexual morph has not been observed (Li et al. 2023a). The type species was isolated from sediment in China. Phylogenetic analyses based on ITS, LSU, SSU, *tef1-α*, and *rpb2* sequences demonstrated that the new species should be classified within the *Roussoellaceae*. Examination revealed that two strains representing *N. irregularis* clustered together in a well-supported clade, indicating a close relationship to the genus *Roussoella*. Morphologically, *Nothoroussoella irregularis* is characterized by unilocular pycnidia that possess a short neck and a distinct ostiole with a single papilla. In contrast, *Roussoella* typically produces multilocular pycnidia, which either lack ostioles or feature indistinct ostioles (Li et al. 2023a).

Reference

Li M, Raza M, Song S, Hou L et al. 2023a – Application of culturomics in fungal isolation from mangrove sediments. Microbiome 11(1), 272.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1517 *Auriporiaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Auriporiaceae B.K. Cui, Shun Liu & Y.C. Dai

The monotypic family *Auriporiaceae* was introduced to accommodate *Auriporia* Ryvarden. as the type genus according to morphological characteristics and the concatenated sequence dataset of nLSU, nSSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* (Liu et al. 2023d). The family is characterized by annual basidiocarps that are resupinate or pileate, with poroid hymenophores. The hyphal system can be monomitic or dimitic, featuring clamped generative hyphae. Cystidia are usually present, while cystidioles may be absent. The basidiospores are allantoid, cylindrical to ellipsoid, colourless, thin-walled, smooth, and exhibit reactions of IKI− and CB−, causing brown rot (Liu et al. 2023d). *Auriporiaceae* is classified under *Polyporales* (*Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Liu et al. 2023d). Current phylogenetic analyses with nLSU, nSSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* sequences indicate that *Sarcoporiaceae* is closely related to *Auriporiaceae*, *Dacryobolaceae*, and *Taiwanofungaceae*. *Auriporiaceae* is morphologically distinct due to its hyphal system, which can be monomitic or dimitic, and its thin-walled basidiospores (Liu et al. 2023d).

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023d – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1518 *Climacocystaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Climacocystaceae B.K. Cui, Shun Liu & Y.C. Dai

Climacocystaceae was erected to accommodate *Climacocystis* Kotl. & Pouzar as the type genus and *C. borealis* (Fr.) Kotl. and Pouzar as the type species according to morphological characteristics and phylogeny using the combined sequence dataset of ITS, nLSU, *rpb1*, *rpb2*, and *tef1-α* (Liu et al. 2023f). Basidiomata are annual, displaying a pileate shape and ranging from resupinate to effused-reflexed. When fresh, they appear soft, corky, and watery, becoming brittle and transitioning to a corky or hard corky texture when dry. The hymenophores are poroid, and the hyphal system is monomitic, dimitic, or trimitic, featuring generative hyphae with clamp connections and skeletal hyphae that are IKI– and CB–. Cystidia may be present or absent, with cystidioles occasionally noted. Basidiospores are broadly ellipsoid to globose-shaped, colourless, thin- to slightly thick-walled, smooth, and are characterized as IKI– and CB–, contributing to the white rot (Liu et al. 2023f). Phylogenetically, *Climacocystaceae* is closely related to several white-rot fungal families, including *Hyphodermataceae*, *Meripilaceae*, *Podoscyphaceae*, and *Steccherinaceae* (Liu et al. 2023f). *Climacocystaceae* is classified under *Polyporales* (*Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Liu et al. 2023f).

Reference

Liu S, Zhou JL, Song J, Sun YF et al. 2023f – *Climacocystaceae* fam. nov. and *Gloeoporellaceae* fam. nov., two new families of *Polyporales* (*Basidiomycota*). Frontiers in Microbiology 14, 1115761.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1519 *Gloeoporellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Gloeoporellaceae B.K. Cui, Shun Liu & Y.C. Dai

Gloeoporellaceae was erected to accommodate *Gloeoporellus* Zmitr. and *G. merulinus* (Berk.) Zmitr. according to morphological characteristics and phylogeny using the combined sequence dataset of ITS, nLSU, *rpb1*, *rpb2*, and *tef1-α* (Liu et al. 2023f). Basidiomata are annual, either resupinate or effused-reflexed, exhibiting a soft corky texture when fresh and becoming corky to fragile upon drying. The hymenophores are poroid, and the hyphal system is dimitic, consisting of generative hyphae with clamp connections, binding hyphae IKI–, and CB+. Cystidia are absent, while cystidioles are present. The basidiospores are allantoid, colorless, thin-walled, smooth, and are IKI–, CB–, associated with white rot (Liu et al. 2023f). *Gloeoporellaceae* is classified under *Polyporales* (*Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Liu et al. 2023f). Phylogenetically, *Gloeoporellaceae* formed a sister clade with the family *Fragiliporiaceae*. Morphologically, *Fragiliporiaceae* closely resembles *Gloeoporellaceae*, sharing characteristics such as an annual growth habit, resupinate basidiomata, clamped generative hyphae, and thin-walled basidiospores. However, distinct differences emerge: *Fragiliporiaceae* features brittle basidiomata, a pore surface that ranges from grayish-buff to lavender when fresh, transitioning to vinaceous gray or grayish-brown upon drying. It possesses larger pores, a monomitic hyphal system, and comparatively larger allantoid basidiospores (Liu et al. 2023f).

Reference

Liu S, Zhou JL, Song J, Sun YF et al. 2023f – *Climacocystaceae* fam. nov. and *Gloeoporellaceae* fam. nov., two new families of *Polyporales* (*Basidiomycota*). Frontiers in Microbiology 14, 1115761.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1520 *Taiwanofungaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Taiwanofungaceae B.K. Cui, Shun Liu & Y.C. Dai

Taiwanofungaceae was erected to accommodate *Taiwanofungus* Sheng H. Wu, Z.H. Yu, Y.C. Dai & C.H. Su as the type genus and *T. camphoratus* (M. Zang & C.H. Su) Sheng H. Wu, Z.H. Yu, Y.C. Dai & C.H. Su as the type species according to morphological characteristics and a concatenated dataset of ITS, nLSU, nSSU, mtSSU, *tef1-α*, *rpb1*, and *rpb2* (Liu et al. 2023f). The genus *Taiwanofungus* was found to be closely related to the genera *Auriporia*, *Dacryobolus*, and *Sarcoporia*, which correspond to the *Auriporiaceae*, *Dacryobolaceae*, and *Sarcoporiaceae* families, respectively. From a morphological view, *Taiwanofungus* is distinct owing to its perennial and resupinate-reflexed to pileate basidiocarps, as well as a hyphal system that ranges from dimitic to trimitic, characterized by nodose-septate generative hyphae and slightly amyloid skeletal hyphae. Additionally, *Taiwanofungus* species exhibit varied morphologies and are relatively distant from the currently recognized families within the *Polyporales* (Liu et al. 2023f). In *Taiwanofungaceae*, the basidiocarps are characterized by their perennial nature, displaying a range of forms including resupinate, effused-reflexed, or pileate shapes. Their texture varies from corky to woody hard. Hymenophores are poroid. Hyphal system is dimitic to trimitic. Generative hyphae are nodose-septate. Cystidia are absent, cystidioles are present or absent. Basidiospores are cylindrical-shaped, colorless, thin-walled, smooth, IKI–, and CB–. The members of this family are noted for their ability to cause brown rot (Liu et al. 2023f). *Taiwanofungaceae* is placed in *Polyporales* (*Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Liu et al. 2023f).

Reference

Liu S, Chen YY, Sun YF, He XL et al. 2023f – Systematic classification and phylogenetic relationships of the brown-rot fungi within the *Polyporales*. Fungal Diversity 118, 1–94.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1521 *Helicoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Helicoscypha Baral

The monotypic genus *Helicoscypha* was erected by Baral (2023) to accommodate *H. heterotricha* (Graddon) Baral, which was previously affiliated in *Venturiocistella* (*Hyphodiscaceae*, *Helotiales*, *Leotiomycetidae*, *Leotiomycetes*, *Pezizomycotina*, *Ascomycota*). The type species was found on dead leaves of *Deschampsia caespitosa* in Great Britain. The apothecia are gregarious. They have a flat, whitish to grayish disc, bordered by approximately 70–120 black spiny hairs and a similar number of brown, twisted hairs. The apothecia can be sessile or possess a short stalk and sit on a web of branched spiny and whip hairs. The spiny hairs are 4–6-celled and have discernible septa (unlike *Venturiocistella*). They appear deep red-brown in water and blackish-brown in KOH, with a slightly paler tip. The whip hairs are also 4–7-celled and more abundant at the margin. They are hyaline with a helicoidal upper part that can form 1–5 turns and feature tubercles that stain lilac in Cresyl blue (CRB). The ectal excipulum is pale ochraceous, approximately 20 μm thick with thin-walled cells, containing dark brown exudate. The surface cells are smooth and vary in colour toward the upper flanks and margin. Overall, the structure exhibits distinctive hair arrangements and cellular characteristics. Asci range from (61–)68–80 × (11.5–)12–13 μm, with a cylindrical-clavate shape and a short stalk. The apex is medium conical, with a deep blue apical ring in iodine (IKI). The ascus wall is inamyloid, and the base originates from croziers. Ascospores are ellipsoid-subfusoid, and are hyaline, 1-septate, and multiguttulate, with visible nuclei. They can appear light brown and 1–3-septate when overmature. The wall is smooth and typically unstained. Paraphyses are cylindrical, with uninflated or slightly tapering apices, and the terminal cells are only slightly wider than the lower cells, which are branched in the middle and lower regions. The upper cells carries loose, refractive granules which are KOH-inert. *Helicoscypha* differs from *Venturiocistella* not only in its distinct hairy subiculum but also in the structural composition of its hair types. In *Helicoscypha*, both the spiny hairs and whip hairs possess smooth walls, providing a key diagnostic feature. The spiny hairs have noticeable septa, indicating their segmented structure, while the whip hairs, positioned in situ, approximate the length of the spiny hairs. The whip hairs are characterized by a helicoidally twisted, whip-like upper section with a unique morphology; this upper part is hyaline and is adorned with coarse, KOH-soluble tubercles (Baral 2023). *H. heterotricha* is only known from the type collection, and no sequences are available up to now.

Reference

Baral HO. 2023 – *Venturiocistella gaylussaciae, V. ulicicola, V. uliginosa* (*Hyphodiscaceae, Helotiales*) and *V. heterotricha* (*incertae sedis*) redescribed from the types. Ascomycete.org 15(2), 63–75.

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(Edited by **Kevin D. Hyde** and **Hans-Otto Baral**)

Note 1522 *Eidernor*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eidernor Y.P. Tan & Bishop-Hurley

The monotypic genus *Eidernor* was introduced by Thompson et al. (2023) under *Exobasidiales* (*Exobasidiomycetidae*, *Exobasidiomycetes*, *Ustilaginomycotina*, *Basidiomycota*) to accommodate *E. doerrieniae* Y.P. Tan & Bishop-Hurley based on morphology and phylogenetic analyses using ITS sequence data. The type species was reported in Australia on dead *Araneae*. Sequences related to *E. doerrieniae* can be found in GenBank with the accessions OR290117 (ITS) and OR288583 (LSU). When comparing the ITS region, *E. doerrieniae* shows differences from the reference strain *Rhamphospora nymphaeae* (CBS 172.38) (Thompson et al. 2023).

Reference

Thompson SM, Tan YP, Shivas RG. 2023 – Nomenclatural novelties. Index of Australian Fungi 10, 1.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
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Note 1523 *Circinellaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Circinellaceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu

Circinellaceae was erected by Zhao et al. (2023b) to accommodate *Circinella* Tiegh. & G. Le Monn. as the type genus according to morphological characteristics and a concatenated dataset of ITS and LSU sequences. The family *Circinellaceae* is positioned next to *Lichtheimiaceae* and *Thermomucoraceae* in phylogenetic analyses. Sporangiophores arise from both substrate and aerial hyphae, exhibiting simple or branched structures with a straight main stem and circinate, curved, or twisted lateral branches. Terminal sporangia are consistently subglobose to globose-shaped and multi-spored, while lateral sporangia can be subglobose to globose and uni- to multi-spored. Apophyses are present, and sporangiospores are often ovoid to ellipsoid. Chlamydospores may occur in substrate hyphae, and if known, zygospores are ornamented, pigmented, and can be either heterothallic or homothallic, featuring opposed suspensors (Zhao et al. 2023b). *Circinellaceae* is classified under *Mucorales* (*Mucoromycetes*, *Mucoromycota*) (Zhao et al. 2023b).

Reference

Zhao H, Nie Y, Zong TK, Wang K et al. 2023b – Species diversity, updated classification and divergence times of the phylum *Mucoromycota*. Fungal Diversity 123(1), 49–157.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China
(Edited by **Kevin D Hyde**)

Note 1524 *Rhizomucoraceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Rhizomucoraceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu

Rhizomucoraceae was erected by Zhao et al. (2023b) to accommodate *Rhizomucor* Lucet & Costantin as the type genus according to morphological characteristics and a concatenated dataset of ITS and LSU sequences. *Rhizomucoraceae* is a sister to the *Syncephalastraceae* clade in phylogenetic and divergence time analyses. It is characterized by the consistent presence of rhizoids and branched sporangiophores arising from hyphae. Notably, apophyses are absent, and the sporangia are columellate and multi-spored. Chlamydospores may also be present. Zygospores are ornamented and exhibit both heterothallic and homothallic reproduction, featuring opposed suspensors and a pigmented zygosporangial wall. Members are adapted to mesophilic and thermophilic environments (Zhao et al. 2023b). *Rhizomucoraceae* is classified under *Mucorales* (*Mucoromycetes*, *Mucoromycota*) (Zhao et al. 2023b).

Reference

Zhao H, Nie Y, Zong TK, Wang K et al. 2023b – Species diversity, updated classification and divergence times of the phylum *Mucoromycota*. Fungal Diversity 123(1), 49–157.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1525 *Protomycocladaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Protomycocladaceae H. Zhao, Y.C. Dai, B.K. Cui, F. Wu, Yuan Yuan & X.Y. Liu

Protomycocladaceae was introduced by Zhao et al. (2023b) to accommodate *Protomycocladus* Schipper & Samson as the type genus according to morphological characteristics and a concatenated dataset of ITS and LSU sequences. The family *Protomycocladaceae* is positioned next to *Rhizomucoraceae* and *Syncephalastraceae* based on phylogenetic analyses. Characterized by sporangiophores that arise from substrate hyphae and exhibit sympodial branching, they possess apophyses. The sporangia are apophysate, smooth, pyriform, multi-spored, and deliquescent-walled. Additionally, the ornamented zygospores are homothallic and feature opposed suspensors (Zhao et al. 2023b). The family *Protomycocladaceae* is classified under *Mucorales* (*Mucoromycetes*, *Mucoromycota*) (Zhao et al. 2023b).

Reference

Zhao H, Nie Y, Zong TK, Wang K et al. 2023b – Species diversity, updated classification and divergence times of the phylum *Mucoromycota*. Fungal Diversity 123(1), 49–157.

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(Edited by **Kevin D Hyde**)

Note 1526 *Ceratoporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ceratoporia Ryvarden & de Meijer

Ceratoporia was established to accommodate *Ceratoporia perplexa* Ryvarden & de Meijer as a monotypic species according to morphological characteristics (Ryvarden 2002). *Ceratoporia* was isolated from decayed branch of unknown dicotyledonous tree in Brazil and is classified under *Ceratobasidiaceae* (*Cantharellales*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*) (Wijayawardene et al. 2022). The basidiocarps grow annually, adopting a resupinate form with a pore surface that appears white to cream. The pores are thin-walled and round to angular, while the tubes extend up to 1 mm deep, and the context remains white and very thin. The hyphal system operates as monomitic, with generative hyphae featuring clamps that possess walls varying from thin to up to 0.7 µm thick; these hyphae twist strongly in certain regions, particularly near the clamps. The basidia take on a clavate shape, featuring a clamp at the base but lacking septa, and each carry four large cylindrical sterigmata that vary in length. Dendrohyphidia inhabit the hymenium, with individual branches reaching up to 2 µm wide, while rare cystidia remain smooth, thin-walled, and pointed. The basidiospores are cylindrical, remaining smooth and thin-walled, demonstrating no reaction in Melzer's reagent (Ryvarden 2002).

References

Ryvarden L. 2002 – editor. Some neotropical wood-inhabiting fungi. Fungiflora.
Wijayawardene NN, Hyde KD, Dai DQ, Sánchez-García M et al. 2022 – Outline of Fungi and fungus-like taxa–2021. Mycosphere 13(1), 53–453.

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(Edited by **Kevin D Hyde**)

Note 1527 *Pseudocastanedospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pseudocastanedospora M. Li, M. Raza & L. Cai

The monotypic genus *Pseudocastanedospora* was introduced by Li et al. (2023) under *Extremaceae* (*Mycosphaerellales*, *Dothideomycetidae*, *Dothideomycetes*, *Pezizomycotina*, *Ascomycota*) to accommodate *P. guangdongensis* M. Li & L. Cai according to morphology and phylogeny using a concatenated dataset of ITS and LSU sequences. In the asexual morph of *Pseudocastanedospora*, the conidiophores are solitary occurring at the terminal, lateral, or intercalary positions on the hyphae. These conidiophores are often branched, thick-walled, pale to medium-brown. They are micro- to macronematous, septate, constricted at the septa. The overall structure can be described as sub-cylindrical, showing variations from straight to geniculate or even irregularly curved forms, indicating a degree of flexibility in growth patterns. The conidiogenous cells appear at the terminal, intercalary, or lateral points and are distinguished by their straight, darkened, and thickened sub-cylindrical shape. Conidia solitary or in chains, subglobose to irregular. Typically pale brown, smooth, thick-walled. The conidia range from 0 to 1 septate. The sexual morph of *Pseudocastanedospora* has not been observed (Li et al. 2023a). Phylogenetically, the analysis revealed that two strains of *P. guangdongensis* clustered within an independent clade, positioned as a sister group to the genus *Castanedospora*. Morphologically, significant differences were observed in the shape of conidiophores, conidiogenous cells, and conidia. In *Pseudocastanedospora*, the conidiophores are characterized by a smooth texture, while the conidiogenous cells are predominantly sub-cylindrical, producing conidia that are typically 0–1 septate. In contrast, *Castanedospora* exhibits a more complex morphology, with conidiophores that are verrucose in appearance. The conidiogenous cells in this genus take on doliiform or cylindrical shapes. Furthermore, the conidia of *Castanedospora* are significantly more variable, exhibiting a range of 31–200-septate structures (Li et al. 2023a).

Reference

Li M, Raza M, Song S, Hou L et al. 2023a – Application of culturomics in fungal isolation from mangrove sediments. Microbiome 11(1), 272.

Entry by Maryam T. Noorabadi, Innovative Institute for Plant Health, Zhongkai University of Agriculture and Engineering, Guangzhou 510225, People's Republic of China

(Edited by **Kevin D Hyde**)

Note 1528 *Cairneyella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cairneyella D.J. Midgley & Tran-Dinh

Cairneyella was introduced to accommodate *C. variabilis* D.J. Midgley & Tran-Dinh as a type species according to morphological characteristics and phylogenetic analysis with ITS sequences (Midgley et al. 2016). The type species was isolated from the root system of *Woollsia pungens* as an ericoid mycorrhizal fungus in Australia. *Cairneyella* is classified under *Helotiales* (*Leotiomycetidae*, *Leotiomycetes*, *Pezizomycotina*, *Ascomycota*) (Midgley et al. 2016). Colonies grow slowly on CYA and MEA, initially appearing off white to white. Aerial mycelium develops into woody structures that change in colour to brown, yellowish brown, crimson, or violet, becoming a little floccose or funiculose. Hyphae appear white, septate, and smooth to finely asperulate. Conidia, sclerotia, and chlamydospores are lacking. The sexual state remains unknown. (Midgley et al. 2016).

Reference

Midgley DJ, Rosewarne CP, Greenfield P, Li D et al. 2016 – Genomic insights into the carbohydrate catabolism of *Cairneyella variabilis* gen. nov. sp. nov., the first reports from a genome of an ericoid mycorrhizal fungus from the southern hemisphere. Mycorrhiza 26, 345–352.

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Note 1529 *Pachysolenaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pachysolenaceae M. Groenew., Hittinger, Opulente & A. Rokas

Pachysolenaceae was established to accommodate *Pachysolen* Boidin & Adzet as the type genus and *Pachysolen tannophilus* Boidin & Adzet as the type species based on morphological characters, physiological features, and a concatenation single-model (LG+G4) approach on a data matrix of 1672 taxa (1644 fungi and 28 outgroups) and 290 BUSCO genes (Groenewald et al. 2023). Family-specific protein family OG0016373 is characterized by a unique trait where the CUG codon is translated into alanine, deviating from the common translation of leucine. This divergence has been identified through phylogenetic analyses that utilize DNA sequences encoding LSU, nSSU, mtSSU, and *tef1-α*. Additionally, budding occurs multilaterally, with a narrow base for support, and the ascospores exhibit a distinctive hemispherical or hat-shaped morphology (Groenewald et al. 2023). *Pachysolenaceae* is classified within *Alaninales*. Different genera were identified in *Alaninales*, namely *Nakazawaea*, *Pachysolen*, and *Peterozyma*. All genera categorized within this order were once part of the *Saccharomycetales incertae sedis*. The taxonomic placement of *Nakazawaea*, *Pachysolen*, and *Peterozyma* was uncertain for many years. Recent research has revealed that these genera collectively form a distinct group where the translation of the CUG codon into alanine, rather than leucine, is a shared characteristic. This unique trait has led to the recognition of the CUG-Ala clade as a monophyletic group. The biotechnological significance of *Nakazawaea peltata* lies in its production of a β-glucosidase enzyme, which when combined with purified cellulase, aids in the breakdown of cellulose. Additionally, this species is known for its efficient production of xylitol, a popular artificial sweetener. On the other hand, *Pachysolen tannophilus* is valuable for its ability to convert crude glycerol into ethanol. Furthermore, studies have demonstrated that strains of this species can transition from glucose to effectively fermenting xylose (Groenewald et al. 2023). The taxonomic placement of this new family is *Alaninales* (*Pichiomycetes*, *Saccharomycotina*, *Ascomycota*) (Groenewald et al. 2023).

Reference

Groenewald M, Hittinger CT, Bensch K, Opulente DA et al. 2023 – A genome-informed higher rank classification of the biotechnologically important fungal subphylum *Saccharomycotina*. Studies in Mycology 105(1), 1–22.

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(Edited by **Kevin D Hyde**)

Note 1530 *Ageratinicolaceae*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ageratinicolaceae L. Lu, K.D. Hyde & Tibpromma

Ageratinicolaceae was erected by Senanayake et al. (2023) to accommodate *Ageratinicola* L. Lu, K.D. Hyde & Tibpromma as a type genus and *A. kunmingensis* L. Lu, K.D. Hyde & Tibpromma as the type species based on combined ITS, SSU, and LSU sequence data. The type species was collected on the dead stems of *Ageratina adenophora* in China. Only the asexual structures have been observed. The conidiomata are pycnidial, globose to subglobose, solitary or aggregated, with multi-layered walls. Conidiophores are reduced to conidiogenous cells, which are enteroblastic, doliiform or cylindrical-shaped, and hyaline. Conidia are multi-shaped, smooth-walled, with or without mucilaginous sheath. *Ageratinicola* and *Foliophoma* form sister clades with *Ageratinicola* based on combined ITS, LSU, and SSU sequence data. In terms of morphology, *Ageratinicola* can be distinguished from the *Foliophoma* species by its brown and muriform conidia. *Ageratinicolaceae* is classified under *Pleosporales* (*Pleosporomycetidae*, *Ascomycota*) (Senanayake et al. 2023).

Reference

Senanayake IC, Rossi W, Leonardi M, Weir A et al. 2023 – Fungal diversity notes 1611–1716: taxonomic and phylogenetic contributions on fungal genera and species emphasis in south China. Fungal Diversity 12, 1–243.

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(Edited by **Kevin D Hyde**)

Note 1531 *Tulosesus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Tulosesus D. Wächt. & A. Melzer

Wächter & Melzer (2020) introduced *Tulosesus* within *Psathyrellaceae* (*Agaricales*, A*garicomycetes*, *Basidiomycota*) to accommodate 39 species of *Coprinellus* s. lat. Their phylogenetic analysis based on ITS, LSU, *tef1-α*, and *tub* placed *Tulosesus* in a sister position to *Coprinellus* s. str. and *Narcissea*. The type species is *T. callinus* (M. Lange & A.H. Sm.) D. Wächt. & A. Melzer. Recently, before the work of Wächter & Melzer (2020), the species of the *Tulosesus* were classified in the section *Setulosi* of the genus *Coprinellus* s. lat., based on their small to medium-sized coprinoid basidiomata combined with elongated pileo- and caulocystidia. Most species from the section *Setulosi* were transferred to the genus *Tulosesus*. Subsequently, *Tulosesus maritimus* D.J. Schaf., Loizides & P. Alvarado was newly described (Schafer et al. 2022). It is a saprotrophic genus with terrestrial, fimicolous, lignicolous or herbicolous species (Uljé 2005).

References

Schafer D, Alvarado P, Smith L, Liimatainen K et al. 2022 – Coprinoid *Psathyrellaceae* species from Cyprus: three new sabulicolous taxa from sand dunes and a four-spored form of the fimicolous species *Parasola cuniculorum*. Mycological Progress 21, 52.

Uljé CB. 2005 – *Coprinus* Pers. In: Noordeloos ME, Kuyper TW, Vellinga EC (eds), Flora *Agaricina Neerlandica*. Taylor & Francis, Boca Raton, 22–109.

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon-rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19, 1151–1265.

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(Edited by **Maryam T. Noorabadi**)

Note 1532 *Punjabia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Punjabia D. Wächt. & A. Melzer

Wächter & Melzer (2020) introduced *Punjabia* within *Psathyrellaceae* (*Agaricales*, *Agaricomycetes*, *Basidiomycota*) to accommodate a single species *P. pakistanica* (Usman & Khalid) D. Wächt. & A. Melzer, originally described in the genus *Coprinellus*, section *Setulosi* (small to medium-sized coprinoid basidiomata and elongated pileo- and caulocystidia) (Hussain et al. 2018). Subsequent phylogenetic analysis based on ITS, LSU, *tef1-α*, and *tub* revealed its separate position within *Psathyrellaceae* (Wächter & Melzer 2020). The only known species has unusual yellowish-green or greenish-yellow tones in the pileus.

References

Hussain S, Usman M, Afshan NS, Ahmad H et al. 2018 – The genus *Coprinellus* (*Basidiomycota*; *Agaricales*) in Pakistan with the description of four new species. Mycokeys 39, 41–61.

Wächter D, Melzer A. 2020– Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon-rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19: 1151–1265.

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Note 1533 *Olotia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Olotia D. Wächt. & A. Melzer

Wächter & Melzer (2020) introduced *Olotia* within *Psathyrellaceae* (*Agaricales*, *Agaricomycetes*, *Basidiomycota*) to accommodate a single species *O. codinae* (Deschuyteneer, A. Melzer & Pérez-De-Greg.) D. Wächt. & A. Melzer, originally described in the genus *Psathyrella*. Although its morphological characters completely fit into *Pstahyrella* (Deschuyteneer et al. 2018), phylogenetic analysis based on ITS, LSU, *tef1-α*, and *tub* revealed its separate position within *Psathyrellaceae* (Wächter & Melzer 2020).

References

Deschuyteneer D, Melzer A, Pérez-De-Gregorio MÀ. 2018 – *Psathyrella codinae*, a new species from Spain. Bulletin de l'Association des Mycologues francophones de Belgique 11, 4–8.

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19, 1151–1265.

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(Edited by **Maryam T. Noorabadi**)

Note 1534 *Narcissea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Narcissea D. Wächt. & A. Melzer

Wächter & Melzer (2020) introduced *Narcissea* within *Psathyrellaceae* (*Agaricales*, *Agaricomycetes*, *Basidiomycota*) to accommodate *Narcissea patouillardii* (Quél.) D. Wächt. & A. Melzer (as the type species) and *Narcissea cordispora* (T. Gibbs) D. Wächt. & A. Melzer, both originally described in the genus *Coprinus*. A phylogenetic analysis based on ITS, LSU, *tef1-α*, and *tub* revealed *Narcissea* as a well-supported lineage, closely related to *Coprinellus* s. str. and *Tulosesus*. Subsequently, two other *Narcissea* species were newly described, *Narcissea delicata* K.G.G. Ganga, Manim. & K.P.D. Latha (Crous et al. 2023b) and *Narcissea lahorensis* Usman & Khalid (Usman et al. 2022), and two species were recombined (*N. ephemeroides* (DC.) T. Bau, L.Y. Zhu & M. Huang and *N. cardiaspora* (Bender) Voto). Morphologically, the species of this genus are very similar to members of the sections *Niveae* and *Subniveae* of the genus *Coprinopsis* (small, thin-fleshed, coprinoid basidiomata; abundant granular veil on the pileus which consists mainly or partly of (sub)globose elements, which are smooth or with small surface crystals; pileocystidia absent; basidiospores without myxosporium). *Narcissea* species are saprotrophic (fimicolous, on decomposing plant remnants or fertilized soil) (Uljé 2005).

References

Crous PW, Costa MM, Kandemir H, Vermaas M et al. 2023b – Fungal Planet description sheets: 1550–1613. Persoonia 51, 280–417.

Uljé CB. 2005 – *Coprinus* Pers. In: Noordeloos ME, Kuyper TW, Vellinga EC (eds), Flora Agaricina Neerlandica. Taylor & Francis, Boca Raton, 22–109.

Usman M, Izhar A, Khalid AN. 2022 – *Narcissea lahorensis* sp. nov. (*Psathyrellaceae*, *Agaricales*) from Pakistan. Mycological Observations 3, 47–55.

Wächter D, Melzer A. 2020 – Proposal for a subdivision of the family *Psathyrellaceae* based on a taxon-rich phylogenetic analysis with iterative multigene guide tree. Mycological Progress 19: 1151–1265.

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Note 1535 *Basidiodesertica*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Basidiodesertica Maharachch., Wanas. & Al-Sadi

Basidiodesertica is an asexual genus in *Corticiaceae* (*Corticiales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*). The sexual morph is unknown. This is a monotypic hyphomycetous genus found on dead plant leaves in Oman deserts and is saprotrophic. The type species is *Basidiodesertica hydei* Maharachch., Wanas. & Al-Sadi. So far only a sequence from nSSU is available. Phylogenetic analyses of the *Corticiaceae* based on the combined ITS, LSU, SSU, and mtSSU sequences placed *Basidiodesertica hydei* sister to *Tretopileus sphaerophorus* (Berk. and M. A. Curtis) S. Hughes & Deighton. The genus was characterized by cylindrical to subulate synnemata, with a pink stroma at base, and by producing brown multicellular conidia (Maharachchikumbura et al. 2021b). Phylogenetically, *Basidiodesertica*, together with *Tretopileus sphaerophorus* and *Giulia* Tassi, form a clade containing saprotrophic, non-lichenicolous taxa in the *Corticiaceae*, all known only from their asexual state (Ghobad-Nejhad et al. 2021).

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Note 1536 *Diplodites / Palaeodiplodites*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Diplodites D.N. Babajan & Tasl. 1973 ex Kalgutkar, Nambudiri & Tidwell (= *Palaeodiplodites* Kyoto Watan., H. Nishida & Tak. Kobay.). 1999 is its later taxonomic synonym (fide Kalgutkar & Jansonius 2000).

Diplodites (Type: *Diplodites sweetii* Kalgutkar et al. 1993) was proposed by Teterevnikova-Babajan & Taslakhchian (1973). They originally used this name for spores similar to modern *Diplodia* from the Tertiary strata of Armenia. The Armenian spores measured 7–12 × 3–5 µm in diameter. However, the name was not then formally published, as the original publication lacked a valid description and illustrations, and no type species or specimen was designated for the proposed genus. Kalgutkar et al. (1993) preferred to retain the original name and thereby established *Diplodites* as a validly published genus by describing it and designating *Diplodites sweetii* as its type. This genus encompasses fossil taxa morphologically similar to the extant fungi *Diplodia*, *Botryodiplodia*, and other related genera such as *Dothiorella* and *Macrophoma*. Kalgutkar & Jansonius (2000) placed *Diplodites* under *Sphaeropsidales*. They also transferred the type of *Palaeodiplodites* (*P*. *yezoensis* Watanabe et al. 1999) to *Diplodites*.

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Note 1537 *Sclerotus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sclerotus Xavier de Lima

Sclerotus belongs to *Hymenochaetaceae* (*Hymenochaetales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*). The asexual morph is unknown. This is a monotypic polypore genus found associated with dead angiosperm wood in the Brazilian and French Guiana Amazon, possibly saprotrophic. Phylogenetic analyses based on ITS and LSU indicated its phylogenetic position in *Hymenochaetaceae*, and sister to the clade of *Sanghuangporus/Tropicoporus*. Type species is *Sclerotus extensus* (Lév.) Xavier de Lima. The genus was characterized by the strongly ventricose hymenial setae, and the black line that is exposed as a dark crust on the pilear surface after the tomentum wears away. Phylogenetic analysis showed that *Sclerotus extensus* has macromorphological plasticity and includes pileate as well as effused-reflexed basidiomata (de Lima et al. 2022).

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Note 1538 *Sertulicium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sertulicium Spirin, Volobuev & K.H. Larss.

Sertulicium is a family *incertae sedis* in *Trechisporales* (*Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina, Basidiomycota*). The asexual morph is unknown. This is a corticioid genus found on rotten wood of deciduous trees and conifers, apparently with a worldwide distribution, saprotrophic. Phylogenetic analyses based on ITS and LSU indicated its phylogenetic position in *Trechisporales*, and sister to the clade of *Sistotremastrum sensu stricto*; family assignment was delayed for further studies. Type species is *Sertulicium niveocremeum* (Höhn. & Litsch.) Spirin & K.H. Larss. The genus was characterized by effused, very thin basidiomata, smooth hymenophore (except in *S. limonadense* (G. Gruhn & P. Alvarado) Z.B. Liu & Yuan Yuan), clamped hyphae, 4–6 sterigmate basidia normally not collapsing at the apex, and narrowly ellipsoid to cylindrical basidiospores. *Sertulicium* currently contains seven species (Spirin et al. 2021, Liu et al. 2022g), but according to the phylogenetic analyses, the genus is expected to include several more species (Spirin et al. 2021). Morphological characterization of *Sertulicium* species towards *Sistotremastrum* s. str. is still difficult (Spirin et al. 2021).

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Note 1539 *Neosarcodon*

Web-links: Index Fungorum, MycoBank, GenBank

Neosarcodon Xiao L. He, Di Wang & W.H. Peng

Neosarcodon is a genus of 11 terrestrial, stipitate, fleshy, hydnoid species from the USA, Neotropics and Australia, previously belonging to the genus *Sarcodon*. The name was originally informally proposed by Larsson et al. (2019) for the North and South American species contingent but not formally described, since ITS was the only molecular marker available at the time. Wang et al. (2024) made the formal description, based on ITS sequences and one *rpb2* sequence. In addition to its original content, Douch et al. (2024) recombined one species from New Zealand into the genus, as *Neosarcodon carbonarius*. The life strategy (ectomycorrhizal or saprotrophic) has yet to be confirmed.

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Note 1540 *Serpula*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Serpula (Pers.) Gray

Basionym: *Merulius* sect. *Serpula* Pers.

Synonyms: *Plicaturella* Murrill, *Xylophagus* Link, *Xylomyzon* Pers., *Gyrophora* Pat., and *Gyrophana* Pat.

Serpula was introduced by Persoon (1801) to designate one section of the genus *Merulius* Boerh. ex Haller. Gray (1821) raised the Persoonian section to the generic rank. Initially, the genus contained one species, *Serpula destruens* (Pers.) Gray. Fries (1821) did not recognize the genus *Serpula*, and continued to consider the aforementioned species in the genus *Merulius* emend. Fr. under the name *Merulius lacrimans* (= *Boletus lacrymans* Wulfen in Jacq.). In this genus, Fries considers fungi with effused or effused-reflexed fruiting bodies, a folded-tortuous hymenophore and a continuous hymenium. Along with *Merulius pulverulentus*, *M. brassicaefolius*, and *M. umbrinus*, *M. lacrymans* were included by Fries (1838) in the section *Coniophori* based on the clearly colored rusty-brownish spore print. The Friesian system was widely recognized by his contemporaries, and the genus *Serpula* was forgotten for many years. The return of this to taxonomic practice was associated with Karsten's work (1889). This researcher adhered to a broader *Serpula* concept and included in this genus many species of *Merulius sensu* Fries, characterized mainly by a pale yellow, ocher, or olive merulioid hymenophore, regardless of the color of the spore print. A number of subsequent mycologists followed the method of splitting the genus *Serpula sensu* P. Karst. After the description *Gyrophora* (Patouillard 1887) (type species *Gyrophora lacrymans*), the rest of merulioid fungi with a fawn or olive hymenophore were continued to be considered in the genus *Merulius* (Harmsen 1954), and not all mycologists recognized the genus *Gyrophora* (Falck 1912). After studying specimens of *Merulius sensu* Fries and Burt, Cooke (1943) confirmed the generic level of *Serpula sensu* Gray based on the difference in basidiospore color with *Merulius* (hyaline vs colored in *Serpula*) and proposed a new combination *Serpula americana* (= *S. himantioides*). Later, a number of species, previously placed in *Serpula*, found their place in the genus *Leucogyrophana* (Pouzar 1958, Parmasto 1968b). Jülich (1979) described the genus *Pseudomerulius* to accommodate *Merulius aureus* and *Merulius elliotii*, to which Redhead and Ginns (1985) add another species, *P. curtisii*, previously considered in the genus *Paxillus* or *Tapinella*. In the era of molecular taxonomy, the independence of the genera *Leucogyrophana* and *Pseudomerulius* was confirmed experimentally, and they were placed in different families, whereas the genus *Leucogyrophana sensu* Pouzar was sufficiently splitted (Jarosch & Besl 2001). Skrede et al. (2011) inferred the evolutionary history of *Serpulaceae* based on multigene phylogeny (SSU, LSU, ITS, *tef1-α*, *rpb2*) and concluded that *Serpula* clusters together with two ectomycorrhizal genera, *Austropaxillus* Bresinsky & Jarosch and *Gymnopaxillus* E. Horak in one family-level clade.

The members of this genus are characterized by annual, resupinate, rarely pileate, fleshy or sometimes floccose, membranous, generally dark-brown basidiomes (Cooke 1957, Skrede et al. 2011). The hymenium is meruloid or poroid with obtuse-edged pores. No type of cystidia has been documented in members of *Serpula* (Cooke 1957). Basidiospores are globose to ovoid, smooth, from yellow to rusty or brown, cyanophylous, with 1–2-layered thick brownish wall (Cooke 1957, Dai 2004, Zmitrovich et al. 2019). *Serpula* consists of saprotrophic taxa that mainly degrade conifer substrates causing brown rot. *Serpula lacrymans* is a well-known destructive house-invading fungus (Dai 2004, Skrede et al. 2011). Though a lot of application-based research has been done on *S. lacrymans*, there has been limited documentation regarding the other taxa of this genus. Currently *Serpula* includes 16 species that have been documented worldwide based on Species Fungorum.

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Note 1541 *Exsudoporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Exsudoporus Vizzini, Simonini & Gelardi

Exsudoporus was proposed by Vizzini, Simonini & Gelardi (Vizzini 2014) to accommodate *Exsudoporus permagnificus* (≡ *Boletus permagnificus*) as the type species, *Exsudoporus floridanus* (≡ *Boletus frostii* subsp. *floridanus*), and *Exsudoporus frostii* (≡ *Boletus frostii*), a stipitate-pileate boletoid species with primary red to rarely yellow pores that often form yellow exudate droplets when young, with conspicuously reticulate or deeply reticulate-alveolate stipe, and intensely blueing tissues when injured. Later its diagnosis was amended by Biketova and Gelardi (Biketova et al. 2022) and one more species (*E. ruber* ≡ *Leccinum rubrum*) has been added, based on morphology and multigene phylogeny (ITS, LSU, *tef1-α*, and *rpb2*). Main additions to the diagnosis were: scaly patches on stipe, tissue can be unchanging when injured, stipe context varies from inamyloid to amyloid or dextrinoid.

According to several multigene phylogenetic analyses (Wu et al. 2016a, Biketova et al. 2022, Wang et al. 2024), *Exsudoporus* is sister to the *Boletus subsplendidus* clade, which potentially can be a member of *Exsudoporus*, but their common branch has weak or no statistical support. However, based on 5-gene phylogenetic reconstruction by Farid et al. 2021, *B. subsplendidus* clusters as a sister clade to *Butyriboletus* with moderate statistical support. Future phylogenomic analysis and deeper morphological studies can clarify generic belonging of this species.

However, there are opinions that *Exsudoporus* should be merged with *Butyriboletus* as a later synonym (Wu et al. 2016a) or treated as the sect. *Exsudoporus* of the latter genus (Wang et al. 2024). The weak point of both papers is lack of studies of both the *Exsudoporus* and *Butyriboletus* type species, as well as lack of sufficient sequences and poor taxonomic representation of *Exsudoporus* spp. in phylogenetic analyses. Moreover, sequences of the same marker loci of *Exsudoporus* spp. from Biketova et al. (2022) were omitted by Wang et al. (2024) and not used in their multigene (ITS, LSU, *tef1-α*, and *rpb2*) phylogenetic analysis. Also members of *Exsudoporus* are quite different from *Butyriboletus* species by multiple characteristics: (1) an overall reddish color of the basidiomes, (2) red pores, (3) non-stuffed pores (although Smith & Thiers (1971), quoting Coker, indicated stuffed pores for *E. frostii*), (4) hymenophore exuding golden-yellow droplets in fresh, young specimens, (5) stipe surface strongly and coarsely reticulate to reticulate-alveolate or with scaly patches, (6) generally stronger bluing reaction on bruising (with the exception of *E. ruber*) and (7) hyphae of the stipe base context usually weakly to strongly amyloid, although the iodine test may also result in a negative or even “pseudoamyloid” (dextrinoid) reaction (Biketova et al. 2022).

Exudate droplets on the hymenophore are a rather rare feature among the *Boletaceae*. Such character was also noticed in *Amoenoboletus*, in particular in *A. weberi*, but needs more observations in other taxa (Biketova et al. 2022). *Amoenoboletus* differs from *Exsudoporus* by generally smaller basidiomes (pileus up to 6.5 cm diam., stipe up to 7 × 1.7 cm) displaying a fibrillose-squamulose to areolate pileal surface, reddish granular-punctate or squamulose to scaly or floccose stipe surface, mainly non-blueing tissues or slightly blueing (which can be sometimes observed on pores and stipe of *A. brachysporus*), and shorter basidiospores (average sizes 7.5–14 × 5–6.5 µm, Qm = 1.26–2.39) without a distinctive suprahilar depression (Wu et al. 2021a, Biketova et al. 2022, Li et al. 2024c).

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Note 1542 *Rostrupomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Rostrupomyces Vadthanarat & Raspé, nom. inval.

Rostrupomyces was established by Vadthanarat et al. (2024a) based on phylogenetic analyses of *atp6*, *cox3*, *rpb2*, and *tef1*-α loci, as well as morphological characteristics. It is a monotypic bolete genus from Thailand. Named in honor of F.G.E. Rostrup. The type species, *R. sisongkhramensis* (Khamsuntorn, Pinruan & Luangsa-ard) Vadthanarat, Raghoonundon & Raspé, occurs solitary, or in small groups, or in clusters by 2 to 3 basidiomata on sandy loam to sandy clay loam soil at low elevation in open dry dipterocarp forest sometimes with scattered *Fagaceae* trees. Compared to other *Boletaceae*, *Rostrupomyces* is distinguished by a combination of the following features: ellipsoid to broadly ellipsoid spores with smooth surface, as seen under light microscope and SEM; yellowish brown spore print; and a basidiomata that does not change color when bruised or cut. The genus resembles *Hemileccinum* in having rugulose to subrugulose pileus surface, a yellow hymenophore depressed around the stipe apex, subscabrous stipe surface, white basal mycelium, and not bruising basidiomata. However, *Hemileccinum* differs in having olive-brown spore print, boletoid spores with irregular warts and pinholes under SEM. *R. sisongkhramensis* form a well-supported phylogenetic group, sister to *Rubinosporus* and closely related to *Hemileccinum* (Vadthanarat et al. 2024a).

The genus name was not validly published in Vadthanarat et al. (2024a) (Art. 40.1; see Arts. 40.3, 6.3, and 12.1 of the Shenzhen Code; Turland et al. 2018) because the name of the combination *R. sisongkhramensis* was invalid (Art. 41.5). A corrigendum was recently published by Vadthanarat et al. (2024b) to validate the generic name and cite the correct basionym of the new combination. However, even after that the name is not validly published and thereby illegitimate both because identifier numbers obtained from a ratified repository are missing (Art. F.5.1) and there is no full and direct reference to previously effectively published description (Art. 38). The reference to Vadthanarat et al. (2024a) in the introduction does not qualify as such reference as required by Arts. 38.13 and Art. 41.5.

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Note 1543 *Niveoboletus*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Niveoboletus Yang Wang, G. Wu, B. Zhang & Yu Li

Niveoboletus is a monotypic bolete genus proposed by Wang et al. (2024) based on unique combination of morphological characters, as well as multigene phylogenetic analyses of ITS, LSU, *tef1-α*, *rpb1*, and *rpb2* loci. The type species is *Niveoboletus brunneus* Yang Wang, G. Wu, B. Zhang & Y. Li, was described from a broad-leaf forest dominated by *Castanopsis* species in Central China. The genus is primarily defined by the combination of purely white hymenophore which stains light brown when injured, a coarse stipe lacking reticulations, and small, smooth phaseoliform basidiospores. In a multilocus Bayesian tree *N. brunneus* forms a well supported clade, which is sister to *Boletus*, *Tylopilus*, *Strobilomyces*, *Porphyrellus*, and *Imleria* (Wang et al. 2024).

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Note 1544 *Meruliporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Meruliporia Murrill

Meruliporia was described by Murrill (1942) for *Merulius incrassatus* Berk. et M.A. Curtis, a merulioid-poroid resupinate dry rot fungus exclusively harmful in the USA. Beginning with Donk (1948), the species was considered mainly as a *Serpula* member. From a molecular perspective, this genus is quite distinct from *Serpula* (Skrede et al. 2011), although it probably also belongs to *Serpulaceae*. Zmitrovich et al. (2019) also included *Serpula pulverulenta* = *Merulius tignicola* in this genus, but it is possible that this is a sister group at the generic level, i.e. an as yet undescribed genus.

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Note 1545 *Phylloporopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phylloporopsis Angelini, Farid, Gelardi, M.E. Sm., F. Costanzo & Vizzini

The monotypic genus was introduced by Farid et al. (2018), to accommodate the American species *Phylloporus boletinoides*. This lamellate to subporoid bolete occurs widely in eastern North America and Central America, and has been more recently reported from montane pine woodland in the Dominican Republic. It grows as a putative ectomycorrhizal partner of several *Pinus* and *Quercus* species. Due to its peculiar morphological features, such as the pallid-colored hymenophore contrasting with the yellow to golden-yellow lamellate hymenophore of the other *Phylloporus* species, *P. boletinoides* has always been considered somehow unusual within the genus. Phylogenetic analysis of DNA sequences from four gene regions (ITS, LSU, *tef1-α*, and *rpb1*) supported the recognition of *Phylloporopsis* as a distinct generic lineage in the *Boletaceae*, sister to the poroid genus *Bothia* and the sequestrate genus *Solioccasus* (Farid et al. 2018).

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Note 1546 *Ionosporus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ionosporus Khmeln.

Ionosporus was established as a new genus in the *Boletaceae* by Khmelnitsky et al. (2019) to accommodate *Boletus longipes*, originally described in 1909 by George Massee from material collected in Singapore. Following a rather complex taxonomic history, that has seen the species recombined in *Porphyrellus* (Singer 1945) and then in *Austroboletus* (Wolfe 1979), the status of *Ionosporus* as a distinct genus was finally recognized thanks to the morphological and molecular study (*rpb2*) of newly collected specimens. The phylogenetic analysis showed that *Ionosporus* is related to *Borofutus* and *Spongiforma*, within the subfamily *Leccinoideae*. A number of collections from sclerophyll forest in Queensland and New South Wales, Australia, led to the description of a new species besides *I. longipes*, named *I. australis* (Khmelnitsky et al. 2018).

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Note 1547 *Perenniporia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Perenniporia Murrill.

Perenniporia Murrill (*Polyporales*, *Basidiomycetes*) is typified by *Perenniporia medulla-panis* (Jacq.) Donk and it is one of the species-rich genera of *Polyporales*. Traditionally, it is characterized by annual to perennial, resupinate, effused-reflexed to pileate basidiomata with a varied coloured pore surface when fresh, a dimitic to trimitic hyphal system with generative hyphae bearing clamp connections, variably dextrinoid and cyanophilous skeletal hyphae, ellipsoid, broadly ellipsoid to subglobose, mostly thick-walled and truncate variably dextrinoid, cyanophilous basidiospores and causing a white rot in dead angiosperm and gymnosperm woods (Ryvarden & Gilbertson 1994, Decock & Ryvarden 1999, Zhao et al. 2013a, Cui et al. 2019, Ji et al. 2023, Wang et al. 2024).

Perenniporia was established by Murrill in 1942 just with two species, *Perenniporia unita* (Pers.) Murrill (Basionym: *Polyporus unitus* Pers.) and *Perenniporia nigrescens* (Bres.) Murrill (Basionym: *Poria nigrescens* Bres.), none of which was regarded as the type species (Murrill 1942). Then *P. unita* was combined into different genera by other mycologists, viz. *Fibuloporia* *unita* (Pers.) Bondartsev, *Fomes unitus* (Pers.) J. Lowe and *Fomitopsis unita* (Pers.) Bondartsev (Bondartsev 1953, Lowe 1955), as well as being designated the lectotype of *Perenniporia* by Cooke (1953). Decock & Stalpers (2006) re-discussed the relationship and status of *Polyporus unitus* and *Boletus medulla-panis* Jacq., though they are synonymous and the latter has been normally regarded as the type species of *Perenniporia* in previous studies (Donk 1960, Ryvarden 1972, Gilbertson & Ryvarden 1987, Ryvarden & Gilbertson 1994). In addition, they demonstrated *Pol*. *unitus* is not a synonym of *B*. *medulla-panis*, the latter of which was selected as the type of *Perenniporia* (Decock & Stalpers 2006). For now, *Poria nigrescens* as a synonym of *Physisporinus crocatus* (Pat.) F. Wu, Jia J. Chen & Y.C. Dai was described from Hungary and it has a perennial basidiomata, erubescent pores (white when fresh, then "carneo-violaceis", finally black), but no basidiospores data (Bresadola 1897, Wang et al. 2024).

Previous studies have shown that *Perenniporia* is a polyphyletic genus (Zhao et al. 2013a, Cui et al. 2019, Ji et al. 2023). Species in *Perenniporia sensu lato* form seven independent clades, based on phylogenetic analysis with typical characteristics (Zhao et al. 2013a). *Hornodermoporus* Teixeira, *Perenniporiella* Decock & Ryvarden, *Truncospora* Pilát, *Vanderbylia* D.A. Reid etc. were derived from *Perenniporia sensu lato*. Specially, Ji et al. (2023) proposed 15 new genera previously addressed in *Perenniporia sensu lato* based on phylogenetic and morphological analyses. *Perenniporia* s.s. contains three species, viz. *P*. *hainaniana* B.K. Cui & C.L. Zhao, *P*. *medulla-panis* and *P*. *substraminea* B.K. Cui & C.L. Zhao (Ji et al. 2023). Up to now, more than 120 taxa were found in *Perenniporia sensu lato* (Ji et al. 2017, Liu et al. 2017b, Shen et al. 2018b, Cui et al. 2019, Zhao & Ma 2019, Ji et al. 2023, Wang et al. 2024). In addition, some species in *Perenniporia sensu lato* could produce laccase (such as *P*. *tephropora* (Mont.) Ryvarden and *Poriella subacida* (Peck) C.L. Zhao) and carotenoid (such as *Vanderbylia fraxinea* (Bull.) D.A. Reid) applied in both biomedical engineering and biodegradation (Si et al. 2011, Churapa & Lerluck 2016, Kim & Lee 2020, Wang et al. 2024).

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Note 1548 *Ceriporiopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Ceriporiopsis Domański

The genus *Ceriporiopsis* Domański (*Meruliaceae*, *Polyporales*) was erected based on the morphological analyses to accommodate *C. gilvescens* (Bres.) Domański (type species), *C. incarnata* Domański, *C. resinascens* (Romell) Domański, *C. aneirina* (Sommerf.) Domański and *C. placenta* (Fr.) Domański (Xu et al. 2023). Currently, there are 42 species accepted in *Ceriporiopsis*, and eight species recorded in China: *C. albonigrescens* Núñez, Parmasto & Ryvarden, *C. aurantitingens* (Corner) T. Hatt., *C. egula* C.J. Yu & Y.C. Dai, *C. lavendula* B.K. Cui, *C. micropora* T.T. Chang & W.N. Chou, *C. mucida* (Pers.) Gilb. & Ryvarden, *C. subrufa* (Ellis & Dearn.) Ginns and *C. subsphaerospora* (A. David) M. Pieri & B. Rivoire (Zhao & Cui 2014, Zhao et al. 2015, 2023a). The genus causes a white rot on angiosperms and gymnosperms (Niemelä 1985, Zhao & Cui 2014, Zhao et al. 2015, Spirin & Ryvarden 2016). It is characterized by annual, resupinate to effused-reflexed basidiocarps, a monomitic hyphal system with no action in Melzer's reagent or cotton Blue, generative hyphae with clamp connections, and subcylindrical to ellipsoid basidiospores with hyaline, thin walls (Gilbertson & Ryvarden 1987, Núñez & Ryvarden 2001, Ryvarden & Melo 2014, Zhao & Wu 2017). Zmitrovich (2018) transferred *C. gilvescens* and *C. kunmingensis* to *Mycoacia* Donk. Phylogenetic study of European *Ceriporiopsis* taxa suggested that the genus is polyphyletic, and the type *C. gilvescens* was grouped with *Phlebia* spp. on the base of the combined data of nLSU and mtSSU (Tomšovský et al. 2010, Zhao & Wu 2017). Vlasák et al. (2012) described a new species, *Ceriporiopsis pseudoplacenta* Vlasák & Ryvarden, based on ITS and nLSU sequences, which was clustered into the phlebioid clade. Binder et al. (2013) employed molecular study based on multigene datasets and demonstrated that the type species of *Ceriporiopsis* (*C. gilvescens*) belongs to the phlebioid clade and appeared to be grouped with *Ceraceomyces* Jülich, *Ceriporia* Donk, and *Phlebia* Fr. by using ribosomal DNA sequences. Zhao & Cui (2014) resolved four major clades for *Ceriporiopsis sensu lato*, including *Phlebia*, residual polyporoid, *Tyromyces*, and *Gelatoporia* clades. Zhao et al. (2015) described two new poroid species in *Ceriporiopsis* based on their morphological characters and rDNA sequences, and these two species belonged to the phlebioid clade, and were related to the type species of *Ceriporiopsis* (*C. gilvescens*) (Zhao & Wu 2017).

Recently, Zhao et al. (2023a) conducted a detailed phylogenetic analysis, and many species within *Ceriporiopsis* were placed in the genera *Ceriporiopsoides* C.L. Zhao, *Hydnophlebia* Parmasto, and *Phlebicolorata* C.L. Zhao. The remaining *Ceriporiopsis* species did not belong to the phlebioid clade but were grouped in the residual polyporoid clade and formed a relatively stable branch cluster (Xu et al. 2023).

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Note 1549 *Cyathus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cyathus Haller

The genus *Cyathus* was introduced by Haller (Haller 1768) and later was adopted by Persoon and was typified by *C. striatus* (Huds.) Willd (Duan et al. 2023). Due to their cup-like basidiomata resembling bird nests and lenticular periodioles resembling eggs, five genera viz. *Cyathus*, *Crucibulum* Tul. & C. Tul., *Mycocalia* J.T. Palmer, *Nidula* V.S. White, and *Nidularia* Fr., are commonly known as bird's nest fungi (Brodie 1975, Gómez and Pérez-Silva 1988, Zhao et al. 2008). This genus is characterized by having the deeper or cupped, inverted bell-shaped basidiomata covered with shaggy or tomentose hairs on the outside; peridium composed of three layers of tissues, filled with a number of dark-colored, small, hard lentil-shaped peridioles attached with funicular cords; and colorless, thin- or thick-walled, smooth basidiospores (Lloyd 1906, Brodie 1974, Brodie 1975, Brodie & Sharma 1980, Miller & Miller 1988, Das & Zhao 2012, 2013). The genus *Cyathus* is commonly found in temperate and tropical countries and that has an important role in nutrient cycling (Brodie 1975). The genus is characterized by having small-sized basidiomata with lenticular structures inside, named peridioles. Due to the arrangement of these structures, resembling small eggs inside a bird's nest, these organisms are known as 'bird's nest fungi'. The species of *Cyathus* are saprobic, usually growing on decaying wood, but it can also grow in manure, soil, leaves or seeds (Lloyd 1906, Brodie 1975, 1984). *Cyathus* is the most diverse genus of *Nidulariaceae*, with at least 60 described species until now (He et al. 2019, Boonmee et al. 2021, Duan et al. 2022), although this number may can reach more than 80 species (Cruz 2017).

The comprehensive molecular systematic studies on *Cyathus* were started in the last two decades (Matheny et al. 2006, Zhao et al. 2007, Kraisitudomsook et al. 2022). An overview of the phylogeny of *Agaricales* based on a multilocus analysis of a six-gene region supermatrix revealed that the family *Nidulariaceae* was close to *Cystodermateae*, in which *Cyathus striatus* and *Crucibulum laeve* (Huds.) Kambly grouped together within the family *Nidulariaceae* (Matheny et al. 2006). Phylogenetic relationships among *Cyathus* were investigated with ITS and nLSU ribosomal DNA sequences datasets inferred from the neighbor-joining, maximum likelihood, maximum parsimony, and MrBayes analyses, showing that morphological characteristics and molecular data were incompatible. These include, for example, the peridium plications, variations in peridium hair anatomy, peridiole structure, and fruit-body color. However, the ITS and nLSU datasets supported the recognition of three infrageneric groups, herein named the ollum, pallidum, and striatum groups (Zhao et al. 2007, Duan et al. 2023b).

Recent phylogenetic studies with all generathe entire genus that composes *Nidulariaceae* (*Cyathus*, *Crucibulum*, *Nidula*, *Nidularia*, *Mycocalia* and the newly described *Retiperidiolia* Kraisit., Cheoyklin, Boonprat & M.E.Sm.) shows that the family is a monophyletic group, forming a clade with *Squamanitaceae* Jülich (Kraisitudomsook et al. 2021, 2022). Zhao et al. (2008) had already shown that there are inconsistencies within the internal clades of *Cyathus*, requiring molecular data from type materials, as suggested by Kraisitudomsook et al. (2021). To solve this problem, Cruz et al. (2023) performed phylogenetic analyses with sequences from type materials and confirmed the existence of the group's pallidum and ollum, proposed by Zhao et al. (2008). The striatum clade was re-nominated to striatum supergroup and was divided into four new groups: aureum, badium, gigasporum and minimum; and three subgroups: discoideus, stercoreus and subglobisporus (Cruz et al. 2023, Góis et al. 2024).

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Note 1550 *Heterobasidion*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Heterobasidion Bref.

Heterobasidion annosum (Fries) Brefeld is the type species of *Heterobasidion* Brefeld (1888). It is characterized by annual to perennial, resupinate to pileate basidiomata that are usually imbricate, leathery when young and fresh, and woody and hard when dry. The pileus is semicircular to fan-shaped. Pore surfaces are white to light cream and the pores are round to angular. The context is white to cream. The hyphal system is dimitic with mostly simple septa on generative hyphae with clamp connections in the context. The dextrinoid or amyloid skeletal hyphae predominate in the basidiomata. Basidiospores are broadly ellipsoid to globose, hyaline, thin to slightly thick walled, asperulate and show no reaction in Melzer's reagent. Members of this genus cause a white rot (Gilbertson & Ryvarden 1986, Dai et al. 2007, Dai & Korhonen 2009b, Tokuda et al. 2009, Otrosina & Garbelotto 2010, Chen et al. 2014, Ryvarden & Melo 2014).

Heterobasidion species are amongst the most intensively studied polypores because several species are aggressive white rot pathogens of managed coniferous forests mainly in Europe and North America (Yuan et al. 2021). The polypore genus *Heterobasidion*, which belongs to the family *Bondarzewiaceae*, is one of the most intensively studied basidiomycetous genera because some species of *Heterobasidion* are aggressive pathogens of managed coniferous forests in Europe and North America (Woodward et al. 1998, Yuan et al. 2021). Two morphological taxa, *H. annosum* (Fr.) Bref. and *H. insulare* (Murrill) Ryvarden, had generally been accepted in *Heterobasidion* (Murrill 1908, Gilbertson & Ryvarden 1986, Ryvarden & Gilbertson 1993, Núñez & Ryvarden 2001). However, mating studies have revealed that both *H. annosum* and *H. insulare* are in fact species complexes (Dai & Korhonen 1999, Dai et al. 2002, 2003).

Three species, *Heterobasidion abietinum* Niemelä & Korhonen (Eur F-group), *H. annosum sensu stricto* (Eur P-group) and *H. parviporum* Niemelä & Korhonen (Eur S-group), have been recognized in Europe (Niemelä & Korhonen 1998), and two species, *H. irregulare* Garbel. and Otrosina (NAm P-group) and *H. occidentale* Otrosina & Garbel. (NAm S-group), were described from North America (Otrosina & Garbelotto 2010). Based on mating studies, the East Asian taxon in the *H. annosum* species complex was considered as *H. parviporum* (Dai & Korhonen 1999, 2003a, Dai et al. 2006, Dai 2012, Chen et al. 2015a). Similarly, investigations based on mating tests, morphological characteristics and molecular analyses revealed several species also within the Asian *H. insulare* complex: *H. linzhiense* Y. C. Dai & Korhonen (Dai et al. 2007), *H. australe* Y. C. Dai & Korhonen (2009), *H. ecrustosum* Tokuda, T. Hatt. & Y. C. Dai, *H. orientale* Tokuda, T. Hatt. & Y. C. Dai (Tokuda et al. 2009), *H. amyloideum* Y. C. Dai, Jia J. Chen & Korhonen, *H. tibeticum* Y. C. Dai, Jia J. Chen & Korhonen (Chen et al. 2014) and *H. amyloideopsis* Saba, C. L. Zhao, Khalid & Pfister (Zhao et al. 2017a). In addition, *H. araucariae* P. K. Buchanan from Australia and adjacent regions was confirmed to be a member of the *H. insulare* species complex (Chen et al. 2015a). Recently, based on more species and samples of *Heterobasidion* and the fossil record, molecular dating suggested that ancestral *Heterobasidion* species originated in Eurasia occurred mainly during the Early Miocene (Chen et al. 2015a, Zhao et al. 2017a).

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Note 1551 *Lyomyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lyomyces P. Karst.

The genus *Lyomyces* P. Karst. is typified by *Lyomyces sambuci* (Pers.) P. Karst. It is characterized by the resupinate-to-effused basidiomata with a smooth-to-odontioid hymenophore, a monomitic hyphal system with generative hyphae bearing clamp connections, the presence of several types of cystidia, and with smooth, thin- to slightly thick-walled basidiospores (Karsten 1881, Bernicchia & Gorjón 2010). Based on MycoBank (http://www.mycobank.org) and Index Fungorum (http://www.indexfungorum.org), *Lyomyces* has registered 55 specific and infraspecific names, and approximately 41 species of *Lyomyces* are currently known (Rabenhorst 1851, Karsten 1881, Karsten 1882, Cunningham 1959, Cunningham 1963, Wu 1990, Hjortstam & Ryvarden 2009, Xiong et al. 2009, Dai 2010, 2011a, Yurchenko & Wu 2013, Gafforov et al. 2017, Riebesehl & Langer 2017, Yurchenko et al. 2017, Chen & Zhao 2020, Yurchenko et al. 2020, Luo et al. 2021b, 2021c, Viner et al. 2022, Guan et al. 2023).

On the basis of the frequent inclusion of data from DNA sequences in many phylogenetic studies, the classification of the wood-inhabiting fungi has been updated continuously (Yurchenko et al. 2020). These pioneering research studies into the family *Schizoporaceae* were just the prelude to the molecular systematics period (Guan et al. 2023, Zhang et al. 2024e). The genus *Hyphodontia sensu lato* was indicated to be a polyphyletic group, in which the genera *Xylodon* (Pers.) Gray, and *Kneiffiella* P. Karst. included the largest number of species (Yurchenko & Wu 2016, Riebesehl & Langer 2017, Riebesehl et al. 2019). Due to the lack of sequences of some wood-inhabiting fungal taxa, it is difficult to clearly distinguish many genera in this family *Schizoporaceae* using molecular data, therefore, a broad concept of *Hyphodontia sensu lato* was accepted (Yurchenko & Wu 2016, Riebesehl & Langer 2017, Wang & Chen 2017, Riebesehl et al. 2019). On the basis of the nuclear DNA sequence data, six well-distinguished clades as *Hastodontia* clade, *Hyphodontia* clade, *Lagarobasidium* clade, *Kneiffiella-Alutaceodontia* clade, *Xylodon-Lyomyces-Rogersella* clade, and *Xylodon-Schizopora-Palifer* clade, were included based on the phylogenetical studies for *Hyphodontia sensu lato*, in which the genus *Lyomyces* nested within the X*ylodon-Lyomyces-Rogersella* clade (Yurchenko & Wu 2013). The research revealed that *Hyphodontia sensu lato* was divided into six genera, viz., *Hastodontia* (Parmasto) Hjortstam & Ryvarden, *Hyphodontia* J. Erikss., *Kneiffiella*, *Lagarobasidium* Jülich, *Lyomyces*, and *Xylodon*, in which 35 new combinations were proposed, including fourteen *Lyomyces* species (Riebesehl & Langer 2017). On the basis of the sequences of the ITS and nLSU, the phylogenetic analysis clarified that the *L. sambuci* complex divided into four new species (Yurchenko et al. 2017). Riebesehl et al. (2019) clarified the generic concept and their phylogenetic reconstruction of *Lyomyces*, and the species *L. sambuci* was sister to *L. crustosus* (Pers.) P. Karst (Riebesehl et al. 2019). Based on a combination of the morphological and molecular evidence, the fungal diversity of the family *Schizoporaceae* were analyzed, in which six new species were described *L. fissuratus* C.L. Zhao, *L. fumosus* C.L. Zhao, *L. niveus* C.L. Zhao, *L. ochraceoalbus* C.L. Zhao, *L. albopulverulentus* C.L. Zhao and *L. yunnanensis* (Luo et al. 2021b, 2021c, Guan et al. 2023).

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Note 1552 *Phlebia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Phlebia Fr.

The genus *Phlebia* was established by Fries in 1821 with *Phlebia radiata* Fr. as the type species, is a large, cosmopolitan genus characterized by the effused or partly pileate basidiomata with a subceraceous to subgelatinous texture when fresh, membranaceous to coriaceous when dry, hymenophore smooth, tuberculate, phlebioid, odontioid, merulioid or poroid, a monomitic (rarely dimitic) hyphal structure generally with clamped hyphae, the embedded generative hyphae very difficult to observe, narrowly clavate basidia, and colorless, thin-walled, smooth, allantoid to ellipsoid basidiospores, which are acyanophilous, inamyloid and non-dextrinoid (Duhem 2009, Bernicchia & Gorjón 2010, Singh et al. 2010, Westphalen et al. 2010, Binder et al. 2013, Duhem 2013, Kaur et al. 2017, Shen et al. 2018a, Huang & Zhao 2020, Huang et al. 2020a, b, Zong & Zhao 2021). Currently, about 100 species have been accepted in the genus worldwide (Chen et al. 2021a, Zhao et al. 2023a).

Recently, mycologists employed molecular data on the genus *Phlebia sensu lato* to establish a phylogenetic frame for the classification of this genus, which indicates that *Phlebia sensu lato* is polyphyletic (Larsson 2007, Justo et al. 2017). Earlier, molecular systematics placed *Phlebia* in the polyporoid clade, and later the phylogenetic research among corticioid homobasidiomycetes suggested that the genus *Phlebia* should be located in the phlebioid clade with related genera *Ceriporia* Donk and *Gloeoporus* Mont (Hibbett & Thorn 2001). Additionally, the phlebioid clade was divided into three subclades that were interpretable also in terms of morphology, which indicated that *Phlebia sensu stricto*, *Mycoacia* Donk, and *Mycoaciella* J. Erikss. & Ryvarden were mainly referred to *Phlebia sensu lato* (Larsson et al. 2004).

Larsson (2007) studied the classification of corticioid fungi, which revealed that *Phlebia* clusters into the family *Meruliaceae* within the order *Polyporales*. Mycologists focused on the phylogenetic study of European *Ceriporiopsis* Domański taxa, which revealed that *P. radiata* and *C. gilvescens* (Bres.) Domański grouped together at the base of the combined data of the LSU, and mtSSU, but the taxa between *Phlebia* and *Ceriporiopsis* were left to be resolved in the future (Tomšovský et al. 2010). Justo et al. (2017) revised the family level classification of the order *Polyporales* by using a multigene dataset, which showed that *P. radiata* belonged to the family *Meruliaceae* and grouped with related genera *Aurantiporus* Murrill and *C. gilvescens*, in which the species of *Phlebia sensu lato* were found in three different families: *Phanerochaetaceae*, *Irpicaceae*, and *Meruliaceae*. Therefore, it was suggested that extensive molecular sampling was essential to establish sound generic concepts in *Phlebia sensu lato*, based on a combination of morphological features and molecular evidence (Zhao et al. 2023a). Huang & Zhao (2020) ran a phylogenetic analysis, which showed that *Phlebia* species clustered into phlebioid clade with three new *Phlebia* species viz. *P. fuscotuberculata* C.L. Zhao, *P. tomentopileata* C.L. Zhao, and *P. tongxiniana* C.L. Zhao from southern China.

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Note 1553 *Vararia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Vararia P. Karst.

The genus *Vararia* is a corticioid wood-inhabiting fungal genus with a wide distribution, typified by *V. investiens* (Schwein.) P. Karst. It was first described by Karsten as a subgenus of *Xerocarpus* P. Karst. for *Xerocarpus alutarius* (Berk. & M. A. Curtis) P. Karst., which was later found to be a synonym of *Radulum investiens* Schwein. Karsten raised *Xerocarpus* subgen. *Vararia* to the generic rank (Karasinski 2010). The genus is characterized by the resupinate basidiomata, a dimitic hyphal structure with simple-septate or clamped generative hyphae and often dextrinoid dichohyphae in Melzer's reagent, the presence of gloeocystidia, and variously-shaped smooth basidiospores with or without an amyloid reaction (Karnste 1898, Boidin & Lanquetin 1975, Boidin 1980, Bernicchia & Gorjón 2010, Deng et al. 2024). The species of *Vararia* are found on fallen angiosperm branches, dead woody or herbaceous stems or occasionally on gymnosperm wood (Yurchenko et al. 2017). Based on MycoBank and Index Fungorum, *Vararia* has registered 106 specific and infraspecific names, and the actual number of the species has reached up to 84, currently known, and they occur mainly in the tropical and subtropical areas of the world (Cunningham 1955, Gilbertson 1965, Boidin 1967, Pouzar 1982, Boidin & Lanquetin 1987, Stalpers 1996, Boidin & Gilles 1999, Larsson & Larsson 2003, Bernicchia & Gorjón 2010, Duhem & Buyck 2012, Sanyal et al. 2012, Nakasone 2015, Liu & He 2016, Dai et al. 2021, Zou et al. 2022, Deng & Zhao 2023, Deng et al. 2024).

Classification of the kingdom of fungi has been updated continuously, based on the frequent inclusion of data from DNA sequences in many phylogenetic studies (Yurchenko et al. 2020). These pioneering research studies into the family *Peniophoraceae* were just the prelude to the molecular systematics period (Zou et al. 2022). The phylogenetic diversity displayed by corticioid fungal species, based on ITS, and nrLSU, revealed that the taxa of *Peniophoraceae* were nested in the russuloid clade, which holds a considerable share of the phylogenetic framework, and included the genera of *Asterostroma* Massee, *Baltazaria* Leal-Dutra, Dentinger & G.W. Griff., *Dichostereum* Pilát, *Gloiothele* Bres., *Lachnocladium* Lév., *Michenera* Berk. & M.A. Curtis, *Peniophora* Cooke, *Scytinostroma* Donk, *Vesiculomyces* E. Hagstr. and *Vararia* (Larsson & Larsson 2003, Larsson et al. 2004, Larsson 2007, Leal-Dutra et al. 2018, Zou et al. 2022, Li et al. 2023f). *Scytinostroma* is similar to *Vararia*, which usually differed in having the typical dichohyphae (Bernicchia & Gorjón 2010). The taxonomic distinction between *Scytinostroma* and *Vararia* has been questioned (Hallenberg 1985, Boidin & Lanquetin 1987, Stalpers 1996, Boidin et al. 1998). However, there has been general agreement that the two genera were closely related and that they together made up a natural group. Larsson & Larsson (2003) strongly suggested that neither skeletal hyphae nor their branching patterns have any predictive power in a phylogenetic context.

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Note 1554 ***Xylodon*** **(Pers.) Gray**

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Xylodon (Pers.) Gray

Xylodon (Pers.) Gray is a large genus of corticioid fungi, having a cosmopolitan distribution (Bernicchia & Gorjón 2010, Guan et al. 2023, Yurchenko et al. 2024, Zhang et al. 2024d). Species of *Xylodon* inhabit dead wood of various sizes, from twigs several millimeters in diameter to large fallen trunks and cause white rot (Greslebin & Rajchenberg 2000, Kotiranta & Saarenoksa 2000, Girometta et al. 2020, Guan et al. 2023). Sometimes basidiomata of *Xylodon* species appear on living parts of trees (Yurchenko 2008), and non-woody plant remains, for example, fern rachises (Kotiranta & Saarenoksa 2000), herb stems and fallen leaves (Viner et al. 2018), and dead polypore basidiomata (Viner et al. 2023). The genus is known from almost all types of world biomes where wooden plant debris occurs, from humid to semi-arid and from seashore to the upper limit of wooden vegetation in altitudinal gradients (Yurchenko et al. 2024). This genus is typified by *X. quercinus* (Pers.) Gray (Bernicchia & Gorjón 2010) and characterized by the resupinate or effuse basidiomata with a smooth, tuberculate, grandinioid, odontioid, coralloid, irpicoid or poroid hymenophore; a monomitic or dimitic hyphal system with clamped generative hyphae; the presence of different types of cystidia; utriform or suburniform basidia; and cylindrical to ellipsoid to globose basidiospores (Gray 1821, Bernicchia & Gorjón 2010, Zhang et al. 2024d). Based on MycoBank (http://www.mycobank.org) and Index Fungorum (http://www.indexfungorum.org), *Xylodon* has been registered with 234 specific and infraspecific names and the actual number of the species has reached 109 species (Chevallier 1826, Kuntze 1898, Wu 1990, 2000, 2001, 2006, Hjortstam & Ryvarden 2007, 2009, Xiong et al. 2009, 2010, Bernicchia & Gorjón 2010, Tura et al. 2011, Dai 2012, Lee & Langer 2012, Yurchenko et al. 2013, Yurchenko & Wu 2014a, b, Zhao et al. 2014a, Chen et al. 2016, Kan et al. 2017a, b, Riehl & Langer 2017, Wang & Chen 2017, Viner et al. 2018, Viner & Miettinen 2022, Riebesehl et al. 2019, Shi et al. 2019, Dai et al. 2021, Luo et al. 2021a, 2022, Qu & Zhao 2022, Qu et al. 2022, Guan et al. 2023, Wang & Zhou 2024, Yurchenko et al. 2024, Zhang et al. 2024d).

Classification of taxa in the kingdom *Fungi* has been updated continuously, based on the frequent inclusion of data from DNA sequences in many phylogenetic studies (Yurchenko et al. 2020). For the past few years, the genus *Xylodon* was generally studied by molecular systematics and it was included in the *Hyphodontia sensu lato* (Hjortstam & Ryvarden 2009, Yurchenko & Wu 2016, Riebesehl & Langer 2017, Wang & Chen 2017, Riebesehl et al. 2019, Qu et al. 2022, Guan et al. 2023). *Hyphodontia sensu lato* was shown to be a polyphyletic genus and a broad concept employed by some mycologists due to a lack of rDNA sequences for many taxa, in which *Xylodon* and *Kneiffiella* P. Karst included rich species (Hjortstam & Ryvarden 2009, Riebesehl & Langer 2017, Riebesehl et al. 2019, Luo et al. 2022, Zhang et al. 2024d). Based on the molecular systematics research, two clades, the *Xylodon-Lyomyces-Rogersella* and the *Xylodon-Schizopora-Palifer* clades were described and the related species of *Lyomyces* P. Karst., *Palifer* Stalpers & P.K. Buchanan, *Rogersella* Liberta & A.J. Navas *Schizopora* Velen. and *Xylodon*, within both clades, were suggested to be mixed (Yurchenko et al. 2013). The research comprised the representative sequences and taxa of *Hyphodontia sensu lato* such as *Lyomyces*, *Palifer*, *Rogersella*, *Schizopora* and *Xylodon*, in which the result demonstrated that it was hard to distinguish the two genera *Xylodon* and *Schizopora* on the basis of the morphological and phylogenetic information; therefore, the authors proposed that the related species of *Schizopora* should be united into the genus *Xylodon* (Riebesehl & Langer 2017). For the phylogenetic relationship of *Xylodon* species, it was confirmed that the two genera *Lagarobasidium* Jülich and *Xylodon* should be synonymous, based on the molecular data from the ITS and nLSU regions, in which the three species *X. pumilius* (Gresl. & Rajchenb.) K.H. Larss., *X. magnificus* (Gresl. & Rajchenb.) K.H. Larss. and *X. rickii* (Gresl. & Rajchenb.) K.H. Larss. were combined into *Xylodon* (Viner et al. 2018). All the taxa of the genera *Odontipsis* Hjortstam & Ryvarden and *Palifer* were placed in the genus *Xylodon*, based on the molecular analyses of 28S and ITS data, in which they proposed four new species of *Xylodon* as *X. exilis* Yurchenko, Riebesehl & Langer, *X. filicinus* Yurchenko & Riebesehl, *X. follis* Riebesehl, Yurchenko & Langer and *X. pseudolanatus* Nakasone, Yurchenko & Riebesehl (Riebesehl et al. 2019). Based on the multiple loci in *Hyphodontia sensu lato*, *Fasciodontia* Yurchenko& Riebesehl, *Hastodontia* (Parmasto) Hjortstam & Ryvarden, *Hyphodontia* J. Erikss., *Lyomyces*, *Kneiffiella* and *Xylodon* in *Hymenochaetales*, they were divided into four clades and three new taxa were found from China, in which *X. gossypinus* C.L. Zhao & K.Y. Luo and *X. brevisetus* (P. Karst.) Hjortstam & Ryvarden grouped together (Luo et al. 2021). Based on the morphological descriptions and molecular analyses, three new species, namely *X. angustisporus* Viner & Ryvarden, *X. dissiliens* Viner & Ryvarden and *X. laxiusculus* Viner & Ryvarden, were described in Africa and placed in the genus *Xylodon* (Viner et al. 2021). A phylogenetic and taxonomic study focusing on the genus *Xylodon* (*Hymenochaetales*) newly described one species of this genus from southern China and this research enriched the fungal diversity worldwide (Zhang et al. 2024d). Since the 1810s, a total of 234 species have been proposed for the genus *Xylodon* (http://www.indexfungorum.org/Names/Names.asp?pg=1). (Luo et al. 2022, Qu et al. 2022, Guan et al. 2023, Zhao et al. 2014a, Yurchenko et al. 2024, Zhang et al. 2024d).

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Note 1555 ***Eriosporella***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Eriosporella Höhn.

Based on the notes of the Outline paper (Wijayawardene et al. 2022), this genus should be placed in *Extremaceae*. Pem et al. (2024) followed Dai et al. (2014) and Hongsanan et al. (2020b), and placed *Eriosporella* in *Capnodiales incertae sedis*. Since the authors in outline of fungi made a tree with both *Eriosporella* and *Pseudoramichloridium*, they confirmed the placement of *Eriosporella*. No author previously included *Eriosporella* and *Pseudoramichloridium* in their tree. So according to the phylogeny of the authors of the outline of fungi, *Eriosporella* belongs to *Extremaceae*.

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Note 1556 *Clavatospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Clavatospora Sv. Nilsson ex Marvanová & Sv. Nilsson

Clavatospora was established to accommodate two species: *Heliscus longibrachiatus* and *Heliscus stellatus* (Nilsson 1964). This segregation was previously proposed by Ingold & Cox (1957) due to the distinct characteristics of the culture of the two *Heliscus* species compared to others in this genus. *Clavatospora* was delineated from other *Heliscus* species based on: 1) appendage:axis length ratio which is nearly one in *Clavatospora* and significantly different from 1 in *Heliscus*; and 2) the aseptate axis of *Clavatospora* (Nilsson 1964). Upon its introduction, no type species was designated, so this was later validated with *Clavatospora longibrachiata* being designated as the type species (Marvanová & Nilsson 1971). The genus was redescribed to further distinguish it from other genera, leading to the reclassification of some species into other genera such as *Alatospora*, *Heliscella*, and *Nawawia* (Marvanova 1980). According to the redescription of Marvanova (1980), *Clavatospora* species form black colonies in culture with grey aerial mycelium. The morphology of the conidiophores, conidiogenous cells and conidia differs depending on whether they are submerged or aerial. Submerged conidiophores are hyaline, simple or poorly branched at the apex while aerial conidiophores are short, simple or branched. In submerged conditions, conidiogenous cells are discrete, fusiform, proliferating sympodially or rarely percurrently whereas aerial conidiogenous cells are integrated, definite and holoblastic. Submerged conidia are tetraradiate with clavate axis and three, thin, divergent apical appendages while the aerial conidia are cylindrical to fusiform, one to two-celled, occasionally produced in branched chains. For nearly 20 years now, no new species has been added to this genus. Although there are seven species with the genus name *Clavatospora* on record, four of these have been reclassified to other genera and two have been synonymized with species in *Clavariopsis* and *Heliscus*, thus only *C. longibrachiata* remains in this genus (Index Fungorum 2024, MycoBank 2024). With only ITS sequences available, phylogenetic analysis showed that *C. longibrachiata* formed a distinct, well-supported clade separate from other genera, supporting the classification of this genus previously based solely on morphological characteristics (Franco-Duarte et al. 2022). The same analysis also included the ITS sequences of *Heliscella stellata* (≡ *Clavatospora stellata*), which formed a clade distinct from *Clavatospora*, thereby validating the reclassification of this species into a different genus (Marvanova 1980, Franco-Duarte et al. 2022). Additional sequences of other loci may further confirm the phylogenetic positions, however, these are not currently available. *Clavatospora longibrachiata* (≡ *Heliscus longibrachiatus*) was first isolated as a saprobe in decaying *Alnus* leaves submerged in freshwater and is commonly reported as a freshwater hyphomycete (Ingold 1942, Marvanova 1980, Franco-Duarte et al. 2022). *Clavatospora* is classified in *Halosphaeriaceae* (*Microascales*, *Sordariomycetes*) based on Index Fungorum (2024) and MycoBank (2024) records.

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Note 1557 *Knudsenia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Knudsenia Y. Joshi

Joshi & Bansal (2023) proposed the monotypic genus *Knudsenia* provisionally within *Planistromellaceae* (*Botryosphaeriales*, *Dothideomycetes*, *Ascomycota*) to accommodate *Knudsenia flavoparmeliarum* Y. Joshi as the type species. This taxonomic decision was based on morphological characters. *Knudsenia flavoparmeliarum* was reported colonizing the thallus of *Flavoparmelia* Hale and *Flavopunctelia* (Krog) Hale in India, displaying some signs of discoloration and necrosis to the host thallus (Joshi & Bansal 2023). The genus name was chosen in order to honor Dr. Kerry Knudsen who unknowingly turned one of the authors' (YJ) interest towards lichenicolous fungi, during his stay in South Korea. The genus is characterized by its lichenicolous lifestyle; inconspicuous galls; stromatic ascomata with sterile brownish black to black tissue, which is K+ majenta, N–, I–. The exciple is evident and hymenial gel is K/I–. Paraphyses are simple to sparsely branched and apically not pigmented. Asci are bitunicate, elongate, clavate to subcylindrical with an indistinct ocular chamber and with a very short stalk, 8-spored, K/I+ reddish brown. Ascospores are hyaline, spherical to ellipsoid at maturity, simple to rarely 1-pseudoseptate, I–, lacking perispore.

Reference

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(Edited by **Maryam T. Noorabdi**)

Note 1558 *Ajaysinghia*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Ajaysinghia Y. Joshi

The monotypic genus *Ajaysinghia* was established within the *Ascomycota* families *incertae sedis* to accommodate *Ajaysinghia dendriscostictae* Y. Joshi, as the type species based on morphological characters (Joshi 2022). The nomenclature of the genus reflects an eminent lichenologist of India (Dr. Ajay Singh) who first collected this specimen from India. This commensalistic lichenicolous genus is characterized by pseudoperithecia growing in clumps making it appear like galls, (0-)1-septate, brown ascospores, with rounded to pointed ends which are slightly constricted at the septum and a cyanobacterial host (*Dendriscosticta praetextata*).

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Note 1559 *Marasmiellomycena*

Web-links: Index fungorum, Facesoffungi, Mycobank, GenBank

Marasmiellomycena De la Peña-Lastra, Mateos, Kolařík, Ševčíková & Antonín

Marasmiellomycena was introduced by Senanayake et al. (2023) to accommodate *M. pseudoomphaliiformis* as the type. This genus contains agaricoid, saprotrophic species with omphaloid or marasmioid basidiomata, well-developed lamellae, thin stipe, smooth spores, indistinct or absent cheilocystidia, absent pleurocystidia and present clamp connections. *Marasmiellomycena omphaliiformis* is the other accepted species of the genus. This species was originally described as *Marasmius omphaliiformis* (Kühner & Romagnesi 1954), but phylogenetic analyses placed it in the *Porotheleaceae*. Consiglio et al. (2022) combined this species to *Porotheleum* despite its different morphology with the cypheloid genus *Porotheleum sensu stricto* by sharing its lignicolous habitat, the presence of clamp connections, sarcodimitic structure *sensu* Redhead (1987) and some metachromatic elements. Phylogenetic analyses of *Porotheleaceae* based on ITS and LSU sequences showed *Marasmiellomycena* formed a distinct clade in the family. Na et al. (2024) confirmed the *Marasmiellomycena* as a separate genus by ITS, nrLSU and *rpb2* analyses, described one new species *M. tomentosa* and combined *Porotheleum albodescendens* into *Marasmiellomycena*. Thus, this genus is known from Asia (China), Europe and North America, growing on dead wood and decaying leaves. *Marasmiellomycena* has morphological affinities with *Vizzinia*, *Pulverulina*, *Marasmiellus*, *Hemimycena*, and several mycenoid genera in *Mycenaceae* (Senanayake et al. 2023, Na et al. 2024). The taxonomic placement of *Marasmiellomycena* is in *Porotheleaceae* (*Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*).

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Note 1560 *Vizzinia*

Web-links: Index fungorum, Facesoffungi, MycoBank, GenBank

Vizzinia Ševčíková & Kolařík

Vizzinia was introduced by Senanayake et al. (2023) to accommodate *Vizzinia nigripes* as the type. This genus contains two species originally described under *Porotheleum sensu* Consiglio et al. (2022). This wide concept of *Porotheleum* contained cypheloid *Porotheleum sensu stricto* and also agaricoid species with marasmielloid or gerronematoid basidioma types sharing pale spores, the presence of clamp connections and lignicolous habitat. Phylogenetic analyses of *Porotheleaceae* based on ITS and LSU sequences showed *Vizzinia* formed a distinct clade in the family. Based on a multi-locus (ITS, LSU and *rpb2*) analysis, Na et al. (2024) confirmed that *Vizzinia* is monophyletic and represents a separate genus. The taxonomic placement of *Vizzinia* is in *Porotheleaceae* (*Agaricales*, *Agaricomycetidae*, *Agaricomycetes*, *Agaricomycotina*, *Basidiomycota*).

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Note 1561 *Induratia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Induratia Samuels, E. Müll. & Petrini

The taxonomic placement is based on multi-locus (ITS, LSU, *rpb2*, and *tub2*) phylogenetic analyses of the holotype strain *Induratia apiospora* (ATCC 60639) by Cedeño-Sanchez et al. (2023b). The strain was believed to be lost, but was rediscovered and molecular data were obtained and compared with new data that became available (Voglmayr et al. 2022). Consequently, *Induratia* was placed in *Barrmaeliaceae*, due to its affinity with this family rather than *Induratiaceae*. Based on these findings, it was necessary to reclassify *Induratia* within *Barrmaeliaceae* and resurrect the genus *Muscodor*. Additionally, *Muscodor* and *Emarcea* should be accommodated in *Xylariaceae*, and the *Induratiaceae*, a family that was recently coined by Samarakoon et al. (2020b), needs to be abandoned (Cedeño-Sanchez et al. 2023b).

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Note 1562 *Thomasiella*

Web-links: Index Fungorum, facesoffungi, MycoBank,

Thomasiella G.H. Jerônimo, nom. nov. [MB#855552]**.**

Replaced synonym: Thomasia G.H. Jerônimo, Mycol. Progr. 23 (1, no. 1): 5 (2023) [MB#848816], nom. illeg., Art. 53.1, non *Thomasia* J. Gay (*Malvaceae*).

Thomasiella is saprotrophic and the type species is *Thomasiella carolinae* G.H. Jerônimo. Thallus is monocentric with exogenous development. Zoosporangium is smooth, producing operculate discharge tubes. Zoosporangium is apophysate; extensive rhizoids with multiple axes. Zoospores contain a single hyaline lipid globule. Resting spores thick-walled with a central and prominent lipid globule.This monotypic genus was previously introduced as *Thomasia* by Jerônimo et al. (2024), however this name has been already used for a plant from *Malvaceae* (nom. not valid. publ., Art. 53.1 - Turland et al. 2018). *Thomasiella* is erected to accommodate *Thomasiella carolinae* (G.H. Jeronimo) G.H. Jeronimo, which was isolated from a water sample containing plant detritus from Maine, USA. The type species (asexual) is characterized by monocentric thallus with exogenous development. Zoosporangia are apophysate and rhizoids are extensive with multiple axes. Resting spores are thick-walled with a central and prominent lipid globule, formed like zoosporangia. Based on LSU and SSU loci, *Thomasiella* is sister to *Nowakowskiellaceae* (*Cladochytriales*, *Cladochytriomycetes*, *Chytridiomycota*). The basionym is *Thomasia carolinae* G.H. Jeronimo. In this genus, the thallus is monocentric with an exogenous development. Zoosporangia are smooth, spherical (15 to 18 µm), operculate, producing discharge tubes varying in length (8 to 20 µm). Zoosporangia are apophysate, and rhizoids extensive, smooth, and with multiple axes. Zoospores contain a single hyaline lipid globule. Resting spores are spherical (8 to 10 µm), thick-walled, with a central and prominent lipid globule, functioning as a prosporangium. This monocentric species develops exogenously, resulting in a non-persistent zoospore cyst and an apophysate zoosporangium with one or two operculate discharge tubes (see Jerônimo et al. 2024).

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Note 1563 *Endophragmiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Endophragmiella B. Sutton

Endophragmiella was established to accommodate *E. pallescens* (type), and *Brachysporium canadense* was transferred as *E. canadensis* (Sutton 1973). *Endophragmiella* is characterized by branched or simple conidiophores, monoblastic conidiogenous cells with percurrent proliferation, and variable-shaped, septate conidia, with rhexolytic conidial secession (Sutton 1973). Due to the absence of sequence data from ex-type cultures, the identification of almost all species is based on their morphological characteristics (Jiang et al. 2018, Ma et al. 2021a, Chuaseeharonnachai et al. 2023). Therefore, the classification of these species is doubtful, and the 120 epithets listed in Index Fungorum (2024) require re-evaluation.

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Note 1564 *Anupama*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Anupama K.N.A. Raj, K.P.D. Latha & Manim.

Anupama was originally described within the family *Biannulariaceae* (= *Catathelasmataceae*) by Raj et al. (2019). This family initially comprised seven genera: *Catathelasma*, *Callistosporium*, *Pleurocollybia*, *Macrocybe*, *Pseudolaccaria*, *Guyanagarika*, and *Anupama* (Sánchez-García et al. 2017, Alvarado et al. 2018, Raj et al. 2019). However, a recent multigene phylogenetic analysis of the *Tricholomatineae* (*Agaricales*, *Agaricomycetes*) by Vizzini et al. (2020a) introduced a new classification, which revealed a monophyletic origin for these genera, except for *Catathelasma*, which showed a closer affinity with *Bonomyces* and *Cleistocybe*, the genera so far treated as *incertae sedis* under the Tricholomatoid clade. Consequently, the family *Biannulariaceae* was amended to include *Catathelasma*, *Bonomyces* and *Cleistocybe*, while a new family, *Callistosporiaceae*, was proposed to accommodate *Callistosporium* (= *Pleurocollybia*) and related genera. Additionally, Vizzini et al. (2020a) erected a new genus, *Xerophorus*, for species of *Callistosporium* with hygrophoroid basidia and large, amygdaliform basidiospores. Presently, *Callistosporiaceae* includes six genera, *Callistosporium*, *Macrocybe*, *Pseudolaccaria*, *Xerophorus*, *Guyanagarika* and *Anupama*. *Anupama* is a monotypic genus (type species *A. indica*), known only from tropical India. The genus is characterized by small to medium-sized, tricholomatoid basidiocarps lacking any kind of veil and growing on soil around bamboo stands; a glabrous, brown pileus with a waxy surface; crowded, sinuate lamellae; an orange-gray, solid stipe that tapers towards the base; stipe base with white mycelial cords; hyaline, smooth, inamyloid basidiospores; a hymenium with abundant cheilocystidia and occasional pleurocystidia; a subregular lamellar trama;

a cutis-type pileipellis and clamped hyphae. Phylogenetically, *Anupama* forms a lineage sister to the genus *Guyanagarika* (Raj et al. 2019, Vizzini et al. 2020a).

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Note 1565 *Auriculoscypha*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Auriculoscypha D.A. Reid & Manim.

Auriculoscypha is a monotypic genus in order *Septobasidiales* (*Basidiomycota*) (Reid & Manimohan 1985). *Auriculoscypha anacardiicola*, the type species, appears to be endemic to Southwest India. Although originally assigned to the order *Auriculariales*, its affinities to the *Septobasidiales* were indicated when the genus was proposed (Reid & Manimohan 1985). However, its association with insects was not known then. Lalitha & Leelavathy (1990) revealed an obligate association between *A. anacardiicola* and a coccid and suggested the transfer of *Auriculoscypha* from *Auriculariales* to *Septobasidiales*. Lalitha et al. (1994) also observed a yeast phase in the life cycle, which supported its redisposition in *Septobasidiales*. Kumar et al. (2007) placed *Auriculoscypha* in the *Septobasidiales* based on molecular and ultrastructural characters. *Septobasidiaceae* contains five genera, all phytoparasitic insect symbionts (Swann et al. 2001) associated with scale insects on living plants. *Auriculoscypha* differs from other genera of the family in having woody, stipitate-cupulate basidiocarps. The basidiocarps of the other genera are simple mycelial mats resupinate on the host plant (Kumar et al. 2007). *Auriculoscypha* is characterized by basidiocarps that grow from small tubercles partially or fully immersed in the bark of mostly anacardiaceous trees, trapping the coccids inside. The genus is further characterized by pendant, stipitate-cupulate basidiocarps with a cylindrical stipe and a cup- or saucer-shaped pileus, a woody, non-gelatinous texture, thick-walled, brown, septate hyphae lacking clamp connections, circinate basidia with two fertile segments and large, septate basidiospores (Reid & Manimohan 1985).

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Note 1566 *Calocybella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Calocybella Vizzini, Consiglio & Setti

Calocybella, a phylogenetically circumscribed agaricoid genus in the *Lyophyllaceae*, contains eight species described worldwide (Vizzini et al. 2015, 2017, Corriol et al. 2017, Latha et al. 2016, 2020, Crous et al. 2021e, Liu et al. 2024). The genus was originally introduced to accommodate *Rugosomyces pudicus* and remained monotypic with the type species *C. pudica* known exclusively from Europe for several years (Vizzini et al. 2015). Latha et al. (2016) described three new species of *Calocybella* from Kerala State, India, marking the first report of the genus outside of Europe. Corriol et al. (2017) synonymized *C. pudica* with *C. juncicola* but according to priority rules, *C. juncicola* takes precedence over *C. pudica*. A morphological circumscription of the genus is difficult because of the fluidity of the morphological characters. The originally proposed diagnostic features of the genus such as a reddening context and basidiospores with a *Rhodocybe*-like verruculose ornamentations were subsequently found to be inconsistent. *Calocybella* species have collybioid or slenderly tricholomatoid basidiocarps, a cutis- or a trichoderm-type pileipellis, and clamped hyphae (Vizzini et al. 2015, 2017, Latha et al. 2016). The known species are *C. babruka*, *C. dicholamellata*, *C. lohitha* and *C. swetha* (India); *C. juncicola* (Europe), *C. dominicana* and *C. goethei* (Dominican Republic) and *C. sribuabanensis* (Thailand) (Vizzini et al. 2015, 2017, Latha et al. 2016, 2020, Corriol et al. 2017, Crous et al. 2021e, Liu et al. 2024c).

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Note 1567 *Cryoendolithus*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Cryoendolithus Piątek, Stryjak-Bogacka & Czachura

The genus *Cryoendolithus* residing in the *Cladosporiaceae* (*Cladosporiales*, *Dothideomycetes*, *Ascomycota*) was described by Piątek et al. (2023) to accommodate four endolithic and psychrophilic species known from extreme environments of Antarctica and the Alps and originally classified in *Rachicladosporium* Crous, U. Braun & C.F. Hill. The type species is *Cryoendolithus mcmurdoi* (Selbmann & Onofri) Piątek, Stryjak-Bogacka & Czachura (syn. *R. mcmurdoi* Selbmann & Onofri) and three other species are *C. antarcticus* (Egidi & Onofri) Piątek, Stryjak-Bogacka & Czachura (syn. *R. antarcticum* Egidi & Onofri), *C. aridus* (Selbmann & Coleine) Piątek, Stryjak-Bogacka & Czachura (syn. *R. aridum* Selbmann & Coleine) and *Cryoendolithus monterosanus* (Isola & Zucconi) Piątek, Stryjak-Bogacka & Czachura (syn. *R. monterosanum* Isola & Zucconi). The genus is characterized by forming only hyphae or hyphae and arthroconidia. Hyphae are subhyaline, pale brown or dark brown, branched, usually torulose, rarely cylindrical. Arthroconidia are dark brown, ellipsoidal, 0–1-septate (Piątek et al. 2023). The genus is mostly delimited by phylogenetic analyses of concatenated ITS, LSU and *rpb2* sequences, which showed that its members form a distinct, sister lineage to representatives of *Rachicladosporium* (Piątek et al. 2023). *Rachicladosporium* species are mainly plant associates rarely also known from insects and rocks. *Cryoendolithus* differs from *Rachicladosporium* s. str. in that its members are unable to grow at 25 °C (Piątek et al. 2023), reflecting the adaptation of *Cryoendolithus* species to harsh and cold environments.

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Note 1568 *Embarria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Embarria Wanas., Camporesi & K.D. Hyde, **gen. nov.**

Index Fungorum Identifier: 554230

= *Embarria* Wanas., Camporesi & K.D. Hyde, in Wanasinghe et al., Fungal Diversity 99: 119 (2018) [Nom. inval., Art. 41.1, see Arts 6.3, 12.1 (Shenzhen)]

For description see p. 119 in Wanasinghe et al. (2018).

Type species *Embarria clematidis* (Wanas., Camporesi, E.B.G. Jones & K.D. Hyde) Wanas. & K.D. Hyde

Embarria clematidis (Wanas., Camporesi, E.B.G. Jones & K.D. Hyde) Wanas. & K.D. Hyde, **comb. nov.**

Index Fungorum Identifier: 554170

= *Allophaeosphaeria clematidis* Wanas., Camporesi, E.B.G. Jones & K.D. Hyde, in Ariyawansa et al., Fungal Diversity 75: 99 (2015)

The genus and the type species were invalidly published due to the absence of a reference to the basionym of the type species (*Allophaeosphaeria clematidis*). Herein we correct this and publish the new genus and new combination for the type species.

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(Edited by **Kevin D Hyde**)

Note 1569 *Apoa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Apoa Syd.

Apoa Syd. [type species *Apoa petrakii* Syd. in Sydow & Petrak, Annls mycol. 29(3/4): 266 (1931)] is synonymized under *Pachypatella* Theiss. & Syd. [type species *Pachypatella petrakii* (Syd.) Arx, in Müller & Ar Beitr. Kryptfl. Schweiz 11(no. 2), 832 (1962)] (www.indexfungorum.org, 2024). The two genera are close to each other by having crustose ascomata but differ as *Pachypatella* forms convoluted ascomata that open by circumferential fissures that exposes gelatinized interthecial filaments which becomes blue in IKI, while *Apoa* besides not having a developed internal stroma also has ascomata not convoluted and opening by radiating fissures, with gelatinous interthecial filaments that do not react in IKI. I suggest that the genus *Apoa* be in *Parmulariaceae* until molecular data is available.

Reference

Index Fungorum. 2024 – http://www.indexfungorum.org/.

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Note 1570 *Metacampanella*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Metacampanella R.H. Petersen

Metacampanella, a genus within *Marasmiaceae*, was proposed by Petersen & Hughes (2024) to accommodate a small group of species that are morphologically similar to *Tetrapyrgos* or *Campanella* but are molecularly distinct based on ITS and LSU sequence data. The defining characteristics of this genus include conchate, obcupulate to ob-saucer-shaped, sessile, pseudostipitate, or laterally stipitate basidiomata, a pileus that ranges from white to greenish or blue-greenish, and rarely pale pink. The hymenophore features some radial, rounded veins, fusiform pleurocystidia, generally triangular basidiospores, and the absence of tetrapyrgoid or metuloid cheilocystidia. *Metacampanella* species typically colonize dead woody substrates, monocots such as bamboo, grass, sedge, or rush, and occasionally dicot rotting wood. Additionally, some members of this genus are associated with grass endophytes. The type species is

Metacampanella dendrophora (Singer) R.H. Petersen. Currently, *Metacampanella* includes six species distributed across North, Central, and South America, Europe, and New Zealand (Petersen & Hughes 2024).

Reference

Petersen RH, Hughes KW. 2024 – *Metacampanella* gen. nov.: the *Campanella dendrophora* complex. Mycology (latest articles) 1–28.

Entry by Vladimír Antonín, Moravian Museum, Dept. of Botany, Zelný trh 6, 659 37 Brno, Czech Republic; vantonin@mzm.cz

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Note 1571 *Ophiotheca*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Ophiotheca Curr.

The genus was proposed by Currey (1854) to accommodate *Ophiotheca chrysosperma*, which was transferred to *Perichaena* by Lister (1894). In the most recent phylogeny of *Trichiales* (García-Cunchillos et al. 2022), the genus *Ophiotheca* was re-erected for *Perichaena* species forming a monophyletic clade unrelated to *Perichaena sensu stricto*. Three species belong to *Ophiotheca*, *O. chrysosperma*, *O. calongei* and *O. pedata*, and their characteristic features include capillitium tubules of not uniform diameter, ornamented with distinct spines, and irregular or fisural peridium dehiscence (García-Cunchillos et al. 2022).

References

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Lister A. 1894 – A monograph of the mycetozoa, being a descriptive catalogue of the species in the herbarium of the British Museum. Printed by order of the Trustees. London.

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Note 1572 *Atripes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Atripes F.A. Custódio & O.L. Pereira

Atripes was introduced by Custódio et al. (2021) based on molecular analysis of ITS, LSU, *rpb1*, and *tef1-α* sequence data. This monotypic genus is typified by *A. paspali* F.A. Custódio & O.L. Pereira, which was obtained from *Paspalum guenoarum* tissues with symptoms of take-all in Eldorado do Sul, Rio Grande do Sul state, Brazil. *Atripes* is phylogenetically close to *Buergenerula spartinae*, but distinct, producing larger conidiophores that can be branched or unbranched and larger conidia (Kohlmeyer & Gessner 1976). *Atripes* has a *Phialophora*-like asexual morph similar to the genera *Falciphora*, *Falciphoriella*, *Gaeumannomycella*, *Gaeumannomyces*, and

Slopeiomyces, but is phylogenetically different from them. *Atripes* produces only falcate, hyaline, smooth, and aseptate conidia and does not have refractive collarettes and/or a hyphopodium, its conidiophores are commonly reduced to conidiogenous cells, sometimes macronematous, and conidiogenous cells are phialidic, hyaline to pale brown, solitary or grouped, terminal or intercalary, lageniform, straight, or curved with a cylindrical to funnel-shaped collarette. According to Custódio et al. (2021) *A. paspali* is the take-all causal agent in *P. guenoarum* and it can also cause take-all on wheat. New studies can be performed to verify the diversity of other *Magnaporthaceae* associated with take-all on wheat and other crops in Brazil.

References

Custódio FA, Rosado AW, Filho RL, Martinelli JA et al. 2021 – *Atripes paspali* gen. et sp. nov. (*Magnaporthaceae*) causing take-all disease on *Paspalum guenoarum* in Brazil. Plant Pathology 70, 110–122.

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Note 1573 *Purimyces*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Purimyces D.O. Ramos & O.L. Pereira

Purimyces, a monotypic genus, was introduced with *Purimyces orchidacearum* D.O. Ramos & O.L. Pereira based on molecular analysis of ITS, and LSU sequence data (Crous et al. 2024b). This genus was isolated as root endophyte on *Cattleya locatellii* (*Orchidaceae*) growing above rocks, near to Araponga municipiallity, state of Minas Gerais, Brazil. *Purimyces* has septate, branched, smooth-walled, hyaline mycelium forming mycelial strains and differs phylogenetically from all known genera of *Hyphodiscaceae*. The genus is placed near to *Venturiocistella* and *Fuscolachnum sensu lato* clade, differing from these genera by the endophytic association and the absence of reproductive morphs. Colonies of *Purimyces* resembles those of *Gamara* and *Glutionomyces*, two other genera of *Hyphodiscaceae* that lack sporulation structures and are known to form endophytic and mycorrhizal associations with plants.

Reference

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Note 1574 *Terresporidia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Terresporidia Vossbrinck & Debrunner-Vossbrinck

The first revision of molecular phylogenetics of the phylum *Microsporidia* based upon data available at the time was reported by Vossbrinck & Debrunner-Vossbrinck (2005). It showed that groups or clades are formed based largely on habitat and host. It was proposed to allocate the five major clades into three classes: *Aquasporidia* (paraphyletic basal group, infecting mostly aquatic hosts), *Marinosporidia* (infecting mostly marine hosts), and *Terresporidia* (the crown of the *Microsporidia* tree of life, infecting mostly terrestrial hosts). However, this division was not widely accepted and more recent studies have demonstrated that each “class” include parasites from different habitats and switching between marine, aquatic and terrestrial hosts (both invertebrate and vertebrate) occurs frequently (Stentiford et al. 2016, Tokarev et al. 2018). Accumulation of data on diversity of *Microsporidia*, including multiple barcoding sequences for the newly described and previously known taxa, showed complex nature of host and habitat distribution. The most comprehensive taxonomic division of *Microsporidia* is based upon molecular phylogenetics while incorporating the classical taxonomic nomenclature, as presented by Bojko et al. (2022).

References

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Stentiford GD, Becnel JJ, Weiss LM, Keeling PJ et al. 2016 – *Microsporidia* - Emergent pathogens in the global food chain. Trends in Parasitology 34(4), 336–348.

Tokarev YS, Sokolova YY, Vasilieva AA, Issi IV. 2018 – Molecular and morphological characterization of *Anncaliia azovica* sp. n. (*Microsporidia*) infecting *Niphargogammarus intermedius* (*Crustacea*, *Amphipoda*) from the Azov Sea. Journal of Eukaryotic Microbiology 65(3), 296–307.

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Edited by **Kevin D Hyde**)

Note 1575 *Enteridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Enteridium Ehrenb.

The name was re-erected to accommodate two aethalium-forming species, previously considered within the genus *Reticularia*. The name *Licaethalium* Rostaf., previously used for this group (Leontyev et al. 2019), is a younger synonym of *Enteridium* (Leontyev & Ronikier 2024).

References

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Leontyev DV, Ronikier A. 2024. – Priority of the generic name *Enteridium* over *Licaethalium* in referring to *Cribrariaceae* species with aethalia. Nova Hedwigia 119(1–2), 107–115.

Note 1576 *Hemitrichia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Hemitrichia Rostaf.

According to García-Cunchillos et al. (2022) five species belong to the clade, that includes the type species of the genus, *H. clavata*. The other species described within this genus are to be transferred to *Trichia* or other genera of the *Trichiaceae*; one species has an uncertain position.

Reference

García-Cunchillos I, Zamora JC, Ryberg M, Lado C. 2022 – Phylogeny and evolution of morphological structures in a highly diverse lineage of fruiting-body-forming amoebae, order *Trichiales* (*Myxomycetes*, *Amoebozoa*). Molecular Phylogenetics and Evolution 177(107609), 1–20.

Note 1577 ***Heterotrichia***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Heterotrichia Massee

The genus was re-erected to accommodate species of *Arcyria* with yellow, orange and, partly, red spore mass, that were found to belong to the *Hemitrichiaceae* (Yatsiuk et al. 2025)

Reference

Yatsiuk I, Leontyev D, Schnittler M, Ehlers T et al. 2025 – *Arcyria* and allied genera: taxonomic backbone and character evolution. Fungal Systematics and Evolution 15, 97–118.

Note 1578 ***Perichaena***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Perichaena Fr.

The paraphyletic origin of the genus *Perichaena* was first demonstrated by Walker et al. (2015) and subsequently confirmed by other phylogenies (Feng & Schnittler 2015, Ronikier et al. 2020). According to the latest revision of *Trichiales* (García-Cunchillos et al. 2022) the clade including *P. corticalis*, the type species of the genus (= *Perichaena sensu stricto*) groups eight species (typically with circumscissile peridium dehiscence). Seven of them belong to *Perichaena*; the additional one that was originally described simultaneously in the two genera *Hemitrichia* (*H. agaves*) (Moreno et al. 2000) and *Trichia* (*T. perichaenoides*) (Mosquera et al. 2000) has now been transferred to *Perichaena* (*P. agaves*) by García-Cunchillos et al. (2022). Other species described within this genus *Perichaena* have been transferred to the newly proposed genus *Gulielmina* (long and branched plasmodiocarps) and to the re-erected genus *Ophiotheca* (capillitium covered with spines) (García-Cunchillos et al. 2022), while those not treated by these authors remain in the genus *Perichaena sensu lato* pending revision.

References

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Ronikier A, García-Cunchillos I, Janik P, Lado C. 2020 – Nivicolous *Trichiales* from the austral Andes: unexpected diversity including two new species, Mycologia 112(4), 753–780.

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(Edited by **Kevin D Hyde**)

Note 1579 *Spiromyxa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Spiromyxa Yatsiuk & Ehlers

This monotypic genus was introduced for *S. slocanensis*, which shows unique ornamentation of capillitium and putative position at the base of *Arcyriaceae* clade (Yatsiuk et al. 2025).

Reference

Yatsiuk I, Leontyev D, Schnittler M, Ehlers T et al. 2025 – *Arcyria* and allied genera: taxonomic backbone and character evolution. Fungal Systematics and Evolution 15, 97–118.

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Note 1580 *Polyschismium*

Web-links: Index Fungorum, Faceofffungi, MycoBank, GenBank, Eumycetozoa

Polyschismium Corda

The genus was proposed by Corda (1842) to accommodate *Leangium trevelyanii*, a species with a peculiar star-like peridium dehiscence. The species was long considered to belong to the genus *Diderma*, but was moved to *Lepidoderma* in 2002 (Poulain et al. 2002). The most recent revision of the genus *Lepidoderma* involving two-gene phylogeny and detailed morphological analysis (Ronikier et al. 2022) showed that *L. trevelyanii* forms a monophyletic group together with other representatives of the genus, while the type species of the genus, *L. tigrinum* clusters together with *Diderma* species. Accordingly, the old genus *Polyschismium* was re-erected and nine species were transferred from *Lepidoderma* to *Polyschismium* (Ronikier et al. 2022, García-Martín et al. 2023). Another four *Lepidoderma* species were transferred to *Polyschismium* by Prikhodko et al. (2023), who also transferred *L. tigrinum* to the genus *Diderma*.

References

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García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes, Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.

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Note 1581 *Aethaliopsis*

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Aethaliopsis Zopf

Aethaliopsis was first introduced by Zopf (Schenk 1887) to accommodate one species *A. stercoriformis*, a synonym of *Fuligo cinerea*, the only species from the genus *Fuligo* with reticulate spores. The genus was re-erected by García-Martín et al. (2023), but so far only one species *A. stercoriformis* is considered to belong here. In the phylogeny of *Physareales* the species forms a distinct clade along with other species from the genera *Badhamia*, *Fuligo* and *Physarum* representing variable morphological characters (García-Martín et al. 2023).

References

García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes*, *Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.

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Note 1582 *Angioridium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Angioridium Grev.

The genus was first proposed by Greville (1828) to accommodate one species *Angioridium sinuosum*, which forms strongly laterally compressed plasmodiocarps with a longitudinal fissure. In the most recent phylogenetic revision, the genus was re-erected by García-Martín et al. (2023). Three other *Physarum* species cluster together with *A. sinuosum*, all with similar morphology, but new combinations have not yet been proposed, and currently the genus includes only one accepted species, *A. sinuosum* (=*Physarum bivalve*).

References

García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes*, *Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.

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(Edited by **Kevin D Hyde**)

Note 1583 *Claustria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Claustria Fr.

The genus was first introduced by Fries (1849) for *C. didermoides* which was later transferred to *Physarum* by Rostafiński (1874). *Claustria* has recently been re-erected by García-Martín et al. (2023), as it forms a separate clade along with other *Physarum* representatives sharing very dark and angular spores. However, new combinations have not yet been proposed, and the genus currently includes only one accepted species, *C. didermoides*.

References

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Note 1584 *Erionema*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Erionema Penz.

Erionema was introduced by Penzig (1898) to accommodate one species *E. aureum* with sporophore in the form of aethalium and wool-like capillitium. According to García-Martín et al. (2023), the genus includes only one species, *E. aureum*. In the *Physarales* phylogeny, the species clusters together with two varieties of *Fuligo septica* (var. *flava* and var. *candida*), which were reinstated at species level (García-Martín et al. 2023), but not transferred to the genus *Erionema*.

References

García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes*, *Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.

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Note 1585 *Fuligo*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Fuligo Haller

According to García-Martín et al. (2023) only four species belong to the clade, which includes the type species of the genus, *F. septica*. Other taxa, described within this genus, including even some varieties of *F. septica* (*F. septica* var. *flava* and var. *candida*), which has been reinstated at species level by García-Martín et al. (2023), are interspersed among other genera of the *Physaraceae*. *Fuligo cinerea* is proposed in the re-erected genus *Aethaliopsis*, *F. laevis* – in the newly proposed genus *Nannengaella* and *F. muscorum* – in the old genus *Lignydium*.

Reference

García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes*, *Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.

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Note 1586 ***Lignydium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Lignydium Link

The genus was first introduced by Link (1809) for *L. griseoflavum* (= *Fuligo muscorum*). *Lignydium* was re-erected by García-Martín et al. (2023) to accommodate *L. muscorum*, which is not closely related to any other *Fuligo* species. According to the most recent phylogeny of *Physarales*, *Lignydium muscorum* is most closely related to *Kelleromyxa* (García-Martín et al. 2023).

Reference

García-Martín J, Zamora JC, Lado C. 2023 – Multigene phylogeny of the order *Physarales* (*Myxomycetes*, *Amoebozoa*): shedding light on the dark-spored clade. Persoonia 51, 89–124.
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Entry by Anna Ronikier, W. Szafer Institute of Botany, Polish Academy of Sciences, Lubicz 46, 31-512 Kraków, Poland, **Paulina Janik**, W. Szafer Institute of Botany, Polish Academy of Sciences, Lubicz 46, 31-512 Kraków, Poland

Note 1587 ***Trichamphora***

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Trichamphora Jungh.

The genus was introduced by Junghuhn (1838) to accommodate *T. pezizoidea*, which forms long-stalked sporophores with discoid-pezizoid sporothecae. The species was later transferred to the genus *Physarum* (Pavillard & Lagarde 1903). In the most recent phylogeny of *Physarales*, *Physarum pezioideum* forms a monophyletic clade, therefore García-Martín et al. (2023) proposed a return to the original treatment of the species within the genus *Trichamphora*.

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Note 1588 *Collaria*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank, Eumycetozoa

Collaria Nann.-Bremek.

This is an artificial genus with *ca*. five species recognized based on the presence of a collar at the base of the sporotheca (Lado & Eliasson 2022). However they seem to be unrelated. According to the phylogeny by Fiore-Donno et al. (2012), the type species of *Collaria*, *C. rubens* (as *Comatricha rubens*) is closely related to *Meriderma* species, while *C.* (*Comatricha*) *nigricapillitia* clusters together with *Enethenema*. Also *C. arcyrionema* forms an outermost clade within *Physarales* (Novozhilov et al. 2022a).

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Note 1589 *Carcerina*

Web-links: Index Fungorum, Facesoffungi, MycoBank, Eumycetozoa

Carcerina Fr.

Carcerina was introduced by Fries (1849) to accommodate one species, *Carcerina spumarioides* (= *Diderma spumarioides*). The genus was re-erected by García-Martín et al. (2023) as *incertae sedis* in the most recent phylogeny of *Physarales*. In addition to the uncertain position of the genus, the species, *D. spumarioides* is polyphyletic, represented by two unrelated clades, both located in distant positions in the phylogenetic tree.

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Note 1590 *Pythium*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Pythium Pringsh. (ca 150)

The monophyly of the *Pythiaceae* is not certain and designation of the genera is considered provisional at present.

Note 1591 *Thomasiella*

Web-links: Index Fungorum, Facesoffungi, MycoBank

Thomasiella G.H. Jerônimo

Thomasiella, a monotypic genus, was introduced as *Thomasia* by Jerônimo et al. (2024). However, the name *Thomasia* was already assigned to a plant genus within the *Malvaceae*, necessitating the new name, *Thomasiella*. The type species *Thomasiella carolinae* G.H. Jerônimo, was isolated from cellulosic substrates placed in a water collection containing plant detritus in Maine, USA. It is recognized as a saprotrophic species. The type species, characterized in its asexual form, exhibits a monocentric thallus with exogenous development. The zoosporangia are apophysate, and the rhizoids are extensive, featuring multiple axes. Resting spores are thick-walled, contain a central and prominent lipid globule, and are morphologically similar to zoosporangia. Phylogenetic analysis based on LSU and SSU loci places *Thomasiella* as a sister genus to the *Nowakowskiellaceae* family (*Cladochytriales*, *Cladochytriomycetes*, *Chytridiomycota*).

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Note 1592 *Hyphoderma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Hyphoderma Wallr.

Hyphoderma Wallr. (*Hyphodermataceae*, *Polyporales*) represents one of the most species-rich and taxonomically complicated genera among wood-inhabiting fungi typified by *H. setigerum* (Fr.) Donk. (Yurchenko & Wu 2014). The species within the genus cause white rot, and is one of the most important fungal groups that plays a key role in the carbon cycle and the most efficient wood decomposers in the forest ecosystem (Floudas et al. 2012, Duan et al. 2023a).The genus is characterized by resupinate to effuse-reflexed basidiomata with ceraceous consistency, and a smooth to tuberculate, grandinioid or odontioid hymenial surfaces, a monomitic hyphal system (rarely dimitic) with clamp connections on generative hyphae, presence of cystidia or not, suburniform to subcylindrical and cylindrical basidia, and ellipsoid to subglobose, smooth, thin-walled basidiospores. Based on Index Fungorum, the genus *Hyphoderma* has 210 specific and registered names. Currently, 116 species have been accepted worldwide (Wu et al. 2010, Baltazar et al. 2016, Martín et al. 2018, Ma et al. 2021b, Guan & Zhao 2021a, b, Guan et al. 2021, Duan et al. 2023a, Yang et al. 2023e).

This pioneering research for the phylogenetic analysis process of the genus *Hyphoderma* was just the prelude to the molecular systematics period (Ma et al. 2021b, Guan & Zhao 2021a, b, Guan et al. 2021, Duan et al. 2023a). The phylogenetic research revealed that all *Hyphoderma* taxa clustered into the different groups in phylogenetic trees at the class level based on the molecular phylogenetic methods, in which the result indicated that *H. praetermissum* (P. Karst.) J. Erikss. & Å. Strid and *Resinicium bicolor* (Alb. & Schwein.) Parmasto were grouped together, while the other *Hyphoderma* species, *Hypochnicium* J. Erikss, and several other species formed a separate branch (Langer 2002). The phylogeny of *Hyphoderma* showed that two species *H. obtusum* J. Erikss. and *H. setigerumnested* into the family *Meruliaceae* Rea and formed a sister taxon to *Hypochnicium polonense* (Bres.) Å. Strid (Larsson 2007). The phylogenetic relationships among the closely related taxa in *Hyphoderma* were determined and a new species was proposed, *H. macaronesicum* Tellería, M. Dueñas, Beltrán-Tej., Rodr-Armas & M.P. Martín (Telleria et al. 2012). The research comprising the representative sequences of the *H. setigerum* complex showed that *H. pinicola* Yurch. & Sheng H. Wu represented a fifth species in this complex of this genus *Hyphoderma* (Yurchenko and Wu 2014). The research of the family-level classification of the order *Polyporales* indicated that four *Hyphoderma* species grouped into the residual polyporoid clade, belonging to the family *Hyphodermataceae*, in which they grouped with three related genera in the family *Meripilaceae* as *Meripilus* P. Karst., *Physisporinus* P. Karst. and *Rigidoporus* Murrill (Justo et al. 2017).

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Note 1593 *Oxneriaria*

Web-links: Index Fungorum, MycoBank, GenBank

Oxneriaria S.Y. Kondr. & Lőkös

Members of the lichen-forming genus *Oxneriaria* S.Y. Kondr. & Lőkös are distributed in cold polar and high-altitude localities of Eurasia and the Northern Hemisphere (Nordin et al. 2011, Haji-Moniri et al. 2017, Chesnokov et al. 2018, Halıcı et al. 2018). They are characterized by the presence of a radiating lichen thallus with a wrinkled or lobate peripheral zone, relatively small ascospores, production of substictic acid and positioning as a distinct branch on phylogenetic trees in the *Megasporaceae*. They grow on rocks and have been observed growing side by side with other taxa of the same and other genera (Haji-Moniri et al. 2017). The genus was first named by Haji-Moniri et al. (2017) who transferred over nine species that were previously included in the genus *Aspicilia*. A total of 17 species has been described for the genus *Oxneriaria* (Haji-Moniri et al. 2017; Iqbal et al. 2023, Zulfiqar et al. 2023a, b, Usman et al. 2024, Manawasinghe et al. 2024).

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Note 1594 *Gibberidea*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Gibberidea Fuckel

The genus *Gibberidea* historically classified within the *Dothideomycetes* genera *incertae sedis*, has faced significant taxonomic challenges due to the lack of recent species introductions and consequent absence of molecular data. The last species was introduced into this genus in 1972, and no new species have been added since. Currently, 105 species are listed under *Gibberidea* in the Index Fungorum (2024). Most taxa in this group have been synonymized with other genera, with only a few exceptions. Even, the type species, *Gibberidea visci*, has been subjected to many revisions and was considered a synonym of *Sphaeropsis* (Saccardo 1880), which was later transferred to *Phaeobotryosphaeria* by Phillips et al. (2008, 2013a). To further complicate the situation, no molecular data is available for the remaining members of *Gibberidea*. This scarcity of genetic information interferes with the ability to confirm phylogenetic relationships within the family and relies heavily on morphological data. Therefore, the stability of *Gibberidea* within its family is questionable. The ongoing challenge is to acquire molecular data that could either solidify the current position of *Gibberidea* or further support its synonymization with other genera to ensure a more reliable classification reflecting both morphological and genetic evidence.

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Note 1595 *Mycosarcoma*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Mycosarcoma Bref.

This genus is not accepted outside the small team that attempted to resurrect the name and is not used here.

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Note 1596 ***Entorrhizomycota***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Entorrhizomycota R. Bauer, Garnica, Oberw., Riess, Weiß & Begerow

The support for recognising a new phylum instead of a subphylum in *Basidiomycota* or a class in *Ustilaginomycotina* was rather weak.

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Note 1597 ***Leptomitaceae***

Web-links: Index Fungorum, Facesoffungi, MycoBank

Leptomitaceae Kütz

The family *Ectrogellaceae* is polyphyletic. The relationships in *Leptomitales* are not well resolved, so it is probably best to keep them all in *Leptomitaceae*.

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Note 1598 ***Sirolpidium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Sirolpidium H.E. Petersen (= *Pontisma* H.E. Petersen)

The genus *Pontisma* has been synonymized with *Sirolpidium* by Karling. It was first thought that *Pontisma* could be conserved, but it was then decided to apply priority.

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Note 1599 ***Microsporidium***

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Microsporidium Balbiani (ca 100)

Microsporidium is a collective genus which incorporates species with uncertain genus allocation.

Note 1600 *Wallemiomycetes*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Wallemiomycetes Zalar, de Hoog & Schroers

Wallemiomycotina should be included in *Agaricomycotina*, as *Bartheletia paradoxa* is the earliest-diverging lineage of the *Agaricomycotina* so if one accepted *Wallemiomycotina*, also *Bartheletiomycotina* would need to be introduced. However, to avoid overly splitting the *Agaricomycotina*, the preferred option is to include both lineages in *Agaricomycotina*.

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Note 1601 *Baorangia*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Baorangia G. Wu & Zhu L. Yang

The genus *Baorangia* was introduced by Wu et al. (2016b) with the type species *Baorangia pseudocalopus* (Hongo) G. Wu & Zhu L. Yang, which is distributed in China and Japan. Members of *Baorangia* are stipitate-pileate boletoid fungi characterized by thin hymenophore (3–5 times thinner than pileal context at the halfway to the pileus center), from ovoid to elongated subfusiform smooth basidiospores with a shallow suprahilar depression, and a trichoderm or subcutis pileipellis (Wu et al. 2016b, Phookamsak et al. 2019). It is very similar to *Lanmaoa*, however both genera appear in two separate phylogenetic clades (Nuhn et al. 2013, Wu et al. 2014). It also has some similarity with *Caloboletus* (especially *C. calopus*) but the latter genus has a bitter taste of the context and distinct reticulations on the stipe (at least at the apex) (Wu et al. 2016b).

At this moment the genus *Baorangia* includes seven species (Species Fungorum 2024), which are known from Europe, East and Southeast Asia, and North America (Wu et al. 2016b, Phookamsak et al. 2019). It also occurs in Africa, based on GBIF (2024). The genus is ectomycorrhizal with *Fagaceae*, *Pinaceae*, and possibly *Dipterocarpaceae* (Wu et al. 2016b, Phookamsak et al. 2019).

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Note 1602 *Lanmaoa*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Lanmaoa G. Wu & Zhu L. Yang

The genus *Lanmaoa* was introduced by Wu et al. (2016b) with the type species *Lanmaoa asiatica* G. Wu & Zhu L. Yang, distributed in southwestern China. Members of this genus are stipitate-pileate boletoid fungi with thin (3–5 times thinner than pileal context at the halfway to the pileus center) cream yellow to lemon yellow hymenophore that stains dull blue when injured; tubes concolorous with hymenophoral surface or light red; central stipe that is yellow to lemon yellow at the apex and light to dark purple-red towards the base, with yellowish white to white basal mycelium; from narrowly suboblong, subellipsoid to subfussoid smooth basidiospores; and can have pileipellis of a (ixo)trichoderm or (ixo)subcutis (Bessette 2015, Wu et al. 2016b, Phookamsak et al. 2019, Farid et al. 2021). At least some *Lanmaoa* species are characterized by peculiar odors: from fruity when fresh and resembling the smell of chicory when dry (*L. fragrans*) to ammonia-like and slightly alliaceous (*L. sublurida*) (Muñoz 2005, Farid et al. 2021).

This genus is very similar to *Baorangia*, however both genera appear in two separate phylogenetic clades (Nuhn et al. 2013, Wu et al. 2014). There is an opinion that *Lanmaoa* should be lumped together with *Cyanoboletus* (Chai et al. 2018, Farid et al. 2021) due to close relation (sister clades) and morphologically intergrading, although *Cyanoboletus* tends to have dull brown colors and *Lanmaoa* often has bright red or yellow coloration (Wu et al. 2014, 2016b, Chai et al. 2018). However, this should be carefully re-considered in future studies of these clades as more data become available (Farid et al. 2021).

At this moment the genus *Lanmaoa* includes 12 species (Species Fungorum 2024). The known distribution of the genus is Asia, Europe, North Africa, North America, and Australia (Crous et al. 2018b, Wu et al. 2016b, Phookamsak et al. 2019, GBIF 2024). The genus is ectomycorrhizal with *Pinaceae* and *Fagaceae* (Wu et al. 2016b, Phookamsak et al. 2019, Farid et al. 2021).

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Note 1603 *Garcileccinum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Garcileccinum Ayala-Vasquez & Pérez-Moreno, **nom. inval.**

Garcileccinum was described to accommodate a newly described Garcileccinum salmonicolor Ayala-Vásquez, Pérez-Moreno, Pinzón (nom. inval.) and two previously described species Leccinellum viscosum (Halling & B. Ortiz) Mikšík and Leccinum violaceotinctum B. Ortiz & T.J. Baroni. It is characterized by stipitate-pileate boletoid basidiomes; pinkish salmon to mustard brown pileus with sometimes sterile margin; tubulose, cream-colored to grayish orange hymenophore; white context which oxidizes to pale gray to dark violet, pale blue green to deep blue, sometimes developing orange-pink to coral pink colors; finely floccose to scabrous stipe that is white to pale apricot colored at first, becoming pale caramel to grayish orange; and smooth fusoid to subfusoid basidiospores (Ayala-Vásquez et al. 2023). Pileipellis is variable in that two of the species have an ixotrichoderm (*G. salmonicolor* and *G. violaceotinctum*), while *G. viscosum* has a palisadal hymeniderm in a gelatinous matrix. Using nrLSU, *rpb2* and *tef1*, the genus is phylogenetically inferred to belong in the subfamily *Leccinoideae* as a distinct clade sister to *Rossbeevera pachydermis* and *Leccinellum* s.s. There appear to be three species known at present from North and Central America (Mexico, Belize). Ectomycorrhizae probable with *Pinus* and *Quercus* (Ayala-Vásquez et al. 2023).

The genus name was not validly published in Ayala-Vásquez et al. (2023) (Art. 40.1; see Arts. 40.3, 6.3, and 12.1 of the Shenzhen Code; Turland et al. 2018) due to invalidity of the name of the type species *G. salmonicolor* because the identifier “MB 834539” cited in the protologue was not issued for this name, therefore the name was not registered before publication (Arts F.5.1 and 40.7, Turland et al. 2018).

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Note 1604 *Otospora*, *Tricispora*

Web-links for *Otospora* : Index Fungorum, Facesoffungi, MycoBank, GenBank

Web-links for *Tricispora* : Index Fungorum, Facesoffungi, MycoBank, GenBank

Otospora Oehl, Palenz. & N. Ferrol.; ***Tricispora*** Oehl, Sieverd., G.A. Silva & Palenz.

The two monospecific genera were introduced by Palenzuela et al. (2008) and Oehl et al. (2011), respectively, based on the spore development (otosporoid and tricisporoid), different from other members in the *Diversisporaceae*. Because of phylogenetic analysis showing the nestedness of the two genera within *Diversispora*, and the low molecular divergence with neighbor *Diversispora* species, *Otospora* and *Tricispora* were transferred to *Diversispora* by Tedersoo et al. (2024).

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Note 1605 *Parvocarpum*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Parvocarpum Magurno

The new monospecific genus was introduced by Tedersoo et al. (2024) based on the phylogenetic placement of *Glomus badium* (Oehl, D. Redecker & Sieverd; synonym *Funneliformis badius* C. Walker & A. Schüßler) whose relationship with the other genera in *Glomeraceae* was still unresolved. The etymology refers to the small size (*parvus*) of fruiting bodies (*carpum*) produced. The species was described producing glomoid spores in compact and small glomerocarps around a central plexus of interwoven hyphae with short and cylindrical subtending hyphae. The analysis of Tedersoo et al. (2024), supported by eDNA long reads and sequences of all described *Glomeromycota* species, arranged *Parvocarpum* in a supported clade populated by *Rhizoglomus*, *Sclerocystis*, *Silvaspora*, *Halonatospora*, *Oehlia* and numerous other undescribed potential new genera.

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Note 1606 *Viscospora*

Web-links: Index Fungorum, Facesoffungi, MycoBank, GenBank

Viscospora Sieverd., Oehl & G.A. Silva

The genus *Viscospora* was introduced originally by Oehl et al. (2011) to accommodate *Glomus viscosum* (T.H. Nicolson) in the family *Claroideoglomeraceae* (= *Entrophosporaceae*). *G. viscosum*, a species with 3 spore wall layers, hyaline to white, was represented in the phylogenetic analysis by a single partial 18S rRNA sequence obtained from the ex-type culture (BEG27). The genus was later rejected by Redecker et al. (2013) after reexamination of the culture, revealing that the sequence was originated by a *Claroideoglomus* sp. contaminant. Analysis based on sequences obtained from more isolates placed the species in the *Septoglomus* clade, as *Septoglomus viscosum* (T.H. Nicolson) C. Walker, D. Redecker, Stille & A. Schüßler, despite sharing few morphological characters with other species of the genus. Nevertheless, da Silva et al. (2023) retained the genus *Viscospora* as valid in the *Glomeraceae*, later enriched by the species *Viscospora peruviscosa* (Corazon-Guivin et al. 2023).

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Declarations Conflict of interest

Authors declare that they have no confict of interest.

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