



Genera of corticioid fungi: keys, nomenclature and taxonomy

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Gorjón SP 2020 – Genera of corticioid fungi: keys, nomenclature, and taxonomy. *Studies in Fungi* 5(1), 125–309, Doi 10.5943/sif/5/1/12

Abstract

A review of the worldwide corticioid homobasidiomycetes genera is presented. A total of 620 genera are considered with comments on their taxonomy and nomenclature. Of them, about 420 are accepted and keyed out, described in detail with remarks on their taxonomy and systematics.

Key words – Corticiaceae – Crust fungi – Diversity – Homobasidiomycetes

Introduction

Corticioid fungi are a diverse and heterogeneous group of fungi mainly referred to basidiomycete fungi in which basidiomes are generally resupinate. Basidiome construction is often simple, and in most cases, only generative hyphae are found. In more structured basidiomes, those with a reflexed margin or with a pileate surface, more or less sclerified hyphae are usually found. Even the basidiome structure is apparently not very complex, hymenophore configuration should be highly variable finding smooth surfaces or different variations to increase the spore production area such as rugose, tuberculate, aculeate, meruloid, folded, or poroid hymenial surfaces. It is often thought that corticioid fungi produce unattractive and little variable forms and, in most cases, they go unnoticed by most mycologists as ungraceful forms that ‘cover sticks and look like a paint stain’. Although the macroscopic variability compared to other fungi is, but not always, usually limited, under the microscope they surprise with a great diversity of forms of basidia, cystidia, spores and other microscopic elements (Hjortstam et al. 1987). This diversity is reflected, even adopting an inclusive vision, as it is done here, by the number of accepted genera.

Corticioid fungi are a non-natural group with species distributed in all the clades of the Basidiomycetes. They have been regarded as either a primitive group that has given rise to forms with more complicated basidiomes or as a heterogeneous assemblage of reduced forms. According to the latter hypothesis corticioid forms have evolved repeatedly through reduction from erect forms (Hibbett & Thorn 2001, Larsson et al. 2004). In recent years, several molecular studies have contributed to elucidate the relationships between different genus of corticioid fungi (Binder et al. 2005, 2010, Larsson 2007b, Larsson & Larsson 2003, Larsson et al. 2004).

Hjortstam (1998) provided a very complete list of corticioid fungi and subsequent authors have continued completing it with new contributions. Here, an updated review is presented, with a traditional and pragmatic approach, of all accepted and commonly used worldwide corticioid homobasidiomycetes genera and other stipitate and pileate relatives. Comments are provided on the validity and usefulness of generic concepts, always having in mind that a genus is an artificial entity that can serve to us from a didactic point of view although their limits in most cases, from morphology, biology and even from a molecular perspective, can be confusing.

Materials & Methods

In this review, original diagnoses and herbarium material has been used for the preparation of the keys and descriptions. Reference specimens are not cited in this revision since it is only about providing a general idea about the generic definition of corticioid fungi without conducting an in-depth study of type or reference specimens, although many specimens have been studied in most cases. Keys are dichotomous, based mainly on macro- and micromorphological characters. Some genera key out by several ways in the keys; this is normal since the generic concept is artificial and, in many cases, there are no specific and diagnostic generic features. For the accepted genera, a complete description is provided with comments on nomenclature, taxonomy, and phylogeny. Here, we are considering corticioid homobasidiomycetes, mainly non-poroid species, but resupinate to effuse-reflexed polypores are also included, as well as the closest pileate and stipitate relatives. For corticioid heterobasidiomycetes the reader is referred to other specific manuals and articles.

The keys are intended to be posted on the website <https://corticioids.webs.com/keys.htm>, so they can be regularly updated and be rapidly accessible to the mycological community.

Main key to groups of corticioid fungi and relatives

1. Basidiome pseudostipitate to stipitate and pileate **Key A**
1. Basidiome sessile and resupinate to slightly pileate 2
2. Hymenophore poroid, with lacerate pores or with anastomosing ridges..... **Key B**
2. Hymenophore diverse, not typically poroid 3
3. Spores hyaline to typically brown or violet in KOH, ornamented, telephoric acid present. **Key C**
3. Not with the above combination 4
4. Brown star-shaped asterohyphidia or setae present..... **Key D**
4. Asterohyphidia or setae absent 5
5. Dichohyphae and/or binding-skeletal hyphae dextrinoid **Key E**
5. Not as above 6
6. Spores with a reaction in Melzer's reagent (amyloid or dextrinoid)..... 7
6. Spores without a reaction in Melzer's reagent 8
7. Spores amyloid **Key F**
7. Spores dextrinoid **Key G**
8. Basidia mostly with (1-3)4 sterigmata (if number of sterigmata not known follow this step)..... 9
8. Basidia mostly with more than 4 sterigmata..... **Key H**
9. Spores distinctly thick-walled and smooth 10
9. Spores thin-walled and/or ornamented and/or branched, lobed, triangular or tetrahedral 11
10. Clamps either totally absent or scattered **Key I**
10. Clamps present on nearly all septa (always at the basidial base) **Key J**
11. Spores ornamented and/or branched, lobed or tetrahedral (easily seen in Melzer!) **Key K**
11. Spores smooth..... 12
12. Lyocystidia present **Key L**
12. Lyocystidia absent 13
13. Generative hyphae with simple septa or occasional clamps..... 14
13. Generative hyphae with clamps..... 15
14. Cystidial organs present (excepting hyphidia or dendrohyphidia) **Key M**
14. Cystidial organs absent **Key N**
15. Hyphal system dimitic/trimitic **Key O**
15. Hyphal system monomitic (or pseudodimitic) 16
16. Dendrohyphidia or dendrophyses present **Key P**
16. Dendrohyphidia or dendrophyses absent (paraphysoid hyphae may be present)..... 17
17. Cystidial organs present..... **Key Q**
17. Cystidial organs absent **Key R**

Key A: Basidiome pseudostipitate to stipitate and pileate

1. Hymenophore hydroid	2
1. Hymenophore smooth to rugose, merulioid or folded.....	6
2. Spores ornamented.....	3
2. Spores smooth.....	4
3. Spores amyloid	<i>Auriscalpium</i>
3. Spores non-amyloid	(see <i>Trechispora</i>) <i>Hydnodon</i>
4. Basidiome fragile, basidia 6-sterigmate, hyphae with abundant oily contents.....	<i>Sistotrema</i>
4. Basidiome tough, basidia 4-sterigmate, hyphae not as above	5
5. Hyphal system monomitic, gloeocystidia absent.....	<i>Mycoleptonoides</i>
5. Hyphal system dimitic, gloeocystidia usually present.....	<i>Mycorrhaphium</i>
6. Basidiome infundibuliform, with a hollow stipe	<i>Parastereopsis</i>
6. Not as above	7
7. Hyphal system monomitic (check for vegetative hyphae in the stipe!).....	8
7. Hyphal system di-trimitic	14
8. Cystidia present (patent and projecting above the basidial layer)	9
8. Cystidia absent (may be present cystidiols or gloeocystidia but little differentiate or embedded)	10
9. Cystidia non-capitate, usually on soil.....	<i>Cotylidia</i>
9. Cystidia capitate, on living mosses.....	<i>Muscinipta</i>
10. Basidiome white, obconical to discoid with a central stipe.....	<i>Caripia</i>
10. Not as above, basidiome usually flabelliform	11
11. Coralloid hyphae present in the pileal surface and stipe	<i>Coralloderma</i>
11. Not as above, coralloid, or dendroid hyphae absent	12
12. Basidiome with a lichenized structure	<i>Cyphellostereum</i>
12. Not as above	13
13. Hymenophore merulioid, spores thick-walled.....	<i>Podoserpula</i>
13. Hymenophore smooth to rugose, spores thin-walled	<i>Stereopsis</i>
14. Hymenophore folded	15
14. Hymenophore smooth to rough	16
15. Hyphae inflated in context, cystidia absent	<i>Inflatostereum</i>
15. Hyphae non-inflated, cystidia encrusted and gloeocystidia present.....	<i>Cymatoderma</i>
16. Hyphal system trimitic, gloeocystidia absent	<i>Aquascypha</i>
16. Hyphal system dimitic, gloeocystidia present	17
17. Generative hyphae simple-septate, dextrinoid binding hyphae, spores amyloid... <i>Dichopleuropus</i>	
17. Generative hyphae clamped, skeletal hyphae non-dextrinoid, spores non-amyloid <i>Podoscypha</i>	

Key B: Basidiome usually sessile and resupinate to pileate, hymenophore poroid with lacerate pores or with anastomosing ridges

1. Basidiome brown, becoming black in KOH, generative hyphae with simple-septa, setae present or absent	(Hymenochaetaceae) 2
1. Not with this combination of characters	3
2. Basidiome perennial, hard, hyphal system dimitic	<i>Phellinus</i> s.l.
2. Basidiome annual, soft, and fragile when dry, hyphal system monomitic	<i>Inonotus</i> s.l.
3. Pores developing from an apical pore in isolated papillae	(= <i>Stromatoscypha</i>) <i>Porothelium</i>
3. Pores development not as above.....	4
4. Hymenium restricted to the base of the pores, tube walls sterile	5
4. Hymenium covering base and tube walls (may be absent in the dissepiments).....	9
5. Hyphal system monomitic	6
5. Hyphal system di-trimitic	7

6. Hymenophore with irregular pores, substate reddened	<i>Porogramme</i>
6. Hymenophore with long anastomosing ridges, substrate not reddened	<i>Hymenogramme</i>
7. Basidiospores thick-walled, with dextrinoid arboriform hyphae	<i>Grammothelopsis</i>
7. Basidiospores thin-walled, arboriform hyphae if present non-dextrinoid	8
8. Skeletal hyphae present, darkening with age and dextrinoid	<i>Grammothele</i>
8. Arboriform hyphae present, not darkening with age, non-dextrinoid	<i>Theleporus</i>
9. Basidiospores with a reaction in Melzer's reagent.....	10
9. Basidiospores negative in Melzer's reagent.....	19
10. Basidiospores amyloid.....	11
10. Basidiospores dextrinoid	18
11. Basidiospores smooth, hyphal system monomitic.....	12
11. Basidiospores ornamented, hyphal system dimitic.....	13
12. Margin rhizomorphic, causing a white rot.....	<i>Anomoloma</i>
12. Margin not rhizomorphic, causing a brown rot	<i>Anomoporia</i>
13. Generative hyphae with simple septa or alternating multiple clamps connections....	<i>Amylosporus</i>
13. Generative hyphae with clamps.....	(<i>Wrightoporia</i> s.l.)14
14. Pores labyrinthine to daedaleoid.....	<i>Amylonotus</i>
14. Pores elongated, round to angular	15
15. Basidiome tough to woody hard	16
15. Basidiome membranous, cottony to corky	17
16. Cystidia apically encrusted	<i>Larssoniporia</i>
16. Cystidia smooth	<i>Wrightoporiopsis</i>
17. Basidiome membranous to cottony, margin usually with rhizomorphs.....	<i>Wrightoporia</i>
17. Basidiome corky, margin without rhizomorphs.....	<i>Pseudowrightoporia</i>
18. Hyphal system monomitic	(= <i>Parmastomyces</i>) <i>Sarcoporia</i>
18. Hyphal system dimitic	<i>Perenniporia</i>
19. Basidiospores ornamented.....	20
19. Basidiospores smooth	24
20. Spore ornamentation rough based on longitudinal striae or rounded ridges	(= <i>Pachykytospora</i>) <i>Haploporus</i>
20. Spore ornamentation asperulate, echinulate or aculeate	21
21. Hyphal system monomitic in most species, hyphae with clamps.....	22
21. Hyphal system dimitic, generative hyphae with simple septa.....	<i>Heterobasidion</i>
22. Basidiospores yellowish to brown	<i>Lenzitopsis</i>
22. Basidiospores not coloured.....	23
23. Hyphae usually ampullate at septa, basidia with no cyanophilous granulation	<i>Trechispora</i>
23. Hyphae not ampullate at septa, basidia with cyanophilous granulation.....	<i>Lindtneria</i>
24. Hyphae with simple septa (some scattered clamps may occur in some hyphae)	25
24. Hyphae with clamps	42
25. Cystidia present	26
25. Cystidial elements absent	32
26. Cystidia long, cylindrical, usually not encrusted.....	27
26. Cystidia slender, usually encrusted at the apex	28
27. Basidiome white to cream, not changing in KOH, causing a white rot.....	<i>Leucophellinus</i>
27. Basidiome orange to red, red in KOH, causing a brown rot.....	<i>Pycnoporellus</i>
28. Hymenial surface brown to purplish, spores cylindrical	<i>Castanoporus</i>
28. Hymenial surface whitish to orange, spores widely ellipsoid to subglobose	29
29. Hymenial surface vivid orange to dark colored, mucronate cystidiols present.....	<i>Rigidoporus</i>
29. Hymenial surface paler, mucronate cystidiols absent.....	30
30. Hymenial surface with yellow brown colors, effuse-reflexed to pileate	<i>Oxychaete</i>
30. Hymenial surface whitish, usually resupinate	31
31. Hyphal system monomitic, hyphae slightly amyloid	<i>Emmia</i>

31. Hyphal system dimitic or pseudodimitic, hyphae not amyloid	<i>Oxyporus</i>
32. Hyphal system monomitic	33
32. Hyphal system dimitic (or seemingly dimitic)	41
33. Basidiospores thick-walled	<i>Byssoporia</i>
33. Basidiospores thin-walled.....	34
34. Hyphae with a reaction in Melzer's reagent	35
34. Hyphae without a reaction in Melzer's reagent	36
35. Hyphae dextrinoid	<i>Phlebiporia</i>
35. Hyphae slightly amyloid (some hyphae with scattered clamps)	<i>Elaphroporia</i>
36. Basidiospores globose	37
36. Basidiospores allantoid, cylindrical to oblong ellipsoid.....	38
37. Basidiome resupinate to pileate, coriaceous, basal hyphae thick-walled	<i>Rigidoporus</i>
37. Basidiome resupinate, ceraceous, basal hyphae thin-walled	<i>Physisporinus</i>
38. Hymenial surface white, beige, cream or pink	39
38. Hymenial surface reddish to purplish	40
39. Pore surface white to buff, anamorph present, basidiospores allantoid.....	<i>Riopa</i>
39. Pore surface more variable in color, anamorph absent, basidiospores variable	<i>Ceriporia</i>
40. Hymenophore merulioid with shallow pits, basidiome thin, not pileate	<i>Meruliopsis</i>
40. Hymenophore typically poroid, basidiome fleshy, often pileate	<i>Leptoporus</i>
41. Skeletal hyphae present	<i>Wolfiporia</i>
41. Binding hyphae or sclerified tortuous generative hyphae present.....	<i>Macrohyporia</i>
42. Cystidia well differentiated present	43
42. Cystidia absent (cystidiols, dendrohyphae or encrusted hyphae may be present).....	55
43. Cystidia smooth or only rarely encrusted in the apex.....	44
43. Cystidia encrusted.....	47
44. Gloeocystidia with oily contents	<i>Antella</i>
44. Cystidia smooth, with no oily contents.....	45
45. Hymenophore poroid to lamellate, with brown colors, causing a brown rot	<i>Gloeophyllum</i> s.l.
45. Hymenophore poroid, light colored, causing a white rot	46
46. Basidiome white, cystidia cylindric, spores narrowly allantoid	(= <i>Chaetoporellus</i>) <i>Kneiffiella</i>
46. Basidiome yellow to straw-coloured, cystidia hyphae-like, spores ellipsoid.....	<i>Luteoporia</i>
47. With two types of cystidia: 1) tramal thick-walled encrusted cystidia, 2) gloeocystidia ..	<i>Butyrea</i>
47. Not with two types of cystidia	48
48. Causing a brown rot.....	<i>Auriporia</i>
48. Causing a white rot	49
49. Cystidia only with apical encrustation.....	50
49. Skeletocystidia with heavily encrusted final part	52
50. Basidiome waxy when fresh and resinous when dry.....	<i>Cerarioporia</i>
50. Basidiome not waxy	51
51. Hymenial surface with violet shades, hyphal system dimitic.....	<i>Trichaptum</i>
51. Hymenial surface with no violet shades, hyphal system monomitic.....	<i>Xylodon</i>
52. Hymenial surface vivid chrome yellow	<i>Flaviporus</i>
52. Hymenial surface cream-coloured to pinkish, buff, cinnamon.....	53
53. Hymenial surface reddish when bruised, skeletal hyphae metachromatic	<i>Geesterania</i>
53. Hymenial surface usually not changing, skeletal not metachromatic	54
54. Basidiome brown, with a sweet smell	<i>Metuloidea</i>
54. Basidiome usually not brown, with no sweet smell	(= <i>Junghuhnia</i>) <i>Steccherinum</i>
55. Hyphal system monomitic	56
55. Hyphal system pseudodimitic, dimitic to trimitic.....	76
56. Basidia distinctly pleural	<i>Radulotubus</i>
56. Basidia not pleural	57
57. Basidia urniform, with 4-8 sterigma, hyphae with oily contents, usually ampullate	<i>Sistotrema</i>

57. Basidia clavate or cylindrical, with 4-sterigma, hyphae not ampullate and with no oily contents .	58
58. Basidiome cartilaginous to waxy when fresh	59
58. Basidiome not cartilaginous or waxy when fresh (ceraceous follow this step).....	64
59. Pore surface whitish, stained dark brown to black when bruised.....	<i>Atraporiella</i>
59. Pore surface not blackening when touched	60
60. Hymenophore pink to reddish and more or less gelatinous, dissepiments fertile	(see also <i>Vitreoporus</i>) <i>Gloeoporus</i>
60. Hymenophore usually differently coloured and non-gelatinous, dissepiments usually sterile....	61
61. Basidiome changing red in KOH..... (see also <i>Erastia</i>)	<i>Aurantiporus</i>
61. Basidiome not changing in KOH.....	62
62. Basidiospores globose, broad bottle-shaped cystidiols	<i>Obba</i>
62. Basidiospores cylindrical to allantoid, no broad bottle-shaped cystidiols.....	63
63. Basidiospores allantoid, hyphae swelling and gelatinized in KOH.....	<i>Gelatoporia</i>
63. Basidiospores cylindrical, hyphae not swelling and gelatinized in KOH	<i>Sebipora</i>
64. Basidiome with rhizomorphs, hyphae encrusted	<i>Porpomyces</i>
64. Basidiome with no rhizomorphs, hyphae encrusted or not.....	65
65. Basidiome usually changing red or purple in KOH..... (see also <i>Erastia</i>)	<i>Hapalopilus</i>
65. Basidiome not changing in KOH.....	66
66. Basidiome reddening after bruising, with skeletoid hyphae.....	<i>Pouzaroporia</i>
66. Basidiome not reddening after bruising, skeletoid hyphae absent	67
67. Basidiospores globose	<i>Physisporinus</i>
67. Basidiospores allantoid, cylindrical to oblong ellipsoid.....	68
68. Hyphae that presents inflated or widened portions and constrictions	69
68. Hyphae not as above.....	70
69. Basidiospores allantoid, hyphae thick-walled, irregularly inflated and constricted.....	<i>Aegis</i>
69. Basidiospores subglobose, hyphae thin-walled, with ampullaceous septa.....	<i>Caudicicola</i>
70. Causing a white rot	71
70. Causing a brown rot.....	75
71. Basidiome resupinate, ceraceous	72
71. Basidiome resupinate to effused-reflexed to pileate, soft to corky.....	73
72. Basidiospores globose to subglobose	<i>Niemelaea</i>
72. Basidiospores ellipsoid to cylindrical	<i>Ceriporiopsis</i>
..... (see also <i>Frantisekia</i> , <i>Raduliporus</i> , <i>Resiniporus</i>)	
73. Tubes white to yellowish	<i>Tyromyces</i>
73. Tubes greyish-violaceous to brown	74
74. Basidiome soft, very brittle when dry, basidiospores allantoid	<i>Fragiliporia</i>
74. Basidiome corky, basidiospores cylindrical	<i>Bjerkandera</i>
75. Basidiome mostly white to yellowish.....	<i>Postia</i>
75. Basidiome pinkish to red	<i>Rhodonia</i>
76. Contextual skeletal hyphae cyanophilous.....	77
76. Contextual skeletal hyphae not cyanophilous.....	79
77. Skeletal hyphae dextrinoid	<i>Megasporoporia</i>
77. Skeletal hyphae non dextrinoid	78
78. Skeleto-binding hyphae in context arboriform, resinous orange substance in context	<i>Gloeoporellus</i>
78. No arboriform skeletal hyphae, resinous substance in context absent	<i>Cyanotrampa</i>
79. Skeletal hyphae with a variable reaction in Melzer's reagent.....	80
79. Skeletal hyphae not reacting in Melzer's reagent	85
80. Skeletal hyphae weakly to distinct amyloid	81
80. Skeletal hyphae usually dextrinoid.....	83
81. Causing a brown rot.....	<i>Amyloporia</i>

81. Causing a white rot	82
82. Basidiospores allantoid, thin-walled..... (=Canopora?)	<i>Cinereomyces</i>
82. Basidiospores ellipsoid, thick-walled	(see also <i>Amylosporia</i>) <i>Yuchengia</i>
83. Substrate reddened in zones.....	<i>Tinctoporellus</i>
83. Substrate not reddened.....	84
84. Basidiospores negative in Melzer's reagent.....	<i>Megasporia</i>
84. Basidiospores with a variable dextrinoid reaction.....	<i>Perenniporia</i>
85. Hyphal system pseudodimitic, skeletoid hyphae or skeletal hyphae present only in context	86
85. Hyphal system dimitic to trimitic	87
86. Thick-walled hyphae with sparse clamps, metachromatic	<i>Rickiopora</i>
86. Skeletal hyphae present only in context, not metachromatic	<i>Frantisekia</i>
87. Basidiome woody, dark brown, context brown	88
87. Not as above, context light or pale coloured	94
88. Hymenophore poroid, daedaleoid to lamellate, causing a brown rot	<i>Gloeophyllum</i> s.l.
88. Hymenophore poroid with round to angular pores, causing a white rot	89
89. Basidiome resupinate.....	90
89. Basidiome usually effuse-reflexed to pileate.....	91
90. Dendrohyphidia present in the dissepiments, basidiospores cylindrical	<i>Neodatronia</i>
90. Dendrohyphidia absent, basidiospores ellipsoid.....	<i>Donkioporia</i>
91. Context rusty brown, no black line between context and tomentum, binding hyphae present	<i>Funalia</i>
91. Context dark brown, with a black line between context and tomentum, binding hyphae rare....	92
92. On conifers, basidiospores allantoid, 3-4 µm long.....	<i>Piloporia</i>
92. On hardwoods, basidiospores cylindrical, 8-12 µm long	93
93. Dendrohyphidia present in the dissepiments	<i>Datronia</i>
93. Dendrohyphidia absent in the dissepiments	<i>Datroniella</i>
94. Hyphal system trimitic, with skeletal and binding hyphae.....	<i>Earliella</i>
94. Hyphal system dimitic, with skeletal or binding arboriform hyphae	95
95. Binding arboriform vegetative hyphae, dichotomously branched.....	(see also <i>Szczepkamyces</i>) <i>Dichomitus</i>
95. Skeletal hyphae more or less straight	96
96. Causing a white rot, spores usually small.....	97
96. Causing a brown rot, spores usually large	<i>Antrodia</i> s.l 101
(see also <i>Antrodiopsis</i> , <i>Brunneoporus</i> , <i>Dentiporia</i> , <i>Flavidoporia</i> , <i>Lentoporia</i> , <i>Neoantrodia</i> , <i>Rhizoporia</i> , <i>Subantrodia</i>)	
97. Skeletal hyphae more or less finely encrusted.....	98
97. Skeletal hyphae not encrusted	99
98. Pores round to lacerate to hydnceous, basidiospores ellipsoid.....(= <i>Schizopora</i>)	<i>Xylodon</i>
98. Pores usually round, small, basidiospores allantoid to cylindrical.....	<i>Skeletocutis</i>
99. Basidiospores ellipsoid to cylindrical, usually up to 5 µm long.....	<i>Antrodiella</i>
99. Basidiospores usually allantoid to cylindrical or ellipsoid, usually longer than 5 µm	100
100. Basidiospores allantoid to cylindrical, basidiome tough	<i>Diplomitoporus</i>
100. Basidiospores ellipsoid, basidiome soft.....	<i>Cinereomycetella</i>
101. Basidiome soft and fleshy, hymenophore gelatinous	<i>Cartilosoma</i>
101. Basidiome tough to hard, hymenophore not gelatinous	102
102. Subiculum cottony with brown generative hyphae next to the substrate	<i>Anthoporia</i>
102. Not as above	103
103. Skeletal hyphae swelling and dissolving in KOH, weak to distinctly amyloid.....	<i>Amyloporia</i>
103. Skeletal hyphae not swelling and dissolving in KOH, not amyloid	104
104. Resinous matter abundant present as droplets or globose bodies.....	<i>Resinoporia</i>
104. Not as above	105
105. Rhizomorphs absent, basidiospores allantoid, cylindrical to narrowly ellipsoid	<i>Antrodia</i>

105. Rhizomorphs usually present, basidiospores usually ellipsoid.....	106
106. Basidiospores thin-walled, skeletal hyphae thinner than generative hyphae	<i>Leifiporia</i>
106. Basidiospores firm to thick-walled, skeletal hyphae wider than generative hyphae	107
107. Basidiomes resupinate with rhizomorphic margin	<i>Fibroporia</i>
107. Basidiospores pileate with entire margin.....	<i>Pseudofibroporia</i>

Key C: Basidiome usually resupinate, hymenophore non-typically poroid, spores hyaline to typically brown or violet in KOH, ornamented, telephoric acid present (tomentelloid fungi)

1. Basidiome bluish when fresh, greenish when dry, spores violaceous in KOH	<i>Amaurodon</i>
1. Not as above	2
2. Hyphae simple-septate, spores echinulate and hyaline in KOH.....	<i>Tomentellopsis</i>
2. Not with this combination of characters	3
3. Basidiome effuse to effuse-reflexed, hymenophore irpicoid to lamellate	<i>Lenzitopsis</i>
3. Not as above	4
4. Basidia sphaeropedunculate, hyphae mostly simple-septate or clamped with hyaline spores	<i>Pseudotomentella</i>
4. Basidia usually clavate, hyphae mostly clamped and spores mostly brownish in KOH.....	(see also <i>Odontia</i> for non-mycorrhizal species) <i>Tomentella</i>

Key D: Basidiome usually resupinate, hymenophore non-typically poroid, smooth or hydroid, with brown asterohyphidia or setae

1. Asterohyphidia present, setae absent	2
1. Asterohyphidia absent, with brown setae	3
2. Hymenophore smooth, asterohyphidia dextrinoid, spores amyloid	<i>Asterostroma</i>
2. Hymenophore hydroid, asterohyphidia not dextrinoid, spores inamyloid.....	<i>Asterodon</i>
3. Basidiospores narrowly cylindrical to allantoid	<i>Hymenochaetopsis</i>
3. Basidiospores cylindrical, ellipsoid to subglobose	(includ. <i>Hydnochaete</i>) <i>Hymenochaete</i>

Key E: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae present

1. Dichohyphae present	2
1. Dichohyphae absent (dendrohyphidia may be present).....	(see also <i>Baltazaria</i>) <i>Scytinostroma</i>
2. Spores smooth, amyloid or not	<i>Vararia</i>
2. Spores verrucose, strongly amyloid.....	<i>Dichostereum</i>

Key F: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores amyloid

1. Hymenophore clearly odontoid to hydroid	2
1. Hymenophore smooth to verrucose or slightly merulioid	11
2. Basidiome stipitate, growing on cones of <i>Picea</i> or <i>Pinus</i>	<i>Auriscalpium</i>
2. Basidiome different.....	3
3. Aculei arising single, usually inconspicuous	4
3. Aculei disposed on a structured conspicuous basidiome	5
4. Cystidia absent.....	<i>Mucronella</i>
4. Cystidia present	<i>Dentipratulum</i>
5. Spores smooth.....	<i>Irpicondon</i>
5. Spores ornamented.....	6

6. Basidiome pileate or effuse-reflexed	7
6. Basidiome resupinate (rarely pileate)	8
7. Basidiome pileate, fleshy, globose to ramified or dimidiate, white to cream.....	<i>Hericium</i>
7. Basidiome effuse-reflexed, not as above, brownish to greyish	<i>Gloiodon</i>
8. Hyphal system dimitic or pseudodimitic, metuloids present.....	<i>Gloeodontia</i>
8. Hyphal system monomitic, metuloids absent	(<i>Dentipellis</i> s.l.) 9
9. Basidiospores distinctly thick-walled, mostly > 5.5 µm long	<i>Dentipellopsis</i>
9. Basidiospores slightly thick-walled, mostly < 5.5 µm long	10
10. Generative hyphae CB–	<i>Dentipellicula</i>
10. Generative hyphae CB+.....	<i>Dentipellis</i>
11. Acanthophyses, botryophyses and/or dendrophyses present	12
11. Acanthophyses, botryophyses and/or dendrophyses absent	21
12. Hyphal system dimitic (compare also <i>Xylobolus</i> and <i>Perplexostereum</i>)	<i>Stereum</i>
12. Hyphal system monomitic	13
13. With a white pocket-rot	14
13. With a laminar white rot	16
14. Hyphae with simple-septa.....	<i>Xylobolus</i>
14. Hyphae with clamps	15
15. Basidiome pulvinate, with acanthophyses, spores smooth.....	<i>Acanthofungus</i>
15. Basidiome effused, no acanthophyses, spores finely warted.....	<i>Haloaleurodiscus</i>
16. Spores smooth.....	<i>Acanthophysellum</i>
16. Spores ornamented.....	17
17. Botryophyses present.....	<i>Aleurobotrys</i>
17. Botryophyses absent	18
18. Acanthobasidia present	<i>Acanthobasidium</i>
18. Acanthobasidia absent	19
19. Basidiome fleshy and gelatinous, cupulate, yellowish to orange coloured	<i>Gleოსoma</i>
19. Not as above	20
20. Spore print white, with acanthophyses, hyphae simple-septate	<i>Aleuromyces</i>
20. Not as above	<i>Aleurodiscus</i> s.l.
21. Hyphal system dimitic or trimitic	22
21. Hyphal system monomitic	31
22. Spores smooth.....	23
22. Spores ornamented.....	25
23. With brown, encrusted (metuloid) cystidia.....	<i>Amylostereum</i>
23. Without brown, encrusted (metuloid) cystidia.....	24
24. With binding hyphae and gloeocystidia.....	<i>Gloeomyces</i>
24. Without binding hyphae and gloeocystidia.....	<i>Stereum</i>
25. Spores 15–20 µm long	<i>Aleurocystidiellum</i>
25. Spores shorter	26
26. Gloeocystidia (SA+) present.....	<i>Scytinostromella</i>
26. Gloeocystidia absent	27
27. Hyphal system trimitic, pseudocystidia absent (encrusted cystidia present).....	<i>Laurilia</i>
27. Hyphal system dimitic, pseudocystidia present.....	28
28. Hymenophore smooth or tuberculate.....	29
28. Hymenophore odontoid to hydroid or dedaleoid.....	30
29. Context reddish-brown, pseudocystidia smooth.....	<i>Perplexostereum</i>
29. Context light orange, pseudocystidia encrusted	<i>Lauriliella</i>
30. Basidiome effuse-reflexed to pileate, context brick-red to brownish orange, on conifers	<i>Echinodontium</i>
.....	
30. Basidiome effused to effuse-reflexed, context cinnamon to olive grey, on <i>Quercus</i>	<i>Echinodontiellum</i>
.....	

31. Spores ornamented (in Melzer's reagent).....	32
31. Spores smooth (in Melzer's reagent)	42
32. Basidia pleural	<i>Pseudoxenasma</i>
32. Basidia terminal	33
33. Encrusted cystidia or hyphae present	34
33. Encrusted elements absent.....	36
34. Metuloids conical present, spores usually up to 5 µm long.....	<i>Gloeopeniophorella</i>
34. Encrusted elements not typical as conical metuloids, spores longer than 5 µm.....	35
35. Cystidia encrusted, spores ornamented with bifurcate aculei.....	<i>Aleurodiscus</i> s.l.
35. Encrusted elements as skeletocystidia, spores verrucose	<i>Aleurocystidiellum</i>
36. Spores usually longer than 10 µm	<i>Aleurodiscus</i>
36. Spores usually up to 10 µm long	37
37. Basidiome pellicular, gloeocystidia absent.....	<i>Amyloathelia</i>
37. Basidiome usually membranous, gloeocystidia present	38
38. Basidiome stereoid, pileate or resupinate, context dark brown	<i>Laxitextum</i>
38. Basidiome resupinate, context white to cream	39
39. Basidia suburniform.....	<i>Boidinia</i>
39. Basidia clavate	40
40. Context pseudoparenchymatic, hyphae cyanophilous, basidia with internal repetition.....	<i>Conferticum</i>
40. Not as above	41
41. Basidiome vivid orange, hyphae simple septate, tropical genus	<i>Gloeocystidiopsis</i>
41. Basidiome generally paler, hyphae with or without clamps, widespread.....	<i>Gloeocystidiellum</i>
42. Spores thin-walled	43
42. Spores thick-walled	53
43. Gloeocystidia present.....	44
43. Gloeocystidia absent.....	48
44. Context pseudoparenchymatic, hyphae cyanophilous, basidia with internal repetition.....	<i>Conferticum</i>
44. Not as above	45
45. Clamps present.....	<i>Megalocystidium</i>
45. Clamps absent.....	46
46. Hyphae, basidia, and gloeocystidia amyloid	<i>Amylofungus</i>
46. Hyphae, basidia, and gloeocystidia not distinctly amyloid	47
47. Gloeocystidia with granular contents, SA+	<i>Gloiothele</i>
47. Gloeocystidia with no appreciable contents, SA-	<i>Vesiculomyces</i>
48. Basidia pleural (see also <i>Melzericum</i> , with larger spores)	<i>Amyloxenasma</i>
48. Basidia terminal	49
49. Lamprocystidia present.....	<i>Amylostereum</i>
49. Lamprocystidia absent	50
50. Skeletocystidia present, hyphae simple-septate.....	<i>Aleurodiscus</i> s.l.
50. Not as above	51
51. Basidiome effuse-reflexed to pileate, hymenophore plicate, spores very narrow, 0.5–1.2 µm wide.....	<i>Plicatura</i>
51. Basidiome resupinate, hymenophore smooth to tuberculate, spores at least 1.5 µm wide.....	52
52. Spores up to 2–3 µm wide, cystidia sometimes present, basidia clavate.....	<i>Amylocorticum</i>
52. Spores larger, 3–6 µm wide, cystidia absent, basidia stalked	<i>Melzericum</i>
53. Clamps absent.....	<i>Hypochnella</i>
53. Clamps present.....	54
54. Basidiospores cylindrical, brown.....	<i>Corneromyces</i>
54. Basidiospores ellipsoid, hyaline	55
55. Amyloid reaction weak, greyish to bluish	<i>Amylocorticiellum</i>

55. Amyloid reaction strong, dark blue to violet *Amyloathelia*

Key G: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores dextrinoid

- 1. Hymenophore smooth or tuberculate..... 2
- 1. Hymenophore merulioid, reticulate, folded, hydroid..... 3
- 2. Cystidia present, non-septate, clamps present *Jaapia*
- 2. Cystidia usually absent, when present septate, clamps usually absent.....*Coniophora*
- 3. Hymenophore merulioid..... 4
- 3. Hymenophore hydroid 6
- 4. Hyphal system dimitic, with skeletoid hyphae, spores longer than 8 µm *Serpula*
- 4. Hyphal system monomitic, spores up to 8 µm long 5
- 5. Spores cylindrical, up to 1–1.5 µm wide, clamps ansiform *Pseudomerulius*
- 5. Spores ellipsoid, wider than 2–2.5 µm, clamps not ansiform..... *Leucogyrophana*
- 6. Hyphae with clamps *Hydnomerulius*
- 6. Hyphae with simple septa..... 7
- 7. Spores thick-walled, hymenophore brownish with greenish tints *Gyrodontium*
- 7. Spores thin-walled, hymenophore whitish to cream..... *Korupella*

Key H: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 4-8 sterigmata

- 1. Basidia urniform 2
- 1. Basidia differently shaped but not urniform 3
- 2. Spores thin-walled *Sistotrema*
- 2. Spores thick-walled *Sistotremella*
- 3. Basal hyphae broad, 5–10(–20) µm wide, and branched at right angles *Botryobasidium*
- 3. Basal hyphae mostly up to 5 µm wide, branched at acute angles..... 4
- 4. Basidiome thin and hardly visible, basidia obconical to pyriform *Paullicorticium*
- 4. Basidiome distinct, basidia almost cylindric to clavate..... *Sistotremastrum*

Key I: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores thick-walled and smooth, clamps absent or scattered

- 1. Dendrohyphidia or paraphysoid hyphae present 2
- 1. Dendrohyphidia or paraphysoid hyphae absent..... 3
- 2. Hyphal system monomitic, on bark of living trees..... *Dendrothele*
- 2. Hyphae system di- to trimitic, on dead wood *Licrostroma*
- 3. Basidiome pinkish to red or orange, hyphae in the subiculum somewhat short-celled..... 4
- 3. Basidiome and subicular hyphae not as above 5
- 4. Saprobes on dead wood, widespread. *Erythricium*
- 4. Parasitic or lichen-forming fungi..... (see also *Lawreymyces*) *Marchandiobasidium*
- 5. Spores up to 6 µm long 6
- 5. Spores longer than 6 µm 8
- 6. Hymenophore poroid *Byssoporia*
- 6. Not as above 7
- 7. Basidiome bluish to greenish, some scattered clamps may be present..... *Byssocorticium*

7. Basidiome white to cream to pale yellow, clamps completely absent.....	<i>Piloderma</i>
8. Spores subglobose to spherical.....	<i>Membranomyces</i>
8. Spores ellipsoid to fusoid or ovoid.....	9
9. Basidiome cream to brown with tuberculate to odontoid hymenophore, spores hyaline.....	10
9. Not as above, basidiome usually smooth, rarely tuberculate, spores coloured.....	11
10. Thin-walled cystidia present.....	<i>Phaeoradulum</i>
10. Cystidia absent.....	<i>Crepatura</i>
11. Basidiome dark violet, spores brownish violet, slightly amyloid.....	<i>Hypochnella</i>
11. Basidiome different, spores yellowish to brownish, non-amyloid (often dextrinoid)	<i>Coniophora</i>

Key J: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores thick-walled and smooth, clamps usually present (always at the basidial base)

1. Spores developing a distal rostrum when mature.....	<i>Arrasia</i>
1. Spores diverse.....	2
2. Hymenophore with hyphal pegs.....	3
2. Hymenophore diverse.....	5
3. Hyphal pegs composed of skeletal hyphae.....	<i>Epithelopsis</i>
3. Not as above.....	4
4. On dead wood, frequently on grasses.....	(see also <i>Colospora</i>) <i>Epithele</i>
4. On bark of living trees.....	<i>Dendrothele</i>
5. Hyphidia or dendrohyphidia present.....	6
5. Hyphidia or dendrohyphidia absent.....	12
6. Skeletal hyphae more or less dextrinoid (context dextrinoid).....	<i>Cystidiodontia</i>
6. Not as above.....	7
7. On bark of living trees.....	<i>Dendrothele</i>
7. On dead wood.....	8
8. Leptocystidia present.....	<i>Boidinella</i>
8. Leptocystidia absent.....	9
9. Basidiome ceraceous, hyphae agglutinate and indistinct, spores up to 6 µm long..	<i>Dendrophlebia</i>
9. Basidiome membranous, hyphae distinct, spores larger.....	10
10. Metuloids or encrusted cystidia present.....	<i>Aleurocystis</i>
10. Encrusted cystidial elements absent.....	11
11. Spores slightly cyanophilous, hyaline.....	<i>Globuliciopsis</i>
11. Spores acyanophilous, with granular contents.....	<i>Radulomyces</i>
12. Thick-walled cystidia, skeletoid or hyphoid encrusted hyphae present.....	13
12. Not as above.....	18
13. Gloeocystidia or moniliform cystidia present.....	14
13. Not as above.....	16
14. Hymenophore odontoid.....	<i>Fasciodontia</i>
14. Hymenophore smooth to tuberculate but not odontoid.....	15
15. With brown, rooted fusiform cystidia, spores subglobose up to 6 µm.....	<i>Hemmesomyces</i>
15. With metuloids and encrusted skeletocystidia, spores ellipsoid, much larger.....	<i>Aleurocystis</i>
16. Hymenophore tuberculate to odontoid, with encrusted skeletoid cystidia.....	<i>Nodotia</i>
16. Hymenophore smooth, with hymenial or hyphoid cystidia.....	17
17. Cystidia hyphoid, septate.....	<i>Gyrophanopsis</i>
17. Cystidia hymenial, aseptate.....	<i>Bulbillomyces</i>
18. Hymenophore merulioid or remarkably folded, spores dextrinoid.....	19
18. Hymenophore different, smooth to hydroid, spores non-dextrinoid.....	21
19. Hyphal system dimitic, spores more than 8 µm long.....	<i>Serpula</i>

19. Hyphal system monomitic, spores up to 8 µm long	20
20. Spores cylindrical, up to 1–1.5 µm wide, clamps ansiform	<i>Pseudomerulius</i>
20. Spores ellipsoid, wider than 2–2.5 µm, clamps not ansiform.....	<i>Leucogyrophana</i>
21. Basidiome byssoid	22
21. Basidiome diverse.....	23
22. Basidiome with bluish to greenish colours	<i>Byssocorticium</i>
22. Basidiome yellowish to cream.....	<i>Tretomyces</i>
23. Basidia clearly stalked	<i>Intextomyces</i>
23. Basidia not stalked	24
24. Basidia pleural	<i>Aphanobasidium</i>
24. Basidia terminal	25
25. Gloeocystidia moniliform and amyloid	<i>Gloeocorticium</i>
25. Not as above	26
26. Some hyphae often ampullate at the septa or short-celled and inflated	27
26. Hyphae not ampullate at the septa	28
27. Hyphae often ampullate at the septa	<i>Trechispora</i>
27. Hyphae short-celled forming a subhymenial pseudoparenchymatous texture	<i>Hallenbergia</i>
28. Spores up to 4–5 µm long and 2–3 µm wide	<i>Amphinema</i>
28. Spores longer and/or wider	29
29. Immature basidia with cyanophilous drops or granules	<i>Cristinia</i>
29. Not as above	30
30. Cystidia (not cystidiols!) present	31
30. Cystidia absent.....	35
31. Hymenophore clearly hydroid	<i>Radulodon</i>
31. Hymenophore smooth to tuberculate or odontoid	32
32. Cystidia (gloeocystidia) SA+.....	<i>Gloeohypochnicium</i>
32. Cystidia SA–.....	33
33. Cystidia moniliform or torulose..... (see also <i>Fasciodontia</i>)	<i>Xylodon</i>
33. Not as above	34
34. Cystidia with obtuse apex, basidia small, 10–20 µm long, with astero-crystals.....	(= <i>Lagarobasidium</i>) <i>Xylodon</i>
34. Not as above	<i>Hypochnicium</i>
35. Hymenophore distinctly odontoid to hydroid	36
35. Hymenophore smooth to tuberculate or grandinioid.....	37
36. Basidiospores and subicular hyphae cyanophilous.....	<i>Cyanodontia</i>
36. Basidiospores and hyphae non cyanophilous	<i>Sarcodontia</i>
37. Basidia 10–15 × 3–4 µm, spores 4–5 × 2.5–3 µm	<i>Hypochniciellum</i>
37. Basidia and spores wider	38
38. Basidia longer than 30 µm, spores on average more than 6 µm wide	<i>Hypochnicium</i>
38. Basidia rarely more than 30 µm long, spores on average decidedly narrower.....	39
39. Hymenophore often with olivaceous tints, spores dextrinoid	<i>Leucogyrophana</i>
39. Hymenophore bright yellow, spores non-dextrinoid	<i>Coniophora</i>

Key K: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores ornamented and/or branched, lobed, triangular or tetrahedral

1. Spores lobed or branched.....	2
1. Spores variable, subballantoid, ellipsoid, fusiform, globose or with a tetrahedral outline.....	5
2. Spores Y-shaped, with two outgrowths, which in the end branch out once again..	<i>Elaphocephala</i>
2. Spores differently shaped.....	3

3. Spores V-shaped.....	<i>Galzinia</i>
3. Spores otherwise.....	4
4. Spores with seven lobes.....	<i>Lobulicium</i>
4. Spores more or less regularly triangular in outline, with 3 lobes.....	<i>Tylospora</i>
5. Hymenophore minutely odontoid formed by sterile hyphal pegs.....	6
5. Not as above (if hymenophore odontoid the aculei are fertile).....	7
6. Spores biapiculate.....	<i>Colospora</i>
6. Spores diverse, not typically biapiculate.....	<i>Epithele</i>
7. Dendrophyses present.....	8
7. Dendrophyses absent.....	10
8. On bark of living trees.....	<i>Dendrothele</i>
8. On decayed wood.....	9
9. Hyphae simple-septate, spores more than 10 µm long.....	<i>Coniophoropsis</i>
9. Hyphae with clamps, spores up to 10 µm long.....	<i>Ramaricium</i>
10. Cystidia absent (cystidiols or large subicular vesicles may be present).....	11
10. Cystidia present.....	29
11. Basidia with cyanophilous granular content.....	<i>Lindtneria</i>
11. Basidia without cyanophilous granular content.....	12
12. Hymenophore poroid.....	<i>Trechispora</i>
12. Hymenophore smooth to hydroid.....	13
13. Hymenophore odontoid to hydroid.....	14
13. Hymenophore smooth to hypochnoid, grandinioid or tuberculate.....	17
14. Basidia clearly stalked, spores ellipsoid, slightly angular, thick-walled.....	<i>Intextomyces</i>
14. Not as above.....	15
15. Basidiospores subfusiform, yellowish, with strongly cyanophilous warts.....	<i>Kavinia</i>
15. Basidiospores ellipsoid to subglobose, hyaline, weakly or not cyanophilous.....	16
16. Basidiome soft and fragile.....	<i>Trechispora</i>
16. Basidiome membranaceous to corneous when dry.....	<i>Ripexicium</i>
17. Clamps absent or inconstant.....	18
17. Clamps present (some few basal hyphae may be simple-septate).....	22
18. Basidia pleural.....	<i>Phlebiella</i>
18. Basidia terminal.....	19
19. Basidia urniform to subcylindrical, hyphae broad, usually more than 5 µm wide.....	20
19. Basidia clavate, hyphae narrow, up to 5 µm wide.....	21
20. Spores thin-walled, not producing secondary spores by germination.....	<i>Botryobasidium</i>
20. Spores thick-walled, often producing secondary spores by germination.....	<i>Tofispora</i>
21. Spores hyaline and cyanophilous.....	<i>Ceraceopsis</i>
21. Not as above.....	Tomentelloid fungi (see Key C)
22. Hyphae with ampullaceous swellings near the septa.....	23
22. Hyphae without ampullate septa.....	24
23. Spore ornamentation developed in later stages of the maturation.....	<i>Trechinothus</i>
23. Not as above.....	<i>Trechispora</i>
24. Spores yellowish to pale brown, darkening to blackish brown.....	<i>Scotoderma</i>
24. Not as above.....	25
25. Basidia pleural.....	26
25. Basidia terminal.....	28
26. Spores angular, tetrahedral.....	<i>Xenosperma</i>
26. Spores subcylindrical to ellipsoid or globose.....	27
27. Spores globose, slightly thick-walled, basidia large, more than 20 µm long..	<i>Cunninghammyces</i>
27. Spores variably in shape, usually ellipsoid, basidia smaller, less than 20 µm long.....	<i>Phlebiella</i>
28. Hyphidia absent, spores rugose, cyanophilous.....	<i>Granulobasidium</i>
28. Hyphidia present, spores minutely warted, acyanophilous.....	<i>Radulomyces</i>

29. Hyphae without clamps or only occasional	30
29. Hyphae with clamps	31
30. Cystidia metuloid.....	<i>Duportella</i>
30. Not as above	<i>Dendrothele</i>
31. Lyocystidia present	<i>Litschauerella</i>
31. Lyocystidia absent	32
32. Basidia terminal	33
32. Basidia pleural	<i>Xenasma</i>
33. Basidiospores with thickened walls, usually larger than 5 µm.....	<i>Hypochnicium</i>
33. Basidiospores thin-walled, up to 5 µm in diameter	<i>Rogersella</i>

Key L: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lyocystidia present

1. Hyphal system dimitic	<i>Dacryobolus</i>
1. Hyphal system monomitic	2
2. Hyphae without clamps	<i>Leifia</i>
2. Hyphae clamped	3
3. Hyphae and cystidia thick-walled, swelling and partly dissolving in KOH, IKI– ..	<i>Amauromyces</i>
3. Not as above, cystidia IKI+	4
4. (Lyo) cystidia dextrinoid.....	<i>Dextrinocystis</i>
4. Lyocystidia not dextrinoid, commonly amyloid.....	5
5. Lyocystidia usually bi-rooted, smooth.....	<i>Tubulicrinis</i>
5. Lyocystidia usually multi-rooted, covered by hyphae	6
6. Spores sigmoid to vermiform, smooth.....	<i>Tubulicium</i>
6. Spores subglobose, finely warted (rarely smooth)	<i>Litschauerella</i>

Key M: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lyocystidia absent, generative hyphae with simple septa, cystidial organs present

1. Acanthobasidia or acanthocystidia present.....	2
1. Acanthoid elements absent	3
2. With acanthobasidia, not reacting in Melzer's reagent, with (1)2 long sterigmata, spores repetitive.....	<i>Heteroacanthella</i>
2. With acanthocystidia, dextrinoid, spores not repetitive.....	<i>Acanthocystidium</i>
3. Septocystidia present	4
3. Clearly differentiated septocystidia absent	5
4. Septocystidia not encrusted (see also <i>Membranomyces spurius</i> , with somewhat septate, scarcely differentiated hyphal ends).....	<i>Candelabrochaete</i>
4. Septocystidia encrusted	<i>Odonticium</i>
5. Basidia pleural	<i>Lepidomyces</i>
5. Basidia terminal	6
6. Cystidia of the metuloid type (thick-walled, encrusted) or heavily encrusted, thick-walled hyphal ends/pseudocystidia present	7
6. Cystidia not heavily encrusted (excepting encrusted hyphal ends or encrusted tips).....	18
7. Hyphal system dimitic or pseudodimitic	8
7. Hyphal system monomitic	12
8. Hymenophore smooth to slightly tuberculate, cystidia yellowish brown to brown	<i>Hjortstamia</i>
8. Hymenophore odontoid to irpicoid, cystidia hyaline	9

9. Hymenophore irregularly irpicoid to subporoid	10
9. Hymenophore odontoid to raduloid.....	11
10. Basidiome white to cream, not changing in KOH.....	<i>Irpex</i>
10. Basidiome yellowish to cinnamon, red in KOH.....	<i>Flavodon</i>
11. Hymenophore with cylindrical or conical aculei.....	<i>Steccherinum</i>
11. Hymenophore raduloid	<i>Australohydnum</i>
12. Metuloids and gloeocystidia present	<i>Peniophora</i>
12. Only metuloids or encrusted cystidia present.....	13
13. Hymenophore irpicoid to poroid	<i>Castanoporus</i>
13. Hymenophore more or less smooth to grandinioid or tuberculate	14
14. Basidiome ceraceous, subiculum poorly developed.....	<i>Scopuloides</i>
14. Basidiome subceraceous to membranaceous, subiculum well developed.....	15
15. Subhymenium formed by a compact structure of hyphal cords	<i>Cordochaete</i>
15. Subhymenium not with such structure of hyphal cords.....	16
16. Basidiome membranaceous, subicular hyphae in a looser structure	<i>Phanerochaete</i>
16. Basidiome subceraceous, subicular hyphae agglutinate and indistinct	17
17. Basidiome whitish to sordid, cystidia hyaline or very pale coloured	<i>Phlebiopsis</i>
17. Basidiome beige to brown, cystidia usually brown coloured.....	<i>Phaeophlebiopsis</i>
18. Basidiome pileate and with a rudimentary or more or less developed stipe.....	19
18. Basidiome resupinate or slightly reflexed	21
19. Basidiome stereoid, dimidiate, laterally attached to small branches	<i>Papyrodiscus</i>
19. Basidiome flabelliform with a rudimentary stipe, on mosses or soil	20
20. Cystidia capitate.....	<i>Musciniupta</i>
20. Cystidia not capitate	<i>Cotylidia</i>
21. Hymenophore merulioid or phlebioid	22
21. Hymenophore smooth to tuberculate, warted, odontoid, hydroid or raduloid.....	24
22. Hymenophore merulioid, cystidia thin-walled, 30–50 µm long, spores 3–6 µm long	23
22. Hymenophore tuberculate to phlebioid, cystidia thick-walled 110–160 µm long, spores 6–9 µm long.....	<i>Crustoderma</i>
23. Basidiome bluish-greyish, cystidia vesicular	<i>Meruliophana</i>
23. Basidiome usually creamish to reddish, cystidia diverse	<i>Byssomerulius</i>
24. Monomitic, hymenophore with hyphal pegs formed by tramal hyphae with walls up to 1 µm thick.....	<i>Myriothele</i>
24. Not as above	25
25. Hymenophore odontoid, aculei with fascicles of thin-walled, usually heavily encrusted hyphae.	26
25. Not as above, aculei not formed by heavily encrusted hyphae.....	27
26. Cystidia absent, only aggregated encrusted hyphal ends.....	<i>Hyphodermella</i>
26. Cystidia present	<i>Botryodontia</i>
27. Hymenophore odontoid to hydroid or raduloid	28
27. Hymenophore smooth to grandinioid or tuberculate.....	31
28. Basidia bisporic, cystidia thick-walled, arising deep in subiculum.....	<i>Kneiffiella</i>
28. Basidia tetrasporic, cystidia not as above	29
29. Basidiome ceraceous to subceraceous, hyphae difficult to discern	<i>Phlebia</i>
29. Basidiome membranous, hyphae distinct	30
30. Margin rhizomorphic, hymenophore reddish orange yellow.....	<i>Hydnophlebia</i>
30. Margin not rhizomorphic, hymenophore whitish to pale yellow.....	<i>Phanerodontia</i>
31. Spores subglobose to globose.....	32
31. Spores navicular to fusiform, cylindrical, ellipsoid or filiform	35
32. Cystidia poorly differentiated, hyphoid and with secondary septa.....	<i>Membranomyces</i>
32. Cystidia conspicuous, non-septate.....	33
33. Cystidia sharply pointed	<i>Subulicium</i>

33. Cystidia with obtuse to capitate apex	34
34. Cystidia with obtuse apex, basidiospores up to 6–9 µm long.....	<i>Radulomycetopsis</i>
34. Cystidia capitate, basidiospores larger, more than 9 µm long	<i>Lawryomyces</i>
35. Spores repetitive	<i>Oliveonia</i>
35. Spores not repetitive	36
36. Spores navicular to fusiform or sigmoid	37
36. Spores cylindrical to ellipsoid	39
37. Hyphal system dimitic, with skeletocystidia	<i>Veluticeps</i>
37. Hyphal system monomitic, cystidia with a resinous encrusted apex.....	38
38. Spores navicular, up to 8 µm long, cystidia fusiform	<i>Coronicium</i>
38. Spores sigmoid, 10-12 µm long, cystidia tubular with a capitate apex	<i>Athelocystis</i>
39. Cystidia capitate present, together with strongly encrusted hyphal ends	<i>Hyphoderma</i>
39. Not as above	40
40. Basidia repetitive	<i>Repetobasidiopsis</i>
40. Basidia not repetitive	41
41. Basidia urniform	<i>Sistotrema</i>
41. Basidia different.....	42
42. Basidiome athelioid; basidia short, 13–16 µm long, in clusters	<i>Athelia</i>
42. Basidiome membranaceous or ceraceous, basidia longer, more than 25 µm long, not in clusters..	43
43. Basidiome with no colour changes in KOH	44
43. Hymenial surface and/or rhizomorphs reddish or purple in KOH	46
44. Basidiome ceraceous, hyphae usually difficult to discern.....	<i>Efibulella</i>
44. Basidiome membranous, hyphae easily to discern	45
45. Subiculum distinctly brown, subicular hyphae yellowish to brown.....	<i>Australicum</i>
45. Subiculum whitish, subicular hyphae hyaline	<i>Phanerochaete</i>
46. Basidiospores more than 8 µm long, basidia clavate to stalked clavate.....	<i>Ginnsia</i>
46. Basidiospores smaller, up to 7 µm long, basidia clavate	<i>Rhizochaete</i>

Key N: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lycystidia absent, generative hyphae with simple septa, cystidial organs absent (hyphidia may be present)

1. Basidiome pileate and stipitate	2
1. Basidiome resupinate.....	3
2. Basidiome white, with a lichenized structure	<i>Cyphellostereum</i>
2. Not as above	<i>Stereopsis</i>
3. Spores repetitive	4
3. Spores not repetitive	7
4. Basidia and hyphidia with acanthoid protuberances	<i>Heteoacanthella</i>
4. Not as above	5
5. Sterigmata large, separated from the rest of the basidium by a simple septum.....	<i>Tulasnella</i>
5. Not as above	<i>Ceratobasidium</i>
6. Basidia forming a regular palisade, ellipsoid to cylindrical	<i>Thanatephorus</i>
6. Basidia not forming a regular palisade, subglobose	<i>Ceratobasidium</i>
7. Subhymenial hyphae typically contorted, on soil or plan pathogen.....	<i>Waitea</i>
7. Not as above	8
8. Hyphal system dimitic, skeletal hyphae with brown (green in KOH) incrustations	<i>Boreostereum</i>
8. Hyphal system monomitic, hyphae without such incrustations.....	9
9. Hymenophore either merulioid, grandinioid, or odontoid to hydroid	10

9. Hymenophore smooth to radially rugose.....	19
10. Hymenophore odontoid, composed of sterile hyphal pegs.....	<i>Epithele</i>
10. Not as above	11
11. Basidiome soft, meruloid (in <i>Byssomerulius pirottae</i> , odontoid to hydroid).....	<i>Byssomerulius</i>
11. Basidiome tough, grandinioid, odontoid to hydroid	12
12. Hyphae in the apex of the aculei compacted and heavily encrusted	<i>Hyphodermella</i>
12. Not as above	13
13. Hyphae and basidial base dextrinoid	<i>Melzerodontia</i>
13. Hyphae and basidia not reacting in Melzer's reagent	14
14. Basal hyphae thin-walled, cystidia lacking	15
14. Basal hyphae thick-walled, hyphoid cystidiols may be present	16
15. Hymenophore grandinioid with small aculei, rose to pinkish	<i>Roseograndinia</i>
15. Hymenophore odontoid to hydroid, ochraceous	<i>Phaneroites</i>
16. Hymenial surface dark reddish in KOH	<i>Odontofibula</i>
16. No colour changes in KOH.....	17
17. Quasi-binding hyphae present next to substratum.....	<i>Hydnophanerochaete</i>
17. No binding hyphae present	18
18. Hyphal system seemingly dimitic, tramal hyphae thick-walled.....	<i>Odonticium</i>
18. Hyphal system monomitic, tramal hyphae usually thin-walled.....	<i>Phanerodontia</i>
19. Basidia predominantly 2-spored	20
19. Basidia predominantly 4-spored	23
20. Basidiome brown, basidiospores fusiform to navicular	<i>Luellia</i>
20. Basidiome differently coloured, basidiospores allantoid, ellipsoid, ovoid to pyriform	21
21. Hyphidia encrusted present.....	<i>Nothocorticium</i>
21. Hyphidia encrusted absent.....	22
22. Basidiome orbicular, gelatinous, spores large, more than 15 µm long.....	<i>Marchandiopsis</i>
22. Basidiome pellicular, spores smaller, less than 15 µm long	<i>Athelia</i>
23. Sterigmata 10–30 µm long, ab. half the length of the basidium.....	<i>Thanatephorus</i>
23. Sterigmata considerably shorter, ab. 1/4 of the length of the basidium.....	24
24. Basidia sphaeropedunculate, probasidia thin-walled, clavarioid anamorph present, pinkish corticioid pathogen on grass.....	<i>Laetisaria</i>
24. Not as above	25
25. Basidia stalked, spores large ab. 15 µm long or more	26
25. Basidia not stalked, spores smaller, up to 15 µm long.....	28
26. Spores allantoid, ab. 20–30 x 8–10 µm	<i>Dendrominia</i>
26. Spores shorter or narrower.....	27
27. Spores wider than 5–6 µm	<i>Athelium</i>
27. Spores narrower, up to 4 µm wide	<i>Amphinema</i>
28. Basidia pleural	<i>Aphanobasidium</i>
28. Basidia terminal	29
29. Basidiome ceraceous, hyphae in a compact texture	<i>Efibula</i>
29. Not as above	30
30. Clamps completely lacking.....	31
30. Clamps scattered on the basal hyphae	33
31. Basidiome yellow to orange, basidia not in candelabrum clusters.....	<i>Athelidium</i>
31. Basidiome whitish, basidia in candelabrum-arranged clusters.....	32
32. Growing in dead wood, woody or organic debris or dead leaves.....	<i>Athelia</i>
32. Growing on dead or living ferns or grasses	<i>Eonema</i>
33. Basidiome athelioid to arachnoid, subiculum loose, basidia in candelabrum clusters.....	<i>Athelia</i>
33. Basidiome membranaceous, subiculum denser, basidia in a dense palisade.....	34
34. Subiculum distinctly brown, subicular hyphae yellowish to brown.....	<i>Australicum</i>
34. Subiculum whitish, subicular hyphae hyaline	<i>Phanerochaete</i>

Key O: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lycocystidia absent, generative hyphae with clamps, hyphal system di- or trimitic

1. Hymenophore formed by small cupuliform pores densely aggregated	<i>Porotheleum</i>
1. Not as above	2
2. Basidiome stipitate with spatulate to flabelliform or infundibuliform pilei	3
2. Basidiome sessile, resupinate to effuse-reflexed or pileate	7
3. Hymenophore hydroid	<i>Mycorrhaphium</i>
3. Hymenophore smooth to rough or ribbed.....	4
4. Gloeocystidia absent, hymenial surface smooth.....	5
4. Gloeocystidia present, hymenial surface smooth or ribbed.....	6
5. Hyphal system trimitic, binding hyphae present	<i>Aquascypha</i>
5. Hyphal system dimitic, with skeletal hyphal restricted to the stipe	<i>Inflatostereum</i>
6. Hymenial surface ribbed, abhymenial surface hirsute or tomentose.....	<i>Cymatoderma</i>
6. Hymenial surface smooth, abhymenial surface glabrous	<i>Podoscypha</i>
7. Skeletal hyphae dextrinoid (different from the binding-skeletal hyphae of <i>Scytinostroma</i>).....	8
7. Skeletal hyphae non-dextrinoid	9
8. Hymenophore merulioid, leptocystidia present, spores fusiform.....	<i>Merulicium</i>
8. Hymenophore hydroid, cystidia absent, spores subglobose	(see also <i>Trechispora</i>) <i>Dextrinodontia</i>
9. Cystidia and dendrohyphidia absent.....	10
9. Cystidia/pseudocystidia and/or dendrohyphidia present	16
10. Basidiome pileate or cupulate.....	11
10. Basidiome resupinate.....	12
11. Basidiome cupulate, skeletoid hyphae close to the substrate	<i>Auriculariopsis</i>
11. Basidiome pileate, dimitic hyphal system with arboriform hyphae	<i>Mycobonia</i>
12. Hyphae often ampullate at the septa, hymenophore arachnoid to granulose	<i>Trechispora</i>
12. Hyphae not ampullate at the septa, hymenophore odontoid to hydroid	13
13. Micro-binding hyphae present.....	<i>Phlebia</i>
13. Only skeletal hyphae present.....	14
14. Basidia more than 25 µm long.....	<i>Fibricium</i>
14. Basidia smaller, up to 20 µm long	15
15. Basidia up to 10 µm long, with smooth skeletal hyphae	<i>Ceraceohydnum</i>
15. Basidia 10–20 µm long, usually with encrusted (pseudo)skeletal hyphae	<i>Fibrodonia</i>
16. Hymenophore odontoid to hydroid.....	17
16. Hymenophore smooth to tuberculate.....	26
17. Basidiospores more than 10 µm long	18
17. Basidiospores up to 10 µm long	19
18. Hymenophore formed by hyphal pegs fused laterally in a shallow semireticulum, basidiospores more than 25 µm long	<i>Pileodon</i>
18. Hymenophore with isolated hyphal pegs (not fused), basidiospores up to 20 µm long ..	<i>Veluticeps</i>
19. Encrusted skeletocystidia present	<i>Steccherinum</i>
19. Encrusted skeletocystidia absent	20
20. Dendrohyphidia and gloeocystidia absent.....	21
20. Dendrohyphidia and/or gloeocystidia present	23
21. Tramal and/or hymenial cystidia and microbinding hyphae present	<i>Pseudolagarobasidium</i>
21. Not as above	22
22. Basidiospores more than 4.5 µm long, cystidia with an apical resinous cap.....	<i>Mycoaciella</i>
22. Basidiospores up to 3.5–4 µm long, cystidiols fusiform	<i>Ceraceohydnum</i>
23. Gloeocystidia or oleiferous hyphae present.....	24

23. Gloeocystidia or oleiferous hyphae absent	25
24. Dendrohyphidia and vesicular to ovate gloeocystidia present	<i>Crustomyces</i>
24. Paraphysate hyphae present, with tubular oleiferous hyphae	<i>Stecchericum</i>
25. Hymenophore formed by sterile hyphal pegs of straight skeletal hyphae	<i>Skeletohydnum</i>
25. Hymenophore odontoid, skeletal branched restricted to the subiculum	<i>Dendrodontia</i>
26. With brown skeletal hyphae, hyaline dendrohyphidia and pyriform basidiospores	
..... (see also <i>Neocampanella</i> for similar species without skeletal hyphae)	<i>Brunneocorticium</i>
26. Not as above	27
27. Hyphal system pseudodimitic, brown dendrohyphydia present	<i>Dendrophora</i>
27. Not as above, brown dendrohyphidia absent	28
28. Skeleto-binding or micro-binding hyphae present	29
28. Only skeletal hyphae present	33
29. Skeletal, binding hyphae and dendrohyphidia present	<i>Trimitiella</i>
29. Not as above	30
30. Basidiome (when fresh) reddish in KOH (hyphae and crystals in KOH reddish).....	<i>Crustodontia</i>
30. Basidiome not changing in KOH.....	31
31. Basidiome bluish to violet, cystidia absent.....	<i>Amethicium</i>
31. Not with this combination of characters	32
32. Cystidia basally encrusted with resinous yellowish matter	<i>Cericium</i>
32. Not as above	<i>Phlebia</i>
33. Dark brown pseudocystidia and/or metuloids present.....	34
33. Dark brown pseudocystidia and metuloids absent (hyaline to pale yellow brown metuloids may be present)	36
34. Gloeocystidia present.....	<i>Duportella</i>
34. Gloeocystidia absent	35
35. Spores more than 10 µm long	<i>Veluticeps</i>
35. Spores up to 6–8 µm long	<i>Porostereum</i>
36. Skeletocystidia present, spores usually more than 10 µm long	<i>Lopharia</i>
36. Not with the previous combination of characters	37
37. Skeletal hyphae with cyanophilous walls, spores subfusiform	<i>Minostroscyca</i>
37. Not as above	38
38. Spores 8–10 × 4.5–5 µm, skeletal rare	<i>Hyphoderma</i>
38. Spores up to 7 µm long, skeletal conspicuous	39
39. Basidiome crustaceous, stratified, vesicular gloeocystidia abundant.....	<i>Cystostereum</i>
39. Basidiome membranaceous to waxy, gloeocystidia few or absent.....	<i>Fibricium</i>

Key P: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lycystidia absent, generative hyphae with clamps, hyphal system monomitic, dendrohyphidia present

1. Basidiome iridescent bluish.....	<i>Terana</i>
1. Basidiome differently coloured	2
2. Basidiome decortican	3
2. Basidiome not decortican	4
3. Basidial layer developed in a hymenium and subiculum distinguishable	<i>Australovuilleminia</i>
3. Basidia not in a distinguishable hymenium and subiculum indistinguishable	
.....(see also <i>Dendrominia</i>)	<i>Vuilleminia</i>
4. On bark of living trees, spores cyanophilous (but often difficult to verify!).....	<i>Dendrothele</i>
4. Not as above	5
5. Repetobasidia present	<i>Repetobasidiellum</i>
5. Repetobasidia absent or only occasional	6

6. Cystidia present	7
6. Cystidia absent.....	14
7. Gloeocystidia present.....	8
7. Gloeocystidia absent, with leptocystidia	9
8. Dendrohyphidia soon brown coloured.....	<i>Dendrophora</i>
8. Dendrohyphidia remaining hyaline or darkening slightly with age	<i>Peniophora</i>
9. Leptocystidia subulate, spores fusiform to navicular	<i>Leptocorticium</i>
9. Leptocystidia with capitate, obtuse apex or fusoid apex, spores otherwise	10
10. Leptocystidia with obtuse apex, spores subcylindrical up to 6–8 µm long	<i>Crustomyces</i>
10. Leptocystidia capitate or subfusiform, spores diversely shaped	11
11. Cystidia subfusiform, spores globose	<i>Tsugacorticium</i>
11. Cystidia capitate, spores globose, pyriform or allantoid	12
12. Spores pyriform	<i>Neocampanella</i>
12. Spores diverse	13
13. Basidiome with a shade of brown, spores subglobose	<i>Punctulariopsis</i>
13. Basidiome light coloured, whitish, spores allantoid.....	<i>Vuilleminia</i>
14. Dendrohyphidia becoming yellowish to brown.....	15
14. Dendrohyphidia remaining hyaline or subhyaline.....	16
15. Hymenium bright red to violaceous red, spores more than 10 µm long.....	<i>Cytidia</i>
15. Hymenium brown to dark violaceous, spores up to 9 µm long	<i>Punctularia</i>
16. Hymenophore composed by sterile hyphal pegs	<i>Epithele</i>
16. Not as above	17
17. Probasidia absent, basidiospores rarely wider than 4 µm.....	18
17. Probasidia present, basidiospores usually wider than 4 µm	20
18. Skeletal (pseudoskeletal) brown hyphae present in context.....	<i>Dendrodontia</i>
18. Skeletals absent, context hyaline	19
19. Basidia long clavate, longer than 30 µm, dendrophyses patent.....	<i>Dentocorticium</i>
19. Basidia utriform, usually up to 30 µm long, dendrophyses not conspicuous	<i>Bourdotiella</i>
20. Probasidia distinctly thick-walled.....	21
20. Probasidia thin-walled	22
21. Basidial walls amyloid, especially where thickened	<i>Amylobasidium</i>
21. Basidial walls inamyloid.....	<i>Corticium</i>
22. Basidiome with a gelatinous consistency when fresh.....	<i>Punctulariopsis</i>
22. Basidiome lacking a gelatinous consistency.....	23
23. Spores globose to ellipsoid or ovoid.....	<i>Dendrocorticium</i>
23. Spores allantoid	<i>Dendrominia</i>

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1. Hyphae and cystidia amyloid.....	<i>Amylohyphus</i>
1. Not as above	2
2. Cystidia with a rooted base, dextrinoid	3
2. Not as above	4
3. Cystidia with an apical umbrella-like encrustation, spores thin-walled.....	<i>Dextrinocystis</i>
3. Cystidia lightly encrusted, not with an apically cap, spores slightly thick-walled.....	<i>Hemmesomyces</i>
4. Subicular hyphae with projections covered with a double cap encrustation	<i>Sceptrulum</i>
4. Not as above	5
5. Cystidia strongly encrusted with crystals	6
5. Cystidia smooth or not densely encrusted	20

6. Basidiome red to brown, (pseudo)cystidia with a shade of brown.....	7
6. Basidiome rarely brown, cystidia hyaline	9
7. Basidiome reddish, strongly pilose by the thick-walled protruding cystidia, wood discoloured reddish by the fungus	<i>Erythromyces</i>
7. Not as above	8
8. Basidiome cupulate, gregarious.....	<i>Campylomyces</i>
8. Basidiome resupinate to effuse-reflexed.....	<i>Duportella</i>
9. Hymenophore distinctly odontoid to raduloid or hydroid	10
9. Hymenophore smooth to grandinioid or tuberculate	11
10. Basidiome decorticant, gloeocystidia present.....	<i>Peniophora</i>
10. Basidiome not decorticant, gloeocystidia absent..... (see also <i>Cabalodontia</i>)	<i>Phlebia</i>
11. Basidiome semigelatinous, hyphae gelatinized and difficult to discern	<i>Phlebia</i>
11. With a different combination of characters.....	12
12. Hymenophore with rounded tubercles.....	<i>Scopulodontia</i>
12. Hymenophore smooth to grandinioid	13
13. Basidiome pink, orange, reddish, dark bluish or violaceous	<i>Peniophora</i>
13. Basidiome differently coloured	14
14. Cystidia subulate, characteristically encrusted with rectangular crystals.....	<i>Subulicystidium</i>
14. Cystidia different	15
15. Cystidia cylindrical to subulate, encrusted only at the basal part, apically naked, basidia mostly pleural.....	<i>Lepidomyces</i>
15. Cystidia and basidia different	16
16. Basidia small, 15–20 µm long	17
16. Basidia larger, 20–40 µm long.....	18
17. Gloeocystidia SA+ present, leptocystidia absent.....	<i>Metulodontia</i>
17. Gloeocystidia SA+ absent, leptocystidia cylindrical to capitate present.....(= <i>Palifer</i>)	<i>Xylodon</i>
18. Spores up to 6 µm long, basal hyphae 4–8 µm wide	<i>Ceraceomyces</i>
18. Spores on average more than 7 µm long, basal hyphae 2–4 µm wide.....	19
19. Basidia clavate to subcylindrical, echinulate cells usually present	<i>Peniophorella</i>
19. Basidia suburniform, echinulate cells absent.....	<i>Hyphoderma</i>
20. Septate cystidia present.....	21
20. Septate cystidia lacking	29
21. Spores 12–18 µm long, fusiform to narrowly fusiform.....	<i>Suillosporium</i>
21. Spores different.....	22
22. Repetobasidia present	<i>Repetobasidium</i>
22. Basidia not repetitive	23
23. With lagenocystidia	<i>Hyphodontia</i>
23. Without lagenocystidia	24
24. Septocystidia hyphoid, very finely encrusted with thin crystals	<i>Amphinema</i>
24. Septocystidia smooth or differently ornamented.....	25
25. Spores more than 6 µm long	26
25. Spores up to 4.5 µm long.....	27
26. Basidiome ceraceous, cystidia with several septa, more or less encrusted	<i>Hyphoderma</i>
26. Basidiome pellicular, cystidia with one clamped septum, smooth.....	<i>Atheloderma</i>
27. Cystidia and basidia thin-walled, cystidia rare	<i>Ceraceomyces</i>
27. Cystidia and basidia basally thick-walled, cystidia abundant	28
28. Cystidia smooth faintly cyanophilous	<i>Tubulicrinopsis</i>
28. Cystidia smooth or some encrusted as lamprocystidia, acyanophilous.....	<i>Amauromyces</i>
29. Basidiome pileate, hymenophore hydroid	30
29. With a different combination of characters.....	32
30. Clamps few and scattered in some hyphae but absent in the basidial base	<i>Climacodon</i>
30. All hyphae and basidial base with clamp-connections	31

31. Oleiferous hyphae present	<i>Stecchericum</i>
31. Oleiferous hyphae absent.....	<i>Mycoleptonoides</i>
32. Basidiome resupinate to effuse-reflexed, hymenophore smooth, violaceous.....	<i>Chondrostereum</i>
32. Not as above	33
33. Cystidia tubular and thick-walled, at least towards the base	34
33. Cystidia different	38
34. Spores on average less than 7 µm long	<i>Kneiffiella</i>
34. Spores on average more than 7 µm long.....	35
35. Spores up to 1.5–2 µm wide	36
35. Spores wider than 1.5–2 µm	37
36. Cystidia 8–12 µm wide, with a drop of secretion at the subcapitate apex.....	<i>Dacryobolus</i>
36. Cystidia 5–6 µm wide, without drop of secretion at the apex	<i>Kneiffiella</i>
37. Cystidia 150–300 µm long, basidia 50–100 µm long	<i>Chaetoderma</i>
37. Cystidia up to 100–130 µm long, basidia up to 20–50 µm long.....	<i>Crustoderma</i>
38. Hymenophore distinctly poroid	(= <i>Chaetoporellus</i>) <i>Kneiffiella</i>
38. Hymenophore not poroid (may be subporoid in some areas or in the margin)	39
39. Basidiome gelatinous to ceraceous, hyphae gelatinized difficult to discern	40
39. Basidiome not ceraceous, hyphae usually distinct	42
40. Sterigmata large, separated from the rest of the basidium by a simple septum, spores repetitive ..	
.....	<i>Tulasnella</i>
40. Not as above	41
41. Hymenophore reddish in KOH.....	<i>Crustodontia</i>
41. Hymenophore with no colour changes in KOH	<i>Phlebia</i>
42. Halocystidia present (capitate cystidia with a more or less conspicuous halo).....	43
42. Halocystidia absent.....	44
43. Asterocystidia present.....	<i>Resinicium</i>
43. Asterocystidia absent	(check also <i>Resinicium</i> s.l.) <i>Skvortzovia</i>
44. Hymenophore odontoid to raduloid or hydroid	45
44. Hymenophore more or less smooth or meruloid to phlebioid.....	54
45. Rosette-like crystals present, cystidiols capitulate, spores allantoid	<i>Sidera</i>
45. Not as above, rosette-like crystals absent	46
46. Cystidia excreting a drop of sticky liquid, spores allantoid.....	<i>Dacryobolus</i>
46. Cystidia not as above, spores variable	47
47. Spores 8–12 µm long	<i>Basidioradulum</i>
47. Spores shorter	48
48. With subulate leptocystidia and gloecystidia, spores 3–4 µm long	<i>Physodontia</i>
48. Not as above	49
49. Gloecystidia distinct	50
49. Gloecystidia absent or indistinct.....	51
50. Gloecystidia with yellowish contents, brownish in sulphovanillin	<i>Hyphodontiastra</i>
50. Gloecystidia encrusted with yellowish resinous matter, negative in sulphovanillin ..	<i>Parvodontia</i>
51. With thin-walled tubular cystidia, spores allantoid	(= <i>Alutaceodontia</i>) <i>Kneiffiella</i>
51. Spores and/or cystidia different	52
52. Basidiome yellowish to brown or orange, hyphae usually coloured.....	<i>Pseudolagarobasidium</i>
52. Not as above	53
53. With large, distinct, and projecting capitate leptocystidia.....	(= <i>Deviodontia</i>) <i>Kneiffiella</i>
53. Cystidia or cystidioles not distinct, as capitate hyphal ends (torulose cystidia or gloecystidia may be present but rare or inconspicuous).....	<i>Xylodon</i>
54. Spores repetitive, basidia with comparatively very long sterigmata	55
54. Spores not repetitive, basidia with shorth sterigmata	56
55. Acanthophyses (and acanthobasidia) present, basidia with one long sterigmata ..	<i>Heteroacanthella</i>
55. Acanthophyses absent, basidia usually with 2-4 sterigmata.....	<i>Oliveonia</i>

56. Basidiome thin and inconspicuous, basidia subglobose to obconical	<i>Sphaerobasidium</i>
56. Basidiome distinct and conspicuous, basidia not as above.....	57
57. Cystidia with an apical papilla or a cap of yellow to reddish-brown incrustations.....	<i>Coronicium</i>
57. Not as above	58
58. Basidiome pellicular, capitate cystidia present.....	<i>Lyothelia</i>
58. Not as above	59
59. Spores on average more than 8 µm long.....	60
59. Spores on average less than 8 µm long.....	63
60. Basidia suburniform.....	<i>Hyphoderma</i>
60. Basidia clavate	61
61. Spores dacryoid to obliquely ellipsoid, often in groups of 2-4.....	<i>Cylindrobasidium</i>
61. Spores not as above	62
62. Spores 6.5–8 µm wide, echinulate cells absent	<i>Clavulicium</i>
62. Spores up to 5 µm wide, echinulate cells usually present	<i>Peniophorella</i>
63. Basidia urniform to suburniform	64
63. Basidia otherwise.....	68
64. Basidia urniform, cystidia present as flexuose gloeocystidia.....	<i>Sistotrema</i>
64. Basidia suburniform, cystidia different	65
65. Cystidia 6–13 µm wide and often longer than 100 µm.....	<i>Hyphoderma</i>
65. Cystidia only 3–7 µm wide and generally up to 60 µm long.....	66
66. With two kinds of cystidia: 1) moniliform and 2) subulate or capitate	<i>Hastodontia</i>
66. Not as above	67
67. Capitate or subulate, more or less encrusted cystidia present	<i>Lyomyces</i>
67. Cystidia, if present, different, not distinct, as hyphoid cystidiols.....	<i>Xylodon</i>
68. Basidia with a basal clamp, subicular hyphae with simple-septa.....	<i>Hyphodontiella</i>
68. Basidia and all hyphae with clamps.....	69
69. Basidia 8–12 µm long, with clavate to flexuous gloeocystidia	<i>Parvobasidium</i>
69. Basidia larger, gloeocystidia absent.....	70
70. Hymenophore becoming violaceous in KOH.....	<i>Ceraceomyces</i>
70. Not as above	71
71. Spores 3–5 µm wide, often glued in groups of 2-4.....	<i>Cylindrobasidium</i>
71. Spores up to 3 µm wide	<i>Amphinema</i>

Key R: Basidiome usually resupinate, hymenophore non-typically poroid, without asterohyphidia; setae absent, dichohyphae and/or dextrinoid binding-skeletal hyphae absent; spores IKI–, basidia with 2-4 sterigmata, spores smooth, lycocystidia absent, generative hyphae with clamps, hyphal system monomitic, dendrohyphidia absent, cystidia absent

1. Basidiome cup-shaped or disciform	2
1. Basidiome not as above	3
2. Hyphal system dimitic/pseudodimitic, hymenophore smooth to folded	<i>Auriculariopsis</i>
2. Hyphal system monomitic, hymenophore hydroid by protruding hyphal fascicles	<i>Mycothele</i>
3. Basidiome gregarious formed by minute globules	<i>Mycostigma</i>
3. Basidiome not as above	4
4. Basidiome with well-developed pilei and a rudimentary to distinct stipe.....	5
4. Basidiome resupinate or slightly reflexed	9
5. Basidiome flabelliform to tubaeform, hymenophore smooth to rough	6
5. Basidiome dimidiate, with a stipe more or less developed, hymenophore aculeate or meruloid..	8
6. Basidiome tubaeform with a hollow stipe	<i>Parastereopsis</i>
6. Basidiome flabelliform, stipe if present solid.....	7
7. Skeletal hyphae absent, hyphae non-inflated.....	<i>Stereopsis</i>
7. Skeletal hyphae present in the stipe, contextual hyphae inflated	<i>Inflatostereum</i>

8. Basidiome with well-developed pilei, hymenophore merulioid.....	<i>Phlebia</i>
8. Basidiome stipitate-pileate, hymenophore aculeate	<i>Mycorrhaphium</i>
9. Sterigmata large, separated from the rest of the basidium by a simple septum, spores repetitive ..	<i>Tulasnella</i>
9. Not as above	10
10. Basidiome pinkish, pathogens on grasses (<i>Gramineae</i>).....	<i>Limonomyces</i>
10. Not as above, fungi usually growing on wood	11
11. Hymenophore tuberculate, odontoid to raduloid, phlebioid, merulioid or poroid.....	12
11. Hymenophore smooth to farinaceous	30
12. Hymenophore poroid, basidia urniform	<i>Sistotrema</i>
12. Hymenophore and basidia different.....	13
13. Hymenophore merulioid or phlebioid	14
13. Hymenophore distinctly tuberculate to odontoid, hydroid or raduloid.....	16
14. Basidiome subgelatinous to ceraceous, hyphae embedded in a gelatinous matrix, clamps and hyphae difficult to discern.....	<i>Phlebia</i>
14. Basidiome not ceraceous, subiculum membranaceous, hyphae distinct and easily to discern....	15
15. Hymenophore smooth to slightly merulioid, spores subglobose to ellipsoid.....	<i>Ceraceomyces</i>
15. Hymenophore distinctly merulioid, spores narrowly cylindrical to fusiform	<i>Serpulomyces</i>
16. Hyphae in subiculum and cords with ampullaceous swellings near the septa	17
16. Hyphae with no ampullate swelling (but isodiametric hyphae may be present)	18
17. Spores 8–10 µm long	<i>Hydnocristella</i>
17. Spores shorter, up to 5 µm long	<i>Trechispora</i>
18. Hymenophore with sterile hyphal pegs	19
18. Not as above	20
19. Spores usually longer than 10 µm, basidia large, normally longer than 50 µm	<i>Epithele</i>
19. Spores smaller up to 10 µm, basidia about 10–15 µm long.....	<i>Pteridomyces</i>
20. Hyphal system pseudodimitic, with skeletoid or pseudoskeletal hyphae.....	<i>Fibrodon</i>
20. Hyphal system monomitic	21
21. Basidia suburniform (cystidiols often present!)	<i>Xylodon</i>
21. Basidia different.....	22
22. Subicular hyphae thick-walled, refractive or pigmented.....	23
22. Not as above	24
23. Subicular hyphae hyaline, refractive in KOH.....	<i>Odontiopsis</i>
23. Subicular hyphae brownish, non-refractive in KOH	(see also <i>Crepatura</i>) <i>Pirex</i>
24. Subhymenial hyphae isodiametric	25
24. Subhymenial hyphae not isodiametric.....	26
25. Spores ellipsoid to globose or more or less rhomboid.....	<i>Brevicellicium</i>
25. Spores reniform to allantoid	<i>Brevicellopsis</i>
26. Hymenophore hydroid to raduloid	27
26. Hymenophore tuberculate to odontoid	29
27. Hymenophore raduloid, spores ellipsoid to globose 8–12 µm long	<i>Radulomyces</i>
27. Hymenophore hydroid, spores up to 8 µm long.....	28
28. Spores ellipsoid.....	<i>Amaurohydnum</i>
28. Spores pyriform	<i>Radulodontia</i>
29. Basidia terminal, spores ellipsoid to allantoid.....	<i>Phlebia</i>
29. Basidia pleural, spores globose.....	<i>Aphanobasidium</i>
30. Spores repetitive	31
30. Spores not repetitive	32
31. Basidia clavate to ovoid, spores citriform, if subglobose to ellipsoid then 2–4 µm wide.....	<i>Oliveonia</i>
31. Basidia obconical, spores subglobose to ovoid 3.5–6 µm wide	<i>Scotomyces</i>
32. Basidia frequently pleural.....	33
32. Basidia terminal, only occasionally pleural.....	34

33. Basidia 30–50 µm long, with a lateral hook-like hypha	<i>Uncobasidium</i>
33. Basidia shorter, without such a lateral hook-like hypha	<i>Aphanobasidium</i>
34. Basidia urniform, hyphae characteristically with oily contents.....	<i>Sistotrema</i>
34. Basidia and/or hyphae differently characterized	35
35. Hyphae in subiculum and cords often ampullate near the septa.....	<i>Trechispora</i>
35. Hyphae in subiculum and cords different (ampullaceous swellings may occur in more or less isodiametric hyphae in subhymenium)	36
36. Subhymenial hyphae short-celled, more or less isodiametric and swollen	37
36. Subhymenial hyphae long celled, not isodiametric	38
37. Spores 8–10 µm long	<i>Conohypha</i>
37. Spores up to 6 µm long	<i>Brevicellicium</i>
38. Hyphae alternating clamps and simple septa.....	<i>Hyphodontiella</i>
38. All septa with clamps.....	39
39. Spores yellowish to ochraceous coloured..... (=Chrysoderma)	<i>Cerocorticium</i>
39. Spores more or less hyaline	40
40. Basidiome ceraceous, hyphae gelatinized and difficult to discern	<i>Phlebia</i>
40. Not as above, hyphae as a rule easily to discern.....	41
41. Basidiome pellicular, basidia in candelabrum-arranged clusters.....	<i>Athelia</i>
41. Not as above	42
42. Basidia with 2 long sterigmata, spores allantoid	<i>Cerinomyces</i>
42. Differently characterized	43
43. Basidiome brown to dark brown, subhymenial hyphae encrusted with resinous matter by age, spores navicular.....	<i>Luellia</i>
43. Not as above	44
44. Hymenial surface white, changing to purple in KOH	<i>Purpureocorticium</i>
44. Hymenial surface not changing in KOH	45
45. Basidia as a rule urniform to suburniform.....	46
45. Basidia cylindrical to clavate.....	48
46. Basidia urniform to cylindrical, often with internal repetition, spores allantoid.....	<i>Galzinia</i>
46. Not as above	47
47. Basidia on average longer than 30 µm, spore usually longer than 7 µm.....	<i>Hyphoderma</i>
47. Basidia on average shorter than 30 µm, spore usually up to 7 µm long.....	<i>Xylodon</i>
48. Basidia clearly stalked	49
48. Basidia not evidently stalked	52
49. Basidia up to 20 µm long, tetrasporic	<i>Athelopsis</i>
49. Basidia more than 20 µm long, with a variable number of sterigmata (2-3-4).....	50
50. Basidia 50–75 µm long, spores globose to subglobose, 9–13 µm in diameter.....	<i>Globulicium</i>
50. Basidia up to 30 µm long, spores ellipsoid to cylindrical, up to 8 µm wide.....	51
51. Basidia bisporic, 20–25 µm long, spores wider than 5 µm.....	<i>Athelium</i>
51. Basidia with 2-3-4 sterigmata, 27–30 µm long, spores up to 4 µm wide	<i>Thujacorticium</i>
52. Basal hyphae cinnamon encrusted, violaceous in KOH.....	<i>Ceraceomyces</i>
52. Basal hyphae otherwise	53
53. Basidia distinctly very thick-walled	<i>Tubulicrinopsis</i>
53. Not as above	54
54. Basidia small, on average <20 µm long.....	55
54. Basidia on average >20 µm long	56
55. Spores on average more than 2.5 µm wide.....	<i>Athelia</i>
55. Spores on average less than 2.5 µm wide	<i>Leptosporomyces</i>
56. Spores up to 4.5 µm wide, thin-walled, on bark of living trees.....	<i>Dendrothele</i>
56. Spores on average more than 5.5 µm wide, slightly thick-walled, on dead wood	57
57. Spores cylindrical to ellipsoid, more than 15 µm long.....	<i>Cerocorticium</i>
57. Spores usually ellipsoid, up to 15 µm long.....	<i>Radulomyces</i>

Descriptions and comments on genera of corticioid fungi and relatives

Acanthobasidium Oberw., Sydowia 19(1-6): 45, 1965.

Type species – *Aleurodiscus delicatus* Wakef., Trans. Br. mycol. Soc. 35(1): 44, 1952.

Basidiome resupinate, effused, thin, hymenophore smooth. Hyphal system monomitic, generative hyphae with clamps. Gloeocystidia and acanthocystidia present. Basidia (pleurobasidia) with some lateral protuberances (acanthobasidia). Basidiospores ornamented, amyloid.

Remarks – *Acanthobasidium* is characterized within the *Aleurodiscus* s.l. above all by the pleurobasidia with small digitiform protuberances. As the other genera segregated from *Aleurodiscus* s.l., it belongs to the Stereaceae in the Russulales (Larsson 2007b).

Acanthocorticium Baltazar, Gorjón & Rajchenb., Botany 93: 456, 2015.

Type species – *Acanthocorticium brueggemannii* Baltazar, Gorjón & Rajchenb. Botany 93: 458, 2015.

Basidiome corticioid, resupinate, adnate, cartilaginous hard when dry, hymenophore smooth to tuberculate, even to rimose. Hyphal system monomitic, generative hyphae simple-septate. Halocystidia abundant in the subiculum and the hymenium, hyaline, finely echinulate at the apex, IKI– to slightly dextrinoid, with a resinous cap. Acanthophyses dominating in the hymenium, cylindrical to clavate, hyaline, with short protuberances in the apical part, dextrinoid. Basidiospores globose, hyaline, smooth and thin-walled, IKI–.

Remarks – *Acanthocorticium* is characterized by the resupinate, cartilaginous basidiome with smooth to tuberculate hymenophore, and microscopically by the presence of abundant, dextrinoid acanthophyses, apically echinulate halocystidia with a resinous cap, and globose, hyaline, IKI– basidiospores. For further information see Baltazar et al. (2015).

Acanthofungus Sheng H. Wu, Boidin & C.Y. Chien, Mycotaxon 76: 154, 2000.

Type species – *Acanthofungus rimosus* Sheng H. Wu, Boidin & C.Y. Chien, Mycotaxon 76: 155, 2000.

Basidiome pulvinate, hymenial surface smooth. Hyphal system monomitic, hyphae with clamps. Acanthophyses numerous. Gloeocystidia SA+. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, amyloid, binucleate. Causing a white pocket rot. Nuclear behaviour heterocytic.

Remarks – *Acanthofungus* is characterized by the pulvinate basidiome causing a white pocket rot, hyphae clamped, presence of acanthophyses, SA+ gloeocystidia, and smooth amyloid basidiospores. It reminds superficially *Xylobolus* but differs in the clamped hyphae and heterocytic nuclear behaviour (holocoenocytic and clampless hyphae in *Xylobolus*). *Acanthofungus* differs from *Acanthophysellum* in the white pocket rot and phenoloxidase negative reaction, however micromorphologically they are similar (Wu et al. 2000).

Acanthophysellum Parmasto, Eesti NSV Tead. Akad. Toim., Biol. seer 16: 377, 1967.

Type species – *Corticium lividocoeruleum* P. Karst., not. Sällsk. Fauna et Fl. Fenn. Förh. 9: 370, 1868.

Basidiome resupinate, thin, adnate. Hyphal system monomitic, generative hyphae with clamps or with simple-septa. Gloeocystidia and acanthocystidia present. Basidia clavate to cylindrical, 2-4-sterigmata. Basidiospores smooth, thin-walled, cylindrical or ellipsoid to allantoid, amyloid.

Remarks – *Acanthophysellum* was introduced for resupinate species with acanthohyphidia and smooth non-amyloid basidiospores with *Corticium lividocoeruleum* as the generic type species (Parmasto 1967). The statement about non-amyloid spores must be regarded as a typographical error because later Parmasto (1968) included *Acanthophysellum* in the tribe *Aleurodisceae* defined by the amyloid spores. *Corticium lividocoeruleum* and *Thelephora frustulata* Pers., the generic type of *Xylobolus* P. Karst, are closely related phylogenetically and morphologically (Larsson & Larsson

2003), and this connection could suggest that *Acanthophysellum* should be regarded as a synonym of *Xylobolus*. However, *Acanthophysellum* differs from *Xylobolus* in some morphological features and in having white rot (white pocket rot in *Xylobolus*), phenoloxidase positive reaction and nuclear behaviour astatocoenocytic (holocoenocytic in *Xylobolus*). Wu et al. (2000) and Boidin & Gilles (2001) treated *Acanthophysium* as a synonym of *Xylobolus* but conserved *Acanthophysellum*.

Acanthophysium (Pilát) G. Cunn., Bull. N.Z. Dept. Sci. Industr. Res., Pl. Dis. Div. 145: 150, 1963.

Basionym – *Aleurodiscus* subgen. *Acanthophysium* Pilát, Annls mycol. 24(3/4): 207, 1926.

Type species – *Aleurodiscus apricans* Bourdot, Rev. Sci. du Bourb. 23(1): 7, 1910.

Remarks – A synonym of *Xylobolus* P. Karst. See *Acanthophysellum* and *Xylobolus* for further comments.

Acia P. Karst., Medd. Soc. Fauna Fl. Fenn. 5: 42, 1879.

Type species – *Hydnum fuscoatrum* Fr., Novit. fl. svec. 2: 39, 1814

Remarks – A homonym of *Acia* Schreb. 1791 (Rosaceae) and a synonym of *Phlebia* Fr.

Aciella (P. Karst.) P. Karst., Finlands Basidsvampar 11: 148, 1899.

Type species – *Phaeodon tomentosus* Schrad. ex J. Schröt., Kryptogamen-Flora von Schlesien, 3-1(4): 458, 1888.

Remarks – A homonym of *Aciella* Tieghem 1894 (Loranthaceae) and a synonym of *Tomentella* Pers. ex Pat.

Acladium Link, Mag. Gesell. naturf. Freunde, Berlin 3(1-2): 11, 1809.

Type species – *Acladium conspersum* Link, Mag. Gesell. naturf. Freunde, Berlin 3(1-2): 11, 1809.

Remarks – A name based on an anamorph. Anamorphic state of *Botryobasidium* Donk.

Actinostroma Klotzsch, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 236, 1843.

Type species – *Actinostroma infunfibuliforme* Klotzsch, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., Suppl. 1 19: 237, 1843.

Remarks – A synonym of *Cymatoderma* Jungh.

Adustomyces Jülich, Persoonia 10(3): 325, 1979.

Type species – *Stereum repandum* var. *lusitanicum*, Broteria (Bot.) 11: 76, 1913.

Remarks – A synonym of *Radulomyces* M.P. Christ. *Adustomyces* is close or identical to *Radulomyces*, but it differs in its crustaceous thick basidiome, brown hyphae and a blackening trama in KOH.

Adustoporia Audet, Mushrooms nomenclatural novelties 11: 1, 2017.

Type species – *Polyporus sinuosus* Fr., Syst. mycol. (Lundae) 1: 381, 1821.

Remarks – According to the original description by Audet (2017j), *Adustoporia* differs from *Antrodia* s.str. by only resupinate basidiomes, pale brown pore surface when fresh, lack of false skeletocystidia, smaller basidia, smaller subballantoid basidiospores with no tapering distal end and from *Amyloporia* s.str. by no yellow basidiome, different hyphal system, inamyloid skeletal hyphae, and by the not similar cultural characteristics. According to Audet (2017j), *Adustoporia* is supported by the molecular analyses in Ortiz-Santana et al. (2013), Spirin et al. (2015) and Binder et al. (2013).

Aegerita Pers., Neues Mag. Bot. 1: 120, 1794.

Type species – *Aegerita candida* Pers., Neues Mag. Bot. 1: 120, 1794.

Remarks – A name based on an anamorph. *Aegerita* is the anamorphic state of *Bulbillomyces* Jülich.

Aegeritina Jülich, Int. J. Mycol. Lichenol. 1(3): 282, 1984.

Type species – *Aegerita tortuosa* Bourdot & Galzin, Hyménomyc. de France (Sceaux): 298, 1928.

Remarks – A name based on an anamorph. *Aegeritina* is the anamorphic genus designated for *Subulicystidium* Parmasto. It consists in small globules composed of tortuous to somewhat inflated clamped hyphae with the subulate and characteristically encrusted cystidia of the teleomorph state. It differs from *Aegerita*, the anamorph of *Bulbillomyces farinosus* (Bres.) Jülich by the absence of cystidial elements in the latter.

Aegis Gómez-Mont., Rajchenb. & Robledo, Mycosphere 8 (6): 1265, 2017.

Type species – *Aegis boa* Gómez-Mont., Rajchenb. & Robledo, Mycosphere 8 (6): 1265, 2017.

Basidiome annual, resupinate, effused-reflexed to pileate, pileal surface glabrous to tomentose, usually white to light ivory, azonate, pores round, 5–6 per mm, context thin, fibrous, white. Hyphal system monomitic with thin- to thick-walled clamped generative hyphae, metachromatic, IKI–. Basidia clavate, with four sterigmata. Basidiospores smooth, allantoid, hyaline, thin-walled, IKI–.

Remarks – *Aegis* is characterized microscopically by a monomitic hyphal system with clamp connections and particular thick-walled hyphae that present inflated and widened portions and constrictions, and allantoid basidiospores. The phylogenetic analysis by Gómez-Montoya et al. (2017) recovered the general topology of previous works, with *Grifola*, *Antrodiella aurantilaeta* (Corner) T. Hatt. & Ryvardeen, and *Aegis* presenting an isolated position, called ‘*Grifola*’ clade.

Aldridgea Masee, *Grevillea* 20(no. 96): 121, 1892.

Type species – *Aldridgea gelatinosa* Masee, *Grevillea* 20(no. 96): 121, 1892 (= *Thelephora puteana* Schumach., Enum. pl. (Kjbenhavn) 2: 397, 1803).

Remarks – A synonym of *Coniophora* DC.

Aleurobotrys Boidin, Bull. trimest. Soc. mycol. Fr. 101(4): 340, 1985.

Type species – *Aleurodiscus botryosus* Burt., Ann. Mo. bot. Gdn 5: 198, 1918.

Basidiome resupinate, thin, hymenophore smooth. Hyphal system monomitic, generative hyphae with simple septa. Gloeocystidia present. Acanthophyses with short amyloid branches (botryophyses). Basidiospores ornamented, amyloid.

Remarks – *Aleurobotrys* is a monotypic genus segregated from *Aleurodiscus* for species with sulfocystidia, ornamented basidiospores and amyloid vegetative structures called botryophyses (acanthophyses with short and obtuse dichotomous branches). The phylogenetic analysis by Larsson & Larsson (2003), confirm *Aleurobotrys botryosus* as distinct from *Aleurodiscus*, and it may be related to *Gloeomyces* but no further conclusions about relationships can be drawn. Wu et al. (2001) found that *A. botryosus* is close to *Aleurodiscus cerussatus*, and they concluded that the phylogenetic importance of the amyloid reaction of the botryophyses is doubtful (Bernicchia & Gorjón 2010).

Aleurocorticium P.A. Lemke, Can. J. Bot. 42: 724, 1964.

Type species – *Corticium acerinum* Pers., Observ. mycol. (Lipsiae) 1: 37, 1796.

Remarks – A synonym of *Dendrothele* Höhn. & Litsch.

Aleurocystidiellum P.A. Lemke, Can. J. Bot. 42: 277, 1964.

Type species – *Stereum subcruentatum* Berk. & M.A. Curtis, Proc. Amer. Acad. Arts & Sci. 4: 123, 1858.

Basidiome annual to perennial, cupulate to substereoid, margin determinate, subcoriaceous, hymenophore smooth, abhymenial sterile surface glabrous. Hyphal system monomitic or dimitic, generative hyphae with clamps. Basidia subclavate, with 4-sterigmata, and a basal clamp. Basidiospores ovoid to broadly ellipsoid, apiculate, thick-walled, minutely verruculose in Melzer's, amyloid.

Remarks – *Aleurocystidiellum* was created by Lemke (1964a) to include dimitic species with discoid basidiome and large, minutely verrucose and amyloid spores with *Aleurocystidiellum subcruentatum* (Berk. & M.A. Curtis) P.A. Lemke as type species. *Aleurocystidiellum subcruentatum* was previously placed in *Aleurodiscus* because of the discoid basidiome and the amyloid basidiospores. However, the skeletal hyphae ending into the hymenium as cystidia-like, more or less encrusted elements made *Aleurocystidiellum subcruentatum* a very distinct species from *Aleurodiscus amorphus* (Pers.) J. Schröt., the type of *Aleurodiscus*. *Aleurodiscus disciformis* (DC.) Pat. was investigated by Boidin et al. (1968) and it showed almost identical cultural characteristics but having monomitic hyphal system and SA+ gloecystidia. Boidin et al. (1968) intended to make the appropriate combination in *Aleurocystidiellum* but failed to include a reference to the basionym. Later, Telleria (1990) provided a correct combination as *Aleurocystidiellum disciforme* (DC.) Telleria. Hallenberg & Parmasto (1998) found that morphological and molecular data supported a close relationship between the two species, also confirmed by molecular studies by Wu et al. (2001), Larsson & Larsson (2003) and Binder et al. (2005). Basidiospores in SEM showed identical wart-like ornamentation in *Aleurocystidiellum subcruentatum* and *Aleurocystidiellum disciforme*, and that is clearly different from the rod-like protuberances present in *Aleurodiscus amorphus* that gives an aculeate appearance to the spores (Hallenberg & Parmasto 1998). The skeletal cystidia in *Aleurocystidiellum subcruentatum* and the gloecystidia in *Aleurocystidiellum disciforme* may be homologous, both representing modifications of the gloeoplerous hyphae that characterize other taxa in the russuloid clade (Hibbett & Thorn 2001, Wu et al. 2001), however subicular hyphae in *A. disciforme* have thickened walls with clamps difficult to discern and with a skeletoid aspect. Nevertheless, the two species have a similar ecology, occurring both on barks of living trees (Bernicchia & Gorjón 2010).

Aleurocystis Lloyd ex G. Cunn., Trans. & Proc. Roy. Soc. New Zealand 84: 234, 1956.

Type species – *Aleurodiscus capensis* Lloyd, Lloyd Mycol. Notes 62: 930, 1920. (= *Corticium hakgallae* Berk. & Broome, J. Linn. Soc. 14: 72, 1873).

Basidiome cupulate to resupinate, pale yellow to ochre, annual, gelatinous and tough when fresh, horny and dense when dry, hymenial surface smooth to tuberculate. Hyphal system monomitic, generative hyphae with clamps, thick-walled in the subiculum and straight to branched, gelatinized in KOH. Paraphysoid hyphae to dendrohyphidia present (in the type) or absent. Cystidia as metuloids or encrusted hyphal ends, thick-walled, projecting or enclosed. Gloecystidia present in one species. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores large, ellipsoid, smooth, thin- to thick-walled, non-amyloid.

Remarks – *Aleurocystis* reminds macromorphologically *Aleurodiscus* s.l., by the cupulate basidiome, but it differs in the encrusted cystidial elements, and inamyloid smooth basidiospores. Dendrohyphidia are present in the generic type distributed in South Africa and in *Aleurocystis magnispora* (Burt.) P.A. Lemke from Jamaica, Colombia, and Southern Brazil, but this structure lacks in *A. gloecystidiata* Rajchenb. & Robledo, from Argentina, that also differs in possessing SA– gloecystidia.

Aleurodiscus Rabenh. ex J. Schröt, in Cohn, Krypt.-Fl. Schlesien (Breslau) 3(1): 429, 1888.

Type species – *Peziza amorpha* Pers., Syn. meth. fung. 2: 657, 1801.

Basidiome resupinate or discoid, margin variable, in some species more or less reflexed or undifferentiated. Hyphal system monomitic or dimitic, hyphae clamped or simple-septate. A variable set of sterile elements may be present (gloeocystidia, acanthophyses, dendrophyses, paraphysoid hyphae, encrusted cystidia, encrusted or smooth skeletocystidia). Basidia medium to

large, with 4-sterigmata, simple-septate or with a basal clamp. Basidiospores smooth or ornamented, amyloid.

Remarks – *Aleurodiscus* in a very broad sense, includes species with several sterile elements (acanthophyses, dendrophyses, paraphysoid hyphae, etc.), hyphae clamped or simple-septate, gloecystidia absent or present and, amyloid basidiospores either smooth or ornamented. In a restricted sense, *Aleurodiscus* comprises those species with amyloid basidiospores but no acanthophyses, botryophyses, acanthobasidia, or encrusted sterile elements. Even a sensu lato *Aleurodiscus* concept is useful to quickly identify a group of species, morphological as well molecular evidence to seem indicate that *Aleurodiscus* can be split into more homogeneous groups. However, we agree that further molecular studies with more species and specimens, included those from tropics and Southern Hemisphere is needed to clarify the taxonomic situation of *Aleurodiscus* s.l. For a detailed information and discussion see also Lemke (1964a,b), Oberwinkler (1965), Parmasto (1967), Boidin et al. (1985), Telleria & Melo (1995), Wu et al. (2000), Wu et al. (2001), Larsson & Larsson (2003), Larsson et al. (2004), Gorjón et al. (2013), Dai & He (2016), Tian et al. (2018).

Aleuromyces Boidin & Gilles, Bull. Soc. Mycol. Fr. 117(3): 176, 2001.

Type species – *Aleurodiscus gabonicus* Boidin, Lanq. & Gilles, in Boidin et al. Bull. Soc. Mycol. Fr. 101(4): 352, 1986.

Basidiome resupinate, effused, adnate, whitish, hymenial surface smooth. Hyphal system monomitic, hyphae with simple-septa. Acanthophyses present, inamyloid and indextrinoid. Gloecystidia often with a moniliform apex, thin to slightly thick-walled, SA–. Basidia ovoid, with 4-sterigmata, with a simple basal septum. Basidiospores ovoid, verrucose, amyloid, spore print white.

Remarks – *Aleuromyces* is characterized by the amyloid and ornamented basidiospores, presence of acanthophyses and simple-septate hyphae. It was proposed to accommodate *Aleurodiscus gabonicus*, but the relationships with other genera within *Aleurodiscus* s.str. is unclear. Núñez & Ryvarde (1997) described clamped hyphae in *A. gabonicus* contrary to Boidin & Gilles (2001) that described only verticillate clamps in the culture, not in the basidiome.

Alysidium Kunze, in Kunze & Schmidt, Mykologische Hefte (Leipzig) 1: 11, 1817.

Type species – *Alysidium fulvum* Kunze & J.C. Schmidt, Mykologische Hefte (Leipzig) 1: 11, 1817.

Remarks – A name based on an anamorph. Anamorphic state of *Botryobasidium* Donk.

Allescheriella Henn., Hedwigia 36(4): 244, 1897.

Type species – *Allescheriella uredinioides* Henn. [as ‘*uredinoides*’], Hedwigia 36(4): 244, 1897.

Remarks – A name based on an anamorph. Anamorphic state of *Botryobasidium* Donk.

Alutaceodontia (Parmasto) Hjortstam & Ryvarde, Syn. Fung. (Oslo) 15: 7, 2002.

Basionym – *Hyphodontia sect. Alutaceodontia* Parmasto, Consp. System. Corticiac. (Tartu): 124, 1968.

Type species – *Hydnum alutaceum* Fr., Syst. mycol. (Lundae) 1: 417, 1821.

Basidiome resupinate, effused, hymenophore odontoid with small aculei. Hyphal system monomitic, hyphae with clamps, and with distinct walls. Cystidia with tramal origin (pseudocystidia) thin-walled, cylindrical or with several constrictions to moniliform, apically obtuse and, aseptate. Basidia subclavate to suburniform, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Alutaceodontia* is separated from *Hyphodontia* s.l. mainly by the thin-walled cystidia and allantoid basidiospores (Hjortstam & Ryvarde 2002a). It reminds in some respects *Chaetoporellus*, but the latter is easily separated by the typical poroid hymenophore. It seems to

belong to the Hymenochaetales and related to *Kneiffiella*, morphologically separated by the thick-walled tramal cystidia (Larsson et al. 2006, Larsson 2007b). *Alutaceodontia* and *Chaetoporellus* are treated as a synonym of *Kneiffiella* P. Karst. by Riebesehl & Langer (2017).

Alytosporium Link, in Willdenow, Sp. Pl., Ed. 4 6(1): 23, 1824.

Type species – *Sporotrichum badium* Link, Mag. Gesell. naturf. Freunde, Berlin 3(1-2): 12, 1809.

Remarks – A synonym of *Tomentella* Pers. ex Pat.

Amaurodon J. Schröt., in Cohn, Krypt.-Fl. Schlesien (Breslau) 3.1(25–32): 461, 1888.

Type species – *Sistotrema viride* Alb. & Schwein., Consp. fung. (Leipzig): 262, 1805.

Synonyms – *Hypochnopsis* P. Karst., *Lazulinospora* Burds. & M.J. Larsen, *Tomentellago* Hjortstam & Rvar den.

Basidiome resupinate, detachable, mostly arachnoid or pelliculose, continuous, hymenophore bluish when fresh, yellow-green when dry, smooth, hydroid or poroid, concolorous with subiculum, sterile margin usually indeterminate or byssoid and paler than hymenophore. Hyphal system monomitic, hyphal cords absent or rarely present only in subiculum, subicular and subhymenial hyphae simple-septate or clamped, thin-walled, hyaline or sometimes partly bluish violet in KOH. Cystidia absent. Basidia utriform, not stalked, often sinuous, hyaline or partly violet in KOH, hyaline in distilled water, with 4-sterigmata. Basidiospores slightly globose or ellipsoid, smooth, verrucose and bi- or trifurcate, mostly violet in KOH, hyaline or yellowish in distilled water.

Remarks – *Amaurodon* is characterized by the bluish basidiomes that become yellowish green when dry and basidiospores, smooth or ornamented, bluish to violet in KOH.

Amaurohydnum Jülich, Persoonia 9(4): 455, 1978.

Type species – *Amaurohydnum flavidum* Jülich, Persoonia 9(4): 455, 1978.

Basidiome annual, resupinate, effused, adnate, membranaceous, hymenial surface minutely hydroid, pale coloured. Hyphal system monomitic, hyphae hyaline, cylindrical to torulose, distinct to indistinct, with clamps. Cystidia absent. Basidia distinctly clavate, small, 4-spored, with a basal clamp. Basidiospores hyaline, thin-walled, smooth, small, inamyloid.

Remarks – *Amaurohydnum* is characterized by the inconspicuous hydroid basidiomes, absence of cystidial elements, and ellipsoid, smooth and inamyloid basidiospores (Jülich 1978a). The phylogenetic relationships of *Amaurohydnum* are unclear because there are no available sequences (Larsson 2007b). Monotypic genus.

Amauromyces Jülich, Persoonia 9(4): 456, 1978.

Type species – *Amauromyces pallidus* Jülich, Persoonia 9(4): 456, 1978.

Basidiome resupinate, effused, adnate, thin, crust-like, ceraceous, hymenial surface pale coloured. Hyphal system monomitic, hyphae hyaline, thin-walled in subhymenium, distinctly thick-walled and very wide in the trama, with clamps at all primary septa; wall of basal hyphae swelling and partly dissolving in KOH. Cystidia hyaline, thick-walled, smooth or encrusted as lamprocystidia, often two-celled with clamped septa. Basidia hyaline, clavate to flexuous-cylindrical, 4-spored, with a basal clamp. Basidiospores hyaline, thin-walled, smooth, ellipsoid, small, IKI–, CB–.

Remarks – *Amauromyces* is characterized by the thick-walled hyphae and cystidia, the hyphae swelling and dissolving in KOH (Jülich 1978a).

Ambivina B. Katz, Nova Hedwigia 25: 811, 1974.

Type species – *Ambivina filobasidia* B. Katz, Nova Hedwigia 25: 811, 1974.

Remarks – Based on invalidly published species. See Katz (1974).

Amethicium Hjortstam, Mycotaxon 17: 557, 1983.

Type species – *Amethicium rimosum* Hjortstam, Mycotaxon 17: 557, 1983.

Basidiome resupinate, effuse, adnate, hymenial surface smooth, moderately soft, in the type species bluish to purplish. Hyphal system dimitic, basal hyphae intricately interwoven, binding hyphae thin- to moderately thick-walled, frequently branched, non-dextrinoid, subhymenial hyphae densely arranged, short-celled, thin-walled, with clamps. Cystidia absent. Basidia terminal, clavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Amethicium* is characterized by the basal binding hyphae, absence of cystidia, and smooth, negative in Melzer's reagent, and acyanophilous basidiospores (Hjortstam 1983). It reminds *Cericium* that also possess binding hyphae, but the latter has distinct cystidia and lacks the violet colours of *Amethicium*.

Amphinema P. Karst., Bidr. Känn. Finl. Nat. Folk 51:228, 1892.

Type species – *Thelephora byssoides* Pers., Syn. meth. Fung. 2: 577, 1801.

Synonyms – *Sphaerophora* Bonord, *Diplonema* P. Karst.

Basidiome resupinate, pellicular, rarely membranaceous, hymenophore smooth or finely velutine due to the projecting cystidia, margin usually with rhizomorphs. Hyphal system monomitic, hyphae yellowish, more or less thin-walled, loosely interwoven, with clamps at all septa (with simple-septa in *Amphinema angustispora*), usually encrusted. Cystidia hyphoid (leptocystidia), cylindrical, projecting, with clamped septa, slightly thick-walled, yellowish, covered with small granules. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid (fusiform in *Amphinema angustispora*), smooth, slightly thick-walled, hyaline, inamyloid, indextrinoid, stained in cotton blue but not truly cyanophilous.

Remarks – Although the relationship with other corticioid genera seems unclear, Eriksson & Ryvarden (1973) indicated some similarities with *Hyphodontia* in the hyphal characters and the shape of the clamps and basidia. Rattan (1977) pointed a relation with *Leucogyrophana* due to the reaction of the spore wall with cotton blue. Molecular studies by Larsson et al. (2004) showed the relation between *Amphinema byssoides* and *Athelia*, *Athelopsis*, *Byssorticum*, *Tylospora*, and *Piloderma* in the athelioid clade, also confirmed by Larsson (2007b) including *Amphinema* in the family Atheliaceae Jülich. The type species of *Amphinema* is mycorrhizal and its basidiome occurs on several substrata.

Amyloathelia Hjortstam & Ryvarden, Mycotaxon 10(1): 201, 1979.

Type species – *Corticium amylaceum* Bourdot & Galzin, Bull. Soc. mycol. Fr. 27(2): 259, 1911.

Basidiome resupinate, adnate, membranaceous to pellicular; hymenophore smooth, whitish to ochraceous, margin fibrillose to indeterminate. Hyphal system monomitic; hyphae clamped, basal hyphae straight, subhymenial irregular to sinuous. Cystidia absent but paraphysoid hyphal ends may be present. Basidia clavate, 4-sterigmata, and with a basal clamp. Basidiospores ellipsoid to subglobose, smooth to ornamented, thick-walled, with a strong bluish-violet reaction in Melzer's reagent.

Remarks – *Amyloathelia* differs from other corticioid species with amyloid basidiospores in the absence of sterile elements like cystidia, gloeocystidia, dendrohyphae or acantohyphae (only in *A. amylacea* some paraphysoid hyphae are present). The strongly amyloid spore-wall separates *Amyloathelia* from *Dendrothele* that presents dendrohyphae more or less numerous, and commonly grows on the bark of living trees (Hjortstam & Ryvarden 1979b). *Aleurodiscus* s.l. also presents several sterile elements. *Amyloathelia* is classified in Atheliales Jülich by Boidin et al. (1998), however, molecular studies by Boidin et al. *l.c.*, Binder et al. (2005) and Larsson (2007b) does not clarify the relationships with other corticioid genera.

Amylobasidium Ginns, Mycologia 80(1): 63, 1988.

Type species – *Amylobasidium tsugae* Ginns, Mycologia 80(1): 63, 1988.

Basidiome pulvinate, sometimes confluent, margin abrupt, determinate. Hymenial surface smooth, cream coloured. Hyphal system monomitic, hyphae thin- to thick-walled, with clamps, IKI–, acyanophilous. Dendrophyses present, forming a catahymenium. Cystidia absent. Basidia utriform to cylindrical, elongate, irregularly thickened over the lower part, with 4-sterigmate, amyloid, especially where thickened. Basidiospores broadly ellipsoid, large, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – It is characterized by the amyloid basidial walls, presence of dendrohyphae, pulvinate basidiomes and large basidiospores wider than 12 µm (Ginns 1988). Morphologically it seems to be related with *Corticium* but differing in the amyloid basidia.

Amylocorticiellum Spirin & Zmitr., Mikol. Fitopatol. 36(1): 22, 2002.

Type species – *Corticium subillaqueatum* Litsch., Anns mycol. 39(2/3): 128, 1941.

Basidiome resupinate, effused, pellicular to membranaceous, margin fibrillose. Hymenophore smooth to meruloid, pale coloured. Hyphal system monomitic, hyphae with evident clamps. Cystidia (leptocystidia) present or absent. Basidia clavate, sinuous, with a basal clamp. Basidiospores ellipsoid, smooth, thick-walled, amyloid, cyanophilous.

Remarks – Zmitrovich & Spirin (2002) described the genus *Amylocorticiellum* with *Corticium subillaqueatum* as the generic type species and included *Corticium cremeoisabellinum* Litsch., *Thelephora mollis* Fr. and *Amylocorticiellum sinuosus* Spirin & Zmitr. These species with distinct amyloid spore wall (greyish in Melzer's reagent) were previously included in *Hypochniciellum* when Hjortstam (1981) emended the generic circumscription. *Hypochniciellum* originally included only *Leptosporomyces ovoideus* Jülich characterized by thick-walled and cyanophilous basidiospores and no reaction in Melzer. Molecular studies include *Corticium subillaqueatum* the generic type of *Amylocorticiellum* in the Amylocorticiaceae Jülich, but *Leptosporomyces ovoideus* the type species of *Hypochniciellum*, is still not molecularly analysed (Larsson 2007b). Gorjón et al. (2011) added three species to *Amylocorticiellum* considering *Hypochniciellum* restricted to the generic type.

Amylocorticium Pouzar, Česká Mykol. 13(1): 11, 1959.

Type species – *Corticium subsulphureum* P. Karst., Meddn Soc. Fauna Flora fenn. 6: 12, 1881.

Basidiome resupinate, at first slightly pellicular, after thicker and membranaceous; hymenophore smooth, usually white to yellowish. Hyphal system monomitic, hyphae with clamps or simple septa, thin-walled, subicular hyphae loosely interwoven, the subhymenial hyphae arranged in a denser tissue. Cystidia absent or present, in any case only hyphoid. Basidia subclavate to clavate, with 4-sterigmata, with simple septa or a basal clamp. Basidiospores narrowly ellipsoid to allantoid, up to 3 µm wide, thin-walled, smooth and amyloid.

Remarks – *Amylocorticium* is above all characterized by the smooth and amyloid basidiospores, no other remarkable elements are present. *Amylocorticium* shares similar features with *Anomoporia* (Polyporaceae), except for the poroid hymenophore (Ryvarden & Gilbertson 1993). Molecular analysis by Larsson et al. (2004) pointed out this relation, indeed *Amylocorticium*, *Anomoporia*, *Ceraceomyces*, and *Hypochniciellum* share the amyloidity of the basidiospores (except *Ceraceomyces*) and are recovered in the same subclade.

Amylodontia Nikol., Nov. sist. Niz. Rast. 4: 238, 1967.

Type species – *Amylodontia parmastoi* Nikol., Nov. sist. Niz. Rast. 4: 238, 1967.

Remarks – A synonym of *Dentipellis* Donk.

Amylofungus Sheng H. Wu, Mycologia 87(6): 886, 1995.

Type species – *Corticium corrosum* G. Cunn. in Trans. Roy. Soc. N. Z. 82: 286, 1954.

Basidiome resupinate, effuse, hymenial surface smooth. Hyphal system monomitic, hyphae simple-septate, amyloid. Gloeocystidia numerous, clavate or cylindrical, SA+, amyloid. Basidia utriform, with 4-sterigmate, simple-septate at the base, amyloid. Basidiospores globose or subglobose, smooth, thin-walled, amyloid.

Remarks – *Amylofungus* is characterized by the presence of amyloid hyphae, gloeocystidia, basidia, and basidiospores (Wu 1995). According to Larsson (2007b), it seems to be close to *Vesiculomyces*. Hjortstam (1995) also placed *Corticium corrosum* in *Vesiculomyces*.

Amylohyphus Ryvarde, Bull. Jard. Bot. Nat. Belg. 48: 81, 1978.

Type species – *Amylohyphus africanus* Ryvarde, Bull. Jard. Bot. Nat. Belg. 48: 82, 1978.

Basidiome resupinate, adnate and hard, hymenial surface smooth along the margin, uneven and warted in more mature parts, light brown, ochraceous at the margin. Hyphal system monomitic, generative hyphae with clamps, amyloid. Catahymenium present with numerous thin- to thick-walled amyloid cystidia, partly as elongated thick-walled hyphae, partly as bulbous to subulate cystidia, smooth to encrusted. Basidia clavate, with 4-sterigmate, and a basal clamp. Basidiospores cylindrical, large, thin-walled, inamyloid.

Remarks – *Amylohyphus* is characterized by the amyloid reaction in hyphae and cystidia. Cystidial elements are very variable, from encrusted hyphoid to bulbous or subulate, all with characteristic thickened and amyloid walls (Ryvarde 1978).

Amylonotus Ryvarde, Norwegian Journal of Botany 22 (1): 26, 1975.

Type species – *Amylonotus africanus* Ryvarde, Norwegian Journal of Botany 22 (1): 26, 1975.

Basidiome annual, sessile, pileate, effused-reflexed or resupinate, soft coriaceous when fresh, coriaceous to brittle when dry. Pileal surface cinnamon to dark brown, first finely tomentose, becoming smooth with age. Pore surface pale orange, isabelline, pale cinnamon to brown; pores large, labyrinthine to daedaleoid. Context pale cinnamon to brownish orange, membranous to fibrous. Tubes leathery to fibrous when dry. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dextrinoid. Gloeoplerous hyphae present or absent. Gloeocystidia occasionally present or absent. Cystidia absent. Basidiospores ellipsoid to subglobose, hyaline, thin- to slightly thick-walled, finely asperulate, IKI+, CB+. Causing a white rot.

Remarks – *Amylonotus* is easy to recognize in the microscope because of the asperulate amyloid spores and the dimitic hyphal system with clamped generative hyphae (Ryvarde 1975). Externally it may remind of an *Inonotus*. For a phylogenetic discussion see Chen et al. (2016).

Amyloporia Bondartsev & Singer ex Singer, Mycologia 36 (1): 67, 1944.

Type species – *Polyporus vulgaris* var. *calceus* Fr., Syst. mycol. (Lundae) 1: 381, 1821.

Basidiome annual, resupinate, often widely effused, adnate, soft when fresh, crumbly and chalky when dry. Pore surface white, to sulphurous yellow or cream when fresh, fading on drying and storing to almost pure white or pale cream, pores circular. Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline, skeletal hyphae predominant, semisolid, straight to slightly sinuous, non-septate, unbranched to occasionally dichotomously branched, weakly amyloid but reaction variable and most easily seen in hyphal masses and in fresh condition. Cystidia none, but fusoid, inconspicuous, non-projecting cystidioles occur scattered among the basidia. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores allantoid to cylindrical or ellipsoid, hyaline, smooth, thin-walled, negative in Melzer's reagent. Causing a brown cubical rot.

Remarks – *Amyloporia* is similar to *Antrodia* in the hyphal system, cylindrical to ellipsoid basidiospores non-reacting in Melzer's reagent, and in the type of rot. It is separated by the amyloidity of the vegetative hyphae; phylogenetical studies confirm this separation (Rajchenberg et al. 2011).

Amylosporia B.K. Cui, C.L. Zhao & Y.C. Dai, *Fungal Diversity* 97: 164, 2019.

Type species – *Perenniporia hattorii* Y.C. Dai & B.K. Cui, *Ann. Bot. Fenn.* 48(3): 224, 2011.

Basidiome annual, resupinate to effused-reflexed, adnate, soft corky to corky when fresh, becoming corky to fragile upon drying. Pore surface cream to buff when fresh, becoming cinnamon-buff when bruised, pale yellowish brown upon drying. Subiculum cream to buff, corky. Tubes concolorous with the pore surface, corky to fragile. Hyphal system dimitic; generative hyphae bearing clamp connections; skeletal hyphae weakly amyloid, CB+. Cystidia absent; cystidioles present. Basidiospores ellipsoid, truncate, hyaline, thick-walled, smooth, weakly amyloid, CB+.

Remarks – *Amylosporia hattorii* (Y.C. Dai & B.K. Cui) B.K. Cui, C.L. Zhao & Y.C. Dai, was firstly described in *Perenniporia* Murrill from tropical China (Dai et al. 2011). It is characterized by an annual growth habit, amyloid, and cyanophilous skeletal hyphae, and ellipsoid, truncate and amyloid basidiospores. *Amylosporia* differs from *Perenniporia* by its both amyloid skeletal hyphae and amyloid basidiospores (Cui et al. 2019).

Amylosporomyces S.S. Rattan, *Bibliotheca Mycol.* 60: 244, 1977.

Type species – *Amylosporomyces echinosporum* S.S. Rattan, *Bibliotheca Mycol.* 60: 245, 1977.

Remarks – A synonym of *Gloeodontia* Boidin. Larsson & Larsson (2003) studied the type material of *A. echinosporum* and found it similar to *Gloeodontia subasperispora* (Litsch.) E. Larss. & K.H. Larss.

Amylosporus Ryvarden, *Norwegian Journal of Botany* 20 (1): 1, 1973.

Type species – *Polyporus campbellii* Berk., *Hooker's J. Bot. Kew Gard. Misc.* 6: 228, 1854.

Basidiome terrestrial or lignicolous, stipitate to sessile. Pileus ochraceous to buff. Context white to pale brown. Pores small and entire. Hyphal system dimitic. Generative hyphae hyaline thin-walled both with simple septa and multiple verticillate clamps, often on the same hyphae. Skeletal hyphae hyaline, thick-walled to almost solid, unbranched or moderately branched. Gloeoplerous hyphae present or absent. Gloeocystidia absent. Cystidia absent. Basidiospores broadly ellipsoid to subglobose, thin- to slightly thick-walled, finely asperulate, IKI+, CB+ or CB-. Causing white rot.

Remarks – *Amylosporus* is a rather distinct genus with its sessile to stipitate basidiomes and a dimitic hyphal system with two types of septation on the generative hyphae, a rather rare characteristic in the Polyporaceae. Gloeoplerous hyphae are also quite rare among the stipitate genera. The basidiospores are finely warted and not like those of *Bondarzewia* which has coarse reticulate ornamentation. For a recent phylogeny see Chen & Shen (2014) and Chen et al. (2016).

Amylostereum Boidin, *Revue Mycol., Paris* 23(3): 345, 1958.

Type species – *Thelephora chailletii* Pers., *Mycol. eur. (Erlanga)* 1: 125, 1822.

Basidiome resupinate, effuse-reflexed or pileate, hymenophore smooth, grey to brownish coloured. Hyphal system monomitic to dimitic, generative hyphae with clamps, thin-walled, hyaline, skeletal hyphae thick-walled and brown. Cystidia (lamprocystidia) fusiform, encrusted in the apical part, thick-walled, yellowish brown. Basidia subclavate, thin-walled, with 4-sterigmata, and basal clamp. Basidiospores cylindrical to narrowly ellipsoid, smooth, thin-walled, amyloid.

Remarks – *Amylostereum* is mainly characterized by the lamprocystidia and the amyloid smooth basidiospores (Boidin & Lanquetin 1984). According to molecular data by Binder et al. (2005), *Amylostereum* appears closely related to *Echinodontium* in the russuloid clade. In the molecular study by Larsson (2007b), *Amylostereum* and *Echinodontium* are recovered in separate subclades of the russuloid clade. *Amylostereum* included symbiotic fungi of wood wasps (*Sirex* spp., *Urocerus* spp.) and most dispersal happens via asexual spores by its winged symbionts, and when they act as invasive species can cause ecological and economic importance damages (Nielsen et al. 2009).

Amyloenasma (Oberw.) Hjortstam & Ryvarde, Syn. Fung. (Oslo) 20: 34, 2005.

Basionym – *Xenamatella* subg. *Amyloenasma* Oberw., Sydowia, Ann. Mycol. Ser. II, 19: 35, 1965.

Type species – *Corticium grisellum* Bourdot, Rev. Sci. Bourb. Centr. Fr. 35:17, 1922.

Basidiome resupinate effused, thin to moderately thick, hard when dry, smooth to more or less tuberculate, greyish often with a bluish tint. Hyphal system monomitic, hyphae with clamps, more or less gelatinized and often with irregular ampullate septa. Cystidia absent. Basidia usually short, pleural, with 4-sterigmata, and a basal clamp. Basidiospores allantoid to reniform, smooth, thin-walled and amyloid.

Remarks – *Amyloenasma* was segregated from *Phlebiella* as independent genus by Hjortstam & Ryvarde (2005) ranking to generic level the subgenus *Amyloenasma* Oberw. It includes species with pleurobasidia and smooth amyloid basidiospores. The phylogenetic position of *Amyloenasma* is unclear, but it could belong to the Amylocorticiaceae because the amyloid spore wall is indicative of this group, but it differs from other genera included in this family in the morphology of the basidia, typically pleurobasidiate (Larsson 2007b).

Anomoloma Niemelä & K.H. Larss., Mycotaxon 100: 312, 2007.

Type species – *Polyporus albolutescens* Romell, Arkiv Botanik 11: 11, 1911.

Basidiome annual, resupinate, loosely attached, soft to brittle, margin with rhizomorphs, hymenial surface poroid, pores round to angular, whitish, yellow or pinkish. Hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled, encrusted or smooth. Cystidia absent. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores usually ellipsoid to subglobose, smooth, thin-walled, amyloid. On dead wood of conifers and hardwood, causing a white rot.

Remarks – *Anomoloma* is closely related to *Anomoporia* differing in species with margin rhizomorphic and causing a white rot (Niemelä & Larsson 2007). Phylogenetic relationship has been studied by Song et al. (2016).

Anomoporia Pouzar, Ceska Mykol. 20: 172, 1966.

Type species – *Polyporus bombycinus* Fr., Elench. Fung. 1: 117, 1828.

Basidiome annual, resupinate, loosely attached, soft to brittle, margin without rhizomorphs, hymenial surface poroid, pores round to angular, whitish, yellow or pinkish. Hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled, encrusted or smooth. Cystidia absent. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores usually ellipsoid to subglobose, smooth, thin-walled, amyloid. On dead wood of conifers and hardwood, causing a brown rot.

Remarks – *Anomoporia* is morphological and phylogenetically closely related to *Amylocorticium* differing basically in the poroid hymenophore in the former (Pouzar 1966a).

Antella Miettinen, Ann. Bot. Fennici 53: 158, 2016.

Type species – *Antrodiella niemelaei* Vampola & Vlasák, Czech Mycol. 63: 197, 2011.

Basidiome resupinate, hymenophore poroid, pores 1-4 per mm, somewhat splitting to irpicoid, light coloured, yellowish when old. Hyphal system dimitic, with clamps, weakly to moderately cyanophilous, skeletal hyphae yellowish in masses, rather narrow, 2–3.5 µm in diam, with a distinct lumen. Gloeocystidia thin-walled, of variable sizes, well differentiated. Basidiospores ellipsoid, small (ab 4.5–2.5 µm), thin-walled, smooth, negative in Melzer's reagent.

Remarks – *Antella* is a genus closely related to *Antrodiella*, differing in the presence of gloeocystidia. Also, skeletal hyphae in *Antrodiella* have an indistinct lumen and they are less cyanophilous (Miettinen & Ryvarde 2016).

Anthoporia Karasiński & Niemelä, Polish Bot. J. 61(1): 8, 2016.

Type species – *Polyporus albobrunneus* Romell, Ark. Bot. 11(no. 3): 10, 1911.

Basidiome annual to perennial, resupinate, effused, soft, hymenophore poroid, with cottony subiculum and fimbriate margin, rhizomorphs present but inconspicuous. Hyphal system dimitic, generative hyphae with clamp connections, in subiculum and tube trama hyaline, in basal subiculum close to substrate brown, often with resinous or fine crystalline encrustation, and occasional simple-septa, skeletal hyphae thick-walled to almost solid, not reacting in KOH, Melzer's reagent and Cotton Blue. Cystidia absent. Basidia clavate, with four sterigmata, and basal clamp. Basidiospores cylindrical to suballantoid, thin-walled, smooth, IKI–, CB–. Causing a brown rot.

Remarks – *Anthoporia* differs significantly from *Antrodia* in the short clavate basidia and shorter, narrower basidiospores. In addition, thick-walled hymenial cells, hyphidia or skeletocystidia are not observed in *Anthoporia*. The basidiomes of *Anthoporia* are totally resupinate, soft, with a cottony subiculum consisting of loosely arranged hyphae. *Anthoporia* differs from *Antrodia* in having brown generative hyphae in the upper subiculum (basal layer) next to the substrate and at the margin of the basidiome (Karasiński & Niemelä 2016). Recently published molecular phylogenies have shown *Polyporus albobrunneus* to be only distantly related to *Antrodia*, *Amyloporia*, and *Fibroporia*, and this is also supported by the morphological characteristics indicated by Karasiński & Niemelä (2016).

Antrodia P. Karst., Meddn Soc. Fauna Flora Fenn. 5: 40, 1879.

Type species – *Polyporus serpens* Fr., Observ. mycol. (Havniae) 2: 265, 1818.

Basidiome annual to perennial, resupinate to effused-reflexed, more rarely sessile and shelf like, mostly light coloured and tough to hard. Pores round to angular. Hyphal system dimitic, generative hyphae with clamps, often irregularly thickened, skeletal hyphae present, hyaline or slightly tinted in a few species, usually non-amyloid, variably amyloid in a few species (see *Amyloporia*). Cystidia not present. Cystidiols fusoid, small, ventricose, often present among the basidia. Basidia clavate, 4-stergimate, with a basal clamp. Basidiospores allantoid to oblong-ellipsoid, hyaline, thin-walled, smooth, negative in Melzer's reagent. Causing a brown rot, mostly in coniferous wood.

Remarks – *Antrodia* is a well know genus among the polypores with many species sharing the poroid hymenophore, dimitic hyphal system, basidiospores not reacting in Melzer's reagent, and causing a brown rot. Recently, some deviating species have been separated from the wide generic concept, and actually are accepted genera as *Amyloporia* and *Fibroporia*. *Cartilosoma* is a more controversial genus, and surely more phylogenetic studies are needed to assess a clear monophyly from *Antrodia*. Audet (2017g) described *Resinoporia* Audet. It differs from *Antrodia* s.str. or *Amyloporia* s.str. by abundant resinous matter occurs in the context and tubes, by tortuous and variably inflated skeletal hyphae, by basidia broadly clavate to barrel-shaped, with thickened walls after spore detachment. *Resinoporia* circumscribes the *Antrodia crassa* group as selected by Spirin et al. (2015), but more studies are needed to elucidate relationships in the *Antrodia crassa* group. *Anthoporia* differs from *Antrodia* in having brown generative hyphae next to the substrate and at the margin of the basidiome. See also Rajchenberg et al. (2011) and Bernicchia & Gorjón (2020).

Antrodiella Ryvarden & I. Johans., Prelim. Polyp. Fl. E. Afr. (Oslo): 256, 1980.

Type species – *Polyporus semisupinus* Berk. & M.A. Curtis, Grevillea 1(4): 50, 1872.

Basidiome resupinate to pileate, waxy soft when fresh, dense and hard and often semi translucent when dry, pileus if present, narrow and light-coloured, smooth to scrupose. Pore surface light ochraceous to straw-coloured when dry, pores entire and small, tubes concolorous with the pore surface, context white to pale straw-coloured. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae mostly narrow, hyaline thick-walled to solid, usually unbranched, more rarely with a few scattered branches. Cystidia absent or present. Basidia clavate, 4-stergimate, with a basal clamp. Basidiospores small, rarely above 5 µm in longest dimension, subglobose, ellipsoid to allantoid, thin-walled, hyaline and non-amyloid. On dead wood causing a white rot.

Remarks – *Antrodiella* is above all characterized by the typical consistency of the fruitbody, being soft and dense, almost wax-like when fresh, becoming dense, hard, and semi translucent when dry (Ryvarden & Johansen 1980).

Antrodiopsis Audet, Mushrooms nomenclatural novelties 1: 1, 2017.

Type species – *Poria oleracea* R.W. Davidson & Lombard, Mycologia 39(3): 317, 1947.

Remarks – According to Audet (2017a), *Antrodiopsis* differs from *Antrodia* s.str. by basidiomata perennial, habitus only resupinate, smaller basidia and by uninucleate basidiospores.

Aphanobasidium Jülich, Persoonia 10(3): 326, 1979.

Type species – *Corticium subnitens* Bourdot & Galzin, Hyménomyc. de France (Sceaux): 224, 1928.

Basidiome resupinate, effused, thin, ceraceous, light coloured, hymenophore smooth. Hyphal system monomitic, generative hyphae with clamps, hyaline, thin-walled. Cystidia lacking. Basidia (pleurobasidia) hyaline, small, thin-walled, with (2)4-sterigmata, with a basal clamp. Spores hyaline, ellipsoid, smooth, thin- or with slightly thickened walls, IKI–.

Remarks – *Aphanobasidium* includes a large and diverse group of pleurobasidiate corticioids species with smooth inamyloid basidiospores. *Aphanobasidium* is with *Coronicium*, *Merulicium*, and *Radulomyces* phylogenetically classified in the Pterulaceae Corner within the Agaricales (Larsson 2007b). *Aphanobasidium* basidiomes have a characteristic phenol smell when touched, a feature also shared with *Pterula* Fr. and *Radulomyces* (Olariaga, pers. obs.).

Aquascypha D.A. Reid, Nova Hedwigia, Beih. 18: 51, 1965.

Type species – *Stereum hydrophorum* Berk., Ann. Mag. nat. Hist., Ser. 1 14: 327, 1844.

Basidiome coriaceous, centrally stipitate, infundibuliform, often coalescent, pileus minutely tomentose or velutinate, concentrically zoned, varying in colour from dark brown to dark purple-brown, normally bearing conspicuous flattened dendroid or antler-like processes, hymenial surface smooth, distinctly pruinose, ochraceous-buff near the margin but becoming almost white towards the stipe in well preserved specimens. Stipe relatively short, minutely velutinate, dark brown to dark purple brown, arising from a well-developed basal disc of mycelium. Flesh of the pileus creamy-white, becoming dark brown in the region of the hymenium. Hyphal system trimitic, consisting of thin-walled, hyaline, branched generative hyphae, which bear inconspicuous clamp-connexions at the septa; thick-walled, unbranched skeletal hyphae which are distinctly brownish in colour; and thick-walled, pale brownish or hyaline, branched binding hyphae, lacking clamp connexions and in which the branches are of limited growth. Cystidia and gloeocystidia absent. Basidia not seen. Basidiospores hyaline, smooth, globose or subglobose, cylindrical (according to Ryvarden 2010).

Remarks – *Aquascypha* is known from tropical South America. It is a characteristic fungus with infundibuliform basidiomes growing on dead wood or debris. Phylogenetic relationships of *Aquascypha* remain unclear (Sjökvist et al. 2012).

Aquathanatephorus C.C. Tu & Kimbr., Bot. Gaz. 139: 459, 1978

Type species – *Aquathanatephorus pendulus* C.C. Tu & Kimbr., Bot. Gaz. 39(4): 459, 1978.

Remarks – A synonym of *Thanatephorus* Donk.

Arrasia Bernicchia, Gorjón & Nakasone, Mycotaxon 118: 258, 2011.

Type species – *Arrasia rostrata* Bernicchia, Gorjón & Nakasone, Mycotaxon 118: 258, 2011.

Basidiome effuse, adnate, thin, white, smooth, finely farinaceous, with distinct margin. Hyphal system monomitic, hyphae clamped. Dendrohyphidia filamentous, branched, clamped. Basidia suburniform at first, then flexuous, clavate to obclavate, with 4-sterigmata. sometimes with a basal lobe, clamped. Basidiospores broadly subfusiform to biapiculate, distal end elongating into a thick-walled rostrum, walls hyaline, slightly thick, smooth, cyanophilous, IKI–.

Remarks – *Arrasia* is well characterized by the large thick-walled basidiospores developing a distal rostrum when mature (Bernicchia et al. 2011). It seems to be related to dendrotheloid fungi such as *Dendrothele* by sharing the same ecology inhabiting bark of living trees, crustose basidioma, subuniform basidia at first, and structure of the hymenium with many dendrophylidia and abundant crystalline deposits as an adaptation to dry and exposure. Monotypic genus.

Asterodon Pat., Bull. Soc. mycol. Fr. 9:53, 1894.

Type species – *Asterodon ferruginosus* Pat., [as '*ferruginosum*'], Bull. Soc. mycol. Fr. 10(3): 130, 1894.

Basidiome annual, resupinate, effused, margin floccose, hymenophore hydroid. Hyphal system dimitic, generative hyphae simple-septate, hyaline to pale brown, skeletal hyphae unbranched, or rarely bifurcate, aseptate, with smooth, brownish ochraceous and thickened walls. Hymenial setae and asterosetae present. Basidia clavate, with 4-sterigmata, simple-septate at the base. Basidiospores ellipsoid, hyaline, smooth, thin-walled, IKI–.

Remarks – *Asterodon* is related to *Hymenochaete* and it belongs to the Hymenochaetaceae Donk (Larsson 2007b). It differs from *Hymenochaete* mainly in the branched asterosetae.

Asterostroma Masee, J. Linn. Soc., Bot. 25: 154, 1889.

Type species – *Corticium apalum* Berk. & Broome, J. Linn. Soc., Bot. 14: 72, 1875.

Basidiome resupinate, effused, membranaceous to pellicular, brittle, loosely adnate, hymenophore smooth, cream to ochraceous. Hyphal system dimitic with simple-septate generative hyphae and asterosetae. Gloeocystidia present. Basidia utriform, with 4-sterigmata and with a simple basal septum. Basidiospores subglobose to ellipsoid, smooth or tuberculate, amyloid (some species with inamyloid basidiospores, subg. *Austroasterostroma* Parmasto).

Remarks – *Asterostroma* seems to be related to *Asterodon* sharing the same type of asterosetae but differing in the type of basidiospores and hymenophore morphology. Phylogenetic analysis includes *Asterostroma* in the russuloid clade and *Asterodon* in the hymenochaetoid clade. *Asterostroma* is included, with *Vararia*, *Dichostereum*, and *Scytinostroma* in the Peniophoraceae Lotsy. The phylogenetic analysis shows that dextrinoid hyphidia do not define a monophyletic group (Larsson 2007b). For a survey of *Asterostroma* see also Boidin et al. (1997b).

Asterostromella Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 116: 773, 1907.

Type species – *Corticium epiphyllum* ss Ravenel.

Remarks – A synonym of *Vararia* P. Karst. A name based on a misapplied type: *Corticium epiphyllum* Pers. belongs to *Athelia* and *Corticium epiphyllum* sensu Ravenel is *Vararia phyllophila* (Masee) D.P. Rogers & H.S. Jacks.

Athelia Pers., Mycol. eur. (Erlanga) 1: 83, 1822.

Type species – *Athelia epiphylla* Pers., Mycol. eur. (Erlanga) 1: 84, 1822.

Basidiome resupinate, thin, pellicular (athelioid), easily detachable, white to whitish, hymenophore smooth. Hyphal system monomitic, hyphae with or without clamps, hyaline, thin-walled, loosely interwoven. Cystidia usually absent, some species with leptocystidia. Basidia short, more or less clavate, in clusters from the subhymenial hyphae, 2-4-sterigmata, clamped or with a simple septum. Basidiospores subglobose to ellipsoid or cylindrical, smooth, thin-walled, often glued together, IKI–.

Remarks – *Athelia* is a large but well delimited genus by the ephemeral and pellicular basidiome and the hymenial structure with open branched hyphae arranged in candelabrum-like clusters. It includes usually acystidiate species, but cystidial elements may be present in few species. According to Larsson et al. (2004), *Athelia* seems to be related to *Piloderma*, *Tylospora*, *Byssocorticium*, *Atheliopsis*, and *Amphinema*. The athelioid clade could be related to the euagarics clade by one subclade in which *Amylocorticium*, *Ceraceomyces tessulatus*, *Hypochniciellum*, and

Anomoporia are present. The athelioid clade includes mycorrhizal species like *Piloderma*, *Amphinema*, and *Tylospora*. A mycorrhizal habit has not been observed in *Athelia* and *Atheliopsis*, but Oberwinkler (1970) described the parasitism by *A. epiphylla*, on unicellular green algae, and by *A. arachnoidea* (Berk.) Jülich on lichens.

Atheliachaete Spirin & Zmitr., Biodiversity of the Heterobasidiomycetes and non-gilled Hymenomycetes (former Aphyllophorales) of Israel: 456, 2011.

Type species – *Thelephora sanguinea* Fr., Elenchus Fungorum 1: 203, 1828.

Remarks – *Atheliachaete* was described as substitute of the superfluous name *Leptochaete* Zmitr. & Spirin. It can be considered as a synonym of *Phanerochaete* P. Karst. sensu lato.

Athelium K.H. Larss. & Hjortstam, Windahlia 15: 49, 1986.

Type species – *Athelium stridii* K.H. Larss. & Hjortstam, in Hjortstam & Larsson, Windahlia 15: 51, 1986.

Basidiome resupinate, loosely adnate, hymenophore smooth. Hyphal system monomitic, hyphae with clamps or simple-septate. Cystidia absent. Basidia constricted, more or less pedunculate. Basidiospores ellipsoid to amygdaliform, smooth, thin to thick-walled, IKI–.

Remarks – *Athelium* is characterized by the small basidiome growing in dry and exposed places, and microscopically by the large basidia and basidiospores. Phylogenetic analyses associate *Athelium* with *Lichenomphalia* Redhead, Lutzoni, Moncalvo & Vilgalys and *Arrhenia* Fr. species and with *Athelia pyriformis* (M.P. Christ.) Jülich in the Hygrophoraceae Lotsy (Larsson 2007b).

Athelidium Oberw., Sydowia 19: 62, 1965.

Type species – *Xenasma aurantiacum* M.P. Christ., Dansk bot. Ark. 19(2): 107, 1960.

Basidiome resupinate, effused, hypochnoid to membranaceous. Hyphal system monomitic, hyphae without clamps, thin-walled. Basidia more or less constricted, cylindrical to clavate, 4-sterigmata, with a simple basal septum. Basidiospores hyaline, thin-walled, smooth, non-amyloid.

Remarks – *Athelidium* is a monotypic genus phylogenetically related to *Cristinia* and *Lindtneria* in the Stephanosporaceae Oberw. & E. Horak; this relationship is unclear because morphologically it shares only the yellow-orange colour of the basidioma (Larsson 2007b).

Athelocystis Hjortstam & Ryvarde, Syn. Fung. (Oslo) 27: 20, 2010.

Type species – *Athelocystis capitata* Hjortstam & Ryvarde, Syn. Fung. (Oslo) 27: 20, 2010.

Basidiome resupinate, effused, closely adnate, membranous, hymenophore smooth, whitish, then cream-colored, margin fibrillose. Hyphal system monomitic, hyphae with simple-septa, thin-walled. Cystidia tubular with a capitate apex, thin-walled, apex strongly encrusted with yellowish amorphous matter. Basidia sphaeropedunculate, with 4-sterigmata, with a basal simple septum. Basidiospores narrowly ellipsoid to pip-shaped, smooth, thin-walled, IKI–, CB–.

Remarks – *Athelocystis* is somewhat reminiscent of *Athelopsis* by the pedunculate basidia. Monotypic genus known only from Brazil (Hjortstam & Ryvarde 2010a).

Atheloderma Parmasto, Consp. System. Corticiac. (Tartu): 73, 1968.

Type species – *Atheloderma mirabile* Parmasto, Consp. System. Corticiac. (Tartu): 200, 1968.

Basidiome resupinate, effused, pellicular, hymenophore smooth, margin more or less fimbriate or with rhizomorphs. Hyphal system monomitic, hyphae with clamps. Cystidia cylindrical, often with a clamped septum, thin-walled, not encrusted. Basidia clavate, constricted, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, inamyloid, indextrinoid.

Remarks – *Atheloderma* reminds *Hyphoderma* in basidia and basidiospores but its relationships are not clear. *Atheloderma* is considered a synonym of *Hyphoderma* by Jülich (1974). Molecular data include *Atheloderma* in the *Rickenella* family with other genera such as

Globulicium, *Cyphellostereum*, and *Resinicium* but the delimitation of this family is unclear (Larsson 2007b).

Athelopsis Oberw. ex Parmasto, Consp. System. Corticiac. (Tartu): 41, 1968.

Type species – *Corticium glaucinum* Bourdot & Galzin, Hyménomyc. de France (Sceaux): 207, 1928.

Basidiome resupinate, thin, pellicular; hymenophore smooth, usually with yellowish tints. Hyphal system monomitic; hyphae with clamps at all septa, thin-walled, hyaline. Cystidia absent, cystidiols may be present. Basidia clavate, stalked, with 4-sterigmata, and with a basal clamp. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, hyaline, IKI–.

Remarks – *Athelopsis* is characterized by the pellicular basidiome, usually with yellowish or greenish tints and by the stalked basidia. Basidia are arranged in a compacted layer that remind those of *Athelia* where basidia are arranged in more open and branched candelabrum-like clusters. According to the molecular studies by Larsson et al. (2004), *Athelopsis* forms part of the athelioid clade, close to *Athelia* and *Piloderma* and closely related to *Byssocorticium*. Larsson (2007b) confirms these results including *Athelopsis* in Atheliaceae and indicating that molecular data show that *Athelia* and *Athelopsis* are polyphyletic.

Atraporiella Ryvarde, Syn. Fung. (Oslo) 23: 38, 2007.

Type species – *Atraporiella neotropica* Ryvarde, Syn. Fung. (Oslo) 23: 38, 2007.

Basidiome resupinate, annual, small, easily separable, soft and slightly waxy when fresh, brittle and contracting when drying and then disc like with raised loosened margin, resinous brittle when dry, pore surface whitish when fresh and actively growing, very rapidly stained dark brown to black when touched, pale ochraceous when dry except for stained parts, pores angular, subiculum thin to almost invisible, pale brown and cottony. Hyphal system monomitic, generative hyphae with clamps, pale brown, thin-walled, richly branched. Cystidia and other sterile hymenial elements absent. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores ellipsoid, thin-walled, smooth, hyaline, IKI–. Presumably causing a white rot.

Remarks – *Atraporiella* is characterized by the white pore surface becoming brown to black when touched. *Nigroporus* Murrill is characterized by being deep blackish violet besides having a distinct dimitic hyphal system (Ryvarde 2007). According to Wu et al. (2017), *Atraporiella* is placed in the residual polyporoid clade as a monophyletic lineage, with *Antrodiella*, *Pouzaroporia*, *Steccherinum*, and *Xanthoporus*.

Aurantiporus Murrill, Bull. Torrey bot. Club 32(9): 487, 1905.

Type species – *Polyporus pilotae* Schwein., Trans. Am. phil. Soc., New Series 4(2): 156, 1832.

Basidiome resupinate to pileate, white to pink or orange, unchanging to red in KOH, hymenophore tubular with round to angular pores. Hyphal system monomitic, generative hyphae hyaline, with clamps, thin-walled, encrusted or not, gloeoplerous hyphae may be present. Cystidia and cystidioles absent. Basidia clavate, with a basal clamp, 4-sterigmatic. Basidiospores ellipsoid, hyaline, smooth, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Aurantiporus* is distinguished among the monomitic polypores by the pore surface usually pinkish to salmon color or bright orange, watery, cartilaginous consistency, and the agglutination of the hyphae. Zmitrovich (2018) proposed the genus *Pappia* Zmitr. to accommodate *Polyporus fissilis* Berk. & M.A. Curtis.

Auriculariopsis Maire, Bull. Soc. mycol. Fr. 18(suppl.):102, 1902.

Type species – *Cyphella ampla* Lév., Annls Sci. Nat., Bot., sér. 3, 9: 126, 1848.

Basidiome cupulate, abhymenial surface velvety to tomentose, hymenophore folded, subgelatinous when fresh. Hyphal system monomitic to dimitic, generative hyphae with clamps

and hair skeletal hyphae close to the abhymenial surface. Cystidia absent. Basidia subclavate, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, thin-walled, IKI–.

Remarks – *Auriculariopsis* is characterized by the resupinate to cupulate basidiome and microscopically by the absence of cystidia and by the smooth inamyloid basidiospores (Maire 1902). *Auriculariopsis* is phylogenetically related to *Schizophyllum* and Nakasone (1996) placed *Cyphella ampla*, the generic type in synonymy with *Schizophyllum*. *Auriculariopsis albomellea* (Bondartsev) Kotl., the other species of the genus, was regarded as closely related to *Phlebia albida* H. Post and transferred to *Phlebia* (Nakasone 1996).

Auriporia Ryvar den, Norw. J. Bot. 20: 3, 1973.

Type species – *Poria aurea* Peck, Ann. Rep. Reg. N.Y. St. Mus. 43: 67, 1890.

Basidiome resupinate to pileate, annual, pore surface yellow to white. Hyphal system monoto dimitic, generative hyphae with scattered clamps, skeletal hyphae, when present, few, mostly confined to the context. Cystidia ventricose, thick-walled, apically encrusted. Basidia clavate, with 4-sterigmate, with a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, thin-walled, negative in Melzer's reagent. On both hardwoods and conifers, causing a brown rot.

Remarks – *Auriporia* is morphologically related to *Antrodia* by the type of rot and hyphal system but differing by the prominent cystidia (Ryvar den 1973).

Auriscalpium Gray, Nat. Arr. Brit. Pl. (London) 1: 650, 1821.

Type species – *Auriscalpium vulgare* Gray, Nat. Arr. Brit. Pl. (London) 1: 650, 1821.

Basidiome stipitate and pileate, hymenophore hydroid, upper sterile surface hirsute. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae present in the context. Gloeocystidia present. Basidia subclavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, ornamented, amyloid.

Remarks – *Auriscalpium* is a stipitate hydroid genus, although it does not share the corticioid habit we include it in this manual to highlight the variability of the basidiome structure present within the russuloid lineage. It is phylogenetically very closely related to *Gloiodon*, with effuse-reflexed basidiome and to *Dentipratulum*, with hydroid gregarious basidiomes (Larsson & Larsson 2003, Larsson 2007b).

Australicum Hjorstam & Ryvar den, Synopsis Fungorum 15: 19, 2002.

Type species – *Corticium singulare* G. Cunn., Trans. R. Soc. New Zealand 82: 325, 1954.

Basidiome resupinate, adnate, hymenophore smooth, usually pale brown, subiculum distinct, brownish to brown, tomentous. Hyphal system monomitic, subicular hyphae thick-walled, yellowish to brownish, with simple-septa even single or double scattered clamps may occur, subhymenial hyphae hyaline, thin or with thickened walls, simple-septate. Cystidia or hyphal ends rare, hyaline, thin-walled, not encrusted. Basidia subclavate, slightly constricted, with 4-sterigmata, with a simple basal clamp. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Australicum* was created to accommodate *Corticium singulare*, a species with a distinct brown and tomentose subiculum composed of brownish thick-walled hyphae (Hjorstam & Ryvar den 2002b). It is closely related to *Phanerochaete* but differing morphologically in the brown subiculum.

Australohydnum Jülich, Persoonia 10: 138, 1978.

Type species – *Hydnum griseofuscescens* Reichardt, Verh. zool.-bot. Ges. Wien 16: 374, 1866. (= *Corticium dregeanum* Berk, J. Bot., Lond. 5: 3, 1846).

Basidiome annual, resupinate to effuse-reflexed, membranaceous, adnate, context homogeneous, margin determinate, rhizomorphs or hyphal strands lacking. Hymenophore hydroid. Hyphal system monomitic or indistinctly dimitic, hyphae simple-septate, hyaline, cylindrical, compactly arranged, thin-walled in the subhymenium, thick-walled in the trama, smooth. Cystidia

(skeletocystidia) present, abundant, arising from thick-walled, clampless, generative hyphae, the projecting part loosely encrusted. Basidia clavate, with a simple basal septum. Basidiospores hyaline, more or less ellipsoid, thin-walled, smooth, not amyloid.

Remarks – *Australohydnum* is phylogenetically related to phanerochaetoid fungi as *Phanerochaete* and *Phlebiopsis* (Larsson 2007b). It shares with these genera the generative simple-septate hyphae, but it differs in the pseudodimitic hyphal system and in the presence of skeletocystidia.

Australovuilleminia Ghobad-Nejhad & Hallenb., in Ghobad-Nejhad et al. Taxon 59(5): 1528, 2010.

Type species – *Australovuilleminia coccinea* Ghobad-Nejhad & Hallenb., in Ghobad-Nejhad et al. Taxon 59(5): 1529, 2010.

Basidiome resupinate, decorticate, erumpent, closely adnate, reddish orange to coccine red, subgelatinous, margin indistinct. Hyphal system monomitic, hyphae with clamps, encrusted with reddish-orange matter, thin to thick-walled. Subiculum thin, composed of highly branched, irregularly arranged hyphae. Cystidia cylindrical, considerably thick-walled excepting in the apical part, contents homogeneous, yellowish to orange brown, not reacting in sulphovainilline neither in Melzer's reagent, slightly or conspicuously projecting above the basidial layer. Dendrohyphidia and hyphidia abundant. Basidia first tubular, becoming elongate, long clavate, flexuous, with 4-sterigmata, densely arranged in the hymenium and intermixed with numerous hyphidia and dendrohyphidia, with a basal clamp. Basidiospores allantoid, thin-walled, smooth, IKI–, cyanophilous.

Remarks – *Australovuilleminia* resembles *Vuilleminia* in its decorticating habit, presence of dendrohyphidia, large basidia and large basidiospores but differing in the well-developed basidial layer in a true hymenium and a distinguishable subiculum. Also, the striking red colour of the basidiome is diagnostic (Ghobad-Nejhad et al. 2010). *Australovuilleminia* is the austral counterpart of *Vuilleminia* and both genera are also phylogenetically closely related.

Baltazaria Leal-Dutra, Dentinger & G.W. Griff., in Leal-Dutra, Neves, Griffith, Reck, Clasen & Dentinger, MycoKeys 37: 47, 2018.

Type species – *Thelephora galactina* Fr., Nova Acta R. Soc. Scient. upsala., Ser. 3 1(1): 136, 1851.

Basidiome corticioid, adherent to effused, coriaceous/membranate when fresh, hard when dry, usually white, cream, or pale ochraceous. Context densely homogeneous with thick-walled and dextrinoid skeletal-binding hyphae, sometimes bearing rows of short papillae or skeletodendrohyphidia. Global distribution.

Remarks – *Baltazaria* is related to *Scytinostroma* in the Lachnocladiaceae. See Leal-Dutra (2018) for further comments.

Basidioradulum Nobles, Mycologia 59: 192, 1967.

Type species – *Hydnum radula* Fr., Observ. mycol. (Havniae) 2: 271, 1818.

Basidiome resupinate to effuse-reflexed, hymenophore hydroid to irpicoid. Hyphal system monomitic, hyphae with clamps. Cystidia cylindrical, not encrusted. Basidia cylindrical, more or less constricted, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical, smooth, thin-walled, IKI–.

Remarks – *Basidioradulum* is closely related to *Hyphoderma* but mainly distinguished by its irpicoid hymenophore (Nobles 1967). Hymenophore configuration is not considered a reliable character for segregating species in different genera (e.g. *Hyphodontia* with smooth and odontoid species; *Mycoacia* species all considered under *Phlebia*), but according to available molecular data (Wagner & Fischer 2002, Larsson 2007b) the generic relationships of *Basidioradulum* remains still unclear and for the time present, we regard it different from *Hyphoderma*.

Beccariella Ces., Atti Accad. Sci. fis. mat. Napoli 8(8): 9, 1879.

Type species – *Beccariella insignis* Ces., Atti Accad. Sci. fis. mat. Napoli 8(8): 10, 1879.

Remarks – A synonym of *Cymatoderma* Jungh.

Bjerkandera P. Karst., Meddn Soc. Fauna Flora fenn. 5: 38, 1879.

Type species – *Boletus adustus* Willd., Fl. berol. Prodr.: 392, 1787.

Basidiome annual, effused, resupinate to pileate, pileus light-coloured, azonate, finely velutinous to pubescent. Pore surface blackish to brown, distinctly delimited towards a white to pale cream context. Hyphal system monomitic, hyphae with clamps, thin-walled hyphae in the hymenium, more thick-walled to almost solid in the context and pileus. Cystidia none. Basidia clavate, 4-sterigmata, with a basal clamp. Basidiospores oblong ellipsoid, hyaline, smooth, thin-walled and non-amyloid. Causing a white rot.

Remarks – *Bjerkandera* is easily to recognize in the field by the large effuse-reflexed basidiomes and the greyish to blackish colour of the tube layer with violet shadows. The monomitic hyphal system, smooth basidiospores, and type of rot points a relationship with *Tyromyces*. See Ryvar den & Melo (2017) and Bernicchia & Gorjón (2020).

Boidinia Stalpers & Hjortstam, in Hjortstam & Stalpers, Mycotaxon 14: 76, 1982.

Type species – *Hypochnus furfuraceus* Bres., Fung. trident. 2(11-13): 97, 1900.

Basidiome annual, resupinate, separable, thin, porulose or furfuraceous, sometimes pellicular to soft membranaceous. Hymenophore smooth, white to cream-coloured, often becoming pale ochraceous or alutaceous with age, margin indistinct. Hyphal system monomitic. Hyphae with clamps, thin- to thick-walled. Gloeocystidia tubular to subclavate, more or less sinuous, basally somewhat ventricose, hyaline or with yellowish contents, SA+ (sometimes weakly), not or slightly projecting above the basidia. Basidia suburniform, usually terminal, but some lateral basidia may occur, often with 1–2 adventitious septa. Basidiospores hyaline, thin- to somewhat thick-walled, globose or subglobose, echinulate or verrucose, ornamentation disappearing in KOH, strongly amyloid, with distinct apiculus.

Remarks – *Boidinia* is morphologically characterized by the amyloid ornamented basidiospores, usually subglobose, and by the suburniform basidia (Hjortstam & Stalpers 1982). *Boidinia* and *Gloeopeniophorella* belong to the Russulaceae Lotsy. Contrary to *Lactarius* and *Russula* that are mycorrhizal, *Boidinia* is saprobic and it clusters in a basal position in the clade, suggesting that the ancestor in the russuloid clade to the agaricoid forms had a corticioid basidiome and was saprotrophic (Larsson & Larsson 2003).

Boidinella Nakasone, Crytogamie, Mycologie 32(2): 192, 2011.

Type species – *Dendrothele globulispora* Boidin & Lanq., Bull. Soc. Mycol. France 112: 103, 1996.

Basidiome resupinate, effuse, thin, soft, fragile, smooth, densely farinaceous to membranous, margin more or less abrupt. Hyphal system monomitic with clamped hyphae. Dendrohyphidia delicate. Leptocystidia obclavate, attenuate, sometimes moniliform. Basidia urniform, oleaginous, walls cyanophilous, 4-sterigmate. Basidiospores subspherical to ellipsoid, walls hyaline, smooth, slightly thick, cyanophilous, not amyloid. On dead stems of monocots.

Remarks – *Boidinella* is characterized by the effuse, soft, densely farinaceous or membranous basidiomes, urniform basidia with 4 sterigmata, obclavate leptocystidia, dendrohyphidia, and basidiospores with smooth, slightly thickened, cyanophilous walls. *Boidinella* is morphologically similar to *Dendrothele* but differing in the delicate and fragile nature of dendrohyphidia, cystidia, and basidia in the former. *Boidinella* lacks crystals and inhabits dead stems of monocots. Basidiospores in *Sistotremella* have also cyanophilous walls but are much smaller and basidia always have 6-8 sterigmata. *Leptocorticium* also shows similarities to *Boidinella*, but basidiospore walls are thin and not cyanophilous in the former. For further comments see Nakasone (2011).

Bonia Pat., Bull. Soc. mycol. Fr. 8(2): 48, 1892.

Type species – *Bonia papyrina* Pat., Bull. Soc. mycol. Fr. 8(2): 48, 1892.

Remarks – A latter homonym of *Bonia* Balansa 1890 (Gramineae). *Bonia papyrina* was later considered a synonym of *Heterochaete tenuicula* (Lév.) Pat. which is a synonym of *Heterochaete delicata* (Klotzsch ex. Berk.) Bres. (Tremellales).

Boninohydnum S. Ito & S. Imai, Trans. Sapporo Nat. Hist. Soc. 16: 127, 1940.

Type species – *Boninohydnum pini* S. Ito & S. Imai, Trans. Sapporo Nat. Hist. Soc. 16: 127, 1940.

Remarks – A synonym of *Gyrodontium* Pat.

Boreostereum Parmasto, Consp. System. Corticiac. (Tartu): 186, 1968.

Type species – *Stereum radiatum* Peck, Bull. Buffalo Soc. nat. Sci. 1: 62, 1873.

Basidiome annual, resupinate to effuse-reflexed, soft-coriaceous to brittle; upper sterile surface dark brown to black; hymenial surface even to radially and concentrically folded, brownish orange. Hyphal system dimitic, generative hyphae without clamps, hyaline to pale brown; skeletal hyphae greenish in KOH. Hyphidia acute. Cystidia absent, hyphoid hyphal ends present. Basidia subclavate to subcylindrical, with 4-sterigmata, and with a simple basal septum. Basidiospores cylindrical, hyaline to yellowish; smooth, thin-walled, IKI–.

Remarks – *Boreostereum* is characterized by the dimitic hyphal system with hyphae and cystidiols having characteristic brown encrustation that turns greenish in potassium hydroxide (Parmasto 1968). *Boreostereum* belongs to the Gloeophyllaceae, with *Veluticeps* and *Chaetodermella* as the closest related genera. The species within this family are saprobics and associated with a brown rot (Larsson 2007b).

Botryobasidium Donk, Medded. Nedl. Mycol. Ver. 18-20: 116, 1931.

Type species – *Corticium subcoronatum* Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 116: 822, 1907.

Synonym – *Botryohypochnus* Donk.

Basidiome resupinate, thin, floccose, reticulate, arachnoid, hypochnoid to porulose under the lens without forming a continuous hymenium. Hyphal system monomitic, hyphae broad (usually 8–10 µm wide or more), loosely interwoven, branched at right angles, basal hyphae more or less thick-walled, clamps present or absent. Cystidia absent or present. Basidia subcylindrical to cylindrical, in clusters on hymenial hyphal branches, with (4)6-8-sterigmata. Basidiospores variable, usually ellipsoid, allantoid or navicular, smooth or ornamented, IKI–, without secondary basidiospores by repetition.

Remarks – *Botryobasidium* is a well-defined genus characterized by its not continuous arachnoid to porulose basidiome, and microscopically by the very broad hyphae branched at right angles, and the subcylindrical basidia with usually 6-8 sterigmata. *Botryobasidium* shows clear relations with *Thanatephorus*, *Ceratobasidium*, and *Cejpomyces* in which basidiospores usually grow by repetition. It is also related to *Sistotrema* which differs in the nature of the hymenium (palisade in *Sistotrema* and clustered in *Botryobasidium*) and shape of basidia (urniform in *Sistotrema* and cylindrical in *Botryobasidium*). Many species in *Botryobasidium* have known anamorphs that are useful in distinguishing related taxa. Molecular data have confirmed these relations, placing *Botryobasidium* in the cantharelloid clade, with *Cantharellus*, *Craterellus*, *Hydnum*, and *Clavulina* (Hibbett et al. 1997, Moncalvo et al. 2006). *Botryohypochnus* differs from other *Botryobasidium* species by the distinctly ornamented and tetrasporic basidia; Langer (1994b) synonymized both genera and treated as a whole group smooth and ornamented spored species. Some molecular studies (cf. Binder et al. 2005, Moncalvo et al. 2006) show *Botryohypochnus* closely related to *Botryobasidium* in a strongly supported monophyletic clade.

Botryodontia (Hjortstam & Ryvarde) Hjortstam, Mycotaxon 28(1): 20, 1987.

Basionym – *Candelabrochaete* subgen. *Botryodontia* Hjortstam & Ryvarde, Mycotaxon 25 (2): 545, 1986.

Type species – *Candelabrochaete cirrata* Hjortstam & Ryvarde, Mycotaxon 25(2): 545, 1986.

Basidiome resupinate, loosely adnate, fairly thin, arachnoid or distinctly continuous, tufted and with small to relatively small aculei. Hyphal cords conspicuous in the type. Hyphal system monomitic or dimitic-duplex in the type, hyphae thin to distinctly thick-walled, without clamps. Cystidia or hyphoid elements present, smooth or strongly encrusted. Basidia short, about 10-15(-20) μm , obconical to becoming short-cylindrical, with 4 sterigmata and without basal clamp. Basidiospores about 6-7 μm in diam., subglobose, thin-walled or with slight thickened walls, smooth, IKI–, CB–.

Remarks – *Botryodontia* was proposed to accommodate *Candelabrochaete cirrata* which differs from other species in the genus by its shorter, mostly obconical to short-cylindrical basidia (Hjortstam 1987b). *Botryodontia* is recognized microscopically by possessing hyphae without clamp-connections, poorly differentiated, smooth or encrusted cystidia which occur mainly in the aculei, short, obconical basidia, usually 10-15 μm long, with four sterigmata, and subglobose, thin-walled, and smooth basidiospores. Macroscopically, it is reminiscent of many *Hyphodontia* species in having a colliculose to odontoid hymenophore. The main difference between unclamped *Hyphodontia* species and *Botryodontia* lies in the morphology of the basidia. In *Hyphodontia* these are large, subclavate, and with a median constriction, whereas in *Botryodontia* they are short and obconical. According to Sell et al. (2014) *Oxyporus philadelphi* (Parmasto) Ryvarde and *Botryodontia millavensis* (Bourdot & Galzin) Duhem & H. Michel are conspecific, as suggested by their similar morphology and ITS sequences. The species is closely related to the type species (*B. cirrata*) of the genus *Botryodontia*, and therefore the name *B. millavensis* should currently be used for this taxon.

Botryohypochnus Donk, Medded. Nedl. Mycol. Ver. 18-20: 118, 1931.

Type species – *Hypochnus isabellinus* Fr., Observ. mycol. (Havniae) 2: 281, 1818.

Remarks – A synonym of *Botryobasidium* Donk. It has long been used for those species of *Botryobasidium* with aculeate basidiospores. Phylogenetic analyses show that both genera are closely related in a monophyletic clade (Moncalvo et al. 2006).

Bourdotiella Duhem & Schultheis, Cryptogamie, Mycol. 32(4): 392, 2011.

Type species – *Bourdotiella complicata* Duhem & Schultheis, Cryptogamie, Mycol. 32(4): 393, 2011.

Basidiome resupinate, effused, hymenophore odontoid with irregular protuberances with penicillate apex composed of densely encrusted hyphae, margin thinning out or indifferiate. Hyphal system monomitic, hyphae with clamps, hyphal segment irregular and somewhat tortuose and inflated, slightly thick-walled in subhymenium. Dendrophyses poorly differentiated. Cystidia absent. Basidia utriform, with 4-sterigmata, up to 30 μm long, with a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–, guttulate.

Remarks – *Bourdotiella* is morphologically closely related to *Dentocorticium*, the latter differing in the long clavate basidia (more than 30 μm long) and conspicuous, well developed dendrophyses. Also, there are similarities with *Hyphodontia* s.l., by the odontoid hymenophore and utriform basidia, but *Bourdotiella* differs in the presence of dendrophyses and somewhat irregularly inflated hyphae (Duhem & Schultheis 2011).

Brevicellicium K.H. Larss. & Hjortstam, in Hjortstam & Larsson, Mycotaxon 7: 117, 1978.

Type species – *Corticium exile* H.S. Jacks., Can. J. Res., Section C 28: 721, 1950.

Basidiome resupinate, adnate, effused, membranaceous to ceraceous, hymenophore smooth to granulose. Hyphal system monomitic, hyphae clamped, hyaline and distinctly isodiametric.

Cystidia absent, sphaerocysts can be present. Basidia shortly cylindrical, with 4-sterigmata and a basal clamp. Basidiospores subglobose to ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Brevicellicium* is above all characterized by the short-celled and isodiametric inflated hyphae and by the small smooth basidiospores (Hjortstam & Larsson 1978). It reminds in some respects to *Trechispora*, but it lacks the ampullate hyphae and the basidiome is usually more structured and not fragile as in *Trechispora*. According to molecular data, *Brevicellicium* cluster with other trechisporoid fungi as *Trechispora*, *Subulicystidium*, or *Tubulicium*. (Larsson 2007b).

Brevicellopsis Hjortstam & Ryvarde, Synopsis Fungorum 25: 15, 2008.

Type species – *Brevicellicium allantosporum* Hjortstam & Ryvarde, Mycotaxon 12: 170, 1980.

Basidiome resupinate, loosely adnate, soft and fragile, hymenophore distinctly odontoid with small almost subulate aculei. Hyphal system monomitic, basal hyphae thin to moderately thick-walled, subhymenial hyphae thin-walled, with an isodiametric appearance, all hyphae with clamps. Cystidia absent. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores reniform to allantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Brevicellopsis* reminds *Brevicellicium* by the isodiametric subhymenial cells, but in the latter the hymenophore is smooth and basidiospores are usually rhomboid to ellipsoid, whereas in *Brevicellopsis* the hymenial surface is odontoid and the basidiospores are narrowly allantoid (Hjortstam & Ryvarde 2008).

Brunneocorticium Sheng H. Wu, Mycologia 99(2): 303, 2007.

Type species – *Brunneocorticium pyriforme* Sheng H. Wu, Mycologia 99(2): 306, 2007 (= *Dendrothele bispora* Burds. & Nakasone, Mycotaxon 17: 253, 1983).

Basidiome resupinate, hymenial surface smooth, cracked, whitish, margin brown. Hyphal system dimitic, generative hyphae with clamps, subiculum brown due to the presence of abundant yellowish-brown skeletal hyphae. Dendrohyphidia present. Leptocystidia with some secondary simple septa present but often difficult to detect. Basidia subclavate, with a median constriction, with two sterigmata, and a basal clamp. Basidiospores pyriform, apiculate, smooth, thin-walled, guttulate, hyaline, IKI–, CB–.

Remarks – *Brunneocorticium* is characterized by the dimitic hyphal system with brownish skeletal hyphae, presence of dendrohyphidia and leptocystidia with secondary simple-septa, bisterigmate basidia, and pyriform basidiospores (Wu et al. 2007). *Brunneocorticium* belongs to the agaricoid clade. See Nakasone et al. (2009) for further comments.

Brunneoporus Audet, Mushrooms nomenclatural novelties 2: 1, 2017.

Type species – *Trametes malicola* Berk. & M.A. Curtis, J. Acad. nat. Sci. Philad., N.S. 3: 209, 1856.

Remarks – According to Audet (2017b), *Trametes malicola* differs from *Antrodia* s.str. by deeper brownish basidiomes, distinctly brownish interwoven skeletal hyphae, short basidia, very rarely pedunculate, mostly about 20-25 µm long, and uninucleate, not regularly fusiform distal end basidiospores. *Brunneoporus* is not related to *Antrodia* s.str. but constitutes its own lineage within the large *Fomitopsis* – *Daedalea* clade (Spirin et al. 2016).

Bulbillomyces Jülich, Persoonia 8: 69, 1974.

Type species – *Kneiffia farinosa* Bres., Annl. mycol. 1(2): 105, 1903.

Basidiome resupinate, effused, hymenophore smooth or pilose by the projecting cystidia. Hyphal system monomitic, hyphae with clamps, more or less cyanophilous. Cystidia thick-walled and encrusted. Basidia urniform or subcylindrical, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to ovoid, somewhat thick-walled, inamyloid. Sclerotial stage consisting in small white globules.

Remarks – *Bulbillomyces* is characterized by the aegeritoid sclerotial stage (*Aegerita*) formed by small globules, and by the presence in the teleomorphic state of encrusted cystidia and thick-walled basidiospores. Phylogenetically it is classified in the Meruliaceae P. Karst. (Larsson 2007b).

Butlerelfia Weresub & Illman, Can. J. Bot. 58(2): 144, 1980.

Type species – *Butlerelfia eustacei* Weresub & Illman, Can. J. Bot. 58(2): 145, 1980 (= *Corticium centrifugum* (Lév.) Bresadola, a name based on an anamorph, associated teleomorph: *Athelia epiphylla* Pers.)

Remarks – A synonym of *Athelia* Pers. *Butlerelfia eustacei* is connected with *Athelia*. The species differs by having constant clamps at the septa, narrower hyphae and no sclerotia, and the production of a basidiome in culture. This species is known from Europe and North America from stored apples and pears, causing fisheye rot.

Butyrea Miettinen, Ann. Bot. Fennici 53: 161, 2016.

Type species – *Physisporus luteoalbus* P. Karst., Rev. Mycol. (Toulouse) 9: 10, 1887.

Basidiome resupinate, hymenophore poroid with small pores (ab. 4–8 per mm), yellowish. Hyphal system dimitic, hyphae with clamps, skeletal hyphae moderately cyanophilous, narrow and sinuous, mostly <2.5 µm in width, with a distinct lumen. Cystidia of two types: 1) Gloeocystidia, thin-walled, present in hymenium and in tube bottoms, 2) Encrusted tramal cystidia, thick-walled, club-shaped, encrusted part ab. 25–50 x 10–18 µm. Basidiospores cylindrical, straight, ab. 4–5 x 1.7–2.3 µm, smooth, thin-walled, inamyloid, indextrinoid.

Remarks – *Butyrea* is closely related to *Antrodiella* but differing in the presence of gloeocystidia and skeletocystida. Also, it shows some similarities with poroid species of *Steccherinum*, but in the latter gloeocystidia are lacking (Miettinen & Ryvardeen 2016).

Byssocorticium Bondartsev & Singer, in Singer, Mycologia 36: 69, 1944.

Type species – *Thelephora atrovirens* Fr., Elench. fung. (Greifswald) 1: 202, 1828.

Basidiome byssoid, hymenophore smooth or poroid, bluish-green. Hyphal system monomitic, hyphae simple-septate and with few scattered clamps, branched at right angles. Cystidia absent. Basidia clavate, with 4-sterigmata, with numerous granular contents, and with or without basal clamp. Basidiospores globose or subglobose, smooth, distinctly thick-walled, inamyloid, indextrinoid, stained in cotton blue.

Remarks – *Byssocorticium* is characterized by the byssoid Basidiome with usually bluish colours and by the thick-walled basidiospores. It is close to *Piloderma* but in this genus lacks the bluish colours and the hyphae are completely simple-septate. According to molecular data, *Byssocorticium* belongs to the Atheliaceae (Larsson 2007b).

Byssocristella M.P. Christ. & J.E.B. Larsen, Friesia 9: 313, 1970.

Type species – *Byssocristella pallidocitrina* M.P. Christ. & J.E.B. Larsen, Friesia 9: 313, 1970.

Remarks – A synonym of *Tomentellopsis* Hjortstam.

Byssomerulius Parmasto, Eesti NSV Tead. Akad. Toim., Biol. seer16: 383, 1967.

Type species – *Thelephora corium* Pers., Syn. meth. fung. (Göttingen) 2: 574, 1801.

Synonym – *Ceraceomerulius* (Parmasto) J. Erikss. & Ryvardeen.

Basidiome resupinate to pileate, hymenophore smooth to merulioid, whitish to yellowish or brownish, margin white. Hyphal system monomitic, thin to thick-walled, all hyphae without clamps. Cystidia absent or present. Basidia narrowly clavate, with 4-sterigmata, and without a basal clamp. Basidiospores subcylindrical, smooth, inamyloid, indextrinoid.

Remarks – Parmasto (1967) described *Byssomerulius* to include some species with simple-septate generative hyphae and merulioid hymenophore with *Thelephora corium* as the generic type species; *Meruliopsis* Bondartsev, was described to include *Xylomyzon taxicola* Pers., with a typical

poroid hymenophore (Parmasto 1959). *Byssomerulius*, *Candelabrochaete*, *Ceriporia*, *Gloeoporus*, and *Meruliopsis*, all sharing generative simple-septate hyphae, are classified by molecular data in the *Byssomerulius* family, with other clamped species as *Phlebia nitidula* (P. Karst.) Ryvarden and *Ceraceomyces serpens* (Tode) Ginns (Larsson 2007b).

Byssoporia M.J. Larsen & Zak, Can. J. Bot. 56: 1123, 1978.

Type species – *Boletus terrestris* DC., in De Candolle & Lamarck, Fl. franç., Edn 3 (Paris) 5/6: 39, 1815.

Basidiome resupinate, effused, soft, hymenophore poroid, margin rhizomorphic with yellowish hyphal strands. Hyphal system monomitic, hyphae with simple-septa or infrequent clamps, thin-walled. Cystidia absent. Basidia clavate, with 4-sterigmata, simple septate at the base. Basidiospores subglobose, smooth, thick-walled, IKI–.

Remarks – *Boletus terrestris* was originally included in *Byssocorticium* but later segregated because of the poroid hymenophore, non-blue basidiome, and the clampless basidial bases (Larsen & Zak 1978). Phylogenetically is classified in the Russulaceae close to the stipitate and pileate poroid genus *Albatrellus* Gray (Bruns et al. 1998, Larsson 2007b).

Cabalodontia Piątek, Polish Botanical Journal 49(1): 2, 2004.

Type species – *Odontia queletii* Bourdot & Galzin, Bull. Soc. mycol. Fr. 30(3): 270, 1914.

Basidiome resupinate, ceraceous to subgelatinous, odontoid, tuberculate or smooth. Hyphal system monomitic, hyphae with clamps. Cystidia lacking or present. Basidia narrowly clavate. Basidiospores non-amyloid, allantoid or ellipsoidal. Nuclear behaviour normal.

Remarks – Based strictly in morphology it could be considered a synonym of *Phlebia* or *Steccherinum*. *Odontia queletii* resembles a species of *Steccherinum* where it has also been included (Hallenberg & Hjortstam 1988) sharing a similar micromorphology and a normal nuclear behaviour (astatocoenocytic or exceptionally heterocytic or holocoenocytic in most of *Phlebia* s.str.), but it differs in the monomitic hyphal system even if the limits between the monomitic-dimitic character within *Steccherinum* species are relative. Eriksson et al. (1981) suggested also the possibility to include *Odontia queletii* among *Mycoacia*, a genus including those *Phlebia* with an odontoid hymenophore. In the molecular analysis by Parmasto & Hallenberg (2000), *Odontia queletii* form with *Phlebia bresadolae* a separate clade from the core of *Phlebia* s.str. (which include the generic type of *Phlebia*). *Odontia queletii* has an odontoid hymenophore and numerous encrusted cystidia, while *Phlebia bresadolae* Parmasto has a tuberculate hymenophore and lacks cystidia, even variation in hymenophore morphology and presence of cystidial elements is a variable feature within *Phlebia* s.str. Piątek (2004), based on the normal nuclear behaviour and molecular data generated by Parmasto & Hallenberg (2000), proposed *Cabalodontia* to include *Odontia queletii* and four more species from the Northern Hemisphere.

Caerulicium Jülich, Bibliotheca Mycol. 85: 395, 1982.

Type species – *Byssocorticium neomexicanum* Gilb. & Budington, Mycologia 62(4): 673, 1970.

Remarks – Similar and possibly a synonym of *Byssocorticium* Bondartsev & Singer, differing in having globose to broadly ellipsoid, thick-walled basidiospores.

Caldesiella Sacc., Michelia 1(1): 6, 1877.

Type species – *Caldesiella italica* Sacc., Michelia 1(1): 7, 1877.

Remarks – A synonym of *Tomentella* (Pers.) Pat.

Campbellia Cooke & Masee, in Cooke, Grevillea 18: 87, 1890.

Type species – *Merulius infundibuliformis* Cooke & Masee, Grevillea 16: 73, 1888.

Remarks – A homonym of *Campbellia* Wight 1850 (Orobanchaceae) and a synonym of *Gyrodon* Opat.

Campylomyces Nakasone, Sydowia 56(2): 261, 2004.

Type species – *Aleurodiscus tabacinus* Cooke, Grevillea 14(69): 11, 1885.

Basidiome perennial or annual, gregarious, campanulate to cupulate, margin involute, ceraceous or corneous when dried but expanded, elastic, and subgelatinous when hydrated. Hymenophore with numerous sterile hyphal pegs not reacting to potassium hydroxide. Hyphal system monomitic, hyphae with clamps. Cystidia (pseudocystidia) present, yellowish to dark brown, encrusted. Basidia large, clavate, with a stalked base, with 4-sterigmata, and with a basal clamp connection. Basidiospores large, cylindrical, with a distinct, blunt apiculus, thin-walled, hyaline, smooth, inamyloid.

Remarks – *Campylomyces* is characterized by small, thin, gregarious, sessile, cupulate Basidiome with free involute margins and a ceraceous or corneous texture (Nakasone 2004). It seems to be related to *Veluticeps* but differs in the absence of colour change in KOH and basidiome structure.

Candelabrochaete Boidin, Cahiers de La Maboké 8: 24, 1970.

Type species – *Candelabrochaete africana* Boidin, Cahiers de La Maboké 8(1): 24, 1970.

Basidiome resupinate, effused, byssoid to submembranaceous. Hymenophore smooth to odontoid. Hyphal system monomitic, hyphae thin- to thick-walled, branching at wide angles, smooth, simple-septate, mostly short-celled. Cystidia cylindrical, often with secondary simple septa, thick-walled. Basidia subcylindrical, with 4-sterigmata, clampless at the base. Basidiospores ellipsoid to allantoid, smooth, thin-walled, non-amyloid.

Remarks – *Candelabrochaete* is characterized by the wide short-celled simple-septate hyphae and the multiseptate cystidia. Some molecular studies seem to indicate that *Candelabrochaete* is polyphyletic (Binder et al. 2005, Larsson 2007b).

Canopora Niemelä, Suomen käävät, Norrlinia 31: 109, 2016.

Type species – not indicated.

Remarks – Niemelä proposed the generic name *Canopora* to classify *Canopora subfuscoflavida* (Rostk) Miettinen & Spirin (Niemelä 2016: 109, 428) but this generic name is not validly published (Art. 40.1, Shenzhen code). According to Spirin (pers. comm.), the type of *Polyporus lindbladii* (from South Carolina, FH) belongs to *Trichaptum sector* (Ehrenb.) Kreisel so, it is necessary to introduce a new genus name for *Polyporus subfuscoflavidus* Rostk. To avoid nomenclatural confusion, we are not introducing here the name *Canopora* until it will be formally published.

Caripia O. Kuntze, Rev. Gen. Pl. 3: 451, 1898.

Type species – *Hypolyssus montagnei* Berk. London J. Bot. 1(3): 139, 1842.

Basidiome small, up to 1 cm, gregarious, centrally stipitate, obconical to turbinate with a flat and more or less discoid pileus, tomentose, whitish, hymenial surface plicate to sublamellate. Context cartilaginous when dry, hard when dry. Hyphal system monomitic, generative hyphae with clamps, hyaline, branched or not, thin- to thick-walled. Cystidia hyaline, fusiform, embedded in the hymenial layer. Basidia clavate to cylindrical, 2- to 4-spored, Basidiospores ellipsoid to navicular, smooth, hyaline, non-amyloid.

Remarks – *Caripia* is a tropical genus distributed from Northern Argentina to Southern Mexico (Kuntze 1898). Molecular analyses showed that it is a reduced form of the agaric *Gymnopus* (Pers.) Roussel.

Cartilosoma Kotl. & Pouzar, Česká Mykol. 12(2): 101, 103, 1958.

Type species – *Trametes subsinuosa* Bres., Anns mycol. 1(1): 82, 1903 (= *Polyporus ramentaceus* Berk. & Broome, Ann. Mag. nat. Hist., Ser. 5 3: 210, 1879).

Basidiome annual, resupinate, normally small and rounded, tough when fresh, with a cartilaginous consistency, hard when dry, margin narrow, white and floccose; pore surface white,

becoming buff to straw-colored or unevenly resinous brown, pores angular; taste bitter. Hyphal system dimitic, generative hyphae abundant, hyaline, with clamps, thin to thick-walled, in parts slightly gelatinized in KOH, moderately to frequently branched, skeletal hyphae solid to thick-walled, straight, non-septate, common in the subiculum, scattered in the trama. Cystidia absent, but fusoid, hyaline. thin-walled cystidioles common, especially in immature hymenia. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores cylindrical to narrowly ellipsoid, hyaline, thin-walled, smooth, IKI-. Causing a brown rot.

Remarks – *Cartilosoma* is a genus segregated from *Antrodia* on the basis of the cartilaginous consistency of the basidiome (Pouzar 1958). The generic type *C. ramentaceum* has a quite isolated position among the *Antrodia* species, but further phylogenetical analyses are needed to establish its position. See also Bernicchia & Gorjón (2020).

Castanoporus Ryvar den, Synopsis Fung. 5: 121, 1991.

Type species – *Merulius castaneus* Lloyd, Lloyd Mycol. Writ. 4: 555, 1916.

Basidiome annual, resupinate, effused, margin wide, cinnamon, hymenial surface poroid, pores angular to irpicoid, cinnamon to purplish, 1-2 per mm. Hyphal system monomitic, generative hyphae simple-septate, thin- to thick-walled, with reddish to brown granular encrustation. Cystidia conical, thick-walled, encrusted in the apical part. Basidia clavate, with 4-sterigmata, and a simple basal septum. Basidiospores cylindrical to broadly allantoid, smooth, thin-walled, hyaline, IKI-.

Remarks – *Castanoporus* is characterized by the cinnamon, irpicoid resupinate basidiomes, microscopically the simple-septate hyphae, encrusted cystidia and cylindrical basidiospores are diagnostic (Ryvar den 1991). *Oxyporus* is quite similar, differing above all in the globose basidiospores and light coloured basidiomes. *Castanoporus* is considered traditionally among the polypore fungi but it is included here by the resupinate basidiome and irpicoid basidiome.

Caudicicola Miettinen, M. Kulju & Kotir., Ann. bot. fenn. 54: 163, 2017.

Type species – *Caudicicola gracilis* Miettinen, M. Kulju & Kotir., Ann. bot. fenn. 54: 163, 2017.

Basidiome annual, resupinate, very fragile, pale creamish white or pale yellow when dry, with a very thin white subiculum, pores angular, 3–4 per mm, with thin, partly lacerate dissepiments, old basidiomes have sometimes pulverulent areas at margin, which contain masses of conidia, but no rhizomorphs. Hyphal system monomitic, hyphae relatively thin-walled, CB-, IKI-, subiculum consists of narrow hyphal strands and loosely arranged randomly orientated hyphae mostly with normal clamps, but ampullaceous septa fairly common; conidiogenous hyphae double walled. Cystidia and cystidioles absent. Basidia subcylindrical, with (2)-4 sterigmata, which are exceptionally long, typically 5 µm but even up to 8 µm, basally clamped. Basidiospores smooth, subglobose, broadly ellipsoid or pip-shaped, fairly thin-walled, with a relatively large apiculus, commonly with one or many shiny, irregular bodies inside, CB-, IKI-. Conidia ellipsoid, often broadly fusiform, reminding a protozoan ciliate, slightly thick-walled, finely ornamented or more rarely smooth, CB+, IKI-. Probably causing a white rot.

Remarks – *Caudicicola* is characterized by very fragile basidiomes, monomitic hyphal structure with clamps, short and wide tramal cells, smooth ellipsoid spores, basidia with long sterigmata and conidiogenous areas in the margins of the basidiome producing verrucose, slightly thick-walled conidia. The genus belongs to the residual polyporoid clade of the Polyporales in the vicinity of Steccherinaceae but has no known close relatives (Kotiranta et al. 2017).

Cejpomyces Svrček & Pouzar, Česká Mykol. 24: 5, 1970.

Type species – *Corticium terrigenum* Bres., Annls mycol. 1(2): 98, 1903.

Remarks – A synonym of *Thanatephorus* Donk.

Ceraceohydnum Jülich, Persoonia 10(1): 138, 1978.

Type species – *Ceraceohydnum brunneum* Jülich, Persoonia 10(1): 138, 1978.

Basidiome annual, resupinate, effused, ceraceous, margin indistinct, hyphal strands lacking, hymenophore hydroid, with long aculei, brownish. Hyphal system dimitic, skeletal hyphae hyaline, thick-walled, generative hyphae hyaline, thick-walled, with clamps. Basidia narrowly clavate, small, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to subglobose, small, hyaline, smooth, inamyloid.

Remarks – It was considered a synonym of *Mycoaciella* by Hjortstam et al. (1990) but it was accepted as a separated genus by Nakasone (2002) because of its small basidia and basidiospores, and absence of cystidia.

Ceraceomerulius (Parmasto) J. Erikss. & Ryvarde, *Cortic. N. Eur.* (Oslo) 2: 196, 1973.

Basionym – *Byssomerulius* subgen. *Ceraceomerulius* Parmasto, *Consp. System. Corticiac.* (Tartu): 80, 1968.

Type species – *Merulius rubicundus* Litsch., *Bull. trimest. Soc. mycol. Fr.* 49: 293, 1934.

Remarks – A synonym of *Byssomerulius* Parmasto.

Ceraceomyces Jülich, *Willdenowia Beih.* 7: 146, 1972.

Synonym – *Athelia* subsect. *Tessulatae* Parmasto.

Type species – *Corticium tessulatum* Cooke, *Grevillea* 6(40): 132, 1878.

Basidiome resupinate, at first pellicular, thickening in age and with a ceraceous consistency, separable from the substrate, hymenophore smooth to meruloid. Hyphal system monomitic, hyphae thin-walled, with clamps, subicular hyphae loosely interwoven, more densely arranged in the subhymenium. Cystidia present or absent. Basidia narrowly clavate, in a dense palisade, (2)4-sterigmata, with basal clamp. Basidiospores subglobose to narrowly ellipsoid, smooth, guttulate, thin-walled, IKI–.

Remarks – *Ceraceomyces* seems to derive from *Athelia* that has short lived basidiome and a restricted number of basidia are produced in open branched clusters, in a loose hymenial structure (Jülich 1972). On the contrary, in *Ceraceomyces* the basidia are produced in prolonged series generating a dense and closely packed palisade of narrow, clavate basidia. Phylogenetic relationships in *Ceraceomyces* are still unclear, it seems to be polyphyletic, while *Ceraceomyces tessulatus* (Cooke) Jülich, the generic type species, and *Ceraceomyces borealis* (Romell) J. Erikss. & Ryvarde, cluster in the Amylocorticiaceae with *Amylocorticiellum subillaqueatum* and *Amylocorticium subincarnatum*. Other *Ceraceomyces* species cluster within clampless genera such as *Byssomerulius*, *Ceriporia*, *Phanerochaete*, or *Phlebiopsis* (Larsson 2007b).

Ceraceopsis Hjortstam & Ryvarde, *Synopsis Fungorum* 23: 62, 2007.

Type species – *Ceraceopsis verruculosa* Hjortstam & Ryvarde, *Synopsis Fungorum* 23: 64, 2007.

Basidiome resupinate, effuse, pellicular to membranous, hymenophore smooth, subiculum distinct, whitish to pale yellowish, margin fimbriate, rhizomorphs rare or absent. Hyphal system monomitic, hyphae straight, distinct, simple-septate, thin-walled or slightly thickened, hyaline, or pale yellowish brown in the subiculum. Cystidia absent. Basidia almost clavate, with 4-sterigmata, and a simple basal septum. Basidiospores subglobose to ellipsoid, finely rugose, thin-walled or with slightly thickened walls, hyaline, inamyloid, indextrine, cyanophilous.

Remarks – *Ceraceopsis* is characterized by the smooth, pellicular to membranous basidiome, simple-septate hyphae, and warted and cyanophilous basidiospores (Hjortstam & Ryvarde 2007). *Coniophoropsis* has also simple-septate hyphae and cyanophilous verrucose but large basidiospores, the basidioma is brown coloured with an olivaceous tint, and basidiospores are distinctly thick-walled and yellowish-brown.

Cerarioporia F. Wu, L.W. Zhou & Jing Si, *Phytotaxa* 280(1): 57, 2016.

Type species – *Cerarioporia cystidiata* F. Wu, L.W. Zhou & Jing Si, *Phytotaxa* 280(1): 58, 2016.

Basidiome annual, resupinate, waxy to resinous. Pore surface white to cream when fresh, dirty cinnamon when dry. Subiculum cinnamon buff, resinous, very thin to almost lacking. Tube layer concolorous with the pore surface. Hyphal system dimitic; generative hyphae bearing clamp connections; skeletal hyphae dominant; presence of thick-walled and encrusted cystidia. Basidiospores hyaline, thin-walled, smooth, fusiform, IKI–, CB–. Causing a white rot.

Remarks – *Cerarioporia* is characterized by a resupinate basidiome with large pores, waxy to resinous tubes, a dimitic hyphal structure with clamp connections, distinctly thick-walled and encrusted cystidia, hyaline, thin-walled, smooth and fusiform basidiospores, all structures negative in both Cotton Blue and Melzer's reagent. Phylogenetic analyses show that *Cerarioporia* belongs to the core polyporoid clade of Polyporales (Wu et al. 2016).

Ceratobasidium D.P. Rogers, Univ. Iowa Stud. nat. Hist. 17: 4, 1935.

Type species – *Ceratobasidium calosporum* D.P. Rogers, Univ. Iowa Stud. nat. Hist. 17(1): 5, 1935.

Basidiome resupinate, very thin, ceraceous, hymenophore smooth, greyish. Hyphal system monomitic, hyphae without clamps, basal hyphae more or less thick-walled. Cystidia absent. Basidia subglobose, with 2–4 long sterigmata, without a basal clamp. Basidiospores ellipsoid to fusiform, smooth, thin-walled, repetitive.

Remarks – *Ceratobasidium* is mainly characterized by the repetitive basidiospores, the simple-septate hyphae, and the almost globose basidia (Rogers 1935). It is very close to *Thanatephorus* and *Botryobasidium*. The latter genus is distinguished by the absence of spore repetition, and *Thanatephorus* differs in the basidial and hymenial morphology and structure. In some molecular studies, Binder et al. (2005), Moncalvo et al. (2006) *Ceratobasidium* is included in the cantharelloid clade forming a monophyletic group with *Thanatephorus* and very closely related to *Botryobasidium*.

Cericium Hjortstam, Mycotaxon 54: 184, 1995.

Type species – *Amethicium luteoincrustatum* Hjortstam & Ryvarden, Mycotaxon 25: 542, 1986.

Basidiome resupinate, thick, stratified, fairly brittle and ceraceous, hymenophore smooth or slightly tuberculate, pale coloured or ochraceous. Hyphal system dimitic, subicular hyphae arboriform (binding hyphae), hyaline, without clamps, generative hyphae thin-walled, hyaline to yellowish, with clamps. Cystidia thin-walled, basally strongly encrusted with resinous yellowish matter, about 70-100 µm long. Basidia subclavate, in a rather dense layer, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Cericium* is characterized by the binding hyphae and numerous cystidia with resinous encrustation. *Amethicium* is superficially similar but is distinct in its striking violet colour and lack of cystidia (Hjortstam 1995).

Cerinomyces G.W. Martin, Mycologia 41: 82, 1949.

Type species – *Cerinomyces pallidus* G.W. Martin, Mycologia 41(1): 83, 1949.

Basidiome resupinate, hymenophore smooth to tuberculate, ceraceous when fresh, brittle when dry. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled. Cystidia absent. Basidia clavate, with two very long sterigmata. Basidiospores ellipsoid to allantoid, smooth, thin-walled, non-amyloid.

Remarks – *Cerinomyces* is characterized by its ceraceous basidiome and basidia with two long sterigmata that could indicate a possible relationship with species in Dacrymycetales (Martin 1949).

Cerioporus Quél., Enchir. fung. (Paris): 167, 1886.

Type species – *Boletus squamosus* Huds., Fl. Angl., Edn 2: 626, 1778.

Remarks – According to molecular data by Justo & Hibbett (2011) and Zmitrovich & Kovalenko (2016), *Boletus squamosus* forms with a distinct clade of resupinate to stipitate polypore species, named ‘Datronia clade’, where the genus *Ceriporus* was reintroduced by Zmitrovich & Kovalenko (2016).

Ceriporia Donk, Med. Bot. Mus. Univ. Utrecht. 9: 170, 1933.

Type species – *Polyporus viridans* Berk. & Broome., Ann. Mag. Nat. Hist. 3(7): 379, 1861.

Basidiome annual, resupinate, hymenial surface poroid with ceraceous pores, fragile when dry, variable in colour, whitish, cream, pinkish, greenish to purplish. Hyphal system monomitic, generative hyphae simple-septate, usually characteristically and conspicuously encrusted. Cystidia absent. Basidia clavate, with 4-sterigmate, and a simple basal septum. Basidiospores variable in shape, allantoid to ellipsoid or subglobose, smooth, thin-walled, hyaline, IKI–. On dead coniferous and deciduous wood, causing a white rot.

Remarks – *Ceriporia* is usually easy to distinguish by the poroid ceraceous hymenophore, simple-septate hyphae usually encrusted, and hyaline, smooth basidiospores, not reacting in Melzer's reagent. See also Ryvarden & Melo (2017) and Bernicchia & Gorjón (2020).

Ceriporiopsis Domański, Acta Soc. Bot. Pol. 32: 731, 1963.

Type species – *Poria gilvescens* Bres., Ann. Mycol. 6: 40, 1908.

Basidiome annual, resupinate, pores round to angular, hymenophore usually light coloured, margin sometimes rhizomorphic. Hyphal system monomitic, generative hyphae with clamps. Cystidia absent, cystidiols may be present. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores cylindrical to globose, smooth, thin-walled, hyaline, IKI–. On deciduous and coniferous wood, causing a white rot.

Remarks – *Ceriporiopsis* is characterized by the monomitic hyphal system with clamped generative hyphae, smooth spores not reacting in Melzer's reagent, and the type of white rot. Morphologically, *Ceriporiopsis* comes in some respects close to *Oligoporus-Postia* that differs in the brown rot type. The genus is polyphyletic as shown in several studies (Tomšovský et al. 2010). Some species have transferred to *Niemelaea*, *Gelatoporia*, and *Pouzaroporia*.

Cerocorticium Henn., Monsunia 1: 138, 1900.

Type species – *Cerocorticium bogoriense* Henn. & E. Nyman, Monsunia 1: 138, 1900. (= *Corticium molle* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(46): 336, 1868).

Basidiome resupinate, effused, ceraceous, hymenial surface more or less smooth, yellow to orange. Hyphal system monomitic, hyphae hyaline, thin- or thick-walled, with clamps. Paraphysoid hyphae present. Cystidia absent. Basidia large, clavate or broadly cylindrical, with a basal clamp. Basidiospores hyaline, smooth, large, more or less thin-walled, inamyloid, with a rather large apiculus.

Remarks – *Cerocorticium* is mainly distinguished by the yellow to the orange hymenial surface and large narrowly ellipsoid to subcylindrical thin-walled basidiospores. Monotypic genus.

Chaetoderma Parmasto, Consp. System. Corticiac. (Tartu): 86, 1968.

Type species – *Peniophora luna* Romell ex D.P. Rogers & H.S. Jacks., Farlowia 1(2): 320, 1943.

Remarks – A later homonym of *Chaetoderma* Kütz. 1843 (Algae). *Chaetodermella* S. Rauchster was proposed to replace *Chaetoderma* Parmasto.

Chaetodermella Rauschert, Haussknechtia 4: 52, 1988.

Type species – *Peniophora luna* Romell ex D.P. Rogers & H.S. Jacks., Farlowia 1(2): 320, 1943.

Basidiome resupinate, thick, hymenophore smooth, whitish to greyish. Hyphal system monomitic, hyphae with clamps. Cystidia tubular, thick-walled, encrusted. Basidia long tubular,

with 4-sterigmata, and with a basal clamp. Basidiospores fusoid, smooth, thin-walled, inamyloid, indextrinoid.

Remarks – *Chaetodermella* is a well-characterized genus by the thick-walled cystidia and the fusoid basidiospores. Phylogenetically its relationships are unclear (Larsson 2007b).

Chaetoporellus Bondartsev & Singer, in Singer, Mycologia 36: 66, 1944.

Type species – *Poria latitans* Bourdot & Galzin, Bull. trimest. Soc. mycol. Fr. 41: 226, 1925.

Basidiome resupinate, effused, hymenophore poroid or hydroid. Hyphal system monomitic, all hyphae with clamps, thin- to thick-walled. Cystidia (leptocystidia) cylindrical, thin or with distinct walls. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, thin-walled, hyaline, IKI–.

Remarks – *Chaetoporellus* is micromorphologically closely related to *Kneiffiella*, and mainly separated by the typical poroid hymenophore, thin-walled leptocystidia and small allantoid basidiospores. Phylogenetically, it seems to be related to *Alutaceodontia* and *Kneiffiella* in the Hymenochaetales, (Larsson et al. 2006, Larsson 2007b) and differing mainly by the poroid hymenophore. *Chaetoporellus* is treated as a synonym of *Kneiffiella* P. Karst. by Riebesehl & Langer (2017).

Chondrostereum Pouzar, Česká Mykol. 13: 17, 1959.

Type species – *Stereum purpureum* Pers., Neues Mag. Bot. 1: 110, 1794.

Basidiome usually effuse-reflexed (stereoid), flexible, composed of several layers in section, upper sterile surface more or less tomentose, hymenophore smooth. Hyphal system monomitic, hyphae with clamps. Cystidia (leptocystidia) present. Basidia tubular, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical, smooth, thin-walled, IKI–.

Remarks – *Chondrostereum* is macroscopically similar to *Stereum* differing mainly in the pinkish to violaceous colour, but microscopically they are not related; basidiospores are inamyloid and typical leptocystidia are present in *Chondrostereum* (Pouzar 1959). Molecular studies by Larsson et al. (2004) show that *C. purpureum* is closely related to *Cylindrobasidium laeve* in the euagarics clade and separated from the rest of corticioid fungi.

Christiansenia Hauerslev, Friesia 9(1-2): 43, 1969.

Type species – *Christiansenia pallida* Hauerslev, Friesia 9(1-2): 43, 1969.

Remarks – A synonym of *Syzygospora* G.W. Martin. See comments under this genus.

Chrysoderma Boidin & Gilles, Cryptog. Mycol. 12(2): 126, 1991.

Type species – *Chrysoderma alboluteum* Boidin & Gilles, Cryptog. Mycol. 12(2): 127, 1991.

Remarks – A synonym of *Cerocorticium* Henn. Hjortstam & Ryvarden (2007) indicated the similarity with *Cerocorticium molle*, and the synonym has recently been confirmed by Nakasone (2015).

Cinereomyces Jülich, Bibliotheca Mycologica 85: 396, 1982.

Type species – *Polyporus lindbladii* Berk., Grevillea 1 (4): 54, 1872.

Basidiome annual, resupinate, becoming widely effused, soft to tough, margin white, narrow to wide. Pore surface white to grayish, pores circular, context white and cottony, azonate. Hyphal system di- to trimitic, generative hyphae with clamps, hyaline. thin-walled, skeletal hyphae straight to sinuous, thick-walled to solid, non-septate, rarely branched, gelatinizing and disappearing in KOH, weakly amyloid in Melzer's reagent, most easily seen in hyphal masses, binding hyphae narrow and richly branched, observed only in the context, apparently rare. Cystidia none, but fusoid, non-projecting cystidiols occur scattered among the basidia. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores allantoid to cylindrical, hyaline, thin-walled, negative in Melzer's reagent. Causing a white rot.

Remarks – *Cinereomyces*, is characterized by the dimitic to trimitic hyphal system with weakly amyloid vegetative hyphae, and allantoid to cylindrical basidiospores, non-reacting in Melzer's reagent. *Cinereomyces lindbladii* (Berk.) Jülich, the generic type, has also been usually classified under *Diplomitoporus* but we want to highlight the amyloidity of the vegetative hyphae that has been proved to be a useful character among other genera of polypores. It is separated from *Amyloporia* by the type of decay, brown rot in the latter. According to Miettinen & Rajchenberg (2012), the 'Cinereomyces clade' comprises the genera *Sebipora*, *Gelatoporia*, *Cinereomyces* and *Obba*. The 'Cinereomyces clade' is well-delimited in nrDNA-based phylogenetic analysis, but its position in Polyporales remains unclear. Its closest relative may be found in the core polyporoid clade. Only a few morphological characters are common for all the species in the clade, e.g. CB– and CRB+ hyphae, white fruiting bodies, presence of oil, and middle-sized spores. Niemelä (2016) proposed the generic name *Canopora* to classify *Polyporus subfuscoflavidus* (= *Polyporus lindbladii*) but this generic name is not validly published (Art. 40.6, Shenzhen code).

Cinereomycetella Zmitr., Folia Cryptogamica Petropolitana 6: 93, 2018.

Type species – *Poria overholtsii* Pilát, Stud. Bot. Čechoslov. 3: 2, 1940.

Basidiome of fibroporioid habitus, annual, widely effused, hymenophore a single tube layer, soft. Subiculum byssoid, white. Hyphal system monomitic in tubes and moderately dimitic in subiculum. Generative hyphae with clamp connections, hyaline, CB–. Leptocystidia fusoid, thin-walled. Basidia clavate, with a central constriction, 4-spored, clamped at the base. Basidiospores ellipsoid, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Cinereomycetella* is similar to *Cinereomyces* but differs by monomitic tubes and ellipsoid (vs. cylindrical) basidiospores (Zmitrovich 2018). *Poria overholtsii* Pilát is a North American species and was treated under *Diplomitoporus* by Gilbertson & Ryvarden (1986).

Cladoderris Pers. ex Berk., J. Bot., Lond. 1(3): 152, 1842.

Type species – *Thelephora dendritica* Pers., in Gaudichaud-Beaupré in Freycinet, Voy. Uranie. Bot. 5: 176, 1827.

Remarks – A synonym of *Cymatoderma* Jungh.

Clavulicium Boidin, Bull. Soc. Hist. nat. Toulouse 92: 280, 1957.

Type species – *Corticium pilatii* Boidin [as 'pilat'], Bull. mens. Soc. linn. Lyon 8: 231, 1954.

Basidiome resupinate, subceraceous to membranaceous, hymenophore smooth. Hyphal system monomitic, hyphae with clamps, thin-walled. Gloeocystidia present. Basidia clavate, 2-spored, with a basal clamp, guttulate. Basidiospores ellipsoid, smooth, thin-walled, inamyloid, indextrinoid, distinctly guttulate.

Remarks – *Clavulicium* is characterized by the clamped generative hyphae, the presence of gloeocystidia and the large ellipsoid basidiospores, with many guttulate contents. *Corticium delectabile* Jacks., and *Corticium spurium* Bourdot have usually been classified in *Clavulicium*, but they are presently included in *Membranomyces*. They differ above all in the simple-septate hyphae and in different basidial morphology. The relationships of *Clavulicium* with other corticioid genera seems still unclear (Larsson 2007b).

Climacodon P. Karst., Revue mycol., Toulouse 3(9): 20, 1881.

Type species – *Hydnum septentrionale* Fr., Syst. mycol. (Lundae) 1: 414, 1821.

Basidiome annual, pileate, imbricate, upper sterile surface fibrillose to scrupose, hymenophore hydroid, with long aculei. Hyphal system monomitic, generative hyphae with simple septa, but some septa may have clamp connections. Cystidia present, as gloeocystidia or thick-walled cystidia. Basidia clavate, with 4-sterigmata and with a simple basal septum. Basidiospores ellipsoid, smooth, thin-walled, IKI–.

Remarks – *Climacodon* is easily recognized by the large pileate basidiome with hydroid hymenophore and imbricate growth. It reminds *Hericium* in some macroscopical aspects, but the

latter has amyloid basidiospores, and is phylogenetically classified in the Russulales, whereas *Climacodon* in the Polyporales (Larsson 2007b). It is also morphologically close to *Mycorrhaphium* which has skeletal hyphae in the aculei and context, and to *Mycoleptodonoides* with a monomitic hyphal system and lacking gloeocystidia. Contrary, *Mycorrhaphium* and *Mycoleptodonoides* have clamped basidia.

Colospora Miettinen & Spirin, Fungal Diversity 75: 232, 2015.

Type species – *Colospora andalasioi* Miettinen & Spirin, Fungal Diversity 75: 232, 2015.

Basidiome resupinate, minutely odontoid (with sterile hyphal pegs), corticioid, on dead wood. Hyphal system dimitic throughout, clamps present, hyphae short-branched, skeletal hyphae dominating in all parts of the basidiome. Dendrohyphidia common, aculei sterile towards the tip. Basidia utriform, with four sterigmata and a basal clamp. Basidiospores large, thin-walled, finely ornamented (in the type species) or smooth, biapiculate, apical parts distinctly tapering and refractive, with numerous oil drops inside, faintly cyanophilous, showing small amyloid patches in apices.

Remarks – *Colospora* contains two *Epithele*-like fungi with a dimitic hyphal structure and biapiculate spores. The type species of *Epithele* (*E. typhae*) and *Skeletohydnum* (*S. nikau*), the two existing genus names for *Epithele*-like fungi, are not particularly closely related. *Epithele typhae* (Pers.) Pat. is a monomitic species with smooth, fusiform spores. *Skeletohydnum nikau* (G. Cunn.) Jülich also has smooth, fusiform spores, which are thick-walled, and skeletal hyphae are restricted in its aculei making the basidiomes more fragile than in *Colospora* (see comments by Miettinen & Spirin in Ariyawansa et al. 2015).

Columnocystis Pouzar, Česká Mykol. 13(1): 17, 1959.

Type species – *Thelephora abietina* Pers., Syn. meth. fung. (Göttingen) 2: 573, 1801.

Remarks – A synonym of *Veluticeps* (Cooke) Pat. See Hjortstam & Telleria (1990).

Columnodontia Jülich, Persoonia 10(3): 326, 1979

Type species – *Columnodontia resupinata* Jülich, Persoonia 10(3): 327, 1979

Remarks – A synonym of *Phlebia* Fr. *Columnodontia* was erected to accommodate resupinate corticioids (similar to species of *Phlebia*) with a membranaceous-ceraceous to crustaceous basidiome, with a hydroid hymenophore with small aculei microscopically composed by generative hyphae and projecting columns of crystals.

Confertextum Priyanka & Dhingra, in Dhingra, Proceedings of the 8th International Conference on Mushroom Biology and Mushroom Products (ICMBMP8) 2014: 25, 2014.

Type species – *Confertextum microsporum* Priyanka & Dhingra, Proceedings of the 8th International Conference on Mushroom Biology and Mushroom Products (ICMBMP8) 2014: 27, 2014.

Remarks – Nom. inval., Art. 32.1(a); see Art. 29.1 (Shenzhen code).

Conferticium Hallenb., Mycotaxon 11: 447, 1980.

Type species – *Gloeocystidium insidiosum* Bourdot & Galzin, Bull. Soc. mycol. Fr. 28(4): 370, 1913.

Basidiome resupinate, effused, membranaceous to ceraceous, hymenophore smooth to tuberculate. Hyphal system monomitic, hyphae with simple septa, cyanophilous, subhymenial hyphae vertically arranged in a compact and dense structure (pseudoparenchymatic). Cystidia (gloeocystidia) numerous, cylindrical, sinuous, SA+. Basidia clavate, with internal repetition, with 4-sterigmata and a simple basal septum. Basidiospores ellipsoid, smooth or ornamented, thin-walled, amyloid, CB–.

Remarks – *Conferticium* was separated from *Gloeocystidiellum* (*G. ochraceum* group in Eriksson & Ryvarden 1976) on the basis of the pseudoparenchymatic context, simple-septate and

cyanophilous hyphae, gloecystidia SA+ and the internal basidial repetition (Hallenberg 1980). *Conferticum* belongs to the Stereaceae in the Russulales (Larsson 2007b).

Confertobasidium Jülich, Willdenowia, Beih. 7: 167, 1972.

Type species – *Corticium olivaceoalbum* Bourdot & Galzin, Bull. Soc. mycol. Fr. 27(2): 239, 1911.

Remarks – A synonym of *Scytinostromella* Parmasto.

Coniobotrys Pouzar, Česká Mykol. 12(1): 32, 1958.

Type species – *Coniophora ochroleuca* Bres., Jber. Westfäl. Prov.-Vereins 26: 130, 1898.

Remarks – A synonym of *Jaapia* Bres.

Coniophora DC., Fl. franç. (Paris) 5/6: 34, 1815.

Synonym – *Coniophorella* P. Karst.

Type species – *Coniophora membranacea* DC., in De Candolle & Lamarck, Fl. franç., Edn 3 (Paris) 5/6: 34, 1815.

Basidiome resupinate, effused, membranaceous, adnate to separable, hymenophore smooth to tuberculate, usually brown-coloured, margin frequently fibrillose or with hyphal strands. Hyphal system monomitic (di- or trimitic in some species), hyphae generative usually without clamps (some species with clamps at all septa), simple or verticillate clamps sometimes present in the basal hyphae, frequently encrusted. Cystidia absent (present in one species). Basidia cylindrical, with a median constriction, with 4-sterigmata and without a basal clamp. Basidiospores ellipsoid, ovoid or fusiform, smooth, double-walled, with a prominent apiculus, pale yellowish to brownish, cyanophilous, variably dextrinoid.

Remarks – *Coniophora* is usually easy to distinguish by the brownish smooth to tuberculate Basidiome, and microscopically by the thick-walled and usually strongly dextrinoid basidiospores. *Leucogyrophana* and *Serpula* are a sister genus of *Coniophora*, differing in the typically merulioid to irpicoid hymenophore and the presence of clamps in the generative hyphae. Molecular studies by Binder & Hibbett (2002) pointed out the evolution of resupinate basidiome deriving from erect ones. Studies by Larsson et al. (2004) and Binder & Hibbett (2006), show the relationship between *Coniophora* and other species of the Boletaceae included in the bolete clade (see also Ginns 1982, Hallenberg 1985).

Coniophorafomes Rick, Brotéria, sér. Ci. Nat. 3: 167, 1934.

Type species – *Coniophora stereoidea* Rick, Brotéria, sér. Ci. Nat. 3: 166, 1934.

Remarks – A synonym of *Gloeocystidiellum* Donk. See Rick (1934).

Coniophorella P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 438, 1889.

Type species – *Hypochnus olivaceus* Fr., Observ. mycol. (Havniae) 2: 282, 1818.

Remarks – A synonym of *Coniophora* DC. *Coniophorella* was segregated from *Coniophora* by the presence of encrusted cystidial elements.

Coniophoropsis Hjorstam & Ryvarde, Mycotaxon 25: 540, 1986.

Type species – *Coniophoropsis obscura* Hjorstam & Ryvarde, Mycotaxon 25: 540, 1986.

Basidiome resupinate, effused, closely adnate, hymenial surface smooth, brown violet or with an olivaceous tint, margin paler, whitish, subiculum distinct, loose and soft, whitish. Hyphal system monomitic, hyphae simple-septate, hyaline or with a yellowish tint, thin-walled, smooth or encrusted. Dendrohyphidia poorly differentiated, with few more or less perpendicular branches, protruding above the basidial layer. Cystidia absent. Basidia cylindrical to suburniform, with a median constriction, with 4-sterigmata, with a simple basal septum. Basidiospores subfusiform to subamygdaliform, verrucose, distinctly thick-walled, with yellowish-brown spore walls, inamyloid, indextrinoid, strongly cyanophilous.

Remarks – *Coniophoropsis* reminds *Coniophora* but differs in the indextrinoid and verrucose basidiospores, and in the total absence of clamps in subicular hyphae. In the ITS phylogenetic tree of Boletales, *Coniophoropsis bambusicola* S.H. He & Nakasone, and the *Coniophora* species formed a fully supported clade (Zhao et al. 2018).

Conohypha Jülich, Persoonia 8: 303, 1975.

Type species – *Corticium albocremeum* Höhn. & Litsch., Wiesner Festschrift (Wien): 61, 1908.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore smooth, whitish to cream, margin indeterminate. Hyphal system monomitic, hyphae with clamps, short-celled, broad, thin-walled, hyaline. Cystidia absent. Basidia cylindrical, thin-walled, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, hyaline, IKI–.

Remarks – *Conohypha* is mainly characterized by broad short-celled subhymenial cells. It may remind to *Brevicellicium*, but it could be easily separated by the larger basidiospores. The phylogenetic relationships of *Conohypha* with other corticioid fungi remain still unclear (Larsson 2007b).

Coralloiderma D.A. Reid, Nova Hedwigia, Beih. 18: 332, 1965.

Type species – *Thelephora acroleuca* Pat., Bull. Soc. mycol. Fr. 14: 188, 1898.

Basidiome terrestrial, stipitate, coriaceous, spatulate, flabellate to infundibuliform. Pilear surface minutely velutinate to rugose with coralloid hyphae, hymenial surface smooth. Stipe lateral to central, velutinous. Context black. Hyphal system monomitic, generative hyphae usually straight, hyaline to pale brown, thin-walled, clamps present or absent, with purple brown encrustations in KOH. Cystidia and gloecystidia absent. Basidia long clavate, 2-4-sterigmate. Basidiospores ellipsoid, thin-walled, hyaline, inamyloid.

Remarks – It is characterized by the blackish stipitate basidiomes and presence of coralloid hyphae (Reid 1965).

Cordochaete Sanyal, Samita, Dhingra & Avneet P. Singh, Mycotaxon 123: 103, 2013.

Type species – *Cordochaete cystidiata* Sanyal, Samita, Dhingra & Avneet P. Singh, Mycotaxon 123: 105, 2013.

Basidiome resupinate, adnate, effused, hymenial surface corneous as dry. Hyphal system monomitic, generative hyphae without clamps, basal zone very thin, context conspicuous, of loosely interwoven hyphae, subhymenium compact, hyphal cordons both in context and subhymenium. Cystidia thick-walled, encrusted. Basidia clavate, 4-sterigmate, without basal clamp. Basidiospores ellipsoidal to subcylindrical, inamyloid, CB–.

Remarks – *Cordochaete*, according to the authors, differs from *Phlebiopsis* in having hyphal cordons and is distinguished from *Rhizochaete* by the absence of a red or violet KOH reaction in both the hymenium and hyphal cordons (Sanyal et al. 2013). It is most similar to *Phanerochaete* differing in the presence of hyphal chords in the subhymenium.

Corneromyces Ginns, Mycologia 68(5): 970, 1976.

Type species – *Corneromyces kinabalui* Ginns, Mycologia 68(5): 970, 1976.

Basidiome resupinate, effuse, hymenophore smooth to granulose or with sterile hyphal pegs, brown to amber or grayish brown. Hyphal system monomitic, hyphae with clamps, hyaline to brownish, slightly darkening in IKI and blackening in KOH. Dendrophyses present. Cystidia absent. Basidia clavate, with a narrower base, with 4-sterigmate, and a basal clamp. Basidiospores narrowly ellipsoid to cylindrical, smooth, very thick-walled, at first hyaline, becoming brown, cyanophilous, amyloid.

Remarks – *Corneromyces* is characterized above all by the large, thick-walled, smooth and brown basidiospores that are strongly amyloid and cyanophilous (Ginns 1976). Monotypic genus.

Coronicium J. Erikss. & Ryvardeen, *Cortic. N. Eur.* (Oslo) 3: 295, 1975.

Type species – *Corticium gemmiferum* Bourdot & Galzin, *Bull. Soc. mycol. Fr.* 27(2): 250, 1911.

Basidiome resupinate, effused, adnate, membranaceous to ceraceous, hymenophore smooth, cream to ochraceous. Hyphal system monomitic, hyphae with or without clamps, thin-walled, hyaline. Cystidia (leptocystidia) or cystidiols present, thin-walled, usually apically encrusted with a brown resinous matter. Basidia clavate to suburniform, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to navicular, smooth, thin-walled, hyaline, IKI–.

Remarks – *Coronicium* was originally described to accommodate *Corticium gemmiferum*, a species with a distinct kind of cystidia apically encrusted with a cap-like of resinous brown substance (Eriksson & Ryvardeen 1975). Jülich (1975) added to deviating species with no encrusted cystidia, *Coronicium thymicola* and *Coronicium alboglaucum*, the latter also differing in the simple-septate hyphae. *Coronicium* belongs to the Pterulaceae in the Agaricales. It is related to *Aphanobasidium*, *Merulicium* and *Radulomyces*. All of them, except *Radulomyces*, share with *Pterula* more or less similar ellipsoid to navicular basidiospores (Larsson 2007b).

Corticirama Pilát, *Beih. Sydowia* 1: 128, 1957.

Type species – *Corticirama petrakii* Pilát, *Beih. Sydowia* 1: 128, 1957.

Remarks – A clavarioid genus not included in this manual.

Corticium Pers., *Neues Mag. Bot.* 1: 110, 1794.

Synonym – *Laeticortidium* Donk.

Type species – *Corticium roseum* Pers., *Neues Mag. Bot.* 1: 111, 1794.

Basidiome resupinate, orbicular or confluent, hymenial surface brightly coloured, smooth. Hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled. Cystidia absent. Dendrohyphidia numerous forming a catahymenium. Basidia large, clavate, cylindrical or tubular, sinuous, thick-walled at the basal part, originating in the subiculum as thick-walled probasidia elongating through a previously developed layer of dendrohyphidia. Basidiospores cylindrical, ovoid to ellipsoid, smooth, thin-walled, IKI–. Spore print pink.

Remarks – *Corticium* is a well delimited genus after the generic emendation by Boidin & Lanquetin (1983). It is characterized, among the corticioids with hyaline dendrohyphae, by its not decorticate basidiome growing on dead wood, pink spore-print, and by the absence of cystidial elements. *Corticium* differs from *Dendrocortidium* in the thick-walled probasidia, basidiospores usually longer than 12 µm, and pink spore-print. *Laeticortidium* is considered a superfluous synonym of *Corticium* (Boidin & Lanquetin 1983).

Cotylidia P. Karst., *Revue mycol., Toulouse* 3(9): 22, 1881.

Type species – *Thelephora undulata* Fr., *Elench. fung.* (Greifswald) 1: 164, 1828.

Basidiome pileate, infundibuliform, with a central or lateral stipe, hymenophore smooth to rugose. Hyphal system monomitic, hyphae with simple-septa, thin-walled. Cystidia (pseudocystidia) with a tramal origin, cylindrical with an obtuse apex, thin-walled, not encrusted. Basidia narrowly clavate, with 4-sterigmata, with a simple basal septum. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Cotylidia* is characterized mainly by the pileate and stipitate stereoid basidiome, the clampless hyphae and the presence of cystidia with tramal origin. *Cotylidia* is included by molecular data in the *Rickenella* family under the Hymenochaetales (Larsson 2007b).

Crassisporus B.K. Cui & Xing Ji, in Ji, Wu, Liu, Si & Cui, *MycKeys* 57: 69, 2019.

Type species – *Crassisporus macroporus* B.K. Cui & Xing Ji, *MycKeys* 57: 73, 2019.

Basidiome annual, effused-reflexed to pileate, pileal surface pale yellowish brown, yellowish brown to umber-brown when dry, concentrically zonate or sulcate, velutinate, pore surface usually white, cream buff to cinnamon-buff when fresh, buff, pale yellowish brown to yellowish brown

when dry. Context pale yellowish brown to yellowish brown, leathery to corky when dry. Tubes concolorous with the context, corky when dry. Hyphal system trimitic with clamped generative hyphae, skeletal hyphae hyaline to pale yellowish brown, binding hyphae hyaline to pale yellowish brown, negative in Melzer's reagent, tissues turning to black in KOH. Cystidia absent, thin-walled cystidioles usually present. Basidiospores oblong to broadly ellipsoid, hyaline, smooth, slightly thick-walled, IKI–, CB–. Causing a white rot.

Remarks – *Crassisporus* is characterized by an annual growth habit, effused-reflexed to pileate basidiocarps with 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, oblong to broadly ellipsoid, hyaline, smooth, and slightly thick-walled basidiospores. Phylogenetic analysis indicates that *Crassisporus* belongs to the core polyporoid clade grouped with *Haploporus* forming a monophyletic lineage and related to *Perenniporia* s.l. (Ji et al. 2019).

Craterella Pers., Neues Mag. Bot. 1: 112, 1794.

Type species – *Craterella pallida* Pers., Neues Mag. Bot. 1: 112, 1794.

Remarks – A synonym of *Cotylidia* P. Karst.

Creolophus P. Karst., Meddn Soc. Fauna Flora fenn. 5: 41, 1879.

Type species – *Hydnum corrugatum* Fr., Observ. mycol. (Havniae) 2: 269, 1818.

Remarks – A synonym of *Hericium* Pers.

Crepatura C.L. Zhao, in Ma & Zhao, Mycol. Progr. 18(6): 790, 2019.

Type species – *Crepatura ellipsospora* C.L. Zhao, in Ma & Zhao, Mycol. Progr. 18(6): 791, 2019.

Basidiome annual, resupinate. Hymenial surface smooth to irregularly tuberculate, concentrically, and radially cracking. Hyphal system monomitic; generative hyphae thick-walled bearing both clamp connections and simple septa, IKI–, CB–; tissues unchanged in KOH. Cystidia and cystidioles absent; numerous crystals present among the hyphae, basidia clavate, with two sterigmata. Basidiospores ellipsoid, hyaline, thick-walled, smooth, IKI–, CB–.

Remarks – Phylogenetic analyses show that *Crepatura* belong to the Phanerochaetaceae family and nested into the *Donkia* clade. *Crepatura* formed a monophyletic lineage with strong support and phylogenetically was closely related to *Pirex concentricus* (Ma & Zhao 2019).

Cristelloporia I. Johans. & Ryvarde, Trans. Br. mycol. Soc. 72(2): 189, 1979.

Type species – *Cristelloporia dimitica* I. Johans. & Ryvarde, Trans. Br. mycol. Soc. 72(2): 189, 1979.

Remarks – A synonym of *Trechispora* P. Karst.

Cristinia Parmasto, Consp. System. Corticiac. (Tartu): 47, 1968.

Type species – *Hydnum helveticum* Pers., Mycol. eur. (Erlanga) 2: 184, 1825.

Basidiome resupinate, loosely adnate, hymenophore granular to irregularly raduloid, rhizomorphs present in the subiculum and at the margins. Hyphal system monomitic, hyphae with clamps or simple septa, thin-walled, shortly celled, hyphal strands sometimes present. Cystidia present or absent. Basidia subclavate or cylindrical, with 4-sterigmata, with cyanophilous granulation, with a basal clamp or a simple septum. Basidiospores subglobose to somewhat angular, smooth, thick-walled, IKI–, cyanophilous.

Remarks – *Cristinia* is characterized above all microscopically, by the basidia with cyanophilous granulation and by the smooth and thick-walled basidiospores. Eriksson & Ryvarde (1975) suggested some relationships of *Cristinia* with *Hypochnicium* due to the similarities of the basidiospores but with differently shaped basidia; with *Trechispora* by the shape of the basidia while differing in the basidiospores; and with *Lindtneria* by the cyanophilous granulation of the

basidia. Molecular data by Binder et al. (2005) suggested the possible relationships with *Lindtneria trachyspora* and *Stephanospora caroticolor*, both genera having cyanophilous granulation in the basidia and cyanophilous spore-walls.

Crustoderma Parmasto, Consp. System. Corticiac. (Tartu): 87, 1968.

Type species – *Corticium dryinum* Berk. & M.A. Curtis, Grevillea 1(12): 179, 1873.

Basidiome resupinate, effused, ceraceous to crustaceous, closely adnate, hymenophore smooth, yellowish to ochraceous or brown, margin abrupt. Hyphal system monomitic, hyphae with clamps, slightly thick-walled, yellowish. Cystidia cylindrical, thick-walled, smooth or somewhat encrusted. Basidia cylindrical to clavate, hyaline to yellowish, with 4-sterigmata, and a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, thin- to slightly thick-walled, hyaline to yellowish, IKI–, usually stained in CB.

Remarks – *Crustoderma* is characterized above all by the ceraceous to crustaceous basidiome with yellowish to brownish colours, and microscopically by the large thick-walled cystidia (Nakasone 1984, Parmasto 1968). *Crustoderma* is classified in the Sparassidaceae, Polyporales (Justo et al. 2017).

Crustodontia Hjortstam & Ryvarde, Syn. Fung. (Oslo) 20: 36, 2005.

Type species – *Corticium chrysocreas* Berk. & M.A. Curtis, Grevillea 1(12): 178, 1873.

Basidiome resupinate, widely effused, closely adnate, hard to brittle, hymenophore smooth, tuberculate to more distinctly odontoid, usually golden to apricot yellow, margin thinning out, usually yellowish, all part of the basidiome turning immediately reddish in KOH. Hyphal system monomitic, hyphae with clamps, thin-walled to moderately thick-walled, hyaline, microbinding hyphae often difficult to detect, but mainly observed in the lower part of the subiculum. Cystidia often numerous, at first sphaeropedunculate then mainly ventricose to ventricose-rostrate, smooth or encrusted beneath the apex. Basidia shortly clavate, hyaline, with 4-sterigmata and with a basal clamp. Basidiospores narrowly ellipsoid to cylindrical, smooth, thin-walled, IKI–, CB–.

Remarks – *Crustodontia* is closely related to *Phlebia* but differing in the granular basidiome that becomes reddish in KOH, small ventricose cystidia and small basidiospores (Hjortstam & Ryvarde 2005). In addition, microbinding skeletoid (fibre-like) hyphae are present in the lower part of the subiculum (this character is also present in the genera *Amethicium* Hjortstam and *Cericium* Hjortstam). Molecular data also place *Crustodontia* in the Meruliaceae close to other phlebioid corticioids (Larsson 2007b).

Crustomyces Jülich, Persoonia 10: 140, 1978.

Type species – *Odontia subabrupta* Bourdot & Galzin, Hyménomyc. de France (Sceaux): 430; 1928.

Basidiome annual, resupinate, effused, crustaceous, adnate, hymenophore smooth, odontoid or hydroid, pale coloured, rhizomorphs or hyphal strands lacking. Hyphal system (mono-) dimitic, generative hyphae hyaline, cylindrical or torulose, with clamps., skeletal hyphae hyaline, about 3 µm in diameter. Cystidia (gloeocystidia) and/or dendrohyphidia present. Basidia clavate, with four sterigmata and a basal clamp. Basidiospores ellipsoid, thin-walled, smooth, hyaline, not amyloid.

Remarks – *Crustomyces* is morphologically very closely related to *Cystostereum* sharing the dimitic hyphal system and the presence of gloeocystidia, differing the latter in the absence of dendrophysis (Jülich 1978b). *Crustomyces* may belong to the Cystosteraceae, where a common family character is the presence of numerous bladder-like gloeocystidia with yellowish contents (Larsson 2007b).

Cryptochaete P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 407, 1889.

Type species – *Corticium polygonium* Pers., Neues Mag. Bot. 1: 110, 1794.

Remarks – A synonym of *Peniophora* Cooke.

Crystallocystidium (Rick) Rick, Brotéria, N.S. 9: 139, 1940.

Basionym – *Stereum* subgen. *Crystallocystidium* Rick, Brotéria, N.S. 9: 43, 1940.

Type species – *Crystallocystidium vorticosum* Rick, Brotéria, N.S. 9: 13, 1940.

Remarks – A name of uncertain application.

Cunninghammyces Stalpers, N.Z. J. Bot. 23(2): 309, 1985.

Type species – *Corticium umbonatum* G. Cunn., Trans. Roy. Soc. New Zealand 82: 298, 1954.

Basidiome resupinate, effused, pellicular to membranaceous, hymenophore easily separable from subiculum and substrate, smooth. Hyphal system monomitic, hyphae with clamps, hyaline, thin- to somewhat thick-walled. Cystidia absent. Basidia clavate to urniform, thin-walled, hyaline, terminal or usually lateral, with 4-sterigmata, and a basal clamp. Basidiospores globose, echinulate, thin- to slightly thick-walled, often with large globule, non-amyloid.

Remarks – *Corticium umbonatum* is characterized by the pleurobasidia and thick-walled, globose, echinulate, and inamyloid basidiospores (Stalpers 1985). Hjortstam (1995) synonymized *Cunninghammyces* to *Xenasma* although the latter is characterized by the presence of cystidia. Boidin et al. (1986) described *Hypochnicium pleurobasidiatum* Boidin, Candoussau & Gilles, refusing to include it in the Xenasmataceae. *H. pleurobasidiatum* was posteriorly synonymized to *C. umbonatum* by Hjortstam (1995). The phylogenetic relationships of *Cunninghammyces* are unclear but it is placed in the Cyphellaceae, distantly from other members of *Phlebiella* (Larsson 2007b). However, it can morphologically be related to *Phlebiella*, but differing in larger basidia (the presence of pleurobasidia can be only a convergence) and thick-walled basidiospores.

Cyanobasidium Jülich, Persoonia 10(3): 327, 1979.

Type species – *Pellicularia chordulata* D.P. Rogers, Farlowia 1: 98, 1943.

Remarks – A synonym of *Lindtneria* Pilát.

Cyanodontia Hjortstam, Mycotaxon 28(1): 23, 1987.

Type species – *Cyanodontia spathulata* Hjortstam, Mycotaxon 28(1): 23, 1987.

Basidiome resupinate, soft, odontoid to hydroid, with dense aculei conical or more commonly flattened, or sometimes subporoid especially near the margin. Hyphal system monomitic, subiculum composed by thick-walled hyphae with strongly cyanophilous walls, subhymenial hyphae thin-walled and acyanophilous. Cystidia absent. Basidia short clavate, with 4-sterigmate, and a basal clamp. Basidiospores subglobose to ellipsoid, slightly to distinctly thick-walled, with a light cyanophilous reaction, inamyloid, indextrinoid.

Remarks – *Cyanodontia* reminds *Hypochnicium* and *Nodotia* by the thick-walled basidiospores but differing in the light cyanophilous reaction in the basidiospores and distinctly cyanophilous hyphae (Hjortstam 1987b).

Cyanohypha Jülich, Persoonia 11(4): 421, 1982.

Type species – *Pellicularia asperula* D.P. Rogers, Farlowia 1: 100, 1943.

Remarks – A synonym of *Botryobasidium* Donk.

Cyanotrampa Ghobad-Nejhad & Y.C. Dai, Mycologia 102(6): 1511, 2010.

Type species – *Poria rimosa* Murrill, Mycologia 12 (2): 91, 1920.

Basidiome perennial, effused, closely adnate, ceraceous, cream to deep straw. Pores angular, dissepiments finely fluffy under lens, pore surface darkening with KOH, rimose in old specimens. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae narrow, strongly CB+, IKI–; context pseudodimitic, very thin. Cystidia absent, cystidioles fusoid. Hyphal pegs variably present. Basidia barrel-shaped to short clavate, with four sterigmata and a basal clamp. Basidiospores allantoid, thin-walled, smooth, CB–, IKI–. Causing white rot in conifers especially *Juniperus*.

Remarks – *Cyanotrampa* superficially resembles species of *Schizopora* but it is separated by the allantoid basidiospores, and cyanophilous tramal hyphae. For further comments see Ghobad-Nejhad & Dai (2010).

Cylindrobasidium Jülich, Persoonia 8: 72, 1974.

Type species – *Thelephora evolvens* Fr., Observ. mycol. (Havniae) 1: 154, 1815 (= *Corticium laeve* Pers., Neues Mag. Bot. 1: 110, 1794).

Basidiome resupinate, effuse-reflexed or discoid, hymenophore smooth to tuberculate. Hyphal system monomitic, hyphae with clamps, smooth, thin- to thick-walled, usually with many oil guttules. Cystidia (leptocystidia) fusiform, with a basal clamp. Basidia narrowly clavate, with 4-sterigmata and a basal clamp. Basidiospores smooth, thin-walled, non-amyloid.

Remarks – *Cylindrobasidium* is characterized by the fusiform leptocystidia, narrowly clavate basidia and smooth inamyloid basidiospores (Jülich 1974a). According to molecular data *Cylindrobasidium* is a member of the Agaricales (Hibbett & Binder 2002, Larsson et al. 2004, Larsson 2007b).

Cymatoderma Jungh., Tijdschr. Nat. Gesch. Physiol. 7: 290, 1840.

Type species – *Cymatoderma elegans* Jungh., Tijdschr. Nat. Gesch. Physiol. 7: 290, 1840.

Basidiome coriaceous, dimidiate, flabellate and pseudoinfundibuliform, frequently becoming confluent, with short lateral or long pseudocentral stipe. Pileus often completely covered by a thick felt-like tomentum. Hymenial surface varying from beige, ochraceous-beige or pinkish-brown to ochraceous-brown (rarely dark purplish-brown in very old material), and ornamented with rather prominent, branched, radiating folds which bear scanty or densely crowded warts or aculei. Hyphal system dimitic, generative hyphae thin- to thick-walled, clamped, skeletal hyphae, often with thin-walled apices, hyaline to brownish. Cystidia present as apically encrusted metuloids and gloeocystidia often abundant. Basidia clavate, usually 4-spored but sometimes 2-spored. Basidiospores hyaline, broadly elliptical to subglobose, thin-walled, inamyloid.

Remarks – *Cymatoderma* is a stipitate genus with pantropical distribution (Junghuhn 1840).

Cyphellostereum D.A. Reid, Nova Hedwigia, Beih. 18: 336, 1965.

Type species – *Stereum pusiolum* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(46): 330, 1868.

Basidiome pileate, dimidiate to flabelliform, with a rudimentary stipe but often inconspicuous, hymenophore smooth. Hyphal system monomitic, hyphae without clamps, thin-walled, and with a lichenized structure. Cystidia absent. Basidia clavate, with 4-sterigmata and a simple basal septum. Basidiospores ellipsoid to subglobose, smooth, thin-walled, IKI–.

Remarks – *Cyphellostereum* is characterized by the flabelliform basidiome with a liquenized structure and lack of cystidial elements. It belongs to the Agaricales (Lawrey et al. 2009). *Cantharellus laevis* was previously placed in *Cyphellostereum*, but it differs phylogenetically, and morphologically, in the presence of cystidia and presenting a non-liquenized structure. *Cantharellus laevis* is now placed in the genus *Musciniupta*.

Cystidi dendron Rick, Lilloa 9: 218, 1943.

Type species – *Cystidi dendron fimbriatum* Rick, Lilloa 9: 21, 1943 (= *Fibrodontia gossypina* Parmasto, Consp. System. Corticiaearum: 207, 1968).

Remarks – According to Baltazar et al. (2016), *Cystidi dendron fimbriatum* Rick is conspecific and a previous synonym of *Fibrodontia gossypina* Parmasto. Thus, *Fibrodontia* Parmasto (1968) should be considered a latter synonym of *Cystidi dendron* Rick (1943), sharing both genera the same generic type (Rick 1943). Baltazar et al. (2016) combined *Cystidi dendron fimbriatum* Rick in *Fibriporia* as *Fibrodontia fimbriata* (Rick) Baltazar & Rajchenb.

Cystidi odontia Hjortstam, Mycotaxon 17: 571, 1983. emend. Hjortstam & Ryvarden, Mycotaxon 25(2): 546, 1986.

Type species – *Hydnum artocreas* Berk. & M.A. Curtis, Grevillea 20(no. 93): 1, 1891 (= *Hydnum laminiferum* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(no. 46): 325, 1868).

Basidiome resupinate, closely adnate, crustaceous, hymenophore grandinoid, odontoid or hydroid. Hyphal system dimitic, skeletal hyphae indextrinoid or strongly dextrinoid, without clamps, subhymenial hyphae thin-walled or with slight wall thickening, with clamps. Gloeocystidia as a rule numerous, with yellowish contents, SA–. Dendrohyphidia in the hymenial layer lacking or present. Basidia subclavate, small to medium-sized, more or less constricted, with 4 sterigmata, and a basal clamp. Basidiospores moderately thick-walled, subglobose, fairly small, indextrinoid, inamyloid but with a slight cyanophilous reaction.

Remarks – *Cystidiodontia* seems very closely related to *Crustomyces*, sharing the dimitic hyphal system and the presence of dendrohyphidia and gloeocystidia, but basidiospores are thick-walled and skeletal hyphae stain reddish-brown in Melzer's reagent in some species of *Cystidiodontia*. The genus was described with *Hydnum artocreas* Berk. & M.A. Curtis as the generic type species, but the description was based on East African specimens which later on appeared to be distinctly separated from the type of *H. artocreas* belonging to *Kneiffia isabellina* Berk. & Br., which primarily differs from its dextrinoid skeletal hyphae (Hjortstam & Ryvarden 1986).

Cystostereum Pouzar, Česká Mykol. 13: 18, 1959.

Type species – *Thelephora murrayi* Berk. & M.A. Curtis [as '*murrai*'], J. Linn. Soc., Bot. 10(46): 329, 1868.

Basidiome perennial, resupinate, effused, crustaceous, adnate, hymenophore tuberculate to odontoid, whitish, rhizomorphs or hyphal strands lacking. Hyphal system dimitic, generative hyphae with clamps, hyaline, richly branched, and thick-walled fibre-like skeletal hyphae. Gloeocystidia or gloeocystidioid vesicles numerous. Dendrohyphidia absent. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, thin-walled, smooth, hyaline, not amyloid.

Remarks – *Cystostereum* is characterized by the dimitic hyphal system and by the numerous vesicular gloeocystidia. It differs from *Crustomyces* mainly in the absence of dendrophyses. Both are molecularly classified in the Cystosteraceae (Larsson 2007b).

Cytidia Quél., Fl. mycol. France (Paris): 25, 1888.

Type species – *Thelephora salicina* Fr., Syst. mycol. (Lundae) 1: 442, 1821.

Basidiome resupinate at first to typically cupuliform, subgelatinous when fresh and coriaceous when dry, hymenophore smooth, reddish to violaceous. Hyphal system monomitic, hyphae with clamps at all septa, thin to thick-walled, bluish in sulfovainilline. Cystidia absent. Dendrohyphidia present, light brown. Basidia large, claviform, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, IKI–, CB–.

Remarks – *Cytidia* seems to be related with other genera in the Corticiaceae s.str., such as *Corticium*, *Dendrocorticium* and *Vuilleminia* (Hallenberg & Parmasto 1998, Larsson 2007b). All of them, growing on branches, share the particular habitat, the presence of dendrohyphidia, and the large basidiospores. *Cytidia* is mainly characterized by the reddish subgelatinous cupuliform basidiome, brown dendrohyphidia, and the absence of any cystidial element.

Cytdiella Pouzar, Česká Mykol. 8: 128, 1954.

Type species – *Cytdiella melzeri* Pouzar, Česká Mykol. 8: 129, 1954. (= *Cytidia albomellea* Bondartsev, Morbi plant Leningrad 16(1): 96, 1927).

Remarks – A synonym of *Auriculariopsis* Maire (Kotlába 1988).

Dacrina Fr., Syst. orb. veg. (Lundae) 1: 172, 1825.

Type species – *Hydnum sudans* Alb. & Schwein., Consp. fung. (Leipzig): 272. 1805.

Remarks – A synonym of *Dacryobolus* Fr.

Dacryobasidium Jülich, Bibliothca Mycol. 85: 396, 1982.

Type species – *Corticium coprophilum* Wakef., Trans. Br. mycol. Soc. 5(3): 480, 1916.

Remarks – A synonym of *Cristinia* Parmasto.

Dacryobolus Fr., Summa veg. Scand. (Stockholm) 2: 404, 1849.

Type species – *Hydnum sudans* Alb. & Schwein., Consp. fung. (Leipzig): 272, 1805.

Basidiome resupinate, adnate, effused, membranaceous to coriaceous, hymenophore smooth, odontoid or tuberculate, margin undifferentiated or finely fibrillose. Hyphal system monomitic or dimitic, hyphae hyaline, thin-walled or slightly thick-walled, generative hyphae clamped. Cystidia present as pseudocystidia and hymenial cystidia. Basidia long, narrow, cylindrical to subclavate, with the apical part constricted close to the sterigmata, thin-walled, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, IKI–.

Remarks – *Dacryobolus* is characterized by the long and narrow basidia, the allantoid basidiospores and the cystidia with tramal origin that project conspicuously above the basidial layer. Parmasto (1968) and Eriksson & Ryvarde (1975) were in agreement in the relationship of *Dacryobolus* with the phlebioid corticioids. Molecular analysis by Binder et al. (2005) placed *Dacryobolus* in the *Antrodia* clade, close to other polyporoid genera as *Antrodia*, *Auriporia*, *Amylocystis* and *Oligoporus*.

Datronia Donk, Persoonia 4(3): 337, 1966.

Type species – *Daedalea mollis* Sommerf., Suppl. Fl. lapp. (Oslo): 271, 1826.

Basidiome annual, wide effused-reflexed (with the effused part strongly adnate) or sessile, to pileate (in *Podofomes trogii*), frequently confluent, cover of pileus velutinous-tomentosus, zonate, usually brown to black, hymenophore tubular, in a solitary layer, small or medium-sized, later often with irregular pores, trama thin, pale-brown, somewhat coriaceous, separated from the tomentosus cover by a thin, black layer. Hyphal system dimitic, generative hyphae thin-walled, hyaline, nodose-septate, skeletal hyphae thick-walled, non-septate, with pale walls, some of them thinner, occasionally dendritically branched hyphae of tomentosus cover with thick, intensively colored walls. Cystidia absent, cystidioles may be present. Basidia clavate, tetrasterigmate, with a basal clamp. Basidiospores cylindrical, medium-sized (8-11 µm long), with thin, hyaline, smooth, nonamyloid walls. Causing a white rot.

Remarks – *Datronia* is characterized by the brown to the black cuticle and the dendroid hyphae in the dissepiments. *Datronia* is phylogenetically classified in the polyporoid clade, with some species of *Polyporus* in the ‘*Datronia* clade’ (Justo & Hibbett 2011). *Daedalea mollis* Sommerf., the generic type of *Datronia* is nested with *Boletus squamosus* Huds., and some other species in *Polyporus* in the so-called ‘*Datronia* clade’ by Justo & Hibbett (2011). So, *Datronia* is considered a synonym of *Cerioporus* Qué. according to Zmitrovich & Kovalenko (2016). However, the phylogeny of *Polyporus* and allied genera is not fully resolved, and we prefer to keep apart *Datronia* s.str., *Datroniella* and *Neodatronia* in a more restrictive consideration of the group according to Li et al. (2014). *Podofomes trogii* (Fr.) Pouzar, a stipitate polypore, also belongs to the *Datronia* s.str. clade (Gorjón, unpublished).

Datroniella B.K. Cui, Hai J. Li & Y.C. Dai, in Li, Cui & Dai, Persoonia 32: 172, 2014.

Type species – *Polyporus scutellatus* Schwein., Trans. Am. phil. Soc., New Series 4(2): 157, 1832.

Basidiome annual, pileate, effused-reflexed or rarely resupinate, when pileate, pileus usually projecting less than 3 cm, pileal surface brown to black, glabrous, pore surface white, cream to pale brown, pores large to small, round to angular. Context pale brown to brown, corky. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae usually dominating, pale brown to brown, moderately to frequently branched in context and frequently branched in trama, IKI–, CB+, tissues darkening in KOH. Dendrohyphidia and cystidia absent in the hymenium, thin-walled

cystidioles usually present. Basidiospores cylindrical, hyaline, thin-walled, smooth, IKI–, CB–. Usually growth on angiosperm wood and causing a white rot.

Remarks – *Datroniella* is phylogenetically, closely related to *Datronia*, and morphologically they differ by the moderately to frequently branched skeletal hyphae in context and absence of dendrohyphidia in the dissepiments in the former (Li et al. 2014).

Dendrocorticium M.J. Larsen & Gilb., Norw. Jl Bot. 21: 225, 1974.

Type species – *Corticium polygonioides* P. Karst., Meddn Soc. Fauna Flora fenn. 6: 12, 1881.

Basidiome annual, resupinate or effuse-reflexed, hymenial surface smooth, margin thinning out. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Dendrohyphidia present, with or without a distinct and well-defined catahymenium. Cystidia absent. Basidia developed from thin-walled probasidia originating in the subhymenium, mature basidia formed by intrusive metabasidial growth, with 4-sterigmata and a basal clamp. Basidiospores subglobose, ellipsoid or broadly ovoid, smooth, thin-walled, IKI–, spore print white.

Remarks – *Dendrocorticium* is very close related to *Corticium*, both share the presence of hyaline dendrophyses, lack of cystidial elements and the smooth inamyloid basidiospores, but differing in the thin-walled probasidia and in the white spore print in the former (Larsen & Gilbertson 1974). Phylogenetically, both are classified in the Corticiaceae (Larsson 2007b).

Dendrodontia Hjortstam & Ryvarden, Mycotaxon 10(2): 273, 1980.

Type species – *Grandinia bicolor* P.H.B. Talbot, Bothalia 4(4): 947. 1948.

Basidiome resupinate, effuse, loosely adnate, hymenial surface tuberculate or odontoid, yellowish to greyish, subiculum well differentiated, brownish. Hyphal system dimitic (or pseudodimitic), generative hyphae with clamps, thin- to thick-walled, skeletal or pseudoskeletal hyphae thick-walled, yellowish to brown, slightly ramified, with sparse clamps. Dendrohyphidia hyaline. Cystidia absent. Basidia clavate, terminal, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to suballantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Dendrodontia* is characterized by the short basidia (without a probasidial stage), dendrohyphae, presence of brown skeletal hyphae in the subiculum (can be considered pseudoskeletal hyphae because they have sparse clamps), and small basidiospores (Hjortstam & Ryvarden 1980a). It seems morphologically related to *Dentocorticium*, but it differs above all in the presence of skeletoid hyphae. Binder et al. (2005) pointed a phylogenetic relationship of a *Dendrodontia* sp. with *Dentocorticium sulphurellum* (Peck) Larsen & Gilb., also with skeletal hyphae in the context, a species that Boidin & Gilles (1998) have already been transferred to *Dendrodontia* based on morphological characters. However, the type species of *Dentocorticium*, *Dentocorticium ussuricum* (Parmasto) Larsen & Gilb., with a monomitic hyphal system, is not still sequenced, and phylogenetic relationships between *Dendrodontia* and *Dentocorticium* are still unclear. *Brunneocorticium* is somewhat similar differing in the smooth hymenial surface, presence of leptocystidia with some secondary simple septa (even they are not conspicuous and are difficult to detect), and bisterigmate basidia. Also, the type species of *Brunneocorticium*, cluster in the Agaricales clade and a *Dendrodontia* sp. in the polyporoid clade.

Dendrominia Ghobad-Nejhad & Duhem, Mycological Progress 13: 7, 2014.

Type species – *Aleurocorticium maculatum* H.S. Jacks. & P.A. Lemke in Lemke, Can. J. Bot. 42: 742, 1964.

Basidiome resupinate, smooth, decorticating or not, closely adnate, white to whitish cream, ceraceous to crustaceous, surface finely farinose, margin distinct. Hyphal system monomitic, hyphae with or without clamps, narrow, thin-walled, encrusted with fine amorphous crystals. Subiculum lacking. Basidia large, long cylindrical clavate, flexuous, arising from inflated basidioles (probasidia), with four stout sterigmata, with or without a basal clamp, contents granular. Cystidia lacking. Dendrohyphidia present. Basidiospores lunate to allantoid, contents granular, smooth, thin-walled, CB–, IKI–.

Remarks – *Dendrominia* was created to accommodate some species previously placed in *Dendrothele* or *Vuilleminia*, with intermediate features but phylogenetically well separated. *Dendrothele* species grow on the bark, have cystidia and cyanophilous, thick-walled basidiospores, while *Dendrominia* species may grow on bark or not, lack cystidia, and have thin-walled, CB-basidiospores. *Dendrominia* differs from *Vuilleminia* by its basidiome texture (ceraceous to crustaceous in the former, mostly gelatinous in the latter) and lack of clamp in some of its species (Ghobad-Nejhad & Duhem 2014).

Dendrophlebia Dhingra & Priyanka, Mycotaxon 116: 157, 2011.

Type species – *Dendrophlebia crassispota* Dhingra & Priyanka, Mycotaxon 116: 159, 2011.

Basidiome resupinate, closely adnate, effused, ceraceous, hymenial surface smooth, continuous, yellowish to brownish, turning dark ruby on 3% KOH solution, margin not differentiated. Hyphal system monomitic, generative hyphae branched, clamped, hyphae often agglutinated, penetrating deep into the substratum, covered by some yellowish-brown crystalline matter. Dendrohyphidia present. Cystidia thin-walled, hyphoid. Basidia clavate to subclavate, 4-sterigmate, with a basal clamp. Basidiospores ellipsoid, smooth, with thickened walls, inamyloid, CB-.

Remarks – *Dendrophlebia* resembles *Phlebia* in having a compact agglutinated texture, clavate basidia, clamped generative hyphae, and 4-sterigmate basidia (Dhingra & Priyanka 2011a). The presence of dendrohyphidia and basidiospores with distinctly thickened walls distinguish *Dendrophlebia* from *Phlebia*. The reaction with KOH, changing to red the hymenial surface, is also present in the phlebioid genus *Crustodontia*.

Dendrophora (Parmasto) Chamuris, Mycotaxon 28: 543, 1987.

Basionym – *Peniophora* subgen. *Dendrophora* Parmasto, Consp. System. Corticiac. (Tartu): 131, 1968.

Type species – *Stereum versiforme* Berk. & M.A. Curtis, Grevillea 1(11): 164, 1873.

Basidiome resupinate, effuse-reflexed or rarely sessile. Hymenophore smooth, finely pruinose or velutinous, grey to brown, abhymenial surface brown to black, tomentose to felty, zonate or not. Hyphal system monomitic (or pseudodimitic), hyphae with clamp, subhyaline to brown, thin- to thick-walled. Cystidia (lamprocystidia) present, heavily encrusted. Dendrohyphidia present, subhyaline to brown. Basidia narrowly clavate, with 4-sterigmata, and with a basal clamp. Basidiospores cylindrical to allantoid, smooth, thin-walled, non-amyloid.

Remarks – *Dendrophora* species are quite similar to species of *Peniophora* and traditionally they have been included in the latter. *Dendrophora* mainly differs in the brown dendrohyphidia. It is phylogenetically classified in the Peniophoraceae (Larsson 2007b).

Dendrophysellum Parmasto, Consp. System. Corticiac. (Tartu): 146, 1968.

Type species – *Dendrophysellum amurense* Parmasto, Consp. System. Corticiac. (Tartu): 206, 1968.

Remarks – A synonym of *Vararia* P. Karst. See Nakasone (2015) for further comments.

Dendrothele Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 116: 819, 1907.

Type species – *Dendrothele papillosa* Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 116: 820, 1907 (= *Corticium griseocanum* Bres., Fung. trident. 2(11-13): 58, 1898).

Basidiome usually orbicular, discoid to corticioid, whitish to pale ochraceous, hymenophore smooth to tuberculate or papillose, margin usually determinate and abrupt. Hyphal system monomitic, hyphae with or without clamps, very difficult to discern due to the crystalline matter. Cystidia present or absent. Dendrohyphidia numerous, encrusted. Basidia large, broadly cylindrical to clavate, with (2-3)4-sterigmata. Basidiospores thin- or slightly thick-walled, usually smooth or warty, non or slightly amyloid, usually with cyanophilous walls.

Remarks – *Dendrothele* appears to be a heterogeneous genus and several molecular analyses showed it is highly polyphyletic (Goranova et al. 2003, Bodensteiner et al. 2004, Binder et al. 2005, Larsson 2007b). It is characterized by growing on the bark of living trees (only there are few records of *Dendrothele* species on decayed wood), the usually orbicular basidiome and microscopically by the presence of numerous dendrophyses, crystals in the context, and by the large basidiospores with distinct and usually cyanophilous walls (Höhnel & Litschauer 1907, Gorjón & Bernicchia 2010). It is included in the Lachnellaceae Boud., in an isolated position among the corticioid fungi, close to other species within the Agaricales (Larsson 2007b).

Dentipellicula Y.C. Dai & L.W. Zhou, Mycologia 105(3): 639, 2013.

Type species – *Dentipellicula taiwaniana* (Sheng H. Wu) Y.C. Dai & L.W. Zhou, Mycologia 105(3): 641, 2013.

Basidiome annual, effused-reflexed to pileate, hymenophore hydroid, aculei soft corky, cream to ivory yellow when fresh, leathery, buff to cinnamon buff when dry. Margin cottony, cream, narrow. Subiculum soft corky, white to pallid. When pileate, pileal surface cinnamon-buff, buff to cream toward margin, indistinctly concentrically zonate, glabrous; margin sharp, incurved when dry. Hyphal system monomitic; generative hyphae with clamp connections, IKI–, CB–. Gloeoplerous hyphae absent or present. Gloecystidia present; cystidia absent. Basidiospores slightly thick-walled, hyaline, minutely rough, strongly amyloid, CB–.

Remarks – *Dentipellicula* is morphologically similar to *Dentipellis* but differs in the CB–generative hyphae (Zhou & Dai 2013).

Dentipellis Donk, Persoonia 2(2): 232, 1962.

Type species – *Hydnum fragile* Pers., Syn. meth. fung. (Göttingen) 2: 561, 1801.

Basidiome resupinate, hymenophore hydroid. Hyphal system monomitic, hyphae with clamps, CB+. Gloecystidia present. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores subglobose to globose, finely asperulate, amyloid.

Remarks – *Dentipellis* is characterized by the hydroid hymenophore, monomitic hyphal system, presence of gloecystidia and ornamented amyloid basidiospores. It is related to other genera in the Hericiaceae as *Laxitextum* and *Hericium*, sharing the gloecystidia and the ornamented amyloid basidiospores; molecular data also confirm these relationships (Larsson 2007b).

Dentipellopsis Y.C. Dai & L.W. Zhou, Mycologia 105(3): 642, 2013.

Type species – *Dentipellopsis dacrydicola* Y.C. Dai & L.W. Zhou, Mycologia 105(3): 642, 2013.

Basidiome annual, resupinate, hymenophore hydroid, aculei soft, cream to flesh-pink when fresh, fragile, cream when dry, clay-buff in bruised part, margin cottony, white, narrow. Subiculum soft corky, white to cream. Hyphal system monomitic; generative hyphae with clamp connections, IKI–, CB–. Gloeoplerous hyphae absent in subiculum, present in hymenophoral trama. Gloecystidia and cystidia present. Basidiospores distinctly thick-walled, colorless, densely echinulate but smooth in KOH, strongly amyloid, CB+.

Remarks – *Dentipellopsis* is morphologically similar to *Dentipellis* and *Dentipellicula* but differs in the distinctly thick-walled basidiospores. Phylogenetically it also seems quite isolated from previous genera (Zhou & Dai 2013).

Dentiporus Audet, Mushrooms nomenclatural novelties 3: 1, 2017.

Type species – *Antrodia albidoides* A. David & Dequatre, Mycol. helv. 1(6): 361, 1985.

Remarks – According to Audet (2017c) *Dentiporus* differs from *Antrodia* s.str. by smaller basidiomes, only resupinate, relatively soft, thicker dissepiments in young basidiomata becoming irpicoid with age, skeletal hyphae with capillary to distinct lumen, uninucleate and cylindrical basidiospores.

Dentipratulum Domański, Acta Mycologica, Warszawa 1: 6, 1965.

Type species – *Dentipratulum bialoviesense* Domański, Acta Mycologica, Warszawa 1(6): 7, 1965.

Basidiome as individual gregarious aculei, pointed and unbranched. Hyphal system monomitic, generative hyphae with clamps. Gloeocystidia present. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores subglobose to globose, smooth to finely asperulate, amyloid.

Remarks – *Dentipratulum* is characterized macroscopically by the basidiome formed by gregarious aculei. It is morphologically related to *Mucronella* that differs in the absence of gloeocystidia. *Dentipratulum* is phylogenetically included among the russuloid lineage, with *Gloiodon* and *Auriscalpium* as the closest related genera (Larsson & Larsson 2003, Larsson 2007b).

Dentocorticium (Parmasto) M.J. Larsen & Gilb., Norw. J Bot. 21: 225, 1974.

Basionym – *Laeticorticium* sect. *Dentocorticium* Parmasto, Consp. System. Corticiac. (Tartu): 151, 1968.

Type species – *Laeticorticium ussuricum* Parmasto, Eesti NSV Tead. Akad. Toim., Biol. Seer 14(2): 229, 1965.

Basidiome annual, effused, hymenial surface smooth and undulating or odontoid. Hyphal system monomitic or dimitic, subicular hyphae normally clamped and with some wall thickening. Dendrohyphidia present, with or without a distinct and well-defined catahymenium. Probasidia absent. Basidia clavate, 4-sterigmata, 30–50 µm long. Basidiospores rarely wider than 4 µm, ellipsoid to cylindrical, allantoid, hyaline, IKI–, CB–.

Remarks – *Dentocorticium* differs from *Corticium* and *Dendrocorticium* in the absence of probasidia, smaller basidiospores, and in the hymenophore more or less odontoid (Larsen & Gilbertson 1974).

Deviodontia (Parmasto) Hjortstam & Ryvarde, Syn. Fung. (Oslo) 26: 49, 2009.

Basionym – *Hyphodontia* sect. *Deviodontia* Parmasto, Consp. System. Corticiac. (Tartu): 125, 1968.

Type species – *Odontia pilaecystidiata* S. Lundell, Fungi Exsiccati Suecici 43-44: 24, 1953.

Basidiome resupinate, adnate, hymenophore hydroid to raduloid with conical to cylindrical aculei. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled. Cystidia numerous, distinctly capitate, thin-walled. Basidia clavate, constricted, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Deviodontia* is a monotypic genus, segregated from *Hyphodontia* s.l. on the basis of its characteristic large cylindrical cystidia with capitate apex. According to Yurchenko et al. (2020), *Deviodontia* is a synonym of *Kneiffiella*.

Dextrinocystidium Sheng H. Wu, Mycologia 87(6): 888, 1996.

Type species – *Peniophora sacrata* G. Cunn., Trans. Roy. Soc. N.Z. 83: 274, 1955.

Remarks – A synonym of *Gloeopeniophorella* according to Hjortstam & Ryvarde (2007). It differs from *Gloeopeniophorella* in the dextrinoid lamprocystidia (see Wu 1995).

Dextrinocystis Gilb. & M. Blackw., Mycotaxon 33: 376, 1988.

Type species – *Epithele capitata* D.P. Rogers & Boquiren, Mycologia 63: 942, 1971.

Basidiome resupinate, effused, soft, hymenial surface smooth, tomentose under the lens, pale ochraceous to buff. Hyphal system monomitic, generative hyphae thin-walled, with clamps, some with cystidiate straight branches apically encrusted with an umbrella-like matter. Cystidia abundant, tubular, with a branched base, thick-walled with a narrow lumen, apically with an umbrella-like encrustation, strongly dextrinoid except in the apical part, not dissolving in KOH. Basidia clavate to utriform, with 4-sterigmata, and a basal clamp. Basidiospores cylindrical to slightly curved, smooth, hyaline, inamyloid, indextrinoid.

Remarks – *Dextrinocystis* is characterized by the dextrinoid (lyo) cystidia with an umbrella-like encrustation not dissolving in KOH. The only species, *Dextrinocystis capitata* (D.P. Rogers & Boquiren) Gilb. & M. Blackw., is reminiscent of *Tubulicrinis hamatus* (H.S. Jacks.) Donk, but differs in the dextrinoid reaction of the cystidia (Gilbertson & Blackwell 1988). Many species of *Tubulicrinis* have lycocystidia that do not dissolve completely or clearly in KOH, so the concept of the lycocystidium as a cystidium that dissolves in KOH should be taken with precaution.

Dextrinodontia Hjortstam & Ryvarde, Mycotaxon 12: 172, 1980.

Type species – *Dextrinodontia molliuscula*, Hjortstam & Ryvarde, Mycotaxon 12: 173, 1980.

Basidiome resupinate, effuse, hymenophore distinctly hydroid, fairly soft. Hyphal system dimitic, skeletal hyphae thick-walled, sparsely ramified, clearly dextrinoid and with a strong cyanophilous reaction, without clamps, generative hyphae thin-walled, with clamps at all septa. Cystidia absent. Basidia more or less clavate, with 4-sterigmata, with a basal clamp. Basidiospores subglobose, smooth, thin-walled, inamyloid.

Remarks – *Dextrinodontia* is characterized by the hydroid basidiome, dextrinoid and cyanophilous hyphae, and smooth basidiospores (Hjortstam & Ryvarde 1980b). It was considered a synonym of *Trechispora* by Larsson (1992).

Dichomitus D.A. Reid, Rev. Biol., Lisb. 5(1-2): 149, 1965.

Type species – *Trametes squalens* P. Karst., in Rabenhorst & Winter, Fungi Europ. Extra-Eur. exsicc.: no. 3528, 1886.

Basidiome annual to perennial, resupinate to pileate and broadly sessile; upper surface white to blackish, pore surface white, cream to pale grayish, in some specimens with a darkened margin. Pores small to large, context white to cream. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae dendritically branched, with tapering ends. Cystidia none. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores cylindrical to oblong ellipsoid, smooth, hyaline, thin-walled, negative in Melzer's reagent. On dead wood of gymnosperms and angiosperms, causing a white rot.

Remarks – *Dichomitus* is in some respects similar to *Polyporus*, and the two genera are closely related. The main characters separating them are the stipitate to dimidiate (or fan-shaped) basidiomes of *Polyporus* and the resupinate to broadly sessile ones of *Dichomitus*. See also Ryvarde (1991), Ryvarde & Melo (2017) and Bernicchia & Gorjón (2020).

Dichostereum Pilát, Anns mycol.: 223, 1926.

Type species – *Asterostromella dura* Bourdot & Galzin, Bull. Soc. mycol. Fr. 36: 74, 1920.

Basidiome resupinate, effused, membranaceous to crustaceous, hymenophore smooth to grandinioid, usually cream to ochraceous. Hyphal system dimitic with clamped generative hyphae and dichohyphae. Gloeocystidia present, SA+ in most species. Basidia narrowly clavate, with 4-sterigmata, and a basal clamp. Basidiospores subglobose to broadly ellipsoid, verrucose, with a strong amyloid reaction.

Remarks – *Dichostereum* is characterized by the dextrinoid dichohyphae, presence of gloeocystidia, and amyloid basidiospores. It is closely related to *Vararia*, but mainly separated by the ornamented basidiospores. Phylogenetically both are classified in the Peniophoraceae among the russuloid clade (Larsson & Larsson 2003, Larsson 2007b).

Dichopleuropus D.A. Reid, Nova Hedwigia, Beih. 18: 329, 1965.

Type species – *Dichopleuropus spathulatus* D.A. Reid, Nova Hedwigia, Beih. 18: 329, 1965.

Basidiome terrestrial, coriaceous, spathulate to flabelliform, pileal surface glabrous to rugulose, hymenial surface smooth, stipe lateral, widened towards the pileus. Hyphal system dimitic, generative hyphae simple-septate, binding hyphae dichotomously branched, thick-walled,

yellowish-brown, dextrinoid. Gloeocystidia present. Basidia clavate, with 4-sterigmate, simple-septate at the base. Basidiospores ellipsoid to subglobose, smooth, thin-walled, hyaline, amyloid.

Remarks – *Dichopleuropus* is characterized by the pileate and stipitate basidiomes, dextrinoid dichotomously branched binding hyphae, and amyloid globose basidiospores. The genus seems to be related to other genera in the Lachnocladiaceae (Reid 1965).

Diplomitoporus Domański, Acta Soc. Bot. Pol. 39: 191, 1970.

Type species – *Trametes flavescens* Bres., Anns mycol. 1(1): 81, 1903.

Basidiome annual, resupinate to effused reflexed, white to light-coloured. Pores circular to angular medium to small. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae hyaline, thick-walled, non-amyloid. Cystidia absent or present. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores allantoid to ellipsoid, thin-walled, smooth, negative in Melzer's reagent. On dead wood of conifers and hardwoods. Causing a white rot.

Remarks – *Diplomitoporus* is in some respects similar to some species of *Antrodia*, but mainly differing in the type of rot, brown rot in *Antrodia* and usually with larger basidiospores. It is also similar to *Antrodiella*, but the latter usually has smaller basidiospores and with a more ellipsoid shape. See also Ryvarden (1991), Ryvarden & Melo (2017) and Bernicchia & Gorjón (2020).

Diplonema P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 430, 1889.

Type species – *Diplonema sordescens* P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 430, 1889.

Remarks – A latter homonym of *Diplonema* G. Don 1837 (Ebenaceae) and a synonym of *Amphinema* P. Karst.

Donkia Pilát, Bull. trimest. Soc. mycol. Fr. 52(3): 328, 1937.

Type species – *Hydnum pulcherrimum* Berk. & M.A. Curtis, Hooker's J. Bot. Kew Gard. Misc. 1: 235, 1849.

Remarks – Treated as a synonym of *Climacodon* P. Karst., but *Hydnum pulcherrimum*, that clusters in the vicinity of other species of *Phanaerochaete*, probably merits a genus of its own as suggested by Moreno et al. (2007) based on morphology and phylogenetic characters.

Donkioporia Kotlába & Pouzar, Persoonia 7: 214, 1973.

Type species – *Boletus expansus* Desm., Catal. des plantes omis.: 19, 1823.

Basidiome resupinate, perennial, woody, dark brown. Pores small, context brown, separated from the substrate by a black line. Hyphal system trimitic, generative hyphae with clamps, skeletal hyphae pale brown, binding hyphae hyaline. Cystidia none. Basidia clavate, with 4-sterigmate and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, hyaline, negative in Melzer's reagent. On hardwoods, causing a white rot.

Remarks – Superficially, *Donkioporia* resembles a resupinate *Phellinus* species but the clamps on the generative hyphae immediately exclude this genus. The brown tissue and clamped generative hyphae are characters also found in *Gloeophyllum*. However, *Gloeophyllum* species cause a brown rot, have cylindrical spores and most species also have cystidia (Kotlába & Pouzar 1973, Bernicchia & Gorjón 2020).

Dryodon Quél. ex P. Karst., Revue mycol., Toulouse 3(no. 9): 19, 1881.

Type species – *Hydnum coralloides* Scop., Fl. carniol., Edn 2 (Wien) 2: 472, 1772.

Remarks – A synonym of *Hericium* Pers.

Duportella Pat., Philipp. J. Sci., C, Bot. 10: 87, 1915.

Type species – *Duportella velutina* Pat., Philipp. J. Sci., C, Bot. 10(2): 87, 1915.

Basidiome resupinate, effused to effuse-reflexed, adnate, hymenophore smooth, greyish, reddish, violaceous, ochraceous or blackish. Hyphal system monomitic or dimitic, hyphae usually with clamps or some simple-septa. Cystidia of two kinds: 1) pseudocystidia, brown, apically

encrusted, 2) gloeocystidia, usually SA+. Basidia cylindrical to subclavate, with 4-sterigmata, and with a basal clamp. Basidiospores variable in shape and characteristic for species delimitation, ellipsoid to ovoid or globose, cylindrical to allantoid, smooth, thin-walled, hyaline, IKI–.

Remarks – *Duportella* is characterized by *Peniophora* s.l. by the brown encrusted pseudocystidia and by presence of skeletal or skeletoid hyphae (Andreasen & Hallenberg 2009). *Duportella* is closely related to *Peniophora* and *Dendrophora* and it is classified in the Peniophoraceae (Larsson 2007b).

Earliella Murrill, Bull. Torrey bot. Club 32(9): 478, 1905.

Type species – *Earliella cubensis* Murrill, Bull. Torrey bot. Club 32(9): 479, 1905 (= *Polyporus scabrosus* Pers., in Gaudichaud-Beaupré in Freycinet, Voy. Uranie., Bot.: 172, 1827).

Basidiome annual to biennial, resupinate, effuse-reflexed to pileate, pilear surface when present glabrous, white to cream, then with a reddish cuticle. Pore surface white to cork-coloured, pores elongated to sinuous, context white to cream. Hyphal system trimitic, generative hyphae with clamps, skeletal and binding hyphae hyaline. Cystidia none. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical to oblong ellipsoid, smooth, hyaline, negative in Melzer's reagent. Causing a white rot in hardwoods.

Remarks – *Earliella* seems close to *Trametes* Fr., sharing the trimitic hyphal system and type of rot, but differing in the resupinate basidiomes with sinuous pores.

Echinodontiellum Nakasone & S.H. He, Mycologia 109 (4): 571, 2017.

Type species – *Echinodontium japonicum* Imazeki, Japanese Journal of Botany 11: 520, 1935.

Basidiome perennial, resupinate to slightly effused-reflexed, woody hard. Hymenophore odontoid, gray to olive gray. Aculei scattered to dense, conical, rigid, brittle. Margin determined, velvety, narrow. Subiculum cinnamon or olive gray to brownish gray, woody hard, darkening in KOH. Hyphal system dimitic. Generative hyphae thin- to thick-walled, hyaline, nodose-septate, with scattered secondary simple septa. Skeletal hyphae thick-walled to subsolid, light brown. Cystidia numerous, clavate, hyaline to light brown, thick-walled, apically encrusted, blunt, embedded or slightly projected. Basidia clavate, hyaline, with 4 sterigmata and a basal clamp connection. Basidiospores ellipsoid, hyaline, thick-walled, echinulate, amyloid. Causing a white rot on living *Quercus* in Japan and China. Monotypic genus.

Remarks – *Echinodontiellum* present basidiomes that are effused to effused-reflexed, whereas they are effused-reflexed to pileate, rarely effused, in *Echinodontium*. *Echinodontiellum* has context cinnamon to olive-grey or brownish grey that darkens in KOH. In comparison, the context in *Echinodontium* species are brick red or brownish orange that turns pale brown to brown in KOH. There are no significant microscopic differences between *Echinodontiellum* and *Echinodontium*. *Echinodontiellum* occurs exclusively on *Quercus*, whereas *Echinodontium* s.str. prefers gymnosperms (Liu et al. 2017).

Echinodontium Ellis & Everh., Bull. Torrey bot. Club 27(2): 49, 1900.

Type species – *Fomes tinctorius* Ellis & Everh., Bull. Torrey bot. Club 22(7): 362, 1895.

Basidiome perennial, sessile, unguulate to conchate, or effuse-reflexed to entirely resupinate, context woody to leathery, brick red, olivaceous, or cream-colored, hymenophore distinctly aculeate to warted, sometimes almost smooth, inner tissue of teeth continuous with context. Hyphal system dimitic, with generative hyphae with clamps and secondary simple septa, thin-walled to solid and skeletal hyphae. Cystidia becoming thick-walled, dark red to hyaline, upper portion heavily encrusted, clavate to fusiform. Basidia clavate, with 4-sterigmate, and a basal clamp. Basidiospores hyaline, thick-walled, globose to ellipsoid, smooth to echinulate, strongly amyloid in Melzer's reagent.

Remarks – It is characterized by the perennial, usually pileate basidiomes with hydroid hymenophore, dimitic hyphal system with encrusted skeletocystidia, and amyloid usually echinulate basidiospores. *Echinodontium*, with other corticioid and pileate fungi, frequently cluster

together into a clade that has been circumscribed variously as the Bondarzewiaceae or the Echinodontiaceae in the Russulales (Larsson & Larsson 2003, Miller et al. 2006). In the phylogenetic tree by Liu et al. (2017), *Echinodontium*, *Amylostereum* Boidin, *Echinodontiellum* S.H. He & Nakasone, and *Larssoniporia* Y.C. Dai, Jia J. Chen & B.K. Cui are included in the Echinodontiaceae, whereas *Bondarzewia*, *Heterobasidion*, *Laurilia* Pouzar, and *Lauriliella* Nakasone & S.H. He, are in the Bondarzewiaceae; *Perplexostereum* Ryvarden & Tutka forms a distinct clade from the Echinodontiaceae and Bondarzewiaceae.

Efibula Sheng H. Wu, Acta Bot. Fennica 142: 21, 1990.

Type species – *Efibula tropica* Sheng H. Wu, Acta Bot. Fennica 142: 25, 1990.

Basidiome effused, subceraceous or ceraceous, hymenial surface usually smooth. Hyphal system monomitic, hyphae simple-septate. Subiculum composed of a thin basal layer, and a prominent medullary layer with dense or compact texture. Cystidia usually lacking. Basidia clavate, 4-sterigmate. Basidiospores ellipsoid or narrowly ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Efibula* has usually been included in *Phlebia* because of its dense contextual texture, or in *Phanerochaete* because of its simple-septate hyphae; but its relationship to the core of the two other genera seem to be distant. *Efibula* can be separated from *Phlebia* s.str. mainly by its simple-septate hyphae, but the separation from *Phanerochaete* requires more careful study. The medullary layer of *Efibula* is rather compact, all hyphae being interwoven and without a tendency to horizontal orientation. In *Phanerochaete* the subiculum usually has a somewhat loose texture, always having distinct spaces between the hyphae, which are usually straighter and horizontally oriented. *Efibula* was originally described to include two new species from Taiwan and some species formerly placed in *Phlebia* and *Phanerochaete*, characterized by simple-septate generative hyphae and dense contextual texture. Zmitrovich et al. (2006) expanded *Efibula* by transferring many acystidiate *Phanerochaete* species under this generic name. As it has been shown later (Wu et al. 2010) *Efibula* as seen by Zmitrovich et al. (2006) is polyphyletic.

Efibulella Zmitr., Folia Cryptogamica Petropolitana 6: 95, 2018.

Etymology – the generic name refers to another genus, *Efibula* Sheng H. Wu.

Type species – *Grandinia deflectens* P. Karst., Bidr. Känn. Finl. Nat. Folk 37: 239, 1882.

Basidiome of phlebioid habitus, annual, widely effused, ceraceous, hymenophore warted to smooth. Subiculum cornescent, hyaline. Hyphal system monomitic. Generative hyphae without clamp connections, hyaline, encrusted by resinous granules and deliquescent, CB–. Leptocystidia cylindrical, thin-walled. Basidia cylindrical, with central constriction, somewhat sinuous, 4-spored, simple-septate at the base. Basidiospores ellipsoid, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Efibulella* mainly differs from *Phlebia* in the simple-septate hyphae, and from species of *Phanerochaete* by the ceraceous basidiomes, with hyphae usually embedded in a gelatinous matrix and difficult to discern (Zmitrovich 2018). *Byssomerulius* is also similar but differs by the byssoid basidiomes in contrasting to the ceraceous consistency of *Efibulella*. From *Efibula*, may be separated by the presence of leptocystidia.

Elaphocephala Pouzar, Česká Mykol. 37: 206, 1983.

Type species – *Elaphocephala iocularis* Pouzar, Česká Mykol. 37(4): 206, 1983.

Basidiome resupinate, effused, gelatinous, almost invisible, white to greyish. Hyphal system monomitic, generative hyphae with simple septa, thin-walled. Cystidia cylindrical with capitate apex, not encrusted. Basidia cylindrical, with 2-3 sterigmata, with a simple basal septum. Basidiospores lobed to forked, with two large outgrowths, smooth, thin-walled, IKI–.

Remarks – *Elaphocephala* is a monotypic genus characterized by the distinct antler-like basidiospores (Pouzar 1983). Its phylogenetic relationships remain still unclear (Larsson 2007b).

Elaphroporia Z.Q. Wu & C.L. Zhao, MycoKeys 29: 88, 2018.

Type species – *Elaphroporia ailaoshanensis* Z.Q. Wu & C.L. Zhao, MycoKeys 29: 89, 2018.

Basidiomes annual, resupinate, becoming rigid and lightweight up on drying, pore surface cream to pale yellow when fresh, turning to yellow upon drying. Hyphal system monomitic, generative hyphae thick-walled bearing both clamp connections and simple septa, slightly amyloid, CB+. Cystidia and cystidioles absent. Basidia clavate, with four sterigmata and a basal clamp connection. Basidiospores ellipsoid, hyaline, thin-walled, smooth, IKI-, CB-.

Remarks – According to Wu et al. (2018), phylogeny shows that the genus *Elaphroporia* belongs to the residual polyporoid clade in the family Meruliaceae. *Elaphroporia* is closely related to *Flaviporus* and *Steccherinum*. Morphologically, *Elaphroporia* resembles *Ceriporia* Donk and *Phlebiporia* Jia J. Chen, B.K. Cui & Y.C. Dai. However, *Ceriporia* differs from *Elaphroporia* by the generative hyphae IKI-, CB-.

Emmia Zmitr., Spirin & Malysheva, Mycena 6: 33, 2006.

Type species – *Polyporus latemarginatus* Durieu & Mont., in Montagne, Syll. gen. sp. crypt. (Paris): 163, 1856.

Basidiome annual, resupinate to orbicular, soft and fragile; hymenophore bearing auxohymenium: tubular, one-layered, tubes firstly reticulate, later elongated, with thin dissepiments and large mouths, soft-waxy; trama subparallel; hyphal system monomitic; hyphae clampless, thin-walled in tubes, with thickened walls in subiculum, slightly amyloid; cystidia present as leptocystidia, thin-walled, cylindrical, naked or faintly encrusted; basidia clavate, four-spored, efibulate, with shallow medial constriction; basidiospores ellipsoid to short cylindrical, often abundant, cyanophilous, mitosporic state present in one species, of *Sporotrichum* type. Causing a white rot.

Remarks – *Emmia latemarginata* (Durieu & Mont.) Zmitr., Spirin & Malysheva has traditionally been classified in *Oxyporus* but it is strictly monomitic, while the other *Oxyporus* species have pseudodimitic structure consisting of more or less sklerified narrower hyphae. Hyphal structure brings *Emmia latemarginata* close to *Ceriporia*. According to molecular data, *Emmia latemarginata* is a member of phanerochaetoid clade and comes close to *Ceriporia* (Greslebin et al. 2004), i.e. it is rather distant from the other *Oxyporus* species.

Entomocorticium H.S. Whitney, Bandoni & Oberw., Can. J. Bot. 65(1): 96, 1987.

Type species – *Entomocorticium dendroctoni* H.S. Whitney, in Whitney, Bandoni & Oberwinkler, Can. J. Bot. 65(1): 96, 1987.

Remarks – Monotypic genus, not considered in this manual. The generic type grows in pupal chambers and larval galleries of *Dendroctonus ponderosae* (Curculionidae) on *Pinus contorta* var. *latifolia* (Whitney et al. 1987).

Eonema Redhead, Lücking & Lawrey, Mycol. Res. 113(10): 1169, 2009.

Type species – *Xenasma pyriforme* M.P. Christ., Dansk bot. Ark. 19(no. 2): 108, 1960.

Basidiome resupinate, effused, pellicular, hymenial surface smooth, whitish. Hyphal system monomitic, hyphae with simple-septa. Cystidia absent. Basidia clavate to cylindrical, with 4-sterigmata, and a simple basal septum. Basidiospores ellipsoid to pyriform, smooth, thin-walled, hyaline, IKI-.

Remarks – *Eonema* was proposed for *Athelia pyriformis* (M.P. Christ.) Jülich, a deviating species within *Athelia* living on ferns and grasses and phylogenetically related to *Dictyonema* but there is no obvious evidence of lichenization in specimens of *A. pyriformis* on fern fronds examined (Lawrey et al. 2009).

Epithele (Pat.) Pat., Essai Tax. Hyménomyc. (Lons-le-Saunier): 59, 1900.

Basionym – *Hypochnus* sect. *Epithele* Pat., N.T., Bull. Soc. Mycol. France 15: 202, 1899.

Type species – *Athelia typhae* Pers., Mycol. eur. (Erlanga) 1: 84, 1822.

Basidiome resupinate, adnate, at first orbicular, then becoming confluent, soft, white to pale yellowish white, hymenophore smooth to odontoid. Hyphal system monomitic, hyphae usually

clamped, thin-walled, richly branched. Sterile hyphal pegs present. Cystidia lacking. Hyphidia present or lacking. Basidia clavate, sometimes slightly constricted. Basidiospores ellipsoid to fusiform, smooth to rough, thin- or thick-walled, non-amyloid, slightly stained in CB.

Remarks – *Epithele* is characterized by the odontoid hymenophore formed by sterile hyphal pegs and by the large fusiform basidiospores. It is phylogenetically included in the Polyporaceae. It presents a hymenial structure comparable to those present in *Grammothele* (Larsson 2007b). See *Epithelopsis* and *Skeletohydnum* for additional comments.

Epithelopsis Jülich, Persoonia 8(4): 457, 1976.

Type species – *Epithele fulva* G. Cunn., Trans. Roy. Soc. N.Z. 83: 631, 1956.

Basidiome annual, resupinate, effused, several cm large, adnate, consistency membranaceous, context homogeneous, hymenial surface pale coloured, odontoid, with sterile hyphal pegs composed of hyaline skeletal hyphae. Hyphal system dimitic, generative hyphae hyaline, cylindrical, loosely arranged, distinct, thick-walled (at least the basal ones), with clamps, skeletal hyphae hyaline, thick-walled. Gloecystidia may be present. Basidia hyaline, clavate, 4-spored, with basal clamp. Basidiospores large, hyaline, somewhat thick-walled, strongly cyanophilous.

Remarks – *Epithelopsis* is characterized by the hyphal pegs composed by skeletal hyphae and by the thick-walled and cyanophilous basidiospores (Jülich 1976b). It differs from *Epithele* in the presence of thick-walled skeletal hyphae in the hyphal pegs, whereas *Epithele* lacks skeletal. *Skeletohydnum* is similar but it differs in the absence of cystidial elements, the presence of dendrohyphidia or paraphysoid hyphae, and in the thin-walled and acyanophilous basidiospores.

Epulorhiza R.T. Moore, Mycotaxon 29: 94, 1987.

Type species – *Rhizoctonia repens* N. Bernard, Rev. gén. Bot. 9: 31, 1904.

Remarks – A name based on the anamorphic stage of *Tulasnella* J. Schröt.

Erastia Niemelä & Kinnunen, Karstenia 45(2): 76, 2005.

Type species – *Polyporus salmonicolor* Berk. & M.A. Curtis, Hooker's J. Bot. Kew Gard. Misc. 1: 104, 1849.

Basidiome annual, effused, poroid, soft, pale salmon colored, when dry discolored but not turning dark purple-red in bruised parts or elsewhere, KOH reaction almost null at pore surface, or light cherry red in ochraceous-colored mycelium of basidiocarp margins and subiculum. Hyphal system monomitic, hyphae thin-walled, with clamp connections, weakly amyloid in tube trama, acyanophilous. Brown oily matter abundant in between the hyphae. Cystidia none. Basidia clavate, with 4-sterigmate, with a basal clamp. Basidiospores thin-walled, ellipsoid, negative in both Melzer's reagent and Cotton Blue, with one prominent oil guttula.

Remarks – Ko et al. (2001) studied phylogenetic relationships among the *Hapalopilus* complex and they found that *Hapalopilus salmonicolor* is in fact alien to the genus, while *H. rutilans* and *H. croceus* are closely related. They proposed *Hapalopilus salmonicolor* to be included in the genus *Sarcoporia*. Niemelä et al (2005) found this proposal unacceptable and proposed the genus *Erastia*. The generic type of *Erastia*, *Polyporus salmonicolor*, is an American species, and in the sense given by European authors, the specimens previously identified as *Hapalopilus salmonicolor* sensu European authors, is heterogeneous and they belong to three different species: *Aurantiporus priscus*, *E. aurantiaca*, and *E. ochraceolateritia*. For further comments see Niemelä et al. (2012).

Erythricium J. Erikss. & Hjortstam, Svensk bot. Tidskr. 64: 165, 1970.

Type species – *Hyphoderma laetum* P. Karst., Revue mycol., Toulouse 11(47): 206, 1889.

Basidiome resupinate, loosely adnate, hymenophore smooth, reddish, or pinkish red when fresh. Hyphal system monomitic, hyphae simple-septate, thin- to thick-walled in the subiculum, usually short-celled. Cystidia absent. Basidia clavate, constricted and sinuous, with 4-sterigmata, and a simple septum at the base. Basidiospores ellipsoid, smooth, thick-walled, IKI-, cyanophilous.

Remarks – *Erythricium* is usually well recognized by the reddish colour of the basidiome; microscopically it reminds *Phanerochate* by the simple-septate hyphae, but differing in the short-celled hyphae, constricted basidia and by the thick-walled and cyanophilous basidiospores (Eriksson & Hjortstam 1970, Ghobad-Nejhad & Hallenberg 2010). Phylogenetically it is classified close to *Laetisaria* in the Corticiaceae (Larsson 2007b).

Erythromyces Hjortstam & Ryvarde, in Hjortstam & Telleria, Mycotaxon 37: 55, 1990.

Type species – *Hymenochaete crocicreas* Berk. & Broome, J. Linn. Soc., Bot. 14(no. 74): 68, 1873.

Basidiome resupinate, adnate, about 1-2 mm thick, hymenophore pilose by protruding cystidia, cinnamon brown to fawn-colored. Hyphal system monomitic, hyphae thin to moderately thick-walled or thick-walled, with clamps. Cystidia numerous, thick-walled, subulate, yellowish brown to reddish, ordinarily 100 µm long. Basidia clavate, more or less pedunculate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to narrowly ellipsoid, thin-walled, smooth, IKI–.

Remarks – The noteworthy unique combination of a reddish and strongly pilose hymenophore and numerous, thick-walled encrusted cystidia characterize this genus. Other characteristics of importance are the monomitic hyphal system with clamped hyphae, hyaline and thin-walled spores and that the fungus produce a white pocket rot. Monotypic genus (Hjortstam & Telleria 1990).

Etheiroduon Banker, Bull. Torrey Bot. Club 29: 441, 1902.

Type species – *Odontia fimbriata* Pers., Observ. mycol. (Lipsiae) 1: 88, 1796.

Remarks – Proposed as a substitute for *Odontia* Fr. and a synonym of *Steccherinum* S.F. Gray.

Fasciodontia Yurchenko & Riebesehl, Mycol. Progress 19: 178, 2020.

Type species – *Odontia bugellensis* Ces. in Rabenhorst, Klotzschii Herb.Viv.Mycol. no. 1915, 1855.

Basidiome resupinate, effused, membranaceous, cracking with age, margin thinning out, rarely abrupt. Hymenial surface minutely odontoid, whitish or cream-colored; aculei sterile except bases and consisting of projecting hyphae. Hyphal system pseudodimitic, hyphae clamped at all primary septa, colorless in water, slightly yellowish in mass in KOH, moderately cyanophilous, negative in Melzer's reagent; skeletal-like thick-walled hyphae present in basal subhymenium and in aculeal trama; skeletal-like hyphae in aculei loosely encrusted, apically thin-walled, partly agglutinated with age. Cystidia from cylindrical to slightly moniliform and capitate. Basidia utriform to subcylindrical, with two slight constrictions, thin-walled or slightly thick-walled in lower part, with four-sterigmata, basally clamped. Basidiospores ellipsoid, smooth, with thickened or thick walls (about 0.2–0.3µm thick), colorless, IKI–, slightly to moderately cyanophilous.

Remarks – The main diagnostic features of the genus are minutely odontoid hymenophore, presence of thick-walled skeletal-like or sclerified hyphae, associated with aculeal trama, submoniliform cystidia, which are from seldom to numerous, confined mostly to the base of aculei, and thick-walled basidiospores. *Xylodon* is the closest genus to *Fasciodontia* in both morphological and molecular aspects (Yurchenko et al. 2020).

Fibriciellum J. Erikss. & Ryvarde

Type species – *Fibriciellum silvae-ryae* J. Erikss. & Ryvarde, Cortic. N. Eur., 3: 375, 1975.

Remarks – A synonym of *Trechispora* P. Karst.

Fibricium J. Erikss., Symb. bot. upsal. 16(1): 112, 1958.

Type species – *Corticium rude* P. Karst., Bidr. Känn. Finl. Nat. Folk 37: 143, 1882.

Basidiome resupinate, effused, hymenophore smooth, margin rhizomorphic. Hyphal system dimitic, generative hyphae clamped, skeletal hyphae thick-walled, acyanophilous. Cystidia usually present, encrusted or smooth. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Fibricium* is characterized by the dimitic hyphal system, the usual presence of cystidia and by the small thin-walled basidiospores. According to molecular data, it is polyphyletic and its relationships with other genera are still unclear. The type species, *Fibricium rude* belongs to the Hymenochaetales (Larsson et al. 2006, Larsson 2007b).

Fibrodontia Parmasto, Consp. System. Corticiac. (Tartu): 174, 1968.

Type species – *Fibrodontia gossypina* Parmasto, Consp. System. Corticiac. (Tartu): 207, 1968 (= *Cystidi dendron fimbriatum* Rick, Lilloa 9: 218, 1943).

Basidiome resupinate, easily detached in pieces, effused, adnate, hymenophore odontoid with cylindrical aculei. Hyphal system pseudodimitic, all hyphae with clamps, pseudoskeletal hyphae thick-walled. Cystidia absent. Basidia clavate to suburniform, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Fibrodontia* is characterized by the odontoid hymenophore, and dimitic or pseudodimitic hyphal system. *Fibrodontia gossypina* belongs to the trechisporoid clade close to other *Trechispora* species. Although morphologically it looks similar to *Hyphodontia* species, phylogenetically it seems not to be very closely related (Binder et al. 2005, Larsson 2007b). Baltazar et al. (2016) checked *Cystidi dendron fimbriatum* Rick and concluded it is conspecific with *Fibrodontia gossypina* Parmasto. See also comments under *Cystidi dendron* Rick.

Fibroporia Parmasto, Consp. System. Corticiac. (Tartu): 176, 1968.

Type species – *Boletus vaillantii* DC., in De Candolle & Lamarck, Fl. franç., Edn 3 (Paris) 5/6: 38, 1815.

Basidiome annual, resupinate, often widely effused, soft-fibrous, margin often wide with rhizomorphs. Pores circular to angular, subiculum soft and cottony. Hyphal system dimitic, generative hyphae with clamps, hyaline, thin-walled, skeletal hyphae predominant in context and rhizomorphs, solid to thick-walled, hyaline, non-septate, straight, and unbranched, rarely dichotomously branched, negative in Melzer's reagent. Cystidia none, fusoid cystidiols may be present. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores ellipsoid, hyaline, smooth, negative in Melzer's reagent. Causing a brown cubical rot.

Remarks – The genus is morphologically similar to *Antrodia*, but the presence of a rhizomorphic margin separate both genera. Phylogenetic analysis supports this separation (Bernicchia et al. 2012, Bernicchia & Gorjón 2020, Rajchenberg et al. 2011).

Fibulomyces Jülich, Willdenowia Beih. 7: 178, 1972.

Type species – *Corticium mutabile* Bres., Fung. Trident. 2(11-13): 59, 1898.

Remarks – A synonym of *Leptosporomyces* Jülich.

Fibuloporia Bondartsev & Singer ex Singer, Mycologia 36: 67, 1944.

Type species – *Boletus molluscus* Pers., Syn. meth. fung. (Göttingen) 2: 547, 1801.

Remarks – A synonym of *Trechispora* P. Karst.

Flavidoporia Audet, Mushrooms nomenclatural novelties 4: 1, 2017.

Type species – *Poria pulvinascens* Pilát, Sb. Nár. Mus. v Praze, Rada B, Prír. Vedy 9(2): 106, 1953.

Remarks – According to Audet (2017d), *Flavidoporia* differs from *Antrodia* s.str. by basidiomata annual to perennial, resupinate to pseudopileate, without context, yellowish pores, smaller basidia, absence of hyphidia or false skeletocystidia, and smaller oblong to ellipsoid basidiospores.

Flaviporus Murrill, Bull. Torrey bot. Club 32(7): 360, 1905.

Type species – *Polyporus rufoflavus* Berk. & M.A. Curtis, Bot. J. Linn. Soc. 10: 310, 1869 (= *Boletus brownii* Humb. [as 'browni'], Fl. Friberg. Spec. (Berlin): 101, 1793)

Basidiome effused reflexed to resupinate, annual; pileus when present dark brown to bay, glabrous. Pore surface vivid chrome yellow, pores tiny, almost invisible to the naked eye, tubes concolorous; context thin and yellow. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae abundant. Skeletocystidia, with densely encrusted apex. Basidia clavate, with 4-sterigmate, with a basal clamp. Basidiospores ellipsoid, smooth, negative in Melzer's reagent, shorter than 5 µm. Causing a white rot.

Remarks – The genus is morphologically related to poroid species of *Steccherinum*, separated only by the vivid yellow pore surface (Bernicchia & Gorjón 2020).

Flavodon Ryvar den, Norwegian J. Botany, 20: 3, 1973.

Type species – *Irpex flavus* Klotzsch, Linnaea 8: 488, 1833.

Basidiome annual, resupinate to pileate, reddish to brown with KOH, pileus adpressed tomentose, yellowish to ochraceous-grey, hymenophore first poroid, then hydroid to irpicoid, context bright sulphurous yellow (colour fades to cinnamon or ochraceous in old or herbarium specimens). Hyphal system dimitic, generative hyphae with simple septa, skeletal hyphae thick-walled and partly bent into the hymenium as smooth or encrusted cystidia, spores broadly ellipsoid, smooth, hyaline and non-amyloid. On deciduous wood, Monotypic genus.

Remarks – Often considered a synonym of *Irpex* Fr. but separated by some authors by its yellowish color and the reddish reaction with KOH. According to Ryvar den (1973) it must be regarded as a tropical counterpart to the temperate-boreal genus *Irpex* s.str.

Flavophlebia (Parmasto) K.H. Larss. & Hjortstam, Mycotaxon 5: 475, 1977.

Basionym – *Phlebia* Fr. subgen. *Lilaceophlebia* Parmasto sectio *Flavophlebia* Parmasto, Consp. System. Corticiac. (Tartu): 94, 1968.

Type species – *Corticium sulphureoisabellinum* Litsch., Sb. nár. Muz. Praze, B 2(3): 43, 1940.

Basidiome resupinate, effused, at first thin, thickening with age, ceraceous, continuous, cracking with age, hymenophore smooth, margin indistinctly thinning out. Hyphal system monomitic, hyphae with clamps, mostly indistinct, thin-walled. Cystidia cylindrical to subfusiform, thin-walled, usually enclosed. Basidia terminal, slightly stalked, with a basal clamp, usually with 4-sterigmata. Basidiospores oblong, subglobose or globose with sublateral apiculus, smooth, IKI–, CB–.

Remarks – *Flavophlebia* is easily recognized by its yellowish basidiome, clavate basidia, and by its subglobose, oil rich basidiospores with distinct, sublateral apiculus. Spore morphology reminds those of *Radulomyces confluens*, even if they are not closely related (Hjortstam & Larsson 1977). Phylogenetic relationships of *Flavophlebia* are still unclear (Larsson 2007b).

Fragiliporia Y.C. Dai, B.K. Cui & C.L. Zhao, Fungal Diversity 70: 121, 2015.

Type species – *Fragiliporia fragilis* Y.C. Dai, B.K. Cui & C.L. Zhao, Fungal Diversity 70: 121, 2015.

Basidiome resupinate, very soft when fresh, becoming brittle when dry (become almost powdery when bruised). Hymenophore poroid, pore surface greyish-buff to lavender when fresh, turning violaceous grey to greyish brown upon drying, margin fimbriate. Subiculum orange yellow. Hyphal system monomitic, generative hyphae with clamps, thick-walled, hyphae frequently branched from clamps connections, hyphae encrusted with crystals. Cystidia absent. Basidia clavate to pyriform, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Fragiliporia* according to authors forms an independent family, Fragiliporiaceae Y.C. Dai, B.K. Cui & C.L. Zhao, in a monophyletic group within Polyporales. Particular characters

are resupinate basidiomes with very soft tubes when fresh, which become brittle when dry (becoming almost powdery when bruised), a monomitic hyphal system with thick-walled generative hyphae, clamp connections, and frequently H-, W- or Y-shaped hyphae branching from the clamp connections (Zhao et al. 2015). It seems macro and micro morphologically related to *Bjerkandera* because the violaceous to greyish-black poroid surface and the thick-walled generative hyphae.

Frantisekia Spirin & Zmitr., Czech Mycology 59 (2): 142, 2007.

Type species – *Poria fissiliformis* Pilát, Studia bot. cechosl.: 1, 1940.

Basidiome annual, pileate, effused-reflexed or resupinate, cream to pale ochraceous, and fleshy in fresh condition, often darkening and fragile when dry. Hymenophore poroid, tubes strongly agglutinated in herbarium specimens; pores small, 6–10 per mm. Hyphal structure pseudodimitic; generative hyphae clamped, hyaline or yellowish, thin- to somewhat thick-walled, pseudoskeletal hyphae present in context and (or) tubes, thick-walled, with rare clamps and septa, even or inflated, often weakly cyanophilous. No cystidia; cystidioles sometimes present. Basidia narrowly clavate, four-spored, clamped; basidiospores thin-walled, oblong ellipsoid to cylindrical, negative in both Melzer's reagent and Cotton Blue. Causing a white rot in dead hardwoods.

Remarks – The best diagnostic characters of *Frantisekia* are the pseudodimitic hyphal structure, narrowly clavate basidia, and small spores. Relatives of *Frantisekia* might be found among *Ceriporiopsis* species, with which it shares fleshy resupinate basidiomes, agglutinated tubes, the predominance of thin-walled generative hyphae and the type of rot. However, the genus *Ceriporiopsis* is evidently heterogeneous (Zmitrovich et al. 2006; Tomšovský et al. 2010) and needs to be split into small homogeneous genera (Spirin & Zmitrovich 2007).

Funalia Pat., Essai Tax. Hyménomyc. (Lons-le-Saunier): 95, 1900.

Type species – *Polyporus mons-veneris* Jungh., Verh. Batav. Genootsch. Kunst. Wet. 17(2): 61, 1838; = *Polyporus leoninus* Klotzsch, in Dietrich, Fl. Regn. Boruss. 7: 459, 1839.

Basidiome annual, pileate and broadly attached, mostly single, semicircular to elongated, pileus densely hirsute, pure white when fresh, straw-colored when dry or old, pore surface concolorous with pileus, pores angular, 1-2 per mm or larger in old specimens, with age strongly lacerate in the dissepiments, context dense and brown to dark brown. Hyphal system trimitic, generative hyphae with clamps, hyaline skeletal and binding hyphae, cystidia none, spores cylindrical, smooth and hyaline 10-14 µm long. On deciduous wood.

Remarks – According to the molecular phylogeny of *Trametes* by Justo & Hibbet (2011), the genera *Artolenzites* Falck, *Coriolopsis* Murrill (the generic type), *Coriolus* Quéél., *Cubamyces* Murrill, *Cyclomycetella* Murrill, *Lenzites* Fr., *Poronidulus* Murrill, *Pseudotrametes* Bondartsev & Singer, and *Pycnoporus* P. Karst. are considered synonyms of *Trametes*, recommending the use of a single generic name *Trametes* for the trametoid clade as the best taxonomic and nomenclatural option to avoid many nomenclatural changes against the alternative scenarios dividing the trametoid clade in five or ten different genera. Out of the trametoid clade is recovered *Trametopsis cervina* (Schwein.) Tomšovský in the phlebioid clade and *Coriolopsis trogii* (Berk.) Domański outside the trametoid clade, closely related to *Coriolopsis gallica* (Fr.) Ryvarden. The name *Funalia* Pat. could be adopted for the *C. gallica* group, but no molecular data are available for the type species of *Funalia*, viz. *Polyporus mons-veneris* Jungh. Morphological characters of *Polyporus mons-veneris*, especially the spore length above 10 µm and the strigose suggest a relationship with the *C. gallica* group (Justo & Hibbet 2011). *Funalia* can be separated in morphology from *Trametes* by dark context composed of coloured vegetative hyphae, the dense and thick mat of strigose hairs on the pileus and the lacerate pore mouths with age.

Galzinia Bourdot, Compt. Rend. Assoc. Franç. Avancem. Sci. 45: 577, 1922.

Type species – *Galzinia pedicellata* Bourdot, Compt. Rend. Assoc. Franç. Avancem. Sci. 45: 577, 1922.

Basidiome resupinate, adnate, effused, membranaceous to ceraceous, pruinose when dry, hymenophore smooth, margin indeterminate. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Cystidia (leptocystidia) present or lacking. Basidia cylindrical to urniform, with 4-sterigmata and with a basal clamp, new basidia are occasionally produced by internal repetition. Basidiospores ellipsoid, cylindrical to allantoid, smooth, thin-walled, non-amyloid.

Remarks – *Galzinia* is morphologically defined by the curved basidiospores and by the urniform basidia with 4-sterigmata. *Athelopsis* differs by the pedunculate basidia and usually smaller basidiospores and *Sistotrema* by different spore morphology and hyphae usually with many oily contents. Phylogenetically *Galzinia* is included in the Corticiaceae (Larsson 2007b).

Galziniella Parmasto, Consp. System. Corticiac. (Tartu): 39, 1968.

Type species – *Galziniella pereximia* Parmasto, Consp. System. Corticiac. (Tartu): 209, 1968. (= *Gloeocystidium sernanderi* Litsch., Svensk bot. Tidskr. 25(3): 437, 1931).

Remarks – A synonym of *Sistotrema* Fr.

Geesterania Westph., Tomšovský & Rajchenb., Persoonia 41: 134, 2018.

Type species – *Poria carneola* Bres., Hedwigia 35: 282, 1896.

Basidiome resupinate, adnate, becoming reddish when bruised and/or upon drying, soft to fleshy when fresh, becoming harder and somewhat waxy when dried. Hymenophore poroid; pores regular to irregular, round to angular. Hyphal system dimitic, generative hyphae clamped, skeletal hyphae metachromatic, hyphae IKI–. Skeletocystidia present in the trama and dissepiments, cylindrical to clavate, incrustated at the apex with thin crystals, usually very long and appearing as skeletal hyphae ends, metachromatic, IKI–. Basidiospores ellipsoid to sub-cylindrical, hyaline, smooth, IKI–.

Remarks – *Geesterania* is characterized by resupinate, somewhat fleshy basidiomes, typically becoming reddish when bruised or dried. The color change is variable, and in some basidiomes only some reddish spots appear while others become pale reddish-brown to flesh colored throughout. Microscopically, the very long finely incrustated (skeleto) cystidia are typical. In the trama, the cystidia are usually markedly thick-walled and long, arising from skeletal hyphae that slowly increase in diameter. For that reason, the distinction between skeletal hyphae and cystidia sometimes is not clear and the cystidia may be interpreted as wide incrustated skeletal hyphae ends. In addition, the skeletal hyphae and cystidia are metachromatic, while the generative hyphae, hymenium and basidiospores are non-metachromatic in Cresyl Violet. *Geesterania* differs from other polypore genera exactly by this combination of characteristics, which is unique and unknown in other poroid fungi. Phylogenetically, the closest related polypore species known is *Phlebioporia bubalina* (Chen & Cui 2013) but, morphologically, it substantially differs by presenting a monomitic hyphal system with simple septate dextrinoid hyphae and lack of cystidia. The recently described genus and species *Luteoporia albomarginata* (Wu et al. 2016) is also phylogenetically related to *Geesterania*, presenting similar resupinate basidiomes with the presence of cystidia-like structures. However, *Luteoporia* differs in being monomitic, turning red in contact with KOH, and having differently shaped thin-walled cystidia (Westphalen et al. 2018).

Gelatoporia Niemelä, Karstenia 25(1): 22, 1985

Type species – *Poria subvermispora* Pilát, Stud. Bot. Čechoslov. 3: 2, 1940.

Basidiome annual, resupinate, light-colored; tubes soft and hygrophanous when fresh. Hyphal system monomitic; hyphae with thin or slightly and evenly thickened walls but lacking solid side branches or other differentiated hyphal types, hyaline, with clamp connections, CRB+, glued together into a gelatinized structure in dry tube dissepiments, adjacent subiculum or both; dissepiment structure often layered with special medullary hyphae; hymenial cystidia absent, but bottle-shaped cystidioles some-times present; spores cylindrical, IKI–, CB–. Causing white rot on both coniferous and deciduous trees.

Remarks – *Gelatoporia* includes resupinate polypores with a monomitic hyphal structure causing a white rot. Hyphae are generally glued together into a gelatinized matrix in a dry tube dissepiment and or in the subiculum. *Gelatoporia* is phylogenetically related to *Obba* and *Cinereomyces*, see Miettinen & Rajchenberg (2012).

Ginnsia Sheng H. Wu & Hallenb., in Wu, Nilsson, Chen, Yu & Hallenberg, Fungal Diversity 42(1): 114, 2010.

Type species – *Thelephora viticola* Schwein.: Fr., Schrift. Naturforsch. Gesellsch. (Leipzig) 1: 107. 1822

Basidiome resupinate, pellicular-membranaceous. Hymenial surface smooth. Hyphal system monomitic, hyphae simple-septate. Cystidia present. Basidia clavate with stalked bases, 4-sterigmate, and guttulate. Basidiospores ellipsoid, smooth, thin-walled, guttulate, inamyloid, non-dextrinoid

Remarks – *Ginnsia* was erected to accommodate *Thelephora viticola*, a deviating species formerly classified in *Phanerochaete*. *Ginnsia* has guttulate basidia with stalked bases, big and usually bearing one prominent oil-drop basidiospores, and fairly narrow subicular hyphae chiefly vertical. In addition to these unusual characters within *Phanerochaete*, *Thelephora viticola* is phylogenetically assigned to the Hymenochaetales (Wu et al. 2010).

Globuliciopsis Hjortstam & Ryvarde, Synopsis Fungorum 18: 22, 2004.

Type species – *Globuliciopsis fuegiana* Hjortstam & Ryvarde, Synopsis Fungorum 18: 24, 2004.

Basidiome resupinate, fairly thick, closely adnate, slightly stratified, pale brown, hymenophore smooth, subiculum compact, brownish. Hyphal system monomitic, subicular hyphae thin or moderately thick-walled, short-celled, other hyphae thin-walled, straight, hyphae hyaline, originally erroneously described without clamps but the original drawing of the type species showing clamps. Cystidia absent, but with hyphal ends and dendrohyphidia. Basidia terminal, arranged in a relatively loose palisade, up to 100 µm long with two or sometimes three to four sterigmata. Basidiospores almost globose, smooth, hyaline, with a slight wall thickening, inamyloid, indextrinoid, slightly cyanophilous.

Remarks – *Globuliciopsis* was originally described with a monomitic hyphal system and erroneously without clamps, even if the type species, *G. fuegiana* has clamp connections as it was showed in the original drawing (Hjortstam & Ryvarde 2004c). Later, *Globuliciopsis lindbladii* Hjortstam & Ryvarde, was added to *Globuliciopsis* (Hjortstam & Ryvarde 2007); this species is superficially similar to *G. fuegiana* but differing in a ditrititic hyphal system, generative hyphae lacking clamp connections, and possessing SA– gloecystidia. According to Karl-Henrik Larsson who examined the type, *G. lindbladii* is conspecific to *Licrostoma subgiganteum* (comm. pers.).

Globulicium Hjortstam, Svensk bot. Tidskr. 67: 108, 1973.

Type species – *Corticium hiemale* Laurila, Ann. bot. Soc. Zool.-Bot. fenn. Vanamo 10(4): 4, 1939.

Basidiome resupinate, adnate, at first orbicular, then effused, ceraceous, hymenophore smooth, margin indeterminate. Hyphal system monomitic, generative hyphae with clamps, thin-walled, and richly branched. Cystidia absent, paraphysoid hyphae present, some encrusted. Basidia clavate to cylindrical, constricted, with 4-sterigmata, and a basal clamp. Basidiospores globose, smooth, thin-walled, IKI–.

Remarks – *Globulicium* reminds in some respects *Hyphoderma*, differing by the globose basidiospores and the encrusted paraphysoid hyphae, and *Radulomyces*, but basidiospores in *Globulicium* are considerably larger and thin-walled. Phylogenetic relationships of *Globulicium* are unclear, it belongs to the *Rickenella* family that includes a mixture of basidiome morphologies (Larsson 2007b).

Gloeocorticium Hjortstam & Ryvarde, Mycotaxon 25: 551, 1986.

Type species – *Gloeocorticium cinerascens* Hjortstam & Ryvarde, Mycotaxon 25: 551, 1986.

Basidiome resupinate, effuse, adnate, hymenophore odontoid. Hyphal system monomitic to dimitic with thick-walled long-celled hyphae in the core of the aculei, hyphae with clamps, IKI–. Gloeocystidia moniliform, thin-walled, distinctly amyloid. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores subglobose, smooth, thick-walled, IKI–, CB–, with a distinct apiculus placed laterally.

Remarks – *Gloeocorticium* is characterized by the moniliform and amyloid gloeocystidia and the thick-walled with an apiculus laterally placed. According to Hjortstam & Ryvarde (1986) it has similar characters to those of *Radulomyces* by the spores with a lateral apiculus and basidia. It was created for a species from North Argentina (Iguazu).

Gloeocystidiellum Donk, Medded. Nedl. Mycol. Ver. 18-20: 156, 1931, em. Donk, Fungus 26: 8, 1956.

Type species – *Corticium porosum* Berk. & M.A. Curtis, Ann. Mag. nat. Hist., Ser. 5 3(15): 211, 1879.

Basidiome resupinate, effuse, membranaceous or ceraceous, hymenophore smooth, rarely grandinioid or odontoid. Hyphal system monomitic, hyphae with clamps or simple-septate. Gloeocystidia present, usually SA+. Basidia clavate, with 4-sterigmata. Basidiospores suballantoid, ellipsoid, subglobose or globose, verrucose or aculeate (seemingly smooth in KOH), thin-walled, amyloid, CB–.

Remarks – *Gloeocystidiellum* was proposed by Donk (1931) for the misapplied *Gloeocystidium* P. Karst., afterwards emended to include monomitic species, with euhymenium, gloeocystidia and amyloid basidiospores (Donk 1956). The genus as above defined was regarded as heterogeneous, but useful for delimit a wide number of species. Eriksson & Ryvarde (1975) subdivided *Gloeocystidiellum* into seven groups on the basis of basidiome texture, hyphal septation, cyanophily of hyphae, sulfoaldehyde reaction of gloeocystidia, basidiospores shape and nature of the spore wall. At the present time *Gloeocystidiellum* s.l. and the seven groups proposed by Eriksson & Ryvarde (1975) are reorganized as follow: *Boidinia* (*G. furfuraceum* group), *Conferticium* (*G. ochraceum* group), *Gloeocystidiellum* (*G. porosum* group), *Gloeopeniophorella* (*G. convolvens* group), *Gloiothele* (*G. lactescens* group), *Megalocystidium* (*G. luridum* group), *Vesiculomyces* (*G. citrinum* group). In addition, Wu (1995, 1996) described other closely related genera: *Amylofungus* with amyloid hyphae, gloeocystidia, basidia and basidiospores; *Dextrinocystidium* with dextrinoid lamprocystidia (synonym of *Gloeopeniophorella* according to Hjortstam & Ryvarde 2007); and *Gloeomyces*, with a distinct dimitic hyphal system and with brownish binding hyphae. For further comments and keys to resupinate corticioids with gloeocystidia and amyloid basidiospores see Wu *l.c.* and Boidin et al. (1997a).

Gloeocystidiopsis Jülich, Int. J. Mycol. Lichenol. 1: 27, 1982.

Type species – *Gloeocystidiellum flammeum* Boidin, Cahiers de La Maboké 4(3): 7, 1966.

Basidiome resupinate, effuse, membranaceous to subgelatinous, hymenophore smooth, pale to orange coloured. Hyphal system monomitic, hyphae with simple-septate. Gloeocystidia present, SA+. Basidia clavate, with 4-sterigmata. Basidiospores ellipsoid, verrucose, thin-walled, strongly amyloid, CB–.

Remarks – It differs morphologically from *Gloeocystidiellum* Donk in the simple-septate hyphae and by the holocoenocytic mycelium. binucleate in *Gloeocystidiellum* (Jülich 1982). The separation is phylogenetically supported (Larsson & Larsson 2003).

Gloeocystidium P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 429, 1889.

Type species – *Grandinia exsudans* P. Karst., Meddn Soc. Fauna Flora fenn. 9: 51, 1882.

Remarks – A synonym of *Dacryobolus* Fr.

Gloeodontia Boidin, Cahiers de La Maboké 4: 22, 1966.

Type species – *Irpex discolor* Berk. & M.A. Curtis, Grevillea 1(3): 45, 1872.

Basidiome resupinate, effused, adnate, hymenophore hydroid, subiculum well developed. Hyphal system monomitic or dimitic, generative hyphae with clamps, thin-walled or with slight thickened walls, skeletal hyphae rarely branched, aseptate or with rare septa, thick-walled. Cystidia (pseudocystidia) arising in tooth trama, cylindrical, heavily encrusted with hyaline crystals. Gloeocystidia scattered in tooth trama, frequent in hymenium, blue to blue-black in sulfuric benzaldehyde. Halocystidia present in one species. Basidia cylindrical to urniform, with 4-sterigmata, with a basal clamp. Basidiospores hyaline to pale yellow under the microscope, thick-walled, asperulate, amyloid.

Remarks – *Gloeodontia* is morphologically defined by the hydroid hymenophore, gloeocystidia, encrusted pseudocystidia, and by the amyloid asperulate basidiospores. *Gloeodontia* forms a well-defined group within the russuloid lineage (Larsson 2007b).

Gloeohypochnicium (Parmasto) Hjortstam, Mycotaxon 28: 30, 1987.

Basionym – *Hypochnicium* subgen. *Gloeohypochnicium* Parmasto, Consp. System. Corticiac. (Tartu): 116, 1968.

Type species – *Gloeocystidium analogum* Bourdot & Galzin, Bull. Soc. mycol. Fr. 28(4): 36, 1913.

Basidiome resupinate, adnate, effused, hymenophore smooth to tuberculate, margin indeterminate. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Gloeocystidia present, SA+. Basidia cylindrical to narrowly clavate, usually constricted, with a basal clamp, with 4-sterigmata. Basidiospores ellipsoid to globose, distinctly thick-walled, warted, IKI–, cyanophilous.

Remarks – *Gloeohypochnicium* is separated from *Hypochnicium* on the basis of the sulfopositive gloeocystidia, the ornamentation of basidiospores, and the swelling of the spore wall (Hjortstam 1987b). Phylogenetically the relationships of *Gloeohypochnicium* remain still unclear (Larsson 2007b).

Gloeomyces Sheng H. Wu, Mycotaxon 58: 47, 1996.

Type species – *Gloeomyces graminicola* Sheng H. Wu, Mycotaxon 58: 49, 1996.

Basidiome resupinate, effuse, membranous. Hyphal system dimitic, generative hyphae simple-septate, binding hyphae sparsely distributed in subiculum, yellow or brown. Gloeocystidia numerous, moniliform, slightly SA+. Basidia utriform, with 4-sterigmata, with a simple basal septum. Basidiospores ellipsoid, smooth, thin-walled, amyloid, CB–.

Remarks – *Gloeomyces* is characterized among *Gloeocystidiellum* s.l. by the dimitic hyphal system with binding hyphae in the subiculum (Wu 1996).

Gloeopeniophora Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 116: 815, 1907.

Type species – *Thelephora incarnata* Pers., Syn. meth. fung. (Göttingen) 2: 573, 1801.

Remarks – A synonym of *Peniophora* Cooke.

Gloeopeniophorella Rick, Brotéria, sér. Ci. Nat. 3: 47, 173, 1934.

Type species – *Gloeopeniophorella rubroflava* Rick, Brotéria, sér. Ci. Nat. 3: 47, 1934.

Basidiome resupinate, effused, adnate. Hymenophore almost smooth to slightly tuberculate, usually ochraceous. Hyphal system monomitic, hyphae hyaline, thin-walled or with a slight thickened wall, simple-septate. Cystidia of two kind: 1) lamprocystidia numerous, hyaline, moderately thick-walled, without dextrinoid reaction (see also *Dextrinocystidium* for a similar genus with dextrinoid lamprocystidia), 2) gloeocystidia few to numerous, thin-walled, with or without positive sulphovanillin reaction. Basidia narrowly clavate, with 4-sterigmata, without a

basal clamp-connection. Basidiospores more or less ellipsoid, distinctly rugose in Melzer's reagent, seemingly smooth in KOH, amyloid.

Remarks – *Gloeopeniophorella* is characterized among the *Gloeocystidiellum* s.l. by the presence of lamprocystidia. *Dextrinocystidium* is a similar genus with dextrinoid lamprocystidia, and a synonym according to Hjortstam & Ryvarde (2007). It belongs to the Russulaceae, closely related to *Boidinia* (Larsson 2007b).

Gloeophyllum P. Karst., Bidr. Känn. Finl. Nat. Folk 37: 79, 1882.

Type species – *Agaricus sepiarius* Wulfen, in Jacquin, Collnea bot. 1(2): 339, 1787.

Basidiome annual to perennial, sessile, pileate, dimidiate to broadly attached or rosette shaped, brown, pileus smooth, tomentose to hispid, hymenophore irregular, distinctly lamellate to daedaleoid, golden to deep brown, hyphal system di- or trimitic, generative hyphae with clamps, skeletal hyphae golden-brown, dominating in the fruitbodies, binding hyphae rare to common, cystidia mostly present, thick to thin-walled, smooth or with a slight apical encrustation, basidiospores cylindrical, smooth, hyaline and non-amyloid. Causing a brown rot.

Remarks – *Gloeophyllum* is closely related to *Funalia*, sharing with this genus the coloured skeletal hyphae, cylindrical, smooth, non-amyloid and moderately large spores and clamped generative hyphae. The cathymenium found in *Gloeophyllum* is however, absent in most *Funalia* species which also have a poroid hymenophore. Recently, He et al. (2014) proposed a phylogeny supporting the separation of *Gloeophyllum* s.l. in smaller entities, establishing differences between *Gloeophyllum* s.str., and *Griseoporia* Ginns (with typically poroid hymenophore and resupinate to effuse-reflexed basidiomes), *Osmoporus* Singer (poroid hymenophore and pileate basidiomes), and *Hispidaedalea* Y.C. Dai & S.H. He (daedaleoid to lamellate hymenophore, pileate basidiomes, and trimitic hyphal system).

Gloeoporellus Zmitr., Folia Cryptogamica Petropolitana 6: 85, 2018.

Type species – *Polyporus merulinus* Berk., in Hooker, Bot. Antarct. Voy., III, Fl. Tasman. 2: 254, 1860.

Basidiome resupinate, of tyromycetoid to ceriporioid habitus with narrow matted pilei or totally prostrate and apricot to carmine red coloration; hymenophore poroid with 2–3-layered elongated pores, cornescent, carmine red. Context apricot, ceraceous. Hyphal system dimitic. Generative hyphae clamped, hyaline. Skeleto-binding hyphae regularly branched, thick-walled, pigmented, CB+. Binding hyphae that in the context are dicophyses-like to arboriform or arachnoid in aspect; these dicophysal elements are present in the dissepiments and the tubes only when the hymenium becomes old. All the basidiome filled with an oily-like resinous substance responsible for the basidiome coloration. Cystidia none, but some cystidiols may be present. Basidia short-clavate, 4-spored with a basal clamp. Basidiospores cylindrical to allantoid, smooth, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Polyporus merulinus* has an austral distribution (Australia, New Zealand, Tasmania, and South Argentina and Chile). There is a good description and drawing in Rajchenberg (2006). He considers the species under *Ceriporiopsis* but noted the unique features among polypore fungi, highlighting the particular dicophysal elements and the oily resinous substances that makes this species very particular. According to Zmitrovich (2018), the closely related genus is *Skeletocutis*, but this genus differs from *Gloeoporellus* by uncolored context and less branched skeletal.

Gloeoporus Mont., Ann. Sci. Nat. Bot. Ser. 2, 17: 126, 1842.

Type species – *Gloeoporus conchoides* Mont., Ann. Sci. Nat. Bot. Ser. 2, 17: 126, 1842.

Basidiome annual, resupinate to effuse-reflexed, abhymenial surface tomentose, hymenial surface poroid, rose to orange-reddish, pores round to angular, more or less gelatinous, dissepiments fertile. Hyphal system monomitic, generative hyphae with clamps or simple-septa.

Cystidia absent, cystidiols may be present. Basidia clavate, with 4-sterigmate. Basidiospores allantoid to cylindrical, smooth, thin-walled, hyaline, IKI–.

Remarks – *Gloeoporus* is undoubtedly closely related to *Byssomerulius* and separated mainly by the poroid hymenophore (meruloid in the latter). See also Ryvarden & Melo (2017) and Bernicchia & Gorjón (2020).

Gloeosoma Bres., Ann. Mycol. 18: 51, 1920.

Type species – *Exidia vitellina* Lév., Annl. Sci. Nat., Bot., sér. 3 2: 219, 1844.

Basidiome cupulate, attached by a contracted base, texture gelatinous when fresh, drying cartilaginous, hymenophore smooth, trama distinctly duplex with a lower dense layer and a subiculum of looser consistency. Hyphal system monomitic, hyphae with clamps. Acanthophyses and hyphidia generally unbranched or with a few apical stout side branches. Basidia subclavate to clavate, with 4 large sterigmata. Basidiospores ovoid, echinulate, amyloid.

Remarks – *Gloeosoma* is easy to recognize by the large cupulate yellowish to orange and gelatinous basidiomes. Microscopically it has typical features of the genus *Aleurodiscus* s.l. Monotypic genus from Patagonia associated to *Nothofagus* species (Gorjón et al. 2013).

Gloeostereum S. Ito & S. Imai, Trans. Sapporo nat. Hist. Soc. 13(1): 11, 1933.

Type species – *Gloeostereum incarnatum* S. Ito & S. Imai, Trans. Sapporo nat. Hist. Soc. 13(1): 11, 1933.

Remarks – Monotypic genus. A synonym of *Merulius* Fr. according to Spirin & Zmitrovich (2004).

Gloeotulasnella Höhn. & Litsch., Wiesner Festschrift (Wien): 57, 1908.

Type species – *Tulasnella cystidiophora* Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 115: 1557, 1906.

Remarks – A synonym of *Tulasnella* J. Schröt.

Gloiodon P. Karst., Meddn Soc. Fauna Flora fenn. 5: 42, 1879.

Type species – *Hydnum strigosum* Sw., K. Vetensk-Acad. Nya Handl. 31(3): 250, 1810.

Basidiome annual, pileate to effuse-reflexed, upper surface strigose to smooth, dark brown to almost black; hymenophore formed by conical aculei. Hyphal system monomitic, hyphae with clamps, pigmented and some with occasional clamps, simulating skeletal hyphae. Gloeocystidia present. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores subglobose, hyaline, finely ornamented and strongly amyloid.

Remarks – *Gloiodon* is characterized by the brownish to greyish effuse-reflexed to pileate basidiome, and microscopically by the presence of gloeocystidia and amyloid ornamented basidiospores. *Gloiodon* is phylogenetically closely related to the stipitate *Auriscalpium* and *Dentipratulum*, and it is included in the Auriscalpiaceae among the russuloid lineage (Larsson 2007b).

Gloiothele Bres., Annl. mycol. 18: 44, 1920.

Type species – *Poria lamellosa* Henn., Bot. Jb. 33: 35, 1904.

Basidiome resupinate, adnate, effused, hymenophore smooth to tuberculate. Hyphal system monomitic, hyphae with simple-septa. Cystidia (gloeocystidia) vesicular, with guttulate content, SA+. Hyphidia, smooth or encrusted, may be present. Basidia narrowly clavate to cylindrical, with 4-sterigmata. Basidiospores ellipsoid to subglobose, with a prominent apiculus, thin-walled, smooth, amyloid.

Remarks – *Gloiothele* includes monomitic species with simple-septate hyphae, gloeocystidia SA+ and smooth amyloid basidiospores (correspond to the *Gloeocystidiellum lactescens* group in Eriksson & Ryvarden 1975). Wu (1996) included in *Gloiothele* also *Vesiculomyces* (with SA–gloeocystidia) and it is obvious that both genera are closely related.

Grammothele Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(no. 46): 327, 1868.

Type species – *Grammothele lineata* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(no. 46): 327, 1868.

Basidiome annual, resupinate, adnate, effused, hymenial surface irregularly irpicoid to poroid and then partly labyrinthine to sinuous, pore surface, cream, bluish-grey to almost black with age or time pale brownish pinkish to pale umber brown, hymenium usually restricted to the base of the tubes. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled to solid, dextrinoid at least in the outer parts, hyaline or darker with age and in some species coloured from the very beginning. Dendrohyphidia absent or present, both in the hymenium and in the dissepiments and the sterile tube walls. Basidia clavate, with 4-sterigmate, and a basal clamp. Basidiospores ellipsoid to cylindrical, thin-walled, smooth and non-amyloid, non-dextrinoid.

Remarks – The genus is related to *Theleporus* which is separated by being di-trimitic with branched, non-dextrinoid, arboriform skeletal hyphae (Ryvarden 1991).

Grammothelopsis Jülich, Bibliothca Mycol. 85: 397, 1981.

Type species – *Grammothele macrospora* Ryvarden, in Ryvarden & I. Johans., Prelim. Polyp. Fl. E. Afr. (Oslo): 43, 1980.

Basidiome annual, resupinate, effused, adnate, membranaceous, context homogeneous, hyphal strands lacking, hymenial surface poroid with angular pores, ochraceous to brownish. Hyphal system dimitic, generative hyphae with clamps, hyaline, cylindrical, thin-walled, arboriform hyphae with a straight long unbranched base and a branched terminal part, thick-walled, yellowish, with a weak to strong dextrinoid reaction. Cystidia absent. Dendrohyphia present. Basidia clavate, with 4-sterigmate, and a basal clamp. Basidiospores ellipsoid, smooth, thick-walled, with a distinct germ pore, inamyloid, strongly dextrinoid.

Remarks – *Grammothele macrospora* is separated from *Grammothele* by the arboriform vegetative hyphae and the thick-walled, dextrinoid basidiospores (Jülich 1981). *Theleporus* differs in the non-dextrinoid arboriform hyphae and thin-walled basidiospores.

Grandinia Fr., Epicr. syst. mycol. (Upsaliae): 527, 1838.

Type species – *Thelephora granulosa* Pers., Syn. meth. Fung. 576, 1801.

Remarks – A synonym of *Xylodon* (Pers.) Fr.

Grandiniella P. Karst., Hedwigia 34: 8, 1895.

Type species – *Grandiniella livescens* P. Karst., Hedwigia 34: 8, 1895. (= *Corticium sordidum* P. Karst., Meddn Soc. Fauna Flora fenn. 9: 65, 1882).

Remarks – A synonym of *Phanerochaete* P. Karst.

Grandiniochaete Rick, Annl. mycol. 38(1): 59, 1940.

Type species – *Grandiniochaete latecontexta* Rick [as 'late-contextum'], Annl. mycol. 38(1): 59, 1940.

Remarks – A name of uncertain application (see Hjortstam 1987a).

Grandinioides Banker, Mem. Torrey bot. Club 12(2): 179, 1906.

Type species – *Peziza flava* Sw., Nov. Gen. Spec. Pl.: 150, 1788.

Remarks – A synonym of *Mycobonia* Pat.

Granulobasidium Jülich, Persoonia 10: 328, 1979.

Type species – *Corticium vellereum* Ellis & Cragin, Bull. Washburn Coll. Lab. Nat. Hist. 1: 66, 1885.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore smooth or slightly tuberculate. Hyphal system monomitric, hyphae with clamps, hyaline, often guttulate. Cystidia absent. Basidia hyaline, cylindrical to narrowly clavate, with granular or guttulate contents, with 4-

sterigmata, with a basal clamp. Basidiospores hyaline, thick-walled, rugose, guttulate, not amyloid, cyanophilous, with chlamydospores ellipsoid, thick-walled, cyanophilous and dextrinoid.

Remarks – *Corticium vellereum* has been considered a deviating species when it was included in *Hypochnicium* (Parmasto 1968, Eriksson & Ryvarden 1976). It is characterized by lacking cystidia, the long tubular basidia with remarkable short sterigmata and granular contents, and the particular, irregularly uneven basidiospores; also, the presence of chlamydospores is remarkable. Phylogenetically, *Granulobasidium* is referred to as the Cyphellaceae with *Chondrostereum*, *Cunninghammyces*, and *Gloeostereum* but the relationships with these genera are still unclear (Larsson 2007b).

Granulocystis Hjortstam, Mycotaxon 25(1): 277, 1986.

Type species – *Phanerochaete flabelliradiata* J. Erikss. & Hjortstam, in Eriksson, Hjortstam & Ryvarden, Cortic. N. Eur. (Oslo) 6: 1073, 1981.

Remarks – A later homonym of *Granulocystis* F. Hindak 1977 (Algae). *Leifia* Ginns was proposed to replace *Granulocystis* Hjortstam (Ginns 1998). It is considered a synonym of *Odonticium* Parmasto by Zmitrovich (2001).

Griseoporia Ginns, Mycotaxon 20(2): 559, 1984.

Type species – *Hexagonia carbonaria* Berk. & M.A. Curtis, Grevillea 1: 68. 1872.

Basidiomes resupinate to effuse-reflexed, rarely narrowly pileate, pores grey, 1-3 per mm, context to 1 mm thick, distinctly brown. Hyphal system dimitic, generative hyphae narrow with clamp connections, skeletal hyphae narrow. Basidiospores allantoid, rarely cylindrical, rather large, the spore wall smooth, thin, hyaline, nonamyloid, acyanophilous.

Remarks – *Griseoporia* was proposed for *Hexagonia carbonaria* Berk. & M.A. Curtis that has traditionally been classified in *Gloeophyllum* P. Karst (Ginns 1984). *Griseoporia carbonaria* (Berk. & M.A. Curtis) Ginns differs from other species in *Gloeophyllum* by the typically poroid hymenophore (lamellate to daedaleoid in *Gloeophyllum* s.str.) and from *Osmoporus* Singer in the resupinate to effuse-reflexed basidiomes, that are distinctly pileate in the latter. The separation of this genera from *Gloeophyllum* and *Hispidaedalea* Y.C. Dai & S.H. He is phylogenetically supported (He et al. 2014).

Gyrodontium Pat., Essai Tax. Hyménomyc. (Lons-le-Saunier): 117, 1900.

Type species – *Hydnum henningsii* Bres., Bull. Soc. mycol. Fr. 6: XLVIII, 1890.

Basidiome resupinate to subpileate, hymenophore tuberculate to hydroid. Hyphal system monomitic, hyphae with simple-septa, thin- to thick-walled, weakly cyanophilous. Cystidia absent. Basidia subclavate, thin-walled, with 4-sterigmata, and simple-septate at the base. Basidiospores ellipsoid, smooth, thick-walled, dextrinoid, cyanophilous.

Remarks – *Gyrodontium* is characterized by the tuberculate to hydroid resupinate basidiome and thick-walled and dextrinoid basidiospores. *Gyrodontium* is morphologically and phylogenetically related to *Coniophora* in the Coniophoraceae (Larsson 2007b).

Gyrophanopsis Jülich, Persoonia 10: 329, 1979.

Synonym – *Hyphodermopsis* Jülich.

Type species – *Pellicularia zealandica* G. Cunn., Trans. Roy. Soc. New Zealand 81: 322, 1953.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore smooth, margin thinning out, rhizomorphs absent. Hyphal system monomitic, hyphae with clamps, hyaline, distinct, cylindrical, thin- to somewhat thick-walled. Cystidia (septocystidia), hyaline, cylindrical, somewhat thick-walled, encrusted. Basidia hyaline, suburniform, with 4-sterigmata, and with a basal clamp. Basidiospores hyaline, ellipsoid, smooth, slightly thick-walled, inamyloid, cyanophilous.

Remarks – *Gyrophanopsis* is separated from *Hypochnicium* s.l. by the characteristically hyphoid encrusted septocystidia (Jülich 1979). Phylogenetic relationships are unclear.

Gyrophora Pat., Hym. Eur. p. 143, 1887.

Type species – *Boletus lacrymans* Wulfen, in Jacquin, Miscell. Austriac. 2: 111, 1781.

Remarks – A later homonym of *Gyrophora* Ach. 1803 and a synonym of *Serpula* (Pers.) Gray.

Haematostereum Pouzar, Česká Mykol. 13(1): 13, 1959.

Type species – *Thelephora sanguinolenta* Alb. & Schwein., Consp. fung. (Leipzig): 274, 1805.

Remarks – A synonym of *Stereum* Pers.

Hallenbergia Dhingra & Priyanka, Mycotaxon 118: 289, 2011.

Type species – *Hallenbergia singularis* Dhingra & Priyanka, Mycotaxon 118: 291, 2011.

Basidiome resupinate, adnate, effused, thin, ceraceous, hymenial surface smooth, farinose under the lens, continuous, some cracks developing on drying, margin not well differentiated. Hyphal system monomitic. generative hyphae thin-walled, clamped, basal hyphae irregularly branched and interwoven into a dense texture, subhymenial hyphae short-celled, compactly packed and appear like a cellular tissue. Cystidia absent. Basidia subclavate to suburniform, 4-sterigmate, basal clamp not observed. Basidiospores ellipsoid to ovoid or subglobose, smooth, with thickened walls, cyanophilous, inamyloid.

Remarks – According to Dhingra & Priyanka (2011b) *Hallenbergia* resembles the genus *Hypochnicium* in having broadly ellipsoid to subglobose basidiospores with somewhat thick and cyanophilous walls. There are also affinities with *Intextomyces* in having a densely interwoven texture. The new genus differs from both genera by the peculiar hyphal texture, with a densely and irregularly branched lower part and a pseudoparenchymatous upper part. Moreover, it differs from *Intextomyces* in the way basidia are formed. In *Intextomyces contiguus* (P. Karst.) J. Erikss. & Ryvarde, basidia are formed at the apex of penetrating, sinuous hyphae, while in *Hallenbergia singularis* the basidia are directly produced from the surface of the pseudoparenchymatic tissue.

Haloaleurodiscus N. Maek., Suhara & K. Kinjo, Mycological Research 109 (7): 826, 2005.

Type species – *Haloaleurodiscus mangrovei* N. Maek., Suhara & K. Kinjo, Mycological Research 109 (7): 827, 2005.

Basidiome annual, resupinate, effused. Hyphal system monomitic, hyphae with clamps. Gloeocystidia tubular, with a basal clamp, SA+. Dendrohyphidia present (in the original description with no indication to reactions in Melzer's reagent). Basidia clavate, sometimes sinuous, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to cylindrical, warted, thin to slightly thick-walled, amyloid. Causing a white pocket rot.

Remarks – It is characterized by the ornamented and amyloid basidiospores, the presence of dendrohyphidia, and the white pocket rot. So far, monotypic genus with an only species growing on mangroves (*Sonneratia alba* Sm.). Phylogenetically it seems related to *Scytinostroma* and *Dichostereum*, more than other members of *Aleurodiscus* s.l. (as indicated by the generic name), and further investigation in this line can provide more date of the natural relationships (Maekawa et al 2005).

Haploporus Singer, Mycologia 35: 66, 1944.

Type species – *Polyporus odor* Sommerf., Suppl. Fl. lapp. (Oslo): 275, 1826.

Synonym – *Pachykytospora* Kotl. & Pouzar.

Basidiomes perennial, pileate, whitish and with a strong scent of anise, hymenophore tubular. Hyphal system trimitic, generative hyphae with clamps. Cystidia absent. Basidia clavate, tetrasterigmate, with a basal clamp. Basidiospores globose to ellipsoid, hyaline, asperulate or with longitudinal ridges, variably dextrinoid in Melzer's reagent. Causing a white heart rot of laying trees, preferably on *Salix*. Circumpolar in the boreal zone.

Remarks – The genus is well characterized by its perennial basidiomes with trimitic hyphal system, and the dextrinoid basidiospores. According to Justo et al. (2017), *Haploporus* is classified in the Polyporaceae among the Polyporales. *Crassisporus* is phylogenetically closely related but differentiated by the smooth basidiospores (Ji et al. 2019).

Haplotrichum Link, in Willdenow, Sp. pl., Ed. 4 6(1): 52, 1824.

Type species – *Haplotrichum capitatum* Link, in Willdenow, Sp. pl., Ed. 4 6(1): 52, 1824.

Remarks – Anamorphic stage of *Botryobasidium* Donk. See Holubová-Jechová (1976).

Hastodontia (Parmasto) Hjortstam & Ryvarden, Syn. Fung. (Oslo) 26: 49, 2009.

Basionym – *Hyphodontia* sect. *Corticodontia* subsect. *Hastodontia* Parmasto, Consp. System. Corticiac. (Tartu): 122, 1968.

Type species – *Peniophora hastata* Litsch., Öst. bot. Z. 77(2): 130, 1928.

Basidiome resupinate, effused, adnate, hymenophore smooth to tuberculate. Hyphal system monomitic, all hyphae with clamps, distinct to thick-walled. Cystidia of two kind: 1) subulate cystidia; 2) enclosed moniliform cystidia. Basidia subcylindrical, with a median constriction, with 4-sterigmata and a basal clamp. Basidiospores cylindrical to subcylindrical, smooth, thin-walled, IKI–, CB–.

Remarks – *Hastodontia* is recognized among *Hyphodontia* s.l. by the combination of subulate and moniliform enclosed cystidia (Hjortstam & Ryvarden 2009b). Phylogenetic relationships are unclear.

Heptasporium Bref., Unters. Gesamtgeb. Mycol. 14: 167, 1908.

Type species – *Heptasporium gracile* Bref., Unters. Gesamtgeb. Mykol. (Liepzig) 14: 167, 1908. (= *Sistotrema brinkmannii*? (Bres.) J. Erikss., K. Fysiogr. Sällsk. Lund. Förhandl. 18(8): 134, 1948).

Remarks – A synonym of *Sistotrema* Fr.

Hemmesomyces Gilb. & Nakasone, Mycologia 95(3): 467, 2003.

Type species – *Hemmesomyces puauluensis* Gilb. & Nakasone, Mycologia 95(3): 467, 2003.

Basidiome resupinate, hymenial surface smooth to tuberculate. Hyphal system monomitic, hyphae with clamps. Cystidia of two types: 1) fusiform, terminal or lateral, with short, knobby branches at base and appearing rooted, tapering to an acute point, arising from subiculum and subhymenium, walls at first hyaline and slightly thickened, then becoming brown, thick, lightly encrusted, sometimes dextrinoid in Melzer's reagent; 2) globose, ellipsoid, or broadly cylindrical, apex obtuse, attenuate or mammiform, arising from subiculum and subhymenium, often containing conspicuous refractive globules or oil-like materials, negative in sulfovanillin, walls hyaline, thin or slightly thick, smooth. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores globose to subglobose, walls hyaline, smooth, slightly thick, negative in Melzer's reagent. Causing a white rot.

Remarks – *Hemmesomyces* is characterized by brown, rooted, fusiform cystidia, gloeocystidia (negative in sulfovanillin), globose to subglobose slightly thickened basidiospores, and clamped generative hyphae (Gilbertson & Nakasone 2003). Monotypic genus. Not validly published, type not mentioned (?).

Hermanssonia Zmitr., Folia Cryptogamica Petropolitana 6: 100, 2018.

Type species – *Phlebia centrifuga* P. Karst., Meddn Soc. Fauna Flora fenn. 6: 10, 1881.

Remarks – A synonym of *Phlebia* Fr. *Hermanssonia* is here considered a synonym of *Phlebia* and waiting for phylogenetic and sexual studies I prefer to adopt a wide concept of *Phlebia*.

Hericium Pers., Neues Mag. Bot. 1: 109, 1794.

Synonym – *Creolophus* P. Karst.

Type species – *Hydnum coralloides* Scop., Fl. carniol., Edn 2 (Wien) 2: 472, 1772.

Basidiome pileate, usually large, dimidiate to globose, with imbricate or gregarious growth, upper side tomentose to hirsute, hymenophore hydroid. Hyphal system monomitic, hyphae with clamps. Gloeocystidia present. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, slightly rugose or asperulate, amyloid.

Remarks – *Hericium* is characterized and easy to identify by the large pileate and fleshy hydroid basidiome, microscopically by the presence of gloeocystidia and amyloid ornamented basidiospores. It is morphologically close related to *Climacodon*, but the latter differs in having inamyloid basidiospores. Phylogenetically, *Hericium* is classified in the Hericiaceae within the russuloid lineage, and very closely related to *Laxitextum*, with steroid basidiome (Larsson 2007b). *Hydnum cirrhatum* Pers., has been referred to *Creolophus* on the basis of the basidiospores that seem smooth at the light microscope, but they appear slightly rugose at SEM; it clusters also with other *Hericium* species; thus the generic separation is not supported (Larsson & Larsson 2003).

Heteroacanthella Oberw., in Oberwinkler, Langer, Burdsall & Tschen, Trans. Mycol. Soc. Japan 31(2): 208, 1990.

Type species – *Heteroacanthella variabilis* Oberw. & Langer, in Oberwinkler, Langer, Burdsall & Tschen, Trans. Mycol. Soc. Japan 31(2): 211, 1990.

Basidiome effused, dense, ceraceous, grey, with a distinct margin. Hyphal system monomitic, with clamp connexions in the type species (simple-septate in *H. variabilis*). Hymenium thin, densely agglutinated, composed of one or more layers of basidia and hyphidia arising from laterally branching subicular hyphae. Hyphidia variously cylindrical, clavate, or irregularly swollen, acanthoid, with numerous simple or branched apical processes. Basidia subglobose to pyriform or ellipsoid, acanthoid, with numerous simple processes up to 2 µm long scattered around the apex, with one long sterigmata in the type species (one or usually two sterigmata in *H. variabilis*), occasionally producing a single, short, subsidiary sterigma and thus appearing furcate. Basidiospores globose to subglobose, smooth, hyaline, inamyloid, some producing secondary spores by replication.

Remarks – *Heteroacanthella* is characterized by the repetitive basidiospores, hyphidia and globose basidia with acanthoid protuberances, and with one or two long sterigmata (see Oberwinkler et al. 1990, Roberts 1998). It was referred to the new family Heteroacanthellaceae P. Roberts in the Exidiales (Roberts 1998) but it is included in this manual because of the aseptate basidia.

Heterobasidion Bref., Unters. Gesamtgeb. Mykol. (Liepzig) 8: 154, 1888.

Type species – *Polyporus annosus* Fr., Syst. mycol. (Lundae) 1: 373, 1821.

Basidiome perennial, resupinate to pileate, widely effused and tough; pileal surface at first light brown and finely tomentose, soon darker and smooth with a distinct thin black cuticle. Pore surface light cream, pores regular, round to angular, mostly small, context white to light cream, dark reddish brown with Melzer's reagent. Hyphal system dimitic, generative hyphae thin-walled, simple septate, skeletal hyphae dominating in the basidiome, dextrinoid, unbranched or with a few branches. Cystidia none. Basidia clavate, with 4-sterigmate, simple-septate at the base. Basidiospores broadly ellipsoid to globose, hyaline, thin to slightly thick-walled, finely asperulate, negative in Melzer's reagent. Causing a white rot of living conifers.

Remarks – *Heterobasidion* is characterized among the polypores by the dextrinoid skeletal hyphae, the simple septate generative hyphae, and the asperulate spores negative in Melzer's reagent. See also Ryvarden & Melo (2017) and Bernicchia & Gorjón (2020).

Heteromyces L.S. Olive, American J. Bot. 44: 432, 1957.

Type species – *Sebacina fibrillosa* Burt, Ann. Mo. bot. Gdn 13(3): 335, 1926.

Remarks – A later homonym of *Heteromyces* Müll. 1889 and a synonym of *Oliveonia* Donk.

Hirneola Fr. Syst. orb. veg. (Lundae) 1: 93, 1825, non *Hirneola* Fr. 1849.

Type species – *Peziza flava* Sw., Nov. Gen. Spec. Pl.: 150, 1788.

Remarks – Donk (1941) proposed the conservation of *Mycobonia* Pat. 1894 against *Hirneola* Fr. 1825, both typified with *Peziza flava* to avoid confusion and save *Hirneola* Fr. 1849 (typified by *Peziza nigra* Fr.) for species belonging to Auriculariales.

Hispidaedalea Y.C. Dai & S.H. He, in He, Vlasák & Dai, Mycol. Progr. 13(3): 835, 2014.

Type species – not indicated.

Remarks – Nom. inval., Art. 40.1 (Shenzhen code). See He et al. (2014) for generic delimitation.

Hjortstamia Boidin & Gilles, Bull. Soc. mycol. Fr. 118(2): 99, 2002.

Type species – *Thelephora friesii* Lév., Syst. Verz.: 17, 1854.

Basidiome resupinate, effuse-reflexed to pileate, upper sterile surface tomentose, brown to greyish coloured, hymenophore smooth to tuberculate, usually with brown colours and often with a pinkish tint. Hyphal system dimitic, generative hyphae with simple septa (some species have few clamps at the basal hyphal but never at the basidial base), skeletal (skeletoid) hyphae thick-walled and brown coloured. Cystidia (skeletocystidia or hymenial cystidial) pale brown, thick-walled, smooth or encrusted. Basidia clavate, with 4-sterigmata, without a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, hyaline, IKI–, CB–.

Remarks – *Hjortstamia* was introduced for stereoid species with a dimitic hyphal system, generative hyphae without clamps, and astatocoenocytic nuclear behaviour (normal in *Lopharia*) (Boidin & Gilles 2002). *Hjortstamia* is distinguished from *Phanerochaete* morphologically by brownish basidiome, subiculum with a loose texture with skeletal or skeletoid hyphae, and pale yellow to brownish skeletocystidia (Wu et al. 2010). The distinction of a strictly monomitic or dimitic hyphal system in some *Hjortstamia* species is often difficult and intermediate stages are frequent. In some species, there are skeletoid brown hyphae with some sparse simple or secondary septa, that cannot be called true skeletal, but they serve, as the skeletal, to provide support in reflexed basidiome. However, it seems that *Phanerochaete* is not the natural place for this group of species, and according to molecular and morphological data we keep *Hjortstamia* as a different genus close related but distinct from *Phlebiopsis*, *Rhizochaete* and *Phanerochaete* in accordance with Wu et al. *l.c.*

Hornodermoporus Teixeira, Boletim do Instituto de Botânica, São Paulo 8: 21, 1993.

Type species – *Polyporus martius* Berk., Hooker's J. Bot. Kew Gard. Misc. 8: 198, 1856.

Basidiome annual to perennial, pileate to effused-reflexed, woody hard, pilei appanate to unguulate, glabrous, usually irregularly concentrically sulcate, dirty brown to black with a distinct crust. Pore surface white to dirty ochraceous; pores round; dissepiments thick, entire. Context pale buff to wood color, woody hard. Tubes concolorous with pore surface, hard corky. Hyphal system dimitic; generative hyphae bearing clamp connections; skeletal hyphae strongly dextrinoid, cyanophilous; tissues unchanged in KOH. Cystidia present. Basidiospores ellipsoid, truncate, hyaline, thick-walled, smooth, strongly dextrinoid, CB+.

Remarks – *Hornodermoporus* is similar to *Perenniporia* but differs by having a black crust at pileal surface, the presence of cystidia and oblong-ellipsoid basidiospores. Previously, species in the genus were treated in *Perenniporia*. Recent phylogenetic studies supported that *Hornodermoporus* is distinct from the *Perenniporia* s.str. clade (Zhao et al. 2013a).

Hydnochaete Bres., Hedwigia 35: 287, 1896.

Type species – *Hydnochaete badia* Bres., Hedwigia 35(5): 287, 1896. (= *Hydnum peroxydatum* Berk. ex Cooke, Grevillea 20 (no. 93): 1, 1891.

Remarks – Phylogenetically it may be considered a synonym of *Hymenochaete* Lév. (Baltazar et al. 2014). From a morphological system it is a useful entity to comprise those species of *Hymenochaete* with a hydroid hymenophore.

Hydnochaete Peck, Rep. N.Y. State Mus. 50: 113, 1897.

Type species – *Hydnochaete setigera* Peck, Ann. Rep. N.Y. St. Mus. 50: 113, 1898.
(=*Asterodon ferruginosus* Pat., Bull. Soc. mycol. Fr. 10(3): 130, 1894).

Remarks – A homonym of *Hydnochaete* Bres. 1896 and a synonym of *Asterodon* Pat.

Hydnochaetella Sacc., Tab. Com. Gen. Fung. p. 11, 1898.

Type species – *Hydnochaete setigera* Peck, Ann. Rep. N.Y. St. Mus. 50: 113, 1898.
(=*Asterodon ferruginosus* Pat., Bull. Soc. mycol. Fr. 10(3): 130, 1894).

Remarks – A substitute for *Hydnochaete* Peck and a synonym of *Asterodon* Pat.

Hydnocristella R.H. Petersen, Česká Mykol. 25(3): 130, 1971.

Type species – *Hydnum himantia* Schwein., Schr. naturf. Ges. Leipzig 1: 104, 1822.

Basidiome resupinate, effused, hymenophore hydroid, margin fibrillose with rhizomorphs. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled, smooth or encrusted with cyanophilous warts. Cystidia absent. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores fusiform to subcylindrical, thin-walled, smooth, IKI–.

Remarks – *Hydnocristella* is characterized by the resupinate hydroid basidiome and microscopically by the hyphae encrusted with cyanophilous warts, and by the inamyloid and smooth basidiospores (Petersen 1971). Molecular data support that *Kavinia* is restricted to species with ornamented basidiospores, whereas smooth-spored species are referred to *Hydnocristella* (Hosaka et al. 2006, Larsson 2007b). *Kavinia*, *Hydnocristella* and *Ramaricium*, are probably derived from *Clavariadelphus*, a clavarioid genus (Giachini et al. 2010).

Hydnodon Banker, Mycologia 5(6): 297, 1913.

Type species – *Hydnum thelephorum* Lév., Anns Sci. Nat., Bot., sér. 3 2: 204, 1844.

Remarks – A synonym of *Trechispora* P. Karst. *Hydnodon* was erected to accommodate a widespread, semistipitate hydroid species with echinulate inamyloid basidiospores and ampullate swellings at the hyphal septa. It is restricted to tropical parts of America. For further comments see Ryvarden (2002).

Hydnofomes Henn., Engl. Bot. Jahrb. 28: 267, 1900.

Type species – *Hydnofomes tsugicola* Henn. & Shirai, in Hennings, Bot. Jb. 28: 268, 1900.
(=*Fomes tinctorius* Ellis & Everh., Bull. Torrey bot. Club 22(7): 362, 1895).

Remarks – A synonym of *Echinodontium* Ellis. & Everh.

Hydnomerulius Jarosch & Besl, Pl. Biol. 3(3): 447, 2001.

Type species – *Hydnum pinastri* Fr., Novit. fl. svec. 2: 38, 1814.

Basidiome resupinate, effused, hymenophore smooth at first, but then typically hydroid to irpicoid, yellowish to brownish-yellow, margin rhizomorphic with sclerotia. Hyphal system monomitic, hyphae with clamps. Cystidia absent. Basidia clavate, with 4-sterigmata, basally clamped. Basidiospores ellipsoid, smooth, thick-walled, usually yellow to brown coloured, weakly dextrinoid, cyanophilous.

Remarks – Jarosch & Besl (2001) proposed the inclusion of *Hydnum pinastri*, traditionally classified in *Leucogyrophana*, in the new genus *Hydnomerulius*. It is closely related to the mushroom-forming fungi *Paxillus* and *Gyrodon* and to the gastroid *Melanogaster* in the *Paxillineae* (Binder & Hibbett 2006). This separation is well supported by molecular data, but from a morphological point of view, *Hydnomerulius* differs from *Leucogyrophana* only in the clearly hydroid hymenophore. However, we adopt here the separation of *Hydnum pinastri* from *Leucogyrophana* highlighting another an interesting example of a close relationship among resupinate, pileate-stipitate and gastroid forms in the Boletales.

Hydnophanerochaete Sheng H. Wu & C.C. Chen, Mycokeys 39: 85, 2018.

Type species – *Phanerochaete odontoidea* Sheng H. Wu, Bot. Bull. Acad. sin., Taipei 41(2): 169, 2000 (= *Hydnophanerochaete odontoidea* (Sheng H. Wu) Sheng H. Wu & C.C. Chen, Mycokeys 39: 86, 2018).

Basidiome effused, adnate, ceraceous, hymenial surface at first buff, with age turning ochraceous to pale brown, slightly tuberculate to grandinioid when young, becoming odontoid to hydroid with age, without color changes in KOH. Aculei conical to cylindrical, ca. 1–4 per mm, up to 700 µm long. Hyphal system essentially monomitic; generative hyphae simple-septate. Subiculum fairly uniform, composed of a basal layer, with compact texture; generative hyphae somewhat horizontal, colorless, thick-walled; quasi-binding hyphae present near substratum, colorless. Hymenial layer thickening. Trama of aculei of compact texture; generative hyphae somewhat vertical, colorless, thick-walled. Cystidia lacking but projecting hyphal ends in the hymenium may be present. Basidia clavate, 4-sterigmate. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, inamyloid, non-dextrinoid, CB–.

Remarks – *Hydnophanerochaete* is morphologically similar to the genus *Hydnophlebia* (Telleria et al. 2017). Both genera have resupinate basidiomes with odontoid to hydroid hymenial surface, a monomitic hyphal system, ordinarily simple-septate hyphae and similar basidiospore shape. However, *Hydnophlebia* has membranaceous basidiome usually with rhizomorphic margin, while *Hydnophanerochaete* has ceraceous basidiomes with fairly determinate margin, occasional single or multiple clamp connections are present in subicular or aculei hyphae of *Hydnophlebia*, whereas they are lacking in hyphae of *Hydnophanerochaete*, and, *Hydnophlebia* occasionally bears tubular to ventricose leptocystidia, which are lacking in *Hydnophanerochaete*. Little morphological differences exist between *Hydnophanerochaete* and *Odontoefibula*: both genera have a monomitic hyphal system with simple-septate hyphae and are lacking cystidia. However, *Hydnophanerochaete* is distinguished from *Odontoefibula* by its basidiomes without a color change in KOH; additionally, its subiculum is compact, not dense.

Hydnophlebia Parmasto, Eesti NSV Tead. Akad. Toim., Biol. seer 16: 384, 1967.

Type species – *Hydnum chrysorhizon* Torr., Man. bot., Edn 3: 309, 1822.

Basidiome resupinate, membranous, reddish-orange, hymenophore hydroid with aculei, margin with rhizomorphs. Hyphal system monomitic, hyphae with simple-septa. Cystidia cylindrical, tubular to ventricose, thin-walled, simple-septate at base. Basidia cylindrical to subclavate, with 4 sterigmata, basal clamp absent. Basidiospores ellipsoid, smooth, thin-walled, inamyloid, non-dextrinoid, CB–.

Remarks – *Hydnophlebia* was erected by Parmasto (1967) to accommodate *Hydnum chrysorhizon* Torr. A few years later, the type species was transferred to *Phanerochaete* P. Karst. (Budington & Gilbertson 1973), and *Hydnophlebia* was neglected for a long time. According to Hjortstam & Ryvar den (2009a), two species should be included in this genus of wood-inhabiting corticoid fungi: *Hydnophlebia chrysorhizon* (Torr.) Parmasto and *Hydnophlebia omnivora* (Shear) Hjortstam & Ryvar den. Recently, Telleria et al. (2017) described three new species in the genus.

Hydnophysa Clem. Genera of Fung. p. 108, 1909.

Type species – *Hydnofomes tsugicola* Henn. & Shirai, in Hennings, Bot. Jb. 28: 268, 1900. (= *Fomes tinctorius* Ellis & Everh., Bull. Torrey bot. Club 22(7): 362, 1895).

Remarks – A superfluous substitute for *Hydnofomes* Henn. and a synonym of *Echinodontium* Ellis. & Everh.

Hydnoporia Murrill, N. Amer. Fl. (New York) 9(1): 3, 1907.

Type species – *Sistotrema fuscescens* Schwein., Schr. naturf. Ges. Leipzig 1: 102, 1822 (= *Sistotrema olivaceum* Schwein., Schr. naturf. Ges. Leipzig 1: 101, 1822).

Remarks – *Hydnoporia* was proposed by Murrill for *Sistotrema fuscescens*, a synonym of *Sistotrema olivaceum* and actually considered as *Hymenochaetopsis olivacea* (Schwein.) S.H. He &

Jiao Yang. The name was not considered when Yang et al. (2016) proposed the name *Hymenochaetopsis* S.H. He & Jiao Yang with *Hymenochaetopsis tabacina* (Sowerby) S.H. He & Jiao Yang, as the generic type, to replace the invalid name *Pseudochaete* T. Wagner & M. Fisch. Both, *H. olivacea* and *H. tabacina* cluster in the same clade delimited by *Hymenochaetopsis* in the vicinity to *Hymenochaete* as the closely related genus.

Hydnotrema Link, Handb. Erk. Gew. 3: 298, 1833.

Type species – *Sistotrema confluens* Pers., Neues Mag. Bot. 1: 108, 1794.

Remarks – A synonym of *Sistotrema* Fr.

Hydrabasidium Park.-Rhodes ex J. Erikss. & Ryvarden, Cortic. N. Eur. 5: 896, 1978.

Type species – *Hypochnus subviolaceus* Peck, Ann. Rep. N.Y. St. Mus. 47: 25, 1894.

Remarks – A synonym of *Scotomyces* Jülich.

Hymenogramme Mont. & Berk., Lond. J. Bot. 3: 329, 1844.

Type species – *Hymenogramme javensis* Mont. & Berk., Lond. J. Bot. 3: 330, 1844.

Basidiome annual, resupinate, adnate, hymenial surface whitish to cream and consisting of long anastomosing ridges with the hymenium restricted to the furrows between the ridges. Hyphal system monomitic, generative hyphae with clamps. Cystidiols more or less, abundant in the hymenium. Basidia clavate and with 4-sterigmata. Basidiospores broadly ellipsoid, thinwalled, smooth and non-amyloid.

Remarks – *Hymenogramme* has a unique surface with long sterile ridges and fertile furrows. This and the light fruitbodies with a monomitic hyphal system are the diagnostic characteristics (Ryvarden 1991).

Hymenochaete Lév., Anns Sci. Nat., Bot., sér. 3 5: 150, 1846.

Type species – *Helvella rubiginosa* Dicks., Fasc. pl. crypt. brit. (London) 1: 25, 1785.

Basidiome resupinate to pileate, hymenophore smooth to slightly tuberculate, more or less cracked, usually brown coloured, blackish in KOH. Hyphal system monomitic, hyphae simple-septate. Setae usually present. Basidia more or less tubular to clavate, with 4-sterigmata, simple-septate at the base. Basidiospores smooth, thin-walled, hyaline, IKI–.

Remarks – *Hymenochaete* is placed in the Hymenochaetaceae with poroid genera such as *Phellinus* and *Inonotus*. It differs from other genera in the Hymenochaetaceae in having a smooth to tuberculate or hydroid (*Hydnochaete*) hymenial surface, and from true stereoid fungi in the xanthocroic reaction of the basidiome and in the presence of setae (Baltazar et al. 2014).

Hymenochaetopsis S.H. He & Jiao Yang, Mycol. Progr. 15(2/13): 2, 2016.

Type species – *Auricularia tabacina* Sowerby, Brit. Fung., pl. 25, 1797.

Basidiomes annual, resupinate, effused-reflexed or pileate, thin, membranous, coriaceous or corky. Hymenophore smooth, hydroid, semi-lamellate or lamellate, more or less cracked with age, usually brown colored, turning black in KOH. Hyphal system monomitic or subdimitic; generative hyphae simple-septate; setal hyphae present in some species. Setae usually abundant, reddish-brown, subulate, more or less encrusted. Basidia clavate to subcylindrical, with four sterigmata, simple-septate at the base. Basidiospores narrowly cylindrical to allantoid, hyaline, thin-walled, smooth, IKI–, CB–. Causing a white rot on angiosperm or gymnosperm wood.

Remarks – *Hymenochaetopsis* is very similar to *Hymenochaete*, it always formed a distinct sister clade with *Hymenochaete* in the phylogenetic trees of Hymenochaetaceae. *Hymenochaetopsis* have narrowly and shortly cylindrical to allantoid basidiospores with a maximum length of 7 µm and width of 2.5 µm, which might be a useful character to distinguish it from *Hymenochaete* with usual cylindrical, ellipsoid to subglobose basidiospores (Yang et al. 2016).

Hyphoderma Wallr., Fl. Crypt. Germ. (Nürnberg) 2: 576, 1833.

Type species – *Thelephora setigera* Fr., Elench. fung. (Greifswald) 1: 208, 1828.

Basidiome resupinate, effused, adnate, often ceraceous when fresh, hymenophore smooth, tuberculate to hydroid, usually white coloured to yellowish with ochraceous or brown tints. Hyphal system monomitic, rarely dimitic, hyphae usually with clamps. Cystidia (leptocystidia) common. Basidia suburniform to subcylindrical, 4-sterigmata and a basal clamp. Basidiospores cylindrical, ellipsoid or subglobose, smooth, thin-walled, IKI–, with oily contents, abundant in herbarium dry specimens.

Remarks – *Hyphoderma* is a large and heterogeneous genus but usually easy to recognize by the large smooth basidiospores, basidia with a median constriction, and hyphae with usually conspicuous clamps. We follow Larsson (2007a) considering *Peniophorella* as a separated genus on the basis of molecular characters and in a microscopical level by the presence of more than one type of cystidia, echinulate cells (echinocysts or stephanocysts), clavate basidia and medium-large size basidiospores. According to the molecular study by Larsson *l.c.*, *Peniophorella* is clearly separated from the rest of leptocystidiata *Hyphoderma* species, however, these phylogenetic analyses show that *Hyphoderma* is not monophyletic and further studies are necessary to explain adequately the generic diversity.

Hyphodermella J. Erikss. & Ryvarde, Cortic. N. Eur. (Oslo) 4: 579, 1976.

Type species – *Grandinia corrugata* Fr., Hymenomyc. eur. (Upsaliae): 625, 1874.

Basidiome resupinate, effused, adnate, hymenophore grandinioid to odontoid, with small aculei and with a fibrillose apex, whitish to cream, margin determined. Hyphal system monomitic, hyphae with simple septa and thin walls. Cystidia absent, encrusted hyphal ends present. Basidia sinuous, clavate to suburniform, with 4-sterigmata and a simple basal septum. Basidiospores ellipsoid, smooth, thin-walled, IKI–.

Remarks – *Hyphodermella* is closely related to *Hyphoderma* but differing in the shape of basidia and lacking clamps (clamps are not also present in *Hyphoderma capitatum* and *H. etrusiae*). The study of Larsson (2007b), based on molecular data, places *Hyphodermella* in the family Phanerochaetaeae. The genus *Phanerochaete*, generic type of this family, has generative simple-septate hyphae even if some species have multiclamped septa at basal hyphae. Phanerochaetaeae would be closely related to a sister clade that includes, among others, simple septate species such as *Byssomerulius*, *Ceriporia* and *Candelabrochaete*.

Hyphodermopsis Jülich, Int. J. Mycol. Lichenol. 1: 28, 1982.

Type species – *Kneiffia polonensis* Bres., Ann. Mycol. 1: 103, 1903.

Remarks – A synonym of *Gyrophanopsis* Jülich.

Hyphodontia J. Erikss., Symb. Bot. Upsal. 16(1): 101, 1958.

Type species – *Gonatobotrys pallidula* Bres., Ann. Mycol. 1(2): 127, 1903.

Basidiome resupinate, effused, hymenophore smooth to odontoid or hydroid. Hyphal system monomitic, all hyphae with clamps, subicular hyphae weakly dextrinoid and distinctly cyanophilous. Cystidia of two kinds: 1) Cystidia septate with more or less capitate apex and some clamped septa, 2) typical lagenocystidia (but few or absent in some species). Basidia subcylindrical, with median constriction, with 4-sterigmata and a basal clamp. Basidiospores subglobose to ellipsoid, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Hyphodontia* is considered here in a restricted sense including only those species with septocystidia and lagenocystidia (Hjortstam & Ryvarde 2009b). In the traditional sense, *Hyphodontia* included a large number of species with many sterile elements and with an easily recognized more or less thick-walled hyphae with well delimited small circular clamps. Cladistic analyses by Langer (1994a) based on morphological and molecular characters suggested that *Hyphodontia* is not monophyletic and that cystidial morphology could be an indication of the species relationships; in addition, several molecular studies show that *Hyphodontia* is polyphyletic

(Langer 2002, Binder et al. 2005, Larsson et al. 2006). Although we are reticent to split genera into small entities when there is limited morphological or molecular support, in the case of *Hyphodontia*, there are many evidences to consider it in a more restricted sense. However, the limits and relationships between most of the species in *Hyphodontia* s.l. are still unclear. There are many deviating species of *Hyphodontia* s.l. from the southern hemisphere with distinct cyanophilous and thick-walled spores, with transitional typical lagenocystidia to heavily encrusted cystidia, with tramal and large capitate cystidia (see Greslebin & Rajchenberg 2000, Gorjón 2012) that does not fit satisfactory in the proposed genera of *Hyphodontia* s.str. A more detailed study is necessary, including species from both hemispheres, and combining morphological and molecular analysis, to have a more comprehensible vision of the *Hyphodontia* s.l. For recent studies see also Riebesehl & Langer (2017), Yurchenko et al. (2020), Yurchenko & Wu (2016).

Hyphodontiastra Hjortstam, Kew Bull. 54(3): 755, 1999.

Type species – *Hyphodontiastra virgicola* Hjortstam & Melo, in Hjortstam, Kew Bull. 54(3): 756, 1999.

Basidiome resupinate, thin, loosely attached, hymenophore odontoid, aculei entire or fimbriate, fairly soft to fragile. Hyphal system monomitic, hyphae thin-walled, with clamps. Gloeocystidia tubular, thin-walled, more or less sinuous, with oily contents, yellowish in KOH, brownish in sulphovanillin. Basidia tubular to narrowly clavate, basally slightly thick-walled, with four sterigmata and a basal clamp, basidia collapsing after spore discharge, the sterigmata turned inwards and difficult to discern. Basidiospores narrowly ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Hyphodontiastra* is reminiscent of *Hyphodontia* but differing in the conspicuous gloeocystidia and tubular to clavate basidia. Gloeocystidia reminds those of *Boidinia* and *Gloeocystidiellum* s.l. Monotypic genus from Brazil (Hjortstam 1999).

Hyphodontiella Å. Strid, Kgl. norske vidensk. Selsk. Skr. 4: 19, 1975.

Type species – *Hyphodontiella multiseptata* Å. Strid, Kgl. norske vidensk. Selsk. Skr. 4: 19, 1975.

Basidiome resupinate, effused, hymenophore smooth, more or less porulose at first. Hyphal system monomitic, hyphae with both clamps and simple-septa, slightly thick-walled, not encrusted. Cystidia absent. Basidia clavate to subcylindrical, more or less constricted, with 4-sterigmata and a basal clamp. Basidiospores subfusiform to navicular, smooth, thin-walled, IKI–.

Remarks – *Hyphodontiella* resembles *Hyphodontia* in the nature of the hyphae, differing in the presence of secondary simple-septa and in the shape of the basidiospores (Eriksson & Ryvar den 1976). According to molecular studies, *Hyphodontiella* clusters with clavarioid taxa, but there are no obvious morphological similarities to indicate that connection (Larsson 2007b).

Hyphoradulum Pouzar, Česká Mykol. 41: 26, 1987.

Type species – *Hyphoradulum conspicuum* Pouzar, Česká Mykol. 41(1): 26, 1987.

Remarks – A synonym of *Pseudolagarobasidium* J.C. Jang & T. Chen. See Nakasone (2015).

Hypochnella J. Schröt., Krypt.-Fl. Schlesien 3(1): 402, 1888.

Type species – *Hypochnella violacea* Auersw. ex J. Schröt., Krypt.-Fl. Schlesien 3(1): 402, 1888.

Basidiome resupinate, adnate, hymenophore smooth, violaceous turning brownish when dry. Hyphal system monomitic, hyphae with simple-septa, branched at right angles, basal hyphae thick-walled, with brownish walls, subhymenial hyphae thin-walled, hyaline. Cystidia absent. Basidia cylindrical, with a slight median constriction, with 4-sterigmata and a simple basal septum. Basidiospores narrowly ellipsoid to ovoid, smooth, thick-walled, brownish to violet, with a slight amyloid reaction.

Remarks – *Hypochnella* is characterized by the violaceous smooth basidiome, simple-septate and wide hyphae branched at right angles, and brownish to violaceous basal hyphae and basidiospores. The phylogenetic relationships of *Hypochnella* are unclear (Larsson 2007b).

Hypochniciellum Hjortstam & Ryvarde, Mycotaxon 12: 176, 1980.

Type species – *Leptosporomyces ovoideus* Jülich, Willdenowia, Beih. 7: 203, 1972.

Basidiome resupinate, effused, pellicular (athelioid) or thin and membranaceous, hymenophore smooth, more or less byssoid. Hyphal system monomitic. Basal hyphae with thin to thickened walls, distinct, partly straight and uniform, hyaline, subhymenial hyphae thin-walled, faintly sinuous, all hyphae with clamps. Cystidia absent in the type species. Basidia fairly small, more or less clavate, moderately constricted, with 4-sterigmata. Basidiospores thick-walled, smooth, non-amyloid or dextrinoid, distinctly cyanophilous,

Remarks – *Hypochniciellum* was described to include *Leptosporomyces ovoideus*, an acystidiate species with thick-walled and cyanophilous basidiospores, and with no reaction in Melzer's reagent. Later, Hjortstam (1981) emended *Hypochniciellum* to include also species with greyish spore-wall in Melzer's reagent. The species having a distinct reaction in Melzer that Hjortstam added to *Hypochniciellum*, are now placed in *Amylocorticiellum* (Gorjón et al. 2011).

Hypochnicium J. Erikss., Symb. bot. upsal. 16(1): 100, 1958.

Type species – *Thelephora bombycina* Sommerf., Suppl. Fl. lapp. (Oslo): 284, 1826.

Basidiome resupinate, adnate, effused, hymenophore smooth, tuberculate or irregularly odontoid, margin indeterminate. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Cystidia present or absent. Basidia cylindrical to narrowly clavate, usually constricted, with a basal clamp, with 4-sterigmata. Basidiospores ellipsoid to globose, distinctly thick-walled, smooth or warted, IKI–, cyanophilous.

Remarks – *Hypochnicium* in an old sense included species with thick-walled, cyanophilous, smooth or warted basidiospores (Boidin & Lanquetin 1971, Eriksson & Ryvarde 1976). Some species have been separated from *Hypochnicium*: *Kneiffia polonensis* has been included in *Gyrophanopsis* due to the hyphoid septate and encrusted cystidia; *Gloeocystidium analogum* in *Gloeohypochnicium* on the basis of the SA+ gloeocystidia; *Peniophora detritica* in *Lagarobasidium* for its evident affinities to *Hyphodontia* (Larsson 2007b); and *Corticium vellereum* in *Granulobasidium* by the irregularly warted basidiospores and the presence of chlamydospores.

Hypochnopsis P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 442, 1889.

Type species – *Hypochnopsis mustialaensis* (P. Karst.) P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 442, 1889.

Remarks – A synonym of *Amaurodon* J. Schröt.

Hypochnus Fr., Observ. Mycol. (Havniae) 2: 278, 1818.

Type species – *Corticium ferrugineum* Pers., Observ. Mycol. (Havniae) 2: 18, 1800.

Remarks – A synonym of *Tomentella* Pers. ex Pat.

Incrustoporia Domański, Acta Soc. Bot. Pol. 32: 737, 1963.

Type species – *Poria stellae* Pilát, Sb. Nár. Mus. v Praze, Rada B, Prír. Vedy 9(2): 107, 1953.

Remarks – *Incrustoporia* has usually been regarded as a synonym of *Skeletocutis* Kotl. & Pouzar, but, phylogeny of genera in the Incrustoporiaceae is actually not settled (Justo et al. 2017).

Inflatostereum D.A. Reid, Nova Hedwigia, Beih. 18: 143, 1965.

Type species – *Thelephora glabra* Lév., Anns Sci. Nat., Bot., sér. 3 5: 147, 1846.

Basidiome discrete, coriaceous, flabelliform, pileus tending to split radially into wedge-shaped segments, glabrous, hymenial surface smooth, stipe lateral, very short or rudimentary, attached to the substrate by a thin, closely appressed, creamy-ochre coloured mycelial disc. Hyphal

system mono- to dimitic, generative hyphae with clamps, thin- to thick-walled, some segments become conspicuously inflated up to 25 µm wide, skeletal hyphae in the stipe and basal portion of the basidiome. Cystidia and gloeocystidia absent. Basidia clavate, often with one large oil globule or a number of smaller guttules in the apical portion, 4-spored. Basidiospores ellipsoid, smooth, hyaline, nonamyloid.

Remarks – *Inflatostereum* is characterized by the inflated hyphae and dimitic hyphal system. It seems close to *Stereopsis* but the latter differs in the monomitic hyphal system and non-inflated hyphae (Ryvarden 2010).

Inonotus P. Karst., Meddn Soc. Fauna Flora fenn. 5: 39, 1879.

Type species – *Boletus hispidus* Bull., Herb. Fr. (Paris) 4: tab. 210, 1784.

Basidiome annual, resupinate, effused-reflexed, sessile, or stipitate, tissue yellowish-to reddish-brown, darkening in KOH; pileal surface hirsute, hispid, tomentose, or glabrous, yellowish to reddish-brown, often darkened and rimose in age; context brown, soft-fibrous to tough-corky. Hymenophore tubular with round to angular pores. Hyphal system monomitic to dimitic, hyphae simple-septate, in most species ranging from thin-walled and almost hyaline to thick-walled and brownish in KOH, much branched, binding hyphae present in some species. Setal hyphae present in context or trama of some species; hymenial setae present in most species, usually hymenial or subhymenial in origin, subulate to ventricose, pointed, pale to dark brown in KOH. Basidia clavate to broadly ellipsoid, 4-sterigmate, simple-septate at the base. Basidiospores narrowly ellipsoid to ovoid or subglobose, hyaline or golden to reddish brown, smooth, negative to variably dextrinoid in Melzer's reagent. Causing a white rot of living and dead conifers and hardwoods.

Remarks – *Inonotus* is a large genus of poroid Hymenochaetaceae, with soft basidiomes and a usually monomitic hyphal system (dimitic in *Phellinus*). We include it in this manual just to key out a large group of resupinate polypores. For more information, the reader is referred to specific polypore works (Bernicchia 2005, Bernicchia & Gorjón 2020, Ryvarden 2005, Ryvarden & Gilbertson 1993, Ryvarden & Melo 2014, 2017).

Intextomyces J. Erikss. & Ryvarden, Cortic. N. Eur. (Oslo) 4: 735, 1976.

Type species – *Corticium calceum* subsp. *contiguum* P. Karst., Acta Soc. Fauna Flora fenn. 2(1): 39, 1881.

Basidiome resupinate, effused, adnate, ceraceous, hymenophore at first smooth, then slightly tuberculate or odontoid, whitish or greyish, margin determinate. Hyphal system monomitic, hyphae clamped, thin-walled, irregularly ramified and densely interwoven. Cystidia absent or present (originally described without cystidia). Basidia suburniform, basally continuing in a narrow-stalked hypha, with a basal clamp. Basidiospores ellipsoid to subangulate, thick-walled, IKI–, cyanophilous.

Remarks – *Intextomyces* was segregated from *Hypochnicium* by Eriksson & Ryvarden (1976) according to the different ceraceous structure of the basidiome with densely interwoven hyphae and with a different development. It is recognized, among other characters, by the stalked basidia and the subangulate thick-walled basidiospores, very abundant in herbarium dry specimens. The molecular study by Larsson (2007b) does not clarify its phylogenetic relationships.

Irpex Fr., Elench. fung. (Greifswald) 1: 142, 1828.

Type species – *Sistotrema lacteum* Fr., Observ. mycol. (Havniae) 2: 266, 1818.

Basidiome annual, resupinate, effused or slightly effuse-reflexed, abhymenial surface whitish, tomentose, hymenophore poroid to hydroid, with irregular to irpicoid pores. Hyphal system dimitic, generative hyphae simple-septate, skeletal hyphae thick-walled, aseptate. Cystidia (pseudocystidia or skeletocystidia) present, thick-walled, with encrusted terminal part. Basidia clavate, with 4-sterigmata and a simple basal septum. Basidiospores cylindrical, smooth, thin-walled, IKI–.

Remarks – *Irpex* is usually well distinguished by the combination of micro- and macromorphological features. *Irpex* differs mainly from *Steccherinum* mainly in the irregularly irpicoid hymenophore whereas in the latter the hymenophore is formed by well-defined cylindrical aculei. In addition, most of the *Steccherinum* species have clamped generative hyphae. Phylogenetically *Irpex* and *Steccherinum* belong to the Polyporaceae but two different clades; *Irpex* is included in the *Byssomerulius* family with other clampless species, whereas *Steccherinum* belongs to the Meruliaceae with *Junghuhnia* as the closest related genus (Larsson 2007b). *Irpex* has traditionally been considered as a monotypic genus with the exclusion of many species (Maas Geesteranus 1974), but recently three more species have been added: *Irpex cremicolor* Miettinen, Niemelä & Ryvarden from Scandinavia (Miettinen et al. 2007), *Irpex hydroides* Y.W. Lim & H.S. Jung (Lim & Jung 2003), and *Irpex hacksungii* J.S. Lee & Y.W. Lim (Lee et al. 2008) both from Korea. Kotiranta & Saarenoksa (2002) transferred most of the *Steccherinum* species to *Irpex*, but at the time present we prefer to maintain the distinction, considering *Irpex* in the strict sense of a clampless genus with irregularly poroid to irpicoid hymenophore. *Flavodon* Ryvarden is another genus to consider, and often is synonymized to *Irpex*. *Flavodon flavus*, the generic type, is usually easily to distinguish by the yellowish to cinnamon hydroid to subporoid hymenophore that turns red in KOH.

Irpicodon Pouzar, Folia geobot. phytotax. 1: 371, 1966.

Type species – *Sistotrema pendulum* Alb. & Schwein., Consp. fung. (Leipzig): 261, 1805.

Basidiome pileate, dimidiate to flabelliform, often with imbricate growth, hymenophore hydroid to sublamellate, margin lobed. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled in the trama. Cystidia absent. Basidia clavate, with 4-sterigmata, and a basal clamp, arranged in a dense palisade. Basidiospores subballantoid, smooth, thin-walled, amyloid.

Remarks – *Irpicodon* is characterized by the pileate hydroid basidiome and amyloid basidiospores; Pouzar (1966b) pointed out a relationship with *Amylocorticium* and *Anomoporia*, both also with amyloid basidiospores. This supposition is confirmed by molecular data and *Irpicodon* is included in the Amylocorticiaceae with *Amylocorticium*, *Anomoporia*, *Amylocorticiellum*, *Amyloxenasma* and *Plicaturopsis* among others; with the last genus it shares also the pileate basidiome (Larsson 2007b).

Jaapia Bres., Ann. mycol. 9: 428, 1911.

Type species – *Jaapia argillacea* Bres., Annl. mycol. 9(4): 428, 1911.

Basidiome resupinate, effused, adnate, hymenophore porulose to flocculose, pilose by protuding cystidia. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia tubular, thick-walled, not encrusted. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores fusiform, smooth, thick-walled, hyaline to yellowish, dextrinoid, cyanophilous.

Remarks – *Jaapia* is characterized by the tubular thick-walled cystidia and the thick-walled dextrinoid and cyanophilous basidiospores. It includes only two well morphologically and phylogenetically delimited species, closely related to *Coniophora* and *Serpula* but in a distinct basal clade of the Boletales (Larsson 2007b). *Jaapia* forms the order Jaapiales as the sister group to the rest of the Agaricomycetidae, suggesting that the greatest radiation of pileate-stipitate mushrooms resulted from resupinate ancestors (Binder et al. 2010).

Jacksonomyces Jülich, Persoonia 10(3): 329, 1979.

Type species – *Peniophora phlebioides* H. S. Jaks. & Dearden, Can. J. Res. (C) 27: 150, 1949.

Remarks – A synonym of *Phlebia* Fr. The type of *Jacksonomyces* has the typical ceraceous basidiome of *Phlebia* but deviates in its stalked-clavate basidia, partly pleurobasidioid, and rather small basidia. *Peniophora phlebioides* on the basis of morphological characters and interfertility tests, is considered to be a synonym of *Phlebia subserialis*.

Junghuhnia Corda, Ann. Stud. Mycol. 195, 1842.

Type species – *Laschia crustacea* Jungh., Verh. Batav. Gerdotsch 17(2): 75, 1839.

Basidiome annual to perennial, resupinate to effuse-reflexed, hymenophore poroid, variable in colour, pores small, round to irregular. Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline, skeletal hyphae dominant, hyaline, thick-walled to almost solid. Cystidia present as skeletocystidia, arising in the trama and projecting above the basidial layer, encrusted in the apical part. Basidia clavate, 4-sterigmata, with a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, thin-walled, hyaline, IKI–. On dead wood or conifers and hardwoods, causing a white rot.

Remarks – It is very close related to *Steccherinum*, sharing the same microfeatures and only distinguished by the poroid hymenial surface. In recent studies *Junghuhnia* is treated as a synonym of *Steccherinum* (Miettinen & Ryvarden 2016, Westphalen et al. 2018).

Kavinia Pilát, Stud. Bot. Českoslav. 1: 3, 1938.

Type species – *Caldesiella sajanensis* Pilát, Bull. trimest. Soc. mycol. Fr. 52(3): 329, 1937 (= *Hydnum alboviride* Morgan, J. Cincinnati Soc. Nat. Hist. 10: 12, 1887).

Basidiome resupinate, effused, hymenophore hydroid, margin fibrillose with rhizomorphs. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled, usually smooth. Cystidia absent. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores fusiform to subcylindrical, with slightly thickened walls, and with cyanophilous warts.

Remarks – *Kavinia* is characterized by the hydroid resupinate basidiome and microscopically by the fusiform basidiospores ornamented with cyanophilous warts. It is closely related to *Hydnocristella* but phylogenetically and morphologically well separated by the smooth basidiospores in the latter (Larsson 2007b).

Kneiffia Fr., Fl. Scan. p. 340: 1835.

Type species – *Thelephora setigera* Fr., Elench. fung. (Greifswald) 1: 208, 1828.

Remarks – A homonym of *Kneiffia* Spach. (Onagraceae) and a synonym of *Hyphoderma* Wallr.

Kneiffiella Underw., Bull. Torrey bot. Club 24: 205, 1897.

Type species – *Thelephora setigera* Fr., Elench. fung. (Greifswald) 1: 208, 1828.

Remarks – A substitute for *Kneiffia* Fr. and a homonym of *Kneiffiella* P. Karst.

Kneiffiella P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 371, 1889.

Type species – *Hydnum barba-jovis* Bull. [as ‘*barba-jobi*’], Herb. Fr. 11: tab. 481, fig. 2, 1791.

Basidiome resupinate, effused, hymenophore smooth to usually odontoid or hydroid. Hyphal system monomitic (pseudodimitic), hyphae with or without clamps, thin- to thick-walled. Cystidia (pseudocystidia) numerous, tubular, thick-walled, arising from the subiculum. Basidia clavate to cylindrical with median constriction, with 4 sterigmata, with or without a basal clamp. Basidiospores subglobose to ellipsoid, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Kneiffiella* is morphologically and phylogenetically close to other *Hyphodontia* s.l. species but it is a valid and useful genus for those *Hyphodontia* species with thick-walled tubular cystidia of tramal origin. Larsson et al. (2006) recovered *Kneiffiella* in the Hymenochaetales. For a modern taxonomic concept see Riebesehl & Langer (2017) and Yurchenko & Wu (2016).

Koleroga Donk, Fungus, Wageningen 28: 35, 1958.

Type species – *Koleroga noxia* Donk, Fungus, Wageningen 28: 35, 1958.

Remarks – A synonym of *Ceratobasidium* D.P. Rogers.

Korupella Hjortstam & P. Roberts, Kew Bull. 55: 817, 2000.

Type species – *Korupella denticulata* Hjortstam & P. Roberts, Kew Bull. 55: 817, 2000.

Basidiome resupinate, effuse, pellicular, hymenophore hydroid. Hyphal system monomitic, hyphae simple-septate, thin- to thick-walled in the subiculum, some dextrinoid. Cystidia absent. Basidia narrowly clavate, with 4-sterigmata, with a simple basal-septum. Basidiospores oblong, smooth, thin-walled, inamyloid, some weakly dextrinoid (pale orange) and cyanophilous.

Remarks – *Korupella* was described for an African species with hydroid hymenophore, unclamped hyphae, lack of cystidia, small basidiospores some of them are weakly dextrinoid and cyanophilous (Roberts 2000). Except for the reaction of the basidiospores, it is similar to species in *Phanerochaete*.

Kurtia Karasiński, Index Fungorum 140: 1, 2014.

Type species – not indicated.

Remarks – Nom. inval., Art. 40.6 (Shenzhen code). Karasiński (2014) indicated after the generic description ‘*Corticium argillaceum*; here designated’ but with no specific generic type designation. The generic name *Kurtia* was intended to accommodate *Corticium argillaceum* Bres., *Gloeocystidium macedonicum* Litsch., and *Hyphoderma magnargillaceum* Boidin & Gilles.

Lachnocladium Lév., Considér. Mycol.: 108, 1846.

Type species – *Eriocladus brasiliensis* Lév., Anns Sci. Nat. Bot. Sér. 3(5): 159, 1846.

Remarks – A clavarioid genus belonging to the Lachnocladiaceae related to *Scytinostroma*, *Gloiothele*, *Vesiculomyces*, and *Asterostroma* (see Larsson & Larsson 2003, Leal-Dutra et al. 2018).

Laeticorticium Donk, Fungus, Wageningen 26: 16, 1956.

Type species – *Corticium roseum* Pers., Neues Mag. Bot. 1: 111, 1794.

Remarks – A superfluous synonym of *Corticium* Pers.

Laetisaria Burds., Trans. Br. mycol. Soc. 72(3): 420, 1979.

Type species – *Hypochnus fuciformis* McAlpine, Anns mycol. 4(6): 549, 1906; anamorph as *Isaria fuciformis* Berk., J. Linn. Soc., Bot. 13: 175, 1873.

Basidiome effused, pellicular, hymenophore smooth. Hyphal system monomitic, hyphae simple-septate, with broad hyphae, up to 10 µm diam. Cystidia absent, hyphidia simple, not branched. Probasidia sphaeropedunculate, metabasidium cylindrical to clavate, with 4-sterigmate, with a simple basal septum. Basidiospores ovoid, hyaline, thin-walled, IKI–, CB–.

Remarks – *Laetisaria* is a genus to accommodate *Hypochnus fuciformis*, an effused corticioid species related to *Dendrocorticium*, but differing in the simple-septate hyphae and not ramified hyphidia (Burdsall 1979). Phylogenetically it is classified in the Corticiaceae s.str. confirming the relationships supposed by Burdsall. The anamorph of *L. fuciformis* is a clavarioid filamentous structure growing on grasses, where conidia formation has been reported by Berkeley (1873), Smith (1884), Masee (1893), and Cunningham (1954) but not by Burdsall *l.c.* Some nomenclatural confusion exists in the epithet “*fuciformis*”, resolved by Burdsall *l.c.* as follow. Berkeley (1873) proposed the name *Isaria fuciformis* Berk. for the clavarioid anamorph stage. McAlpine (1906) found the perfect stage and proposed a combination as *Hypochnus fuciformis* (Berk.) McAlpine, but this combination was invalid because the teleomorphic name was typified by an anamorph. However, because McAlpine provided a description of the teleomorph, he is credited with describing a new species of *Hypochnus*, that should be cited as *Hypochnus fuciformis* McAlpine. In addition, Wakefield (1917), combined *Isaria fuciformis* in *Corticium*, as *C. fuciformis* (Berk.) Wakef., thus in the same McAlpine situation, the name was not validly published. Because Wakefield’s species is not conspecific with *H. fuciformis*, it should be regarded as a new species validly published, and the name cited as *Corticium fuciformis* Wakef. Wakefield’s species is an *Athelia* species, similar to *Athelia singularis* Parmasto (Parmasto 1967), and because, *A. singularis*

was subsequently described, *C. fuciformis* has priority, and it was stated by Burdsall *l.c.* as *Athelia fuciformis* (Wakef.) Burds.

Lagarobasidium Jülich, Persoonia 8: 84, 1974.

Type species – *Odontia pruinosa* Bres., Ann. mycol. 18(1/3): 43, 1920.

Remarks – A synonym of *Xylodon* (Pers.) Gray. Viner et al. (2018) showed that *Odontia pruinosa*, the type of *Lagarobasidium*, belongs in *Xylodon* and is a sister species to *X. detriticus*. Molecular and morphological information show that the traditional concept of *Lagarobasidium detriticum* (Bourdot) Jülich covers at least two species, *Xylodon detriticus* (Bourdot) K.H. Larss., Viner & Spirin from Europe and *X. prunosus* (Bres.) Spirin & Viner, with known distribution in Europe and North America (Viner et al. 2018).

Larssoniporia Y.C. Dai, Jia J. Chen & B.K. Cui, Persoonia 37: 26, 2015.

Type species – *Fomes tropicalis* Cooke, Grevillea 15 (73): 22, 1886.

Basidiome annual to perennial, pileate, effused-reflexed or resupinate, woody hard when dry. Pileal surface ochraceous beige to dark brown, usually glabrous. Pore surface cream, grey, alutaceous to brown; pores large to small, irregular, round to angular. Context clay-buff, rusty to brown, hard corky. Tubes tough. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dextrinoid. Gloeocystidia present. Cystidia with crystals at tips present. Basidiospores broadly ellipsoid to subglobose, hyaline, thin- to slightly thick-walled, finely asperulate, IKI+, CB– or CB+. Causing a white rot.

Remarks – *Larssoniporia* is characterized by its woody hard basidiomes when dry, tough tubes, dextrinoid skeletal hyphae, presence of cystidia with crystals at tips and gloeocystidia, finely asperulate and amyloid basidiospores, and by presenting a distribution in the tropics. In the phylogeny of Chen et al. (2016), *Larssoniporia tropicalis* (Cooke) Y.C. Dai, Jia J. Chen & B.K. Cui, the generic type, was present as a single lineage distant from the Wrightoporiaceae clade which was also shown by Larsson & Larsson (2003).

Laurilia Pouzar, Česká Mykol. 13: 14, 1959.

Type species – *Stereum sulcatum* Burt, Ann. Rep. Reg. St. N.Y. 54: 154, 1901.

Basidiome perennial, resupinate to effuse-reflexed, with a corky consistence, hymenophore smooth to tuberculate. Hyphal system trimitic, generative hyphae with clamps, hyaline, skeletal hyphae subhyaline to pale brown, binding hyphae more or less hyaline. Cystidia (metuloids) thick-walled, encrusted. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores globose to subglobose, minutely echinulate thin- to slightly thick-walled, hyaline, amyloid.

Remarks – *Laurilia* is characterized by the trimitic hyphal system (a very rare feature among the corticioid fungi), the presence of metuloids, and by the amyloid echinulate basidiospores. It is phylogenetically included in the Echinodontiaceae among the russuloid clade with other corticioid genera as *Amylostereum* (Larsson & Larsson 2003, Larsson 2007b). Monotypic genus. For further comments and phylogenetic analyses see Liu et al. (2017).

Lauriliella S.H. He & Nakasone, Mycologia 109 (4): 571, 2017.

Type species – *Stereum taxodii* Lentz & H.H. McKay, Mycologia 52: 262, 1961.

Basidiome perennial, effuse-reflexed, pileate or umbonate, woody hard. Upper surface velutinous, grayish brown to dark brown, sulcate, becoming glabrous, black, rimosus with age; margin acute to blunt, thickening with age. Hymenophore smooth to tuberculate, grayish orange, brownish orange to light brown; margin sterile, distinct. Context brownish orange to light brown, woody hard. Hyphal system dimitic. Generative hyphae thin- to thick-walled, hyaline, nodose-septate, with scattered secondary simple septa. Skeletal hyphae dominant, thick-walled to subsolid, light yellow, unbranched. Cystidia hyphoid to clavate, thick-walled, apically encrusted, embedded or slightly projected. Basidia clavate, hyaline, with 4 sterigmata and a basal clamp connection. Basidiospores broadly ellipsoid to subglobose, hyaline, thick-walled, echinulate, amyloid.

Associated with white stringy rot to brown powdery rot in pockets, often associated with living trees of Cupressaceae.

Remarks – *Lauriliella* creates large pockets of decayed wood scattered in the heartwood of *Taxodium* and *Chamaecyparis* that is somewhat stringy or laminated, whereas *Laurilia* causes a white stringy rot or white pocket rot of dead coniferous wood. The hymenophore is light yellow or pink to salmon-colored in *Laurilia* but gray, orange, or brown in *Lauriliella*. Microscopically, unbranched skeletal hyphae are dominant in the context of *Lauriliella* whereas in *Laurilia* unbranched skeletal and richly branched binding hyphae are present (Liu et al. 2017).

Lawreymyces Lücking & Moncada, Fungal Diversity 84: 133, 2017.

Type species – *Lawreymyces palicei* Lücking & Moncada, Fungal Diversity 84: 135, 2017.

Remarks – *Lawreymyces* is a genus proposed on by a cryptic (no physical type specimens preserved except for the corresponding host lichens, which, however, do not show the features of the fungus), lichenicolous basidiomycete in the family Corticiaceae, on lichens of the family Verrucariaceae, known specifically from the genera *Agonimia* and *Normandina*; consistently differing from the currently resolved sister clade formed by the related genera *Erythricium* and *Marchandiobasidium* (Lücking & Moncada 2017).

Lawrynomyces Karasiński, Acta Mycol. 48(1): 6, 2013.

Type species – *Hyphoderma capitatum* J. Erikss. & Å. Strid, in Eriksson & Ryvarde, Cort. N. Eur. 3: 461, 1975.

Basidiome resupinate, effused, adnate, thin. Hymenophore even, margin indeterminate, without rhizomorphs. Hyphal system monomitic. Hyphae with simple septa, thin to thick-walled, hyaline. Cystidia tubular, with capitate apex. Hyphidia sometimes present. Basidia suburniform to subcylindrical and constricted, more or less pedunculate, basally without clamps, with (2–)4 prominent sterigmata. Basidiospores relatively large, broadly ellipsoid to subglobose, with slightly thickened walls and distinct apiculus, smooth, IKI–, CB–.

Remarks – *Lawrynomyces* was proposed to accommodate *H. capitatum*, a deviating species in *Hyphoderma* by the simple-septate hyphae. It belongs to the *Rickenella* clade in the Hymenochaetales (Karasiński 2013).

Laxitextum Lentz, U.S. Dept. Agric. Monogr. 24: 18, 1956.

Type species – *Thelephora bicolor* Pers., Syn. meth. fung. (Göttingen) 2: 568, 1801.

Basidiome resupinate an effuse-reflexed (stereoid), upper sterile surface tomentose, hymenophore smooth, whitish. Hyphal system monomitic, hyphae with clamps, thin-walled, brown in the trama. Cystidia (gloeocystidia) cylindrical to subulate, frequently constricted, enclosed or slightly projecting. Basidia tubular to clavate, with 4-sterigmata, and with a basal clamp. Basidiospores ellipsoid to subglobose, finely asperulate to echinulate, amyloid.

Remarks – *Laxitextum* is characterized by the stereoid basidiome, the presence of gloeocystidia and by the minutely echinulate amyloid basidiospores. Molecular studies by Larsson & Larsson (2003) and Larsson et al. (2004) show that *Laxitextum* is closely related to *Hericium* in the russuloid clade.

Lazulinospora Burds. & M.J. Larsen, Mycologia 66(1): 97, 1974.

Type species – *Lazulinospora wakefieldiae* Burds. & M.J. Larsen, Mycologia 66(1): 98, 1974.

Remarks – A synonym of *Amaurodon* J. Schröt.

Leaia Banker, Mem. Torrey Bot. Club 12: 175, 1906.

Type species – *Leaia piperata* Banker, Mem. Torrey bot. Club 12(2): 175, 1906, (= *Hydnum strigosum* Sw., K. Vetensk-Acad. Nya Handl. 31: 250, 1810).

Remarks – A synonym of *Gloiodon* P. Karst.

Leifia Ginns, Mycologia 90(1): 19 (1998)

Type species – *Phanerochaete flabelliradiata* J. Erikss. & Hjortstam, in Eriksson, Hjortstam & Ryvarden, Cortic. N. Eur. (Oslo) 6: 1073, 1981.

Basidiome loosely adnate, effuse, moderately thick, hymenophore grandinoid and with the margin distinctly fibrillose. Hyphal system monomitic, hyphae thin-walled to slightly thick-walled, in KOH with walls swelling, without clamps. Cystidia terminal, thick-walled except in the apical part, walls swelling or dissolving in 2% KOH, inamyloid. Basidia subclavate to pedunculate, basally thick-walled, with four sterigmate and without a basal clamp. Basidiospores ellipsoid, thin-walled, smooth, medium-sized (4–6 µm long), walls inamyloid, non-dextrinoid and without cyanophilous reaction.

Remarks – *Phanerochaete flabelliradiata* agrees in some respects with *Hyphodermella*, preferably in the shape of the basidia and the nature of the subodontoid hymenium. The main difference from the type species of this genus is the occurrence of cystidia and the morphology of the spores. Another striking feature is the cystidial wall that swells and dissolved partially in KOH. It is considered a synonym of *Odonticum* Parmasto according to Zmitrovich (2001).

Leifiporia Y.C. Dai, F. Wu & C.L. Zhao, Mycological Progress 15(7): 802, 2016.

Type species – *Leifiporia rhizomorpha* Y.C. Dai, F. Wu & C.L. Zhao, Mycological Progress 15(7): 803, 2016.

Basidiome annual, resupinate, adnate, soft when fresh, brittle when dry, pore surface white to cream. Pores angular; dissepiments thin, entire to slightly lacerate. Hyphal system dimitic, generative hyphae hyaline, thin-walled with clamp connections, frequently branched at right angle; skeletal hyphae present in subiculum only, interwoven, distinctly thinner than generative hyphae, IKI–, CB–; tissues unchanged in KOH. Basidia barrel-shaped to pyriform. Basidiospores ellipsoid, hyaline, thin-walled, smooth, usually bearing one or two guttules, IKI–, CB–.

Remarks – *Leifiporia* is characterized by an annual growth habit, resupinate basidiocarps with white to cream pore surface, dimitic hyphal system with clamped generative hyphae and branching mostly at right angles, skeletal hyphae present in the subiculum only and distinctly thinner than generative hyphae. Phylogenetic analyses show that *Leifiporia* belongs to the core polyporoid clade and is closely related to *Diplomitoporus overholtsii* and *Lopharia cinerascens*, and then grouped with *Pycnoporus* and *Trametes* (Zhao et al. 2016b).

Leiostroma Fr., Novit. F. Suec. part 5 cont. p. 80: 1819.

Type species – *Thelephora maculaeformis* Fr. Observ. mycol. (Havniae) 1: 150, 1815. (= *Thelephora polygonia* (Pers.) Pers., Syn. meth. fung. (Göttingen) 2: 574, 1801).

Remarks – A synonym of *Peniophora* Cooke.

Lentoporia Audet, Mushrooms nomenclatural novelties 5: 1, 2017.

Type species – *Poria carbonica* Overh., Canadian Journal of Research, Section C 21: 232, 1943.

Remarks – According to Audet (2017e) *Lentoporia* differs from *Antrodia* s.str. by only round pores, strongly amyloid hyphae and larger skeletal hyphae, smaller basidia, smaller ellipsoid to short cylindrical basidiospores and It differs from *Amyloporia* s.str. by no yellow basidiome, no bitter taste, and no curved basidiospores.

Lenzitella Ryvarden, Syn. Fung. (Oslo) 5: 174, 1991.

Type species – *Lenzitella malençonii* Ryvarden, Syn. Fung. (Oslo) 5: 174, 1991.

Remarks – A synonym of *Lenzitopsis* Malençon & Bertault.

Lenzitopsis Malençon & Bertault, Bull. Soc. Mycol. France 79: 82, 1963.

Type species – *Lenzitopsis oxycedri* Malençon & Bertault, Bull. Soc. Mycol. France 79: 82, 1963.

Synonym – *Lenzitella* Ryvarden.

Basidiome annual, resupinate to effused-reflexed, submembranaceous, abhymenial surface tomentose to glabrous, hymenial surface irpicoid to irregularly poroid or irregularly lamellate, with brown to black brown. Hyphal system monomitic, hyphae with thin to thickened walls, hyaline to brownish, with clamps. Cystidia absent. Basidia clavate to cylindrical, often somewhat constricted and narrowed towards the base, with 2-4 sterigmata, with a basal clamp. Basidiospores subglobose to broadly ellipsoid, yellowish to brown, warted, thin-walled, IKI–, CB–. It is associated to *Juniperus* causing a white rot.

Remarks – *Lenzitopsis* is characterized by the brown lamellate to irpicoid hymenophore and brownish ornamented basidiospores (Malençon & Bertault 1963, Bernicchia & Gorjón 2020).

Lepidomyces Jülich, Persoonia 10: 329, 1979.

Type species – *Peniophora subcalcea* Litsch., Öst. bot. Z. 88: 119, 1939.

Basidiome resupinate, effused, ceraceous-crustaceous, adnate, hymenophore smooth. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled, indistinct, torulose, Cystidia (leptocystidia) present, hyaline, thin-walled, clamped, basally strongly encrusted. Basidia variable in shape, cylindrical, suburniform or clavate, sometimes pleurobasidia are present, hyaline, with 4-sterigmata, and with a basal clamp. Basidiospores cylindrical to narrowly ellipsoid, hyaline, smooth, thin-walled, IKI–, CB–.

Remarks – *Lepidomyces* is characterized by the basally strongly encrusted leptocystidia and frequent pleurobasidia. The phylogenetic relationships are still unclear, but it may belong to the Pterulaceae in the Agaricales, close to *Aphanobasidium* (Larsson 2007b).

Leptochaete Lév., Considér. Mycol.: 108, 1846.

Remarks – In the original publication as '*Leptochaete*, Lév. = *Hymmochaete*, Lév.'; nomen rejiciendum.

Leptochaete Zmitr. & Spirin, Mycena 6: 39, 2006.

Type species – *Thelephora sanguinea* Fr., Elenchus Fungorum 1: 203, 1828.

Remarks – A homonym of *Leptochaete* Lév. 1846 and a synonym of *Phanerochaete* P. Karst.

Leptocorticium Hjortstam & Ryvarden, Syn. Fung. (Oslo) 15: 23, 2002.

Type species – *Corticium cyatheae* S. Ito & S. Imai, Trans. Sapporo nat. Hist. Soc. 16: 143, 1940.

Basidiome resupinate, adnate, crustaceous, hymenophore smooth, margin indeterminate. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled. Dendrohyphidia present and numerous. Cystidia (leptocystidia), almost subulate, thin-walled, basally encrusted. Basidia clavate, subpedunculate, with 4-sterigmata, and a basal clamp. Basidiospores subfusiform to navicular, smooth, thin- to slightly thick-walled, IKI–, CB–.

Remarks – *Leptocorticium* reminds in some respects *Lepidomyces*, but it differs in the terminal basidia and the presence of dendrohyphae. *Repetobasidiellum* is somewhat similar but it has repetitive basidia (Hjortstam & Ryvarden 2002c). Phylogenetically its relationships are unclear, but it may belong to the Corticiaceae (Larsson 2007b).

Leptodon Quél., Ench. fung. Eur. (Paris) p. 191, 1886.

Type species – *Hydnum pudorinum* Fr., Elench. Fung. 1: 133, 1828) (= *Hydnum ochraceum* Pers. ex J.F. Gmel., in Gmelin, Systema Naturae, 2(2): 1440, 1792).

Remarks – A synonym of *Steccherinum* S.F. Gray.

Leptosporomyces Jülich, Willdenowia, Beih. 7: 192, 1972.

Type species – *Corticium galzinii* Bourdot, Rev. Sci. Bourb. Centr. Fr. 23(1): 11, 1910.

Synonym – *Fibulomyces* Jülich. Includ.: *Confertobasidium* Jülich.

Basidiome resupinate, effused, soft and fragile, pellicular, hymenophore smooth, whitish or with some green or pinkish tints. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled, hyaline, encrusted or not. Cystidia usually absent or present as thin-walled hyphoid leptocystidia. Basidia clavate, usually small up to 12–15 µm long, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid or cylindrical, usually up to 5 µm long, smooth, thin-walled, IKI–, CB– (in the generic type) or with a weakly cyanophilous reaction.

Remarks – The generic delimitation of *Fibulomyces* and *Leptosporomyces* from *Athelia* s.l. is somewhat controversial. Both genera were differentiated from *Athelia* mainly by the smaller size and the shape of basidia (Jülich 1972); *Leptosporomyces* with *Corticium galzinii* Bourdot as the generic type species, was differentiated by a more pellicular basidiome with some smaller basidia (up to 12 µm long), while the basidiome is membranaceous in *Fibulomyces*, with *Corticium mutabile* Bres., as the type species. Molecular data indicate that both *Athelia* and *Athelopsis*, are polyphyletic and also seem to support a narrow genus concept close to the one advocated by Jülich (Larsson 2007b). *Fibulomyces* and *Leptosporomyces* are phylogenetically very closely related and almost morphologically indistinguishable, for that reason we chose to include all the species in *Leptosporomyces* instead in *Fibulomyces*, even if the generic type in *Fibulomyces* is an older name (page priority is not a criterion when two genera are described in the same publication). However, most of the species have been commonly referred to *Leptosporomyces* during the recent time (Parmasto et al. 2004), and the use of *Fibulomyces* needed more nomenclatural proposals. More species are needed to be sequenced to establish a more comprehensible delimitation of these related generic entities. Jülich (1972) erected the genus *Confertobasidium* to include those athelioid species with pigmented brown basal hyphae, but designating *Corticium olivaceoalbum* Bourdot & Galzin, as the generic type, a dimitic species with gloecystidia and amyloid basidiospores actually placed in *Scytinostromella*.

Leptoporus Quél., Enchir. fung. (Paris): 175, 1886.

Type species – *Boletus mollis* Pers., Observ. mycol. (Lipsiae) 1: 22, 1796.

Basidiome annual, sessile to effused reflexed, upper surface white to pale reddish at first, becoming dark reddish purple to purplish brown with age or drying, pore surface becoming purplish brown, pores regular. Hyphal system monomitic, generative hyphae simple-septate. Cystidia or other sterile hymenial elements lacking. Basidia clavate, 4-sterigmate, simple-septate at the base. Basidiospores allantoid, hyaline, negative in Melzer's reagent; causes a brown cubical rot of dead conifers in boreal forests.

Remarks – The genus comes very close to *Postia*, sharing the same hyphal system, type of spores and brown rot, but is separated because of the simple-septate hyphae and the color change from pinkish white to deep purplish in drying. According to molecular data by Justo et al. (2017), *Leptoporus* is recovered in the Irpicaceae, close to *Ceriporia* and *Meruliopsis*.

Leucogyrophana Pouzar, Česká Mykol. 12: 32, 1958.

Type species – *Merulius molluscus* Fr., Syst. mycol. (Lundae) 1: 329, 1821.

Basidiome resupinate, effused, easily detachable, membranaceous to pellicular, hymenophore smooth to merulioid, yellowish, orange red to brown coloured. Hyphal system monomitic, hyphae with clamps, more or less branched. Cystidia usually absent. Basidia clavate, with 4-sterigmata, basally clamped. Basidiospores ellipsoid, smooth, thick-walled, usually yellow to brown coloured, dextrinoid, cyanophilous.

Remarks – *Leucogyrophana*, according to Jarosch & Besl (2001) and Binder & Hibbett (2006), is polyphyletic and could be reduced to just the type, *Merulius molluscus*. It is very closely related to *Hygrophoropsis aurantiaca* (Wulfen) Maire and included in the Hygrophoropsidaceae, whereas the rest of *Leucogyrophana* would be placed within *Coniophora*. According to Jarosch & Besl l.c., *Hydnum pinastri* Fr. is included in *Hydnomerulius*. *Leucogyrophana* is considered a synonym of *Serpula* by Zmitrovich & Spirin (2002), but molecular studies (Jarosch & Besl l.c., Binder & Hibbett l.c., Larsson 2007b) seem to indicate that they do not form a monophyletic group.

Although there are not many morphological characters to support a clear generic separation (larger basidiospores and presence of skeletal hyphae in *Serpula*), and waiting for further studies, it seems preferably to keep *Leucogyrophana* and *Serpula* separate (see also Ginns 1978, 1982).

Leucophellinus Bondartsev & Singer, in Singer, Mycologia 36(1): 68, 1944.

Type species – *Trametes irpicoides* Bondartsev ex Pilát, Bull. trimest. Soc. mycol. Fr. 52(3): 311, 1937.

Basidiome resupinate to pileate, pileal surface if present densely tomentose. Pores angular, cream to light brown, context cream. Hyphal system monomitic, generative hyphae simple-septate. Cystidia clavate to tubular, sinuous, thin- to thick-walled, adventitious septa may occur, usually not encrusted but a resinous matter may be covering the cystidia. Basidia clavate, with 4-sterigmate, simple-septate at the base. Basidiospores broadly ellipsoid to ovoid, smooth, thick-walled. Causing a white rot.

Remarks – *Leucophellinus* is characterized by the simple-septate hyphae, long cystidia, and ellipsoid to ovoid, thick-walled basidiospores. Some similarities share with *Oxyporus*, but in the latter, cystidia are slender and apically encrusted (Ryvarden 1991).

Licentia Pilát, Ann. Mycol. 38: 66, 1940.

Type species – *Licentia yaochanica* Pilát, Ann. mycol. 38(1): 66, 1940.

Remarks – A synonym of *Lopharia* Kalchbr. & MacOwan.

Licrostroma P.A. Lemke, Can. J. Bot. 42: 762, 1964.

Type species – *Corticium subgiganteum* Berk., Grevillea 2: 3, 1873.

Basidiome resupinate or effuso-reflexed, confluent, margin determinate, hymenial surface continuous, cream-colored to alutaceous. Hyphal system dimitic, generative hyphae simple-septate, walls thin to partially thickened, basal hyphae aseptate, thick-walled to semisolid, with tapering, antler-like branches (*Bovista* type), indextrinoid. Pseudocystidia thin to thick-walled elements of deep origin, flexuous-cylindric to subclavate, with rounded or tapering apices, not projecting beyond the level of the hymenium. Basidia scattered, large, cylindrical. Basidiospores large, globoid to subgloboid, apiculate, thick-walled, smooth, non-amyloid in Melzer's.

Remarks – *Licrostroma* is characterized by the simple-septate and binding *Bovista*-like hyphae, long cylindrical cystidia, and non-amyloid basidiospores. Monotypic genus (Lemke 1964b).

Lilaceophlebia (Parmasto) Spirin & Zmitr., Nov. sist. Niz. Rast. 37: 177, 2004.

Basionym – *Phlebia* sect. *Lilaceophlebia* Parmasto, Consp. System. Corticiac. (Tartu): 94, 1968.

Type species – *Corticium lividum* Pers., Observ. mycol. (Lipsiae) 1: 38, 1796.

Remarks – A synonym of *Phlebia* Fr.

Limonomyces Stalpers & Loer., Can. J. Bot. 60(5): 533, 1982.

Type species – *Limonomyces roseipellis* Stalpers & Loer., Can. J. Bot. 60(5): 534, 1982.

Basidiome resupinate, effused, ceraceous. Hyphal system monomitic, hyphae hyaline, with clamps. Basidia urniform, normally originating from thin-walled probasidia, with (1–)2–4 sterigmata. Basidiospores ellipsoid to pip-shaped, smooth, thin-walled, hyaline, inamyloid.

Remarks – *Limonomyces* is a pathogen pinkish corticoid growing on grasses. *Laetisaria* also is a pathogen on several herbs, differing in having hyphidia and hyphae lacking clamps. See Stalpers & Loerakker (1982) for a complete survey on the previous genera.

Lindtneria Pilát, Stud. Bot. Čechoslav. 1: 72, 1938.

Type species – *Poria trachyspora* Bourdot & Galzin, Bull. trimest. Soc. mycol. Fr. 41: 219, 1928.

Basidiome resupinate, effused, membranaceous, hymenophore smooth, merulioid to poroid or hydroid. Hyphal system monomitic, hyphae with or without clamps (usually both), often inflated where branches occur. Basidia hyaline, clavate to suburniform, with 4-sterigmata, with strongly cyanophilous globules or guttules in the cytoplasm. Basidiospores globose to broadly ellipsoid, hyaline to mostly pale brown, somewhat thick-walled, with an ornamentation of aculei or wing-like crests, IKI–, cyanophilous.

Remarks – *Lindtneria* is characterized above all by the basidia with cyanophilous granulation and the cyanophilous ornamented basidiospores. It is phylogenetically very closely related to the gastroid genus *Stephanospora* Pat., sharing common morphological characters as the cyanophilous thick-walled and ornamented basidiospores (Martín et al. 2004). Eriksson & Ryvarde (1975) pointed a relation of *Lindtneria* with *Cristinia* due to the cyanophilous granulations in immature basidia, and this connection is confirmed also by molecular data (Larsson 2007b).

Litschauerella Oberw., Sydowia 19: 43-44, 1966.

Type species – *Peniophora abietis* (Bourdot & Galzin) Bourdot & Galzin, Hyménomyc. de France (Sceaux): 286, 1928.

Basidiome resupinate, effused, adnate, thin, hymenophore smooth, velutinous under the lens, margin thinning out, indeterminate. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia (lyocystidia) numerous, narrowly conical with an acute apex, pleural or multi-rooted at the base, thick-walled, heavily encrusted, usually covered with infrequently branched hyphae. Basidia terminal or pleural, short-cylindrical to ellipsoid, with a basal clamp, with 4-sterigmata. Basidiospores globose, ornamented (or smooth), IKI–.

Remarks – *Litschauerella* is characterized by the multi-rooted lyocystidia covered with branched hyphae and by the ornamented basidiospores. It differs from *Tubulicium* mainly by the subglobose ornamented spores, vermiform to sigmoid and smooth in the latter. It seems to belong to the Hydnodontaceae, and related to genera such as *Brevicellicium*, *Fibrodontia*, *Subulicystidium*, *Trechispora*, and *Tubulicium* (Larsson 2007b).

Lloydella Bres., Lloyd Mycol. Writ. 1: 51, 1901.

Type species – *Thelephora cinerascens* Schwein., Trans. Am. phil. Soc., Ser. 2 4(2): 167, 1832.

Remarks – A synonym of *Lopharia* Kalchbr. & MacOwan.

Lobulicium K.H. Larss. & Hjortstam, in Hjortstam & Larsson, Mycotaxon 14: 69, 1982.

Type species – *Lobulicium occultum* K.H. Larss. & Hjortstam, in Hjortstam & Larsson, Mycotaxon 14(1): 70, 1982.

Basidiome resupinate, small, orbicular to effuse, loosely adnate, hymenophore smooth, or more or less blister-like. Hyphal system monomitic, hyphae with clamps, distinct, thin-walled, basal hyphae long-celled, rarely with ampulliform swellings near the septa, subhymenial hyphae short-celled. Cystidia absent. Basidia small, mostly subclavate, usually with 4-sterigmata. Basidiospores with seven lobes, thin-walled, IKI–, CB–.

Remarks – *Lobulicium* is characterized by the small basidiome growing on very decayed brown-rotted wood and by the lobed basidiospores (Hjortstam & Larsson 1982). According to molecular data, *Lobulicium* seems to belong to the Atheliaceae (Larsson 2007b).

Lomatia P. Karst., Bidr. Känned. Finl. Nat. Folk 48: 403, 1889.

Type species – *Thelephora salicina* Fr., Syst. mycol. (Lundae) 1: 442, 1821.

Remarks – A homonym of *Lomatia* R. Broome 1819 (Proteaceae).

Lomatina P. Karst., Hedwigia 31: 220, 1892.

Type species – *Thelephora salicina* Fr., Syst. mycol. (Lundae) 1: 442, 1821.

Remarks – A substitute of *Lomatia* P. Karst. and a synonym of *Cyrtidia* Quéf.

Lopharia Kalchbr. & MacOwan, Grevillea 10(54): 58, 1881.

Type species – *Lopharia lirellosa* Kalchbr. & MacOwan, Grevillea 10(54): 58, 1881 (= *Radulum mirabile* Berk. & Broome, J. Linn. Soc., Bot. 14(2): 61, 1875).

Basidiome resupinate, effuse-reflexed to pileate, upper sterile surface tomentose, hymenophore smooth to tuberculate, with irregular ridges to hydroid or semiporoid, greyish with to cream or pale ochraceous. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled, hyaline. Cystidia (skeletocystidia) thick-walled, hyaline and encrusted. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, hyaline, with distinct oily content, IKI–, CB–.

Remarks – *Lopharia* differs from *Porostereum* in the lighter basidiome, hyaline skeletocystidia, and larger basidiospores, usually more than 10 µm long, with distinct guttulate content. *Hjortstamia* differs from both *Lopharia* and *Porostereum* in the clampless generative hyphae (Hjortstam & Ryvarde 1990, Boidin & Gilles 2002). *Lopharia* belongs to the Polyporaceae according to molecular data (Larsson 2007b).

Luellia K.H. Larss. & Hjortstam, Svensk bot. Tidskr. 68: 59, 1974.

Type species – *Corticium reconditum* H.S. Jacks., Can. J. Res., Section C 26: 154, 1948.

Basidiome resupinate, effused, thin, hymenophore smooth, brown. Hyphal system monomitic, hyphae clamped or not. Cystidia absent. Basidia clavate to pyriform, with 2 or 4-sterigmata, with simple basal septum or clamp. Basidiospores fusiform to navicular, smooth, thin-walled, IKI–, CB–.

Remarks – *Luellia* is mainly characterized by its brown basidiome, a rare character in the corticioid fungi, except for the Coniophoraceae; and microscopically by its pyriform basidia and fusiform basidiospores (Larsson & Hjortstam 1974). Phylogenetically *Luellia* is included in the Hydnodontaceae although it does not show clear morphological common characteristics with the other members in that family (Larsson 2007b).

Luteoporia F. Wu, Jia J. Chen & S.H. He, Phytotaxa 263(1): 37, 2016.

Type species – *Luteoporia albomarginata* F. Wu, Jia J. Chen & S.H. He, Phytotaxa 263(1): 37, 2016.

Basidiome annual, resupinate, soft when fresh, hard corky upon drying. Hymenophore poroid, pore surface yellow when fresh, straw-colored when dry, pores angular to irregular, dissepiments thin, lacerate, margin cottony, thinning out. Hyphal system monomitic, generative hyphae with clamp connections, become red in KOH. Cystidia-like hyphae projecting out of hymenium, cystidioles present. Basidia subclavate to barrel-shaped, bearing four sterigmata and a basal clamp connection. Basidiospores oblong-ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–. Causing a white rot.

Remarks – *Luteoporia* is distinguished from other fungal genera by having yellow poroid hymenophore, a monomitic hyphal structure, generative hyphae with clamp connections, cystidia like hyphae projecting out of hymenium (Wu et al. 2016).

Lyoathelia Hjortstam & Ryvarde, Syn. Fungorum 18: 10, 2004.

Type species – *Peniophora laxa* Burt, Ann. Mo. Bot. Gard. 12: 224, 1926.

Basidiome resupinate, pellicular to membranaceous, smooth, subiculum thin, white, hyphal chords usually present. Hyphal system monomitic, hyphae thin- to thick-walled, encrusted, all hyphae with clamps. Cystidia capitate, encrusted, thin-walled. Basidia somewhat stalked, thin-walled, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, thin-walled or with distinct walls, smooth, IKI–, CB–.

Remarks – *Lyoathelia* reminds *Athelia*, but it differs in a more developed basidiome with a thicker subiculum, capitate cystidia, somewhat pedunculate basidia, and almost globose basidiospores (Hjortstam & Ryvarde 2004a).

Lyomyces P. Karst., Bidr. Känn. Finl. Nat. Folk 37: 153, 1882.

Type species – *Corticium sambuci* Pers., Neues Mag. Bot. 1: 111, 1794.

Basidiome resupinate, effused, hymenophore smooth to rarely granular or odontoid. Hyphal system monomitic, all hyphae with clamps, subicular hyphae thin- to thick-walled, usually strongly encrusted. Cystidia (leptocystidia) present, capitate or subulate, usually more or less encrusted. Basidia clavate to suburniform, with 4-sterigmata and a basal clamp. Basidiospores globose, ellipsoid or cylindrical, smooth, thin- to slightly thick-walled, IKI–, with a weak cyanophilous reaction.

Remarks – *Lyomyces* is separated from *Hyphodontia* s.l. mainly by the strongly encrusted capitate or subulate cystidia. The relationships with the other *Hyphodontia* s.l. are not completely clear and more studies are required (see Yurchenko et al. 2017, 2020).

Macrohyporia I. Johans. & Ryvarden, Trans. Br. mycol. Soc. 72(2): 192, 1979.

Type species – *Polyporus dictyoporus* Cooke, Grevillea 12(no. 61): 17, 1883.

Basidiome annual to perennial, resupinate, in small patches to widely effused, brittle to hard when dry. Pore surface cream to ochraceous or pale brown, dull, pores 1-5 per mm or larger, context thin. Hyphal system (pseudo)dimitic, generative hyphae simple-septate, thin-walled, binding or strongly branched thick-walled generative hyphae dominating in the trama and context, inamyloid to weakly amyloid, of large diameter. Basidia clavate, 4-sterigmate, simple-septate at the base. Basidiospores hyaline to pale yellow, thin- to slightly thick-walled, subglobose to ellipsoid, non-amyloid. Causing a brown rot.

Remarks – *Macrohyporia* is characterized by the wide and simple-septate generative hyphae, the wide and tortuous binding hyphae (even in some cases they present simple-septa, so can be considered sclerified generative hyphae), and by the slightly thick-walled subglobose basidiospores (Rajchenberg 1996).

Malacodermum (Fr.) Marchand, Énum. Méth. Rais Fam. Genres Mycophytes (Paris): 200, 1896.

Basionym – *Stereum* subgen. *Malacodermum* Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 1(1): 111, 1851.

Type species – *Stereum vitile* Fr., K. svenska Vetensk-Akad. Handl., ser. 3: 23, 1848.

Remarks – A name of uncertain application.

Marchandiobasidium Diederich & Schultheis, in Diederich, Schultheis & Blackwell, Mycol. Res. 107(5): 524, 2003.

Type species – *Marchandiobasidium aurantiacum* Diederich & Schultheis, in Diederich, Schultheis & Blackwell, Mycol. Res. 107(5): 524, 2003.

Basidiome effused, thin, adnate, granulose, floccose, margin indeterminate, light orange (same colour as sclerotia of *Marchandiomyces aurantiacus*), hymenium comprising one or several layers of basidia on vertically branching, thin-walled hyphae. Hyphal system monomitic, basal hyphae hyaline, occasionally contorted, thick-walled, subhymenial hyphae hyaline, thin-walled, lacking clamps. Hyphidia, cystidia and other sterile hymenial elements lacking. Basidia initially elongate cylindrical, sometimes with a basal, lateral, ellipsoid probasidial bladder, generally becoming clavate to suburniform, exceptionally with one thin, transverse septum in the upper third, with four long and curved sterigmata, basal clamp lacking. Basidiospores pyriform or lacrimiform, one side frequently flattened or slightly concave, with a prominent truncate apiculus, hyaline, smooth, thick-walled, nonamyloid, not repetitive.

Remarks – Basidiome of *Marchandiobasidium aurantiacum* is rare but widespread in Europa, also cited from North America (Diederich & Lawrey 2007). The anamorph, *Marchandiomyces aurantiacus* is relatively common and widespread in Europe. The species is a virulent parasite of corticolous *Physcia* spp., occasionally also attacking neighboring thalli of other lichens, such as *Xanthoria* spp. The parasite develops mainly in autumn and is able to kill *Physcia* thalli over larger areas within several weeks. Infection results in the thalli shrinking in thickness, leaving at the end

the decoloured, film-like, cortical remnants of the hosts. *Marchandiobasidium* differs from *Waitea* in the longer basidia, the occasional presence of a basal, lateral probasidial bladder, and dry, non-gelatinous sclerotia. *Marchandiopsis* may be a latter synonym or a closely related genus. The only and type species described in *Marchandiopsis* differ in the bisterigmatic basidia and thin-walled basidiospores, but it shares the same ecology, parasiting lichens, and it is phylogenetically related. *Marchandiobasidium* belongs to the Corticiales and it is morphologically and phylogenetically closely related to *Erythrimum* (see also Lawrey et al. 2007).

Marchandiomyces Diederich & D. Hawksw., in Diederich, Mycotaxon 37: 311, 1990.

Type species – *Illosporium corallinum* Roberge, in Desmazières, Pl. Crypt. Nord France, Edn 1 32: no. 1551, 1847.

Remarks – A name based on an anamorphic stage. *Marchandiomyces aurantiacus* (Lasch) Diederich & Etayo is the anamorph of *Marchandiobasidium aurantiacum* Diederich & Schultheis (Diederich & Lawrey 2007).

Marchandiopsis Ghobad-Nejhad & Hallenb., Taxon 59(5): 1530, 2010.

Type species – *Laeticorticium quercinum* J. Erikss. & Ryvardeen, Cort. N Europe 4: 777, 1976.

Basidiome resupinate, closely adnate, orbicular, cooccurring with *Colpoma quercinum* (Pers.) Wallr. from tiny patches around lenticels on bark, rarely confluent, reddish-pink, hymenial surface smooth, gelatinous, margin indistinct. Hyphal system monomitic, hyphae hyaline, thin-walled, simple-septate. Basidia large clavate, developing from bladder-like probasidia, 2-sterigmate. Cystidia absent. Dendrohyphidia few, little branched. Basidiospores large ellipsoid, smooth, thin-walled, with a prominent apiculus, IKI–, CB–.

Remarks – It is characterized by its small reddish-pink gelatinous basidiomes, simple-septate hyphae, bisporic basidia and large basidiospores. It has a peculiar ecology occurring with the lichen *Colpoma* on *Quercus* twigs. Phylogenetically it is related to the anamorphic genus *Marchandiomyces* within the *Corticium* clade (Ghobad-Nejhad et al. 2010). It seems to be related to the parasitic lichen genus *Marchandiobasidium*.

Megalocystidium Jülich, Persoonia 10: 139, 1978.

Type species – *Corticium leucoxanthum* Bres., Fung. trident. 2(11-13): 57, 1898.

Basidiome resupinate, effused, membranaceous to ceraceous, hymenophore smooth, margin byssoid or thinning out. Hyphal system monomitic, hyphae with clamps, hyaline, cylindrical to torulose, more or less thin-walled. Gloeocystidia present, long, flexuous, with oily contents or granular, SA+. Basidia narrowly clavate, hyaline, with 4-sterigmata, a basal clamp present or lacking. Basidiospores cylindrical to ellipsoid, smooth (or minutely ornamented), hyaline, more or less thin-walled, amyloid, CB–.

Remarks – *Megalocystidium* was described by Jülich (1978b) to include the *Gloeocystidiellum luridum* and *G. lactescens* groups proposed by Eriksson & Ryvardeen (1975). The genus thus defined, included species with smooth basidiospores, SA+ gloeocystidia, clamped (*G. luridum* group) and clampless (*G. lactescens* group) species. Hjortstam (1987) pointed out that the main features of *Thelephora lactescens* Berk. were in agreement with those of *Gloiothete lamellosa* (Henn.) Bres., the type species of *Gloiothete*, and subsequently regarded as the appropriate genus for the *G. lactescens* group. Thus, *Megalocystidium* is including only clamped species in the sense of Wu (1996).

Megasporia B.K. Cui, Y.C. Dai & Hai J. Li, in Li & Cui, Mycologia 105(2): 369, 2013.

Type species – *Poria hexagonoides* Speg., Anal. Mus. nac. Hist. nat. B. Aires 6: 170, 1898.

Basidiome annual, resupinate. Pore surface white, cream, ochraceous, pale brown, pale purplish brown, lavender tints. Pores mostly angular, rarely round. Hyphal system dimitic with clamped generative hyphae, skeletal hyphae non to strongly dextrinoid and CB–, unbranched to

sparingly branched. Basidiospores cylindrical to ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–. Polyhedral crystals in subhymenium and hymenium in all species so far. Hyphal pegs absent. Dendrohyphidia in *M. cavernulosa*, difficult to observe. Causing white rot. So far known from the Neotropics.

Remarks – *Megasporia* can be differentiated from the other similar genera by the acyanophilous hyphae and the neotropical distribution (Li & Cui 2013).

Megasporoporia Ryvar den & J.E. Wright, Mycotaxon 16(1): 173, 1982.

Type species – *Poria setulosa* Henn., Bot. Jb. 28(3): 321, 1900.

Basidiome resupinate, pores generally large, angular to round, pore-surface cream, greyish to pale brown or cinnamon, context usually very thin white to cream or very pale brown. Hyphal system di-trimitic, generative hyphae with clamps, skeletal hyphae thick-walled and dextrinoid, branched vegetative hyphae which may be interpreted as binding hyphae present in most species, dextrinoid, CB+. Cystidia absent, dendrohyphidia present or absent, crystals usually present, often abundantly in the subhymenium and the context. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical, smooth, thin-walled and large, IKI–. On deciduous wood causing a white rot. Predominantly a tropical genus.

Remarks – *Megasporoporia* is characterized by its resupinate basidiomes, the large spores and pores besides strongly dextrinoid skeletal hyphae. The presence of dendrohyphidia in some of the species described here seems to point to a relationship to *Grammothele* as such organs in general are rare among the polypores (Ryvar den et al. 1982). According to Justo et al. (2017), *Megasporoporia* is classified in the Polyporaceae family.

Megasporoporiella B.K. Cui, Y.C. Dai & Hai J. Li, in Li & Cui, Mycologia 105(2): 377, 2013.

Type species – *Polyporus cavernulosus* Berk., Hooker's J. Bot. Kew Gard. Misc. 8: 235, 1856.

Remarks – A synonym of *Megasporia* B.K. Cui, Y.C. Dai & Hai J. Li. There are no morphological or phylogenetical evidence to keep *Megasporoporiella* separated from *Megasporia*.

Melzericium Hauerslev, Friesia 10: 316, 1975.

Type species – *Corticium udicola* Bourdot, Rev. Sci. Bourb. Centr. Fr. 23(1): 10, 1910.

Basidiome annual, resupinate, effused, membranaceous, hymenophore smooth, margin indistinct. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled, often with ampullate septa. Cystidia absent. Basidia clavate, stalked, with (2-)4-sterigmata, and a basal clamp, some pleurobasidia present. Basidiospores ellipsoid to cylindrical, constricted, smooth, thin-walled, hyaline, amyloid.

Remarks – *Melzericium* is characterized by lacking cystidial elements, the stalked basidia, and by the smooth amyloid basidiospores. The phylogenetic relationships of *Melzericium* remain still unclear (Larsson 2007b).

Melzerodontia Hjortstam & Ryvar den, Mycotaxon 12: 177, 1980.

Type species – *Melzerodontia aculeata* Hjortstam & Ryvar den, Mycotaxon 12: 178, 1980.

Basidiome resupinate, effuse, adnate, hymenophore grandinioid to distinctly odontoid with rather small aculei. Hyphal system monomitic, all hyphae without clamps, basal hyphae somewhat thick-walled, with a slight dextrinoid reaction, subhymenial hyphae less thick-walled, usually strongly dextrinoid and cyanophilous. Cystidia absent, paraphysoid hyphae or dendrohyphidia may be present. Basidia clavate, with 4-sterigmate, basally thick-walled, dextrinoid, and cyanophilous. Basidiospores subcylindrical, smooth, thin-walled, IKI–, CB–.

Remarks – *Melzerodontia* is recognized by the aculeate hymenophore, lack of cystidia and clamps, and hyphae and basidial base with a dextrinoid reaction. Monotypic genus of an African species (Hjortstam & Ryvar den 1980b).

Membranomyces Jülich, Persoonia 8: 296, 1975.

Type species – *Corticium spurium* Bourdot, Rev. Sci. Bourb. Centr. Fr. 35: 15, 1922.

Basidiome resupinate, effused, subceraceous to membranaceous, hymenophore smooth. Hyphal system monomitic, hyphae simple-septate, thin- to slightly thick-walled. Cystidia and gloecystidia absent, hyphoid cystidiols may be present. Basidia clavate, 2-4-spored, simple-septate at the base, guttulate. Basidiospores ellipsoid to subglobose, smooth, thin- or slightly thick-walled, inamyloid, indextrinoid, distinctly guttulate.

Remarks – *Membranomyces* is characterized by the simple-septate generative hyphae, absence of cystidial elements, and large ellipsoid to subglobose basidiospores. It mainly differs from *Clavulicium* in the absence of clamps and gloecystidia. *Membranomyces* is considered as the sister group of *Clavulina cristata* which provides another example of a resupinate-clavarioid transformation (Larsson et al. 2004).

Merulicium J. Erikss. & Ryvarden, Cortic. N. Eur. (Oslo) 4: 859, 1976.

Type species – *Merulius fusisporus* Romell, Ark. Bot., Ser. 2 2(3): 27, 1911.

Basidiome resupinate, thin, pellicular, hymenophore merulioid when fresh, more or less smooth when dry, margin fibrillose with thin rhizomorphs. Hyphal system dimitic, generative hyphae with clamps, thin-walled, skeletal hyphae thick-walled, dextrinoid. Cystidia (leptocystidia), obclavate, with an obtuse or slightly widened apex, thin-walled. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores fusiform, smooth, thin-walled, IKI–, CB–.

Remarks – *Merulicium* differs from other athelioid species in the dimitic hyphal system with dextrinoid skeletal hyphae (Eriksson & Ryvarden 1976). Phylogenetically, it belongs to the Pterulaceae in the Agaricales (Larsson 2007b).

Meruliophana Duhem & Buyck, Cryptogamie, Mycol. 32(2): 136, 2011.

Type species – *Meruliophorana mahorensis* Duhem & Buyck, Cryptogamie, Mycol. 32(2): 137, 2011.

Basidiome resupinate, effused, hymenophore tuberculate to merulioid, bluish greyish, more or less translucent, gelatinous to ceraceous, margin indeterminate. Hyphal system monomitic, hyphae with simple-septa, usually thin-walled, more or less widened at septa, not encrusted. Cystidia vesicular or broadly clavate, thin-walled, usually encrusted with irregular crystals. Basidia clavate, stalked, with 4-sterigmata, and a simple basal septum. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, IKI–, guttulate.

Remarks – *Meruliophana* is characterized by the merulioid bluish-greyish hymenophore, simple-septate hyphae, vesicular cystidia, and smooth not reacting in Melzer's reagent basidiospores (Duhem & Buyck 2011).

Meruliopsis Bondartsev, in Parmasto, Izv. Akad. Nauk Estonsk. SSR, Ser. Biol. 8: 274, 1959.

Type species – *Xylomyzon taxicola* Pers., Mycol. Eur. (Erlanga) 2: 32, 1825.

Basidiome annual, resupinate to effused-reflexed, seldom wholly sessile, coriaceous-ceraceous, upper surface tomentose; white to pale yellow brown. Hymenial surface usually with shallow pits (merulioid), in one species more or less even when young; cream-colored, yellowish orange, red to dark violaceous black. Hyphal system monomitic. Hyphae mostly without clamps, some septa with single or multiple clamps; hyaline. Cystidia present or absent; cylindrical; thin-walled. Basidia subclavate; 4-sterigmate; basal clamp absent. Basidiospores ellipsoid, cylindrical, or allantoid; hyaline; smooth; thin-walled; negative in Melzer's.

Remarks – *Meruliopsis* Bondartsev (1971), was described to include *Xylomyzon taxicola* Pers., with a typical poroid hymenophore. *Byssomerulius*, *Candelabrochaete*, *Ceriporia*, *Gloeoporus*, and *Meruliopsis*, all sharing generative simple-septate hyphae, are classified by molecular data in the *Byssomerulius* family, with other clamped species as *Phlebia nitidula* (P. Karst.) Ryvarden and *Ceraceomyces serpens* (Tode) Ginns (Larsson 2007b).

Meruliporia Murrill, Mycologia 34: 596, 1942.

Type species – *Merulius incrassatus* Berk. & M.A. Curtis., Hooker's J. Bot. Kew Gard. Misc. 1: 234, 1849.

Remarks – A synonym of *Serpula* Gray.

Merulius Fr., Syst. mycol. 1: 326, 1821.

Type species – *Merulius tremellosus* Schrad.: Fr., Syst. mycol. 1: 327, 1821.

Remarks – A synonym of *Phlebia* Fr.

Metulodontia Parmasto, Consp. System. Corticiac. (Tartu): 117, 1968.

Type species – *Kneiffia nivea* P. Karst., Hedwigia 35: 173, 1896.

Basidiome resupinate, effused, adnate, hymenophore tuberculate to grandinoid, whitish, margin rhizomorphic. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia of two kinds: 1) encrusted cystidia and 2) gloeocystidia, SA+. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Metulodontia* is microscopically characterized by the presence of both, encrusted cystidia and sulphopositive gloeocystidia, and smooth inamyloid basidiospores. According to molecular studies, despite the inamyloid basidiospores, belongs to the russuloid clade, as the most basal subclade of the Peniophorales (Larsson & Larsson 2003, Larsson 2007b).

Metuloidea G. Cunn., Bull. N.Z. Dept. Sci. Industr. Res., Pl. Dis. Div. 164: 250, 263, 1965.

Type species – *Trametes tawa* G. Cunn., Bull. N.Z. Dept. Sci. Industr. Res., Pl. Dis. Div. 80: 9, 1948.

Basidiome annual, effuse-reflexed to pileate, solitary or imbricate, attached by a lateral base, pilei conchate, appanate, or effused-reflexed, without a cortex, hymenophore hydroid to poroid with round pores, brown-colored and with a sweet smell. Context of mainly parallel hyphae radiately arranged; hyphal system dimitic to trimitic, generative hyphae branched, septate, with clamp connections, walls thin and hyaline, skeletal hyphae aseptate, unbranched, walls brown; binding hyphae aseptate, freely branched of *Bovista* type, walls brown. Skeletocystidia or encrusted hyphal ends present in tube mouths, clearly differentiate in old basidiomes. Basidia cylindrical, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to short cylindrical, walls smooth, hyaline, nonamyloid.

Remarks – *Metuloidea* resembles species of *Steccherinum* which are generally not brown colored and have no sweet smell. *Butyrea* is phylogenetically closely related, but morphologically it differs in the effused basidiomes without any smell, and in the presence of gloeocystidia and well differentiated skeletocystidia. Phylogenetically, all are phylogenetically classified in the Steccherinaceae family according to Justo et al. (2017).

Michenera Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(no. 46): 333, 1868.

Type species – *Michenera artocreas* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10(no. 46): 333, 1868.

Remarks – A name based on an anamorph. Anamorphic state of *Licrostroma* P.A. Lemke.

Minostrocyta Hjortstam & Ryvarden, Mycotaxon 79: 194, 2001.

Type species – *Minostrocyta discoidalis* Hjortstam & Ryvarden, Mycotaxon 79: 194, 2001.

Basidiome disciform, hymenophore smooth to rough. Hyphal system dimitic, generative hyphae thin-walled, clamped, hyaline, skeletal hyphae thick-walled, moderately branched, cyanophilous, indextrinoid and inamyloid. Gloeocystidia abundant, sinuous, not encrusted, thin-walled, SV⁻. Basidia clavate, with 4-sterigmate, with a basal clamp. Basidiospores subfusiform, smooth, thin-walled, IKI–, CB–.

Remarks – *Minostrocyta* is characterized by the discoid basidiome, dimitic hyphal system with cyanophilous skeletal, large gloeocystidia, and large subfusiform basidiospores (Hjortstam & Ryvar den 2001).

Mucronella Fr., Hyménomyc. Eur. (Paris): 629, 1874.

Type species – *Hydnum calvum* Alb. & Schwein., Consp. fung. (Leipzig): 271, 1805.

Basidiome formed by small aculei, of very small dimension and mostly inconspicuous. Hyphal system monomitic, hyphae simple-septate or with clamps, hyaline. Cystidia absent but hyphoid cystidiols may be present, as well gloeoplerous hyphae. Basidia more or less clavate, with 4-sterigmata. Basidiospores ellipsoid, smooth, thin-walled, hyaline, weakly to distinctly amyloid.

Remarks – *Mucronella* is macroscopically characterized by the inconspicuous basidiome, formed by small gregarious aculei, microscopically by the absence of cystidial elements and by the amyloid basidiospores. It seems to belong to the Clavariaceae in the Agaricales, but data are not consistent (Larsson 2007b).

Muscinipta Redhead, Lücking & Lawrey, Mycol. Res. 113(10): 1167, 2009.

Type species – *Cantharellus laevis* Fr., Syst. mycol. (Lundae) 1: 324, 1821.

Basidiome pileate, dimidiate to flabelliform, with a short stipe but often inconspicuous, hymenophore smooth. Hyphal system monomitic, hyphae without clamps. Cystidia (leptocystidia) present. Basidia clavate, with 4-sterigmata and a simple basal septum. Basidiospores ellipsoid to subglobose, smooth, thin-walled, IKI–.

Remarks – *Muscinipta* is a recently created genus by Lawrey et al. (2009) to include *Cantharellus laevis*. This species was traditionally included in *Cyphellostereum*, but *Cyphellostereum pusiolum* (Berk. & M.A. Curtis) D.A. Reid, the generic type, differs in some anatomical and morphological features (liquenized structure) and lacks cystidia (Lawrey et al. *l.c.*). They are not phylogenetically related, *Muscinipta laevis* belongs to the Hymenochaetales and *Cyphellostereum pusiolum* to the Agaricales.

Mutatoderma (Parmasto) C.E. Gómez, in Gómez & Loewenbaum, Bol. Soc. Argent. Bot. 17(3-4): 346, 1976.

Basionym – *Hyphoderma* sect. *Mutatoderma* Parmasto, Consp. System. Corticiac. (Tartu): 114, 1968.

Type species – *Corticium mutatum* Peck, Ann. Rep. N.Y. St. Mus. 43: 23, 1890.

Remarks – Not validly published, basionym not mentioned.

Mycoacia Donk, Medded. Nedl. Mycol. Ver. 18-20: 150, 1931.

Type species – *Hydnum fuscoatrum* Fr., Novit. fl. Svec. 2: 39, 1814.

Remarks – A synonym of *Phlebia* Fr. A name largely and still in use for species of *Phlebia* with odontoid to hydroid hymenophore. See Nakasone (1997).

Mycoaciella J. Erikss & Ryvar den, Cort. N Europe 5: 901, 1978.

Type species – *Resinicium bisporum* Stalpers, Persoonia 9(1): 145, 1976.

Basidiome resupinate, effuse, adnate, not detachable, when fresh of ceraceous consistency, hymenophore hydroid with dense, cylindrical or narrow conical subulate aculei. Hyphal system dimitic to trimitic, skeletal hyphae straight, parallel, thick-walled, micro-binding hyphae may be present, generative hyphae thin-walled, with clamps, richly branched and interwoven, trama of the aculei to the largest part composed of parallel hyphae, subhymenium thin, distinct, separate from the trama. Cystidia small, cylindrical, thin-walled, with an apical globule of excreted, resinous matter. Basidia clavate, normally with 4-sterigmata. Basidiospores narrowly ellipsoid, thin-walled, smooth, inamyloid.

Remarks – *Mycoaciella* is characterized by a dimitic to trimitic (with microbinding hyphae), hydroid hymenophore, and small cystidia with a cap of resinous substance (Eriksson et al. 1978). It was considered a synonym of *Phlebia* Fr. by Nakasone (2002) but it is still in use by other authors.

Mycobonia Pat. 1894, Bull. Soc. Mycol. Fr. 10(2): 76, 1894.

Type species – *Hydnum flavum* Berk., Ann. Mg. Nat. Hist. I 10: 380, 1842.

Basidiome pileate, sessile, dimidiate to reniform, firm and brittle when dry. Hymenial surface with sterile hyphal pegs consisting of thick-walled to almost solid hyphae lacking clamps. Hyphal system dimitic, generative hyphae hyaline, thin-walled, with clamps, binding hyphae hyaline to somewhat yellowish, thick-walled to solid, arboriform. Cystidia and gloeocystidia absent, but tramal cystidia-like present. Basidia clavate, with 4-sterigmate and with a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, IKI–, CB–. On dead wood of hardwoods, causing a white rot.

Remarks – *Mycobonia* is recognized by the pileate and fragile yellowish basidiomes with numerous hyphal pegs, and microscopically by the arboriform skeletal hyphae (Jülich 1976b, Ryvarden 2010).

Mycoleptodon Pat., Cat. Rais. Pl. Cellul. Tunisie (Paris): 54, 1897.

Type species – *Hydnum pudorinum* Fr., Elench. fung. (Greifswald) 1: 133, 1828.

Remarks – A synonym of *Steccherinum* Gray.

Mycoleptonoides Nikol., Botanicheskie Materialy 8: 117, 1952.

Type species – *Mycoleptonoides vassiljevae* Nikol., Botanicheskie Materialy 8: 117, 1952.

Basidiome made up of imbricate pilei, pileus fan-shaped, narrowed into a lateral base or stipe, glabrous, innate-fibrillose, smooth or radiately rugulose, white drying yellow to brown, hymenium covering aculei on the underside of the pileus, concolorous with the pileus. Hyphal system monomitic, generative hyphae inflating in the older parts of the pileus, branched, septate, thin- to thick-walled or even solid, with clamp-connections. Cystidia little differentiate may be present, fusiform to ventricose. Basidia clavate, 4-spored, with a basal clamp. Basidiospores narrowly ellipsoid, more or less curved, smooth, colourless, IKI–, CB–.

Remarks – *Mycoleptonoides* is characterized by the flabelliform and stipitate basidiomes with hydroid hymenophore, monomitic hyphal system, presence of cystidia or cystidiols, and basidiospores with no reaction in Melzer's reagent. It is morphologically closely related to *Mycorrhaphium*, differentiated in the dimitic hyphal system, and *Climacodon* which possess gloeocystidia and basidia with a simple basal septum.

Mycolindtneria Rauschert, Feddes Repert. 98: 660, 1987.

Type species – *Poria trachyspora* Bourdot & Galzin, Bull. trimest. Soc. mycol. Fr. 41(2): 219, 1925.

Remarks – A superfluous *nomen novum* for *Lindtneria* Pilát. *Lindtneria* Pilát was named after Vojtech H. Lindtner and is not a homonym of *Linderia* Durand & Lubber 1889 (Liliaceae).

Mycorrhaphium Maas Geest., Persoonia 2: 394, 1962.

Type species – *Hydnum adustum* Schwein., Schr. naturf. Ges. Leipzig 1: 103 (1822)

Basidiome sessile to pileate with imbricate growth, flabelliform, narrowed into a lateral base, upper sterile surface glabrous, without concentric zonation, hymenophore hydroid, white drying yellow to brown. Hyphal system monomitic in the context and dimitic in the aculei, generative hyphae with clamps, thin- to thick-walled, inflated. Gloeocystidia present or absent, cystidiols may be present. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores narrowly ellipsoid, more or less curved, smooth, colourless, IKI–, CB–.

Remarks – *Mycorrhaphium* is macroscopically characterized by the flabelliform basidiome with hydroid hymenophore. The phylogenetic relationships of *Mycorrhaphium* are unclear but it may belong to the Meruliaceae (Larsson 2007b).

Mycostigma Jülich, Persoonia 8(4): 432, 1976.

Type species – *Corticium aegeritoides* Bourdot & Galzin, Bull. Soc. mycol. Fr. 27(2): 249, 1911.

Basidiome consisting of minute globules, separated or aggregated but never confluent, connected by a few hyaline hyphae. Hyphal system monomitic, hyphae indistinct, probably with clamps, hyaline, cylindrical or somewhat torulose, thin-walled. Cystidia or gloeocystidia lacking. Basidia hyaline, clavate, thin-walled, rather small, probably clamped, 4-spored. Basidiospores ellipsoid, thin-walled, smooth, hyaline, inamyloid, CB–.

Remarks – *Mycostigma*, a monotypic genus, is typified by *Corticium aegeritoides*, a species characterized by the gregarious basidiome formed by minute globules up to 0.1 mm in diam., the lack of cystidial elements and the absence of any reaction in Melzer's reagent or cotton blue (Jülich 1976). The phylogenetic relationships of *Mycostigma* are still unclear.

Mycothele Jülich, Persoonia 8(4): 452, 1976.

Type species – *Mycobonia disciformis* G. Cunn., Trans. Roy. Soc. N.Z. 83(4): 635, 1956.

Basidiome resupinate to disciform, solitary or in small groups of 3-5, attached by a small central base, membranaceous to coriaceous. Hymenial surface hydroid with sterile aculei of tramal origin (fascicles arising from the basal layer, traversing the context and projecting to 130 µm, 20-30 per mm, apices long-acuminate, of cemented hyphae embedding masses of crystals often placed obliquely). Hyphal system monomitic, hyphae hyaline, with clamps, with large masses of crystals in the trama of the aculei. Cystidia and gloeocystidia absent. Basidia stalked clavate, hyaline, with 4-sterigmata and a basal clamp. Basidiospores broadly ellipsoid to subglobose, smooth, hyaline, thin-walled, inamyloid, dextrinoid, CB–.

Remarks – Monotypic genus, only found on *Rhopaloslylis sapida*, an endemic species of *Palmae* in New Zealand. Characterized by the small basidiomes and peculiar fascicles. Basidiomes may be disciform and range in diameter from one to a few mm. The surface is pallid sulphur-yellow and densely velutinate with projecting fascicles, in this feature simulating some delicate *Hydnum* (Jülich 1976).

Myriothele Nakasone, Sydowia 65(1): 104, 2013.

Type species – *Epithele philippiae* Boidin & Gilles, Bull. mens. Soc. linn. Lyon 69(9): 195, 2000.

Basidiome resupinate, thick, soft, hymenial surface aculeate from emergent hyphal pegs. Hyphal system monomitic with clamped generative hyphae, subhymenium thickening, a non-agglutinated tissue of upright hyphidia, cystidia and hyphae. Cystidia of three types: obclavate to utriform, often with secondary septa, walls hyaline, thin, smooth; filiform to narrowly obclavate, with a capitate apex, enclosed by a bulbous globule observed in water mounts only; gloeocystidia, rare. Basidia distinctly utriform, clamped at base, 4-sterigmate. Basidiospores broadly ellipsoid to subglobose with hyaline, smooth, weakly cyanophilous, and inamyloid walls that swell in KOH.

Remarks – *Epithele philippiae* is characterized by hyphal pegs, a thickened, non-agglutinated context, capitate cystidia, utriform basidia, and subglobose basidiospores with walls that swell in KOH. The bulbous globules on the capitate cystidia were not observed in mounts with KOH or Melzer's reagent. This is a striking species that is clearly not related to *Epithele* or the Polyporales (Nakasone 2013).

Myxomycidium Masee, Bull. Misc. Inf., Kew: 179, 1901.

Type species – *Myxomycidium pendulum* Masee, Bull. Misc. Inf., Kew: 180, 1901.

Remarks – A synonym of *Mucronella* Fr.

Necator Masee, Bull. Misc. Inf., Kew: 119, 1898.

Type species – *Necator decretus* Masee, Bull. Misc. Inf., Kew: 119, 1898.

Remarks – A name based on an anamorph. The anamorphic state of *Erythricium salmonicolor* (Berk. & Broome) Burds.

Neoantrodia Audet, Mushrooms nomenclatural novelties 6: 1, 2017.

Type species – *Polyporus serialis* Fr., Syst. mycol. (Lundae) 1: 370, 1821.

Remarks – According to Audet (2017f), *Neoantrodia* differs from *Antrodia* s.str. by non-metachromatic hyphae, smaller not short-lived pedunculate basidia, cystidioles with cap-like crystalline encrustation, and by uninucleate basidiospores.

Neocampanella Nakasone, Hibbett & Goranova, Botany 87: 877, 2009.

Type species – *Dentocorticium blastanos* Boidin & Gilles, Cryptogamie Mycologie 19 (3): 193, 1998.

Basidiome resupinate, effuse, thin, membranous, soft, not gelatinous, smooth to pulverulent, white to pale yellow or orange, margin adnate, more or less abrupt. Hyphal system monomitic, generative hyphae with clamp connections. Dendrohyphidia simple or delicately and finely branched, usually encrusted with tiny hyaline crystals. Cystidia cylindrical, subfusiform to capitate. Basidia ephemeral, more or less cylindrical, bearing 2 or 4 sterigmata. Basidiospores often adherent, ellipsoid or pyriform, often adaxial side slightly flattened, tapering to a prominent, blunt apiculus, with walls thin, hyaline, smooth, IKI–, CB–.

Remarks – *Neocampanella* is characterized by thin, effuse, nongelatinized basidiomes with dendrohyphidia, cylindrical to capitate cystidia, and ellipsoid to pyriform basidiospores with a distinct, blunt apiculus. Mature basidia are difficult to observe for they probably collapse soon after discharging spores. The characteristic spore shape, slightly tapering toward the prominent apiculus, is reminiscent of basidiospores found in species of *Campanella* and related genera. *Neocampanella*, with its corticioid habit and smooth hymenial surface, however, would never be confused with *Campanella*'s pleurotoid form and reticulate lamellae. Dendrohyphidia in the hymenium of *Neocampanella* may be homologous to the rameal-like structures developed in the pileal epicutis of *Campanella* and allied genera. The combination of dendrohyphidia and pyriform basidiospores, however, is unique among corticioid fungi to *Neocampanella* and *Brunneocorticium*. *Neocampanella* has a monomitic hyphal system, whereas *Brunneocorticium* has a dimitic hyphal system with the brown-pigmented skeletal hyphae dominating the context and margin (Nakasone et al. 2009).

Neodatronia B.K. Cui, Hai J. Li & Y.C. Dai, in Li, Cui & Dai, Persoonia 32: 177, 2014.

Type species – *Neodatronia sinensis* B.K. Cui, Hai J. Li & Y.C. Dai, Persoonia 32: 178, 2014.

Basidiome annual, resupinate, pore surface white, cream to pale brown; pores moderate to small, round to angular; pore surface fragile when dry. Subiculum yellowish brown to cinnamon, corky. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae usually dominating, pale brown to brown, moderately to frequently branched in subiculum and trama, branches of tramal skeletal hyphae usually well differentiated from the main part, IKI–, CB+, tissues darkening in KOH. Dendrohyphidia present in the hymenium and dissepiment edges, cystidia absent, but thin-walled cystidioles usually present. Basidiospores cylindrical, hyaline, thin-walled, smooth, IKI–, CB–. Usually growth on angiosperm wood and causing a white rot.

Remarks – Species of *Neodatronia* differ from *Datronia* s.str. by their resupinate basidiomes and moderately to frequently branched skeletal hyphae in subiculum Li et al. (2014).

Neokneiffia Sacc., Tab. compar. Gen. Fung. p. 11, 1898.

Type species – *Thelephora setigera* Fr., Elench. fung. (Greifswald) 1: 208, 1828.

Remarks – A substitute form *Kneiffia* Fr. and a synonym of *Hyphoderma* Wallr.

Niemelaea Zmitr., Ezhov & Khimich, Agriculture & Forestry 61(4): 27, 2015.

Type species – *Poria consobrina* Bres., Bull. trimest. Soc. mycol. Fr. 41(2): 230, 1925.

Basidiome resupinate, annual, with ceraceous tubular hymenophore. Hyphal system monomitic, hyphae with clamps, of phanerochaetoid appearance, with large oculate clamps and parallel branching pattern, hyaline and loosely arranged in the subiculum, basically inamyloid (seemingly amyloid in the subiculum after heating) and acyanophilous. Cystidia absent. Basidia clavate, with a weak medial constriction, 4-spored, with a large basal clamp. Basidiospores widely ellipsoid, with homogeneous refractive contents, with prominent smooth walls, firm-walled, IKI–, CB–. Causing a white rot.

Remarks – *Niemelaea* was created for *Ceriporiopsis consobrina* (Bres.) Ryvar den and *Fibuloporia cremea* Parmasto by Zmitrovich et al. (2015). The hyphal walls in *Niemelaea* are a bit thickened, with a phanerochaetoid appearance. Phylogenetically, *Niemelaea* is phylogenetically classified in the Steccherinaceae family according to Justo et al. (2017).

Nodotia Hjortstam, Mycotaxon 28: 33, 1987.

Type species – *Nodotia aspera* Hjortstam, Mycotaxon 28(1): 33, 1987.

Basidiome resupinate, effused, hymenophore odontoid, margin indistinct or fibrillose. Hyphal system (pseudo)dimitic, generative hyphae with clamps, thin- to thick-walled, with thick-walled and clamped skeletoid hyphae. Cystidia arising from thick-walled and clamped basal hyphae, encrusted. Basidia clavate, sinuous, with 4-sterigmata, and a basal clamp. Basidiospores subglobose to ellipsoid, smooth, thick-walled, IKI–, CB–.

Remarks – *Nodotia* was described to include *Nodotia aspera*, a species close to *Hypochnicium* but differing in the presence of skeletoid encrusted cystidia (Hjortstam 1987b). *Nodotia* was later synonymised with *Hypochnicium* (Hjortstam 1995) but later reintroduced (Hjortstam & Ryvar den 2004b). Phylogenetically, *Nodotia* is included among other *Hypochnicium* species and closely related to the generic type of *Hypochnicium* (Telleria et al. 2010). Therefore, it can be considered, based on phylogenetic analysis, a synonym of *Hypochnicium*.

Nodularia Peck, Ann. Rep. N.Y. St. Mus. 24: 96, 1872.

Type species – *Nodularia balsamicola* Peck, Ann. Rep. N.Y. St. Mus. 24: 96, 1872.

Remarks – A latter homonym of *Nodularia* Link ex Lyngbye 1819 (Rhodophyceae) and a synonym of *Aleurodiscus amorphus* (Pers.) J. Schröt.

Nothocorticium Gresl. & Rajchenb., Mycotaxon 70: 372, 1999.

Type species – *Nothocorticium patagonicum* Gresl. & Rajchenb., Mycotaxon 70: 372, 1999.

Basidiome resupinate, orbicular to effused, hymenial surface smooth, velutinate or felty under the lens, pinkish or pale brown coloured, margin fibrillose or forming white hyphae strands developing into the bark. Hyphal system monomitic, hyphae simple-septate, thin- to thick-walled. Hyphidia abundant, filiform, strongly encrusted, simple or with few straight branches. Cystidia absent. Basidia narrowly clavate, large, sinuous, with 2 prominent sterigmata, simple septate at the base. Basidiospores cylindrical or slightly curved, large, smooth, thin-walled, guttulate, IKI–.

Remarks – *Nothocorticium* is characterized by the orbicular to effused basidioma that develop marginal white strands penetrating into the wood, smooth hymenophore, simple-septate hyphae, large bisterigmatic basidia, large cylindrical and thin-walled basidiospores, and encrusted, thick-walled and simple or branched (usually two or few branches) hyphidia. It is a common species and easy to identify, even in the field. It is distributed in the Patagonian Andes of South Sudamerica (Greslebin & Rajchenberg 1999). *Nothocorticium* resemble morphologically *Corticium*, *Dendrocorticium*, and *Marchandiopsis*. Preliminary molecular analysis seems to indicate that *Nothocorticium* is related to *Clavulicium macounii* (Burt) J. Erikss. & Boidin ex Parmasto (K-H. Larsson, pers. comm.).

Obba Miettinen & Rajchenb., Mycol. Progr. 11(1): 141, 2012.

Type species – *Ceriporiopsis rivulosa* var. *valdiviana* Rajchenb., Bol. Soc. Argent. Bot. 30(3-4): 153, 1995.

Basidiome resupinate, annual to biennial, white when fresh, cream to ochraceous when dry, consistency soft when fresh, drying hard to brittle, subiculum thin, cartilaginous line when dry. Hyphal system monomitic, clamps present, hyphae mostly thin-walled to slightly thick-walled, coarse crystal rosettes in trama and tube mouths, also rhomboidal plates. Subicular hyphae often agglutinated. Cystidia none. Basidia mostly clavate, with 4 sterigmata. Cystidioles subulate to mammiform, common. Basidiospores subglobose to globose, CB+, plasma stained in CB, with a large hyaline oil droplet, thin- to slightly thick-walled, smooth. Associated with white-rot on trunks of gymnosperms and angiosperms.

Remarks – *Obba* shares a monomitic, clamped hyphal structure with several other polypore genera including *Atraporrella*, *Ceriporiopsis*, *Erastia*, *Hapalopilus* and *Raduliporus*. Type species of these genera never show quite the same combination of characters as species of *Obba*: white, thin, resupinate fruiting bodies, large hymenial cells, abundant cystidioles and subglobose, (very) slightly thick-walled spores. Phylogenetically, *Obba* is recovered in the ‘*Cinereomyces* clade’ with *Cinereomyces*, *Gelatoporia* and *Sebipora*. Species in the ‘*Cinereomyces* clade’ share a number of characters: resupinate pale-coloured and poroid fruiting bodies, encrustation in trama or tube mouths, medium-sized spores, the hyaline or shiny oily substance in trama, CRB+ but CB– hyphae, and cultural characters (Miettinen & Rajchenberg 2012).

Odontia Pers., Neues Mag. Bot. 1: 110, 1794.

Type species – *Odontia ferruginea* Pers., Neues Mag. Bot. 1: 110, 1794.

Basidiome resupinate, separable from the substratum, arachnoid, continuous, hymenophore granulose to hydroid, hyphal cords present in subiculum and margins. Hyphal system dimitic, generative hyphae simple-septate or with clamps connections. Cystidia absent. Basidia long clavate or utriform, clamped at base, often sinuous, rarely with transverse septa, 4 sterigmata. Basidiospores bi- and trifurcate, pale brown in 3% KOH and in distilled water. Chlamydospores absent. Saprobious, not ectomycorrhizal as in the sister genus *Tomentella*.

Remarks – Under the name *Odontia* have been described a heterogeneous group of corticioid species with odontoid to hydroid hymenophore (eg. species belonging to *Dentipellis*, *Hyphodontia*, *Hypochnicium*, *Phlebia*, *Trechispora*, *Xylodon*, etc.). *Odontia ferruginea* has long been treated under *Tomentella*. Phylogenetic analyses of LSU data placed *Odontia* species as a sister group to *Thelephora* and *Tomentella* species. The monophyly of *Odontia* was strongly supported. In *Odontia* ectomycorrhizal associations were not observed in nature or in various synthesis experiments (Tedersoo et al. 2014, Yuan et al. 2018).

Odonticum Parmasto, Consp. System. Corticiac. (Tartu): 126, 1968.

Type species – *Odonticum romellii* (S. Lundell) Parmasto, Consp. System. Corticiac. (Tartu): 126, 1968.

Synonym – *Granulocystis* Hjortstam.

Basidiome resupinate, effused, membranaceous, hymenophore odontoid to hydroid, usually cream coloured. Hyphal system monomitic (pseudodimitic), hyphae with simple-septa, thin- to thick-walled, hyaline. Cystidia present or absent, cylindrical, thin- or with distinct walls, hyaline, smooth or encrusted. Basidia cylindrical to clavate, with 4-sterigmata, and a simple basal septum. Basidiospores cylindrical to ellipsoid, smooth, thin-walled, IKI–.

Remarks – *Odonticum* is characterized by the odontoid to hydroid hymenophore, monomitic to pseudodimitic hyphal system with simple-septate hyphae, the presence of cystidial elements in most of the species and the smooth inamyloid basidiospores. Phylogenetically it is included in the *Rickenella* family, but probably *Odonticum* is a paraphyletic genus (Larsson 2007b).

Odontina Pat., Hym. Eur. p.147, 1887.

Type species – *Hydnum denticulatum* Pers., Mycol. eur. (Erlanga) 2: 181, 1825.

Remarks – A synonym of *Steccherinum* Gray.

Odontiochaete Rick, Ann. mycol. 38(1): 60, 1940.

Type species – *Odontiochaete alba* Rick, Ann. Mycol. 38(1): 60, 1940.

Remarks – A name of uncertain application (see Hjortstam 1987a).

Odontiopsis Hjortstam & Ryvarde, Mycotaxon 12: 180, 1980.

Type species – *Odontiopsis hyphodontina* Hjortstam & Ryvarde, Mycotaxon 12(1): 180, 1980 (= *Odontiopsis ambigua* (Berk. & Broome) Hjortstam, Mycotaxon 28(1): 35, 1987).

Basidiome resupinate, effused, adnate, hymenophore odontoid, aculei with a more or less fimbriate apex. Hyphal system monomitic or subdimitic, all hyphae with clamps, subicular hyphae thick-walled, refractive in KOH and cotton blue as well in Melzer's reagent, long-celled and with scattered clamps, subhymenial hyphae thin-walled and less refractive, swelling in KOH. Cystidia lacking, hyphal ends numerous in the aculei and in the smooth hymenial surface between the aculei. Basidia clavate, short and with 4-sterigmata. Basidiospores globose, smooth, thin-walled, IKI–.

Remarks – *Odontiopsis* is recognized by its odontoid hymenophore, projecting hyphal ends, strongly refractive hyphae, shorth and stout basidia, and nearly globose basidiospores (Hjortstam & Ryvarde 1980b). The phylogenetic relationships are still not resolved (Larsson 2007b).

Odontoefibula C.C. Chen & Sheng H. Wu, in Chen, Wu & Chen, MycoKeys 39: 89, 2018.

Type species – *Odontoefibula orientalis* C.C. Chen & Sheng H. Wu, in Chen, Wu & Chen, MycoKeys 39: 90, 2018.

Basidiome annual, resupinate, effused, adnate, membranaceous to ceraceous. Hymenial surface at first honey yellow, becoming ochraceous to pale brown with age, turning dark reddish in KOH, initially smooth to slightly tuberculate, becoming grandinoid to odontoid with age. Aculei conical to cylindrical, separate or fused, up to 0.3 mm long. Hyphal system monomitic; hyphae normally simple-septate. Subiculum uniform, with dense texture; basal hyphae interwoven, somewhat horizontal or with irregular orientation, colorless, thin- to slightly thick-walled; subicular hyphae somewhat vertical, colorless, thin- to slightly thick-walled. Subhymenium not clearly differentiated from subiculum. Central trama of fairly dense texture; hyphae vertical, colorless, thin- to slightly thick-walled. Cystidia lacking but projecting hyphal ends in the hymenium may be present. Basidia clavate to narrowly clavate, 4-sterigmate. Basidiospores ellipsoid, smooth, thin-walled, inamyloid, non-dextrinoid, CB–.

Remarks – *Phaneroites* Hjortstam & Ryvarde, a monotypic genus introduced to accommodate *P. subquercinus* (Henn.) Hjortstam & Ryvarde, resembles *Odontoefibula* in having odontoid hymenial surface and a monomitic hyphal system with ordinarily simple-septate hyphae. However, *Phaneroites* is distinguished from *Odontoefibula* by having thin-walled subicular hyphae, a few clamped septa on hyphae next to the substratum and subcapitate cystidia (Hjortstam & Ryvarde 2010). Moreover, basidiomes of *Odontoefibula* turn dark reddish in KOH, while this reaction was not reported from *Phaneroites*.

Oidium Link, in Willdenow, Sp. pl., Ed. 4 6(1): 121, 1824.

Type species – *Oidium monilioides* (Nees) Link, in Willdenow, Sp. pl., de. 4 6(1): 121, 1824.

Remarks – Some anamorphic states of *Botryobasidium* Donk were adscribed to *Oidium* Link. ex Fr. emend. Linder (see Holubová-Jechová 1969). The generic name *Oidium* was latter accepting to only be conserved for conidial states of *Erysiphe* R. Hedw. ex DC. and related genera (powdery mildews, Ascomycota). Recently, Braun (2013) proposed to conserve the teleomorph-typified names *Blumeria* Golovin ex Speer and others against the anamorph-typified name *Oidium* Link.

Oligoporus Bref., Unters. Gesamtgeb. Mykol. (Liepzig) 8: 114, 1888.

Type species – *Oligoporus farinosus* Bref., Unters. Gesamtgeb. Mykol. (Liepzig) 8: 118, 1888 (= *Polyporus rennyi* Berk. & Broome, Ann. Mag. nat. Hist., Ser. 4 15(no. 85): 31, 1875).

Basidiomes annual, resupinate to pileate, fleshy when fresh, brittle to hard when dry, mostly white to light colored, sometimes becoming darker by drying. Hymenophore tubular with round pores. Hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled. Cystidia mostly absent, present in few species. Basidia clavate, 4-sterigmate and with a basal clamp. Basidiospores thin-walled, smooth, hyaline, allantoid to ellipsoid, negative in Melzer's reagent. Chlamydospores absent or present. Causing a brown rot, mostly in conifers, more rarely in hardwoods.

Remarks – *Oligoporus* comprises species causing a brown rot and having a monomitic hyphal system with clamped generative hyphae. Still today, there is controversy with the correct use of *Postia* or *Oligoporus*. For nomenclatural comments see Ryvarden (1991), Renvall (1992), Walker (1996), and Bernicchia & Gorjón (2020). Phylogenetic studies showed that species of both genera appear here and there in the same clade.

Oliveonia Donk, Fungus, Wageningen 28: 20, 1958.

Type species – *Sebacina fibrillosa* Burt, Ann. Mo. bot. Gdn 13(3): 335, 1926.

Syn.: *Sebacinella* Hauerslev, Friesia 11: 95, 1977; *Monosporonella* Oberw. & Ryvarden, Mycol. Res. 95(3): 378, 1991.

Basidiome resupinate, effused, thin, ceraceous, hymenophore smooth, greyish to white. Hyphal system monomitic, hyphae with or without clamps, thin- to thick-walled in subiculum, often agglutinated, with or without clamps. Cystidia (leptocystidia) present or absent, thin-walled. Basidia clavate to ovoid, with (1-)2-4-sterigmata. Basidiospores subglobose, ellipsoid, citriform, or oblong, smooth, thin-walled, IKI–, CB–, producing secondary spores by repetition.

Remarks – *Oliveonia* is closely related to *Ceratobasidium* but originally differing mainly in the presence of leptocystidia, even some acystidiate species have been transferred to *Oliveonia*. Roberts (1998) referred *Oliveonia* to the Exidiales.

Oncobasidium P.H.B. Talbot & Keane, Aust. J. Bot. 19: 203, 1971

Type species – *Oncobasidium theobromae* P.H.B. Talbot & Keane, Aust. J. Bot. 19: 203, 1971.

Remarks – A synonym of *Thanatephorus* Donk.

Osmoporus Singer, Mycologia 36(1): 67, 1944.

Type species – *Boletus odoratus* Wulfen, in Jacquin, Collnea bot. 2: 150, 1791.

Remarks – Traditionally, the generic type has been treated as *Gloeophyllum odoratum* (Wulfen) Imazeki. Recently He et al. (2014) proposed a phylogeny to delimit small genera among *Gloeophyllum* s.str. It differs from *Gloeophyllum* s.str. in the typically poroid hymenophore and pileate basidiomes.

Oxychaete Miettinen, Mycokeys 17: 19, 2016.

Type species – *Polyporus cervinogilvus* Jungh., Praemissa in floram cryptogamicam Javae insulae: 45, 1838.

Basidiome effused-reflexed, yellow-brown, light cardboard-like consistency and large, shallow pores. Hyphal system monomitic, hyphae simple-septate, with slightly thick-walled hyphae and abundant subulate, naked, thick-walled cystidia of subhymenial origin. Hymenial branching corymb-like. Cystidia abundant, hymenial, thick-walled, often with an apical crystal cap. Basidia cylindrical to narrowly clavate, collapsing upon spore release and difficult to spot, with 4 sterigmata. Basidiospores cylindrical, curved, thin-walled, smooth, IKI–, plasma stains in CB.

Remarks – Other hydroid and poroid genera with simple-septate hyphae and encrusted, thick-walled cystidia include *Australohydnum*, *Phlebiopsis*, *Flavodon* and *Irpex*. The latter two are

phylogenetically distantly related to *Oxychaete*, and they possess dimitic hyphal structure quite different from the loose monomitic structure of *Oxychaete*. *Phlebiopsis* is phylogenetically distinct from *Oxychaete*, and its hyphal structure is more compact, even agglutinated (basal layer). Hyphae are also winding and covered with abundant brownish encrustation, which is lacking in *Oxychaete*. Cystidia are tramal in origin (as opposed to hymenial in *Oxychaete*). Due to the hyphal structure the basidiome is tougher and not board-like when cut as in *Oxychaete* (Miettinen et al. 2016).

Oxydontia L.W. Mill., Mycologia 25: 294, 1933.

Type species – *Hydnum setosum* Pers., Mycol. eur. (Erlanga) 2: 213, 1825.

Remarks – A synonym of *Sarcodontia* Schulz.

Oxyporus (Bourdot & Galzin) Donk, Revis. Nederl. Heterobasid. 2: 202, 1933.

Type species – *Polyporus connatus* connatus Schwein., Trans. Am. phil. Soc., New Series 4(2): 154, 1832 (= *Oxyporus populinus* (Schumach.) Donk, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 9: 204, 1933).

Basidiome annual to perennial, resupinate to pileate, fibrous to woody, pilear surface when present white to deep cream, velutinate and often covered with mosses, pore surface white to yellowish, pores mostly small and isodiametric or angular, context white to cream. Hyphal system monomitic to dimitic or pseudodimitic, generative hyphae simple-septate, mostly thick-walled, IKI–. Cystidia obclavate to fusiform, thick-walled, often abundantly encrusted in the apex. Basidia clavate, with 4-sterigmate, with a simple basal septum. Basidiospores globose to broadly ellipsoid, smooth, thin-walled, hyaline, IKI–. Causing a white rot.

Remarks – *Oxyporus* is characterized by the simple-septate hyphae, presence of encrusted cystidia and more or less globose basidiospores. *Rigidoporus* is somewhat similar differing in darker orange to brown colored basidiomes and in the mamillated cystidiols. *Emmia* differs in the strictly monomitic hyphal system with slightly amyloid hyphae (Bernicchia & Gorjón 2020).

Pachykytospora Kotl. & Pouzar, Česká Mykol. 17(1): 27, 1963.

Type species – *Polyporus tuberculosus* Fr., Syst. mycol. (Lundae) 1: 380, 1821.

Remarks – A synonym of *Haploporus* Singer.

Pachysterigma Johan-Olsen, in Bref., Unters. Gesamt. Mykol. 8: 5, 1889.

Type species – *Pachysterigma fugax* Johan-Olsen, in Bref., Unters. Gesamt. Mykol. 8: 6, 1889.

Remarks – A synonym of *Tulasnella* J. Schröt.

Palifer Stalpers & P.K. Buchanan, New Zealand J. Bot. 29(3): 339, 1991.

Type species – *Peniophora verecunda* G. Cunn., Trans. Roy. Soc. New Zealand 83: 262, 1955.

Basidiome resupinate, effuse, annual, arachnoid to submembranaceous, hymenophore smooth. Hyphal system monomitic, hyphae with clamps, hyaline, thin- to rarely somewhat thin-walled, locally inflated. Leptocystidia straight, cylindrical, protruding, originating from basal hyphae. Lamprocystidia small, originating in the trama, encrusted with coarse crystals. Capitulate cystidia or capitulate hyphal ends also present. Basidia subclavate, terminal, hyaline, thin-walled, with 4-sterigmata, with a basal clamp. Basidiospores ellipsoid, hyaline, thin-walled, IKI–.

Remarks – Phylogenetically but also morphologically, it can be considered a synonym of *Xylodon*. *Palifer* was erected to include a species described by G.H. Cunningham, *Peniophora verecunda* from New Zealand with three kinds of cystidia: leptocystidia, lamprocystidia, and capitulate cystidia. Later, Hjortstam & Ryvarde (2007) included three species from Argentina previously referred to *Hyphodontia*, with odontoid hymenophore and lacking typical leptocystidia (vid. *Hyphodontia wrightii* Hjortstam & Ryvarde, *H. gamundiae* Gresl. & Rajchenb., and *H. hjortstamii* Gresl. & Rajchenb.). However, *Hyphodontia wrightii* is a member of *Hyphodontia* s.str.

(with typical lagenocystidia), and *H. gamundiae* and *H. hjortstamii* (both with encrusted cystidia) seem to belong in the *Xylodon* clade, the latter phylogenetically closely related to *P. verecunda*. See also Gorjón (2012). The genus is treated as a synonym of *Xylodon* (Pers.) Gray, see Viner et al. (2018).

Papyrodiscus D.A. Reid, Beih. Sydowia 8: 333, 1979.

Type species – *Papyrodiscus ferrugineus* D.A. Reid, Beih. Sydowia 8: 333, 1979.

Basidiome 1.7-4.5 cm diam., attached to very small twigs at the centre of the dorsal surface, and forming flattened circular or slightly pendulous, thin papery fruitbodies. Upper surface felty-tomentose, conspicuously zoned and of a uniform bright red-brown colour. Hymenial surface smooth, cream flushed with pink. Hyphal structure monomitic, consisting of hyphae, 3.5-5.5 µm wide, with thin to very slightly brown walls, freely branched and loosely entwined, lack clamp-connections at the septa. Cystidia fortuitous. A very thin-walled, hyaline fusiform or lanceolate sterile organs, up to 25(-40) µm long and 4.5-6.0 µm wide may be present. Basidia 12.0-17.0 × 4.5-6.0 µm, thinwalled, suburniform, with 4 sterigmata. Basidiospores 5.0-6.2 × 2.0-2.2 µm, thin-walled, hyaline, navicular and nonamyloid.

Remarks – Monotypic genus from Papua-New Guinea. According to Reid (1979) is a stereoid fungus apparently showing certain affinities with the polypore genus *Flavodon*. We have examined the type and the species is similar to a thin papyraceous *Stereum* or *Hymenochaete*, with hyphae and hyphal system reminding Hymenochaetaceae, also blackening in KOH, but lacking setal elements.

Parapterulicium Corner, Ann. Bot. London 16: 285, 1952.

Type species – *Parapterulicium subarbusculum* Corner, Ann. Bot. London 16: 288, 1952.

Remarks – A clavarioid genus belonging to the Varariaceae related to *Vararia* and *Dichostereum* (see Leal-Dutra et al. 2018).

Parastereopsis Corner, Nova Hedwigia 27: 331, 1976.

Type species – *Parastereopsis borneensis* Corner, Nova Hedwigia 27: 331, 1976.

Basidiome infundibuliform, with a hollow stipe, hymenophore smooth to sulcate. Hyphal system monomitic, hyphae with clamps, shorth-celled and inflating. Cystidia absent. Basidia clavate, with (2-)4-sterigmate, and a basal clamp. Basidiospores ellipsoid, smooth, non-amyloid. Conidia globose, smooth, formed in the pileal surface.

Remarks – This genus resembles *Stereopsis*, but it has a hollow stem or tubaeform basidiome as in *Craterellus* and inflating short-celled hyphae. Monotypic genus from Borneo (Corner 1976).

Parmastomyces Kotl. & Pouzar, Reprrium nov. Spec. Regni veg. 69: 138, 1964.

Type species – *Tyromyces kravtzevianus* Bondartsev & Parmasto, Mycoth. Eston. 1: 22, 1957.

Remarks – A synonym of *Sarcoporia* P. Karst.

Parvobasidium Jülich, Persoonia 8: 302, 1975.

Type species – *Gloeocystidium cretatum* Bourdot & Galzin, Bull. Soc. mycol. Fr. 28(4): 371, 1913.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore smooth cream-coloured. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled. Gloeocystidia present, hyaline, clavate. Basidia hyaline, small, thin-walled, with a basal clamp. Basidiospores hyaline, small, thin-walled, smooth, inamyloid.

Remarks – *Parvobasidium* is characterized by the presence of gloeocystidia, the small clavate basidia and the smooth basidiospores with no reaction in Melzer's reagent. It is for the time being included in the Cystostereaceae, a group of gloeocystidiate genera where *Crustomyces*, *Cystiodontia*, *Cystostereum*, *Parvodontia* are also present (Larsson 2007b).

Parvodontia Hjortstam & Ryvarde, Syn. Fungorum 18: 28, 2004.

Type species – *Parvodontia luteocystidiata* Hjortstam & Ryvarde, Syn. Fungorum 18: 28, 2004.

Basidiome resupinate, hymenial surface grandinioid with more or less smooth aculei. Hyphal system monomitic, hyphae smooth, thin-walled, with clamps at all septa. Cystidia abundant, projecting or enclosed, thin-walled, variably in size but with a vesicular shape, encrusted with a yellowish matter, negative in sulphovanilline, cystidiols sinuose, slightly projecting. Basidia subpedunculate, sinuous, thin-walled, with 4-sterigmata, and a basal clamp. Basidiospores narrowly ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Parvodontia* is characterized by the grandinioid hymenophore and thin-walled cystidia with yellowish, resinous contents (Hjortstam & Ryvarde 2004c).

Paullicorticium J. Erikss., Symb. bot. upsala. 16(1): 66, 1958.

Type species – *Corticium pearsonii* Bourdot, Trans. Br. mycol. Soc. 7(1-2): 52, 1921.

Basidiome resupinate, adnate, thin and inconspicuous, ceraceous when fresh, pruinose when dry, hymenophore more or less porulose. Hyphal system monomitic, hyphae with clamps or simple septa. Cystidia absent. Basidia obconical to pyriform, with (4-)6-8-sterigmata. Basidiospores ellipsoid, allantoid or navicular, smooth, thin-walled, IKI–, CB–.

Remarks – *Paullicorticium* is characterized by the inconspicuous basidiome and by the obconical to pyriform basidia with usually 6-8-sterigmata. The phylogenetic relationships of *Paullicorticium* remain still unclear (Larsson 2007b).

Pellicularia Cooke, Grevillea 4(no. 31): 116, 1876

Type species – *Pellicularia koleroga* Cooke, Grevillea 4(no. 31): 116. 1876.

Remarks – A *nomen confusum*, see further Donk (1954).

Peniophora Cooke, Grevillea 8: 20, 1879.

Type species – *Thelephora quercina* Pers., Syn. meth. fung. (Göttingen) 2: 573, 1801.

Synonym – *Gloeopeniophora* Höhn. & Litsch.

Basidiome usually resupinate, margin adnate or loosening from the substrata, hymenial surface smooth to tuberculate, grey, violaceous, orange, red or brown. In vertical section, subhyaline to brown, membranaceous to ceraceous, sometimes pseudoparenchymatic. Hyphal system monomitic, hyphae hyaline to brown, thin- to thick-walled with clamps in most species, few with simple-septate hyphae. Dendrohyphidia, gloeocystidia and lamprocystidia present or lacking. Basidia subclavate to cylindrical, with 4-sterigmata, a basal clamp present in most species. Basidiospores usually large, ellipsoid, cylindrical to allantoid, smooth, thin-walled, IKI–, spore print pinkish to reddish.

Remarks – *Peniophora* is a large genus somewhat heterogeneous but it appears monophyletic in the most analysis (Boidin et al. 1998, Hallenberg et al. 2010, Larsson & Larsson 2003, Larsson 2007b). The genus *Dendrophora* differs from *Peniophora* above all, for the presence of pigmented, thick-walled dendrohyphidia and *Duportella* for the distinct brown pseudocystidia and the dimitic hyphal system (Boidin 1994). *Peniophora* is a good example of ecological adaptation to dry and exposed environments. We can find many species with a protective dendrohyphidia layer or more or less coloured hyphae to avoid dehydration or solar radiation, but also large basidiospores to aid the first steps of the germination in a dry substrate. For a complete and recent survey of the genus see Andreasen & Hallenberg (2009) and Yurchenko (2010).

Peniophorella P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 427, 1889.

Type species – *Thelephora pubera* Fr., Elench. fung. (Greifswald) 1: 215, 1828.

Basidiome resupinate, effused, adnate, ceraceous to corneous, hymenophore usually smooth to tuberculate, white to yellowish. Hyphal system monomitic, hyphae clamped, subiculum thin and not well differentiate. Cystidia of several kinds, leptocystidia, metuloids or gloeocystidia,

echinulate cells (echinocysts or stephanocysts) usually present (at least in culture) but often difficult to see. Basidia narrowly to broadly clavate, with 4-sterigmata and basal clamp. Basidiospores cylindrical, ellipsoid or allantoid, smooth, thin-walled, with oily content, abundant in herbarium material, IKI–.

Remarks – *Peniophorella* differs from *Hyphoderma* in the presence of echinulate cells, clavate basidia, medium-sized to large basidiospores with oily content, and a bipolar mating system (cf. Larsson 2007a).

Perenniporia Murrill, Mycologia 34(5): 595, 1942.

Type species – *Boletus medulla-panis* Jacq., Miscell. Austriac. 1: 141, 1778.

Basidiome mostly perennial, rarely annual, resupinate to pileate, pileus smooth, ochraceous to blackish with age. Pore surface white to cream, pores small, isodiametric; context white to pale ochraceous, hard and woody. Hyphal system dimitic (trimitic), generative hyphae thin-walled, hyaline, with clamps, often difficult to observe, skeletal hyphae dominating in the basidiomes, solid to thick-walled, unbranched to moderately branched, non-dextrinoid to strongly dextrinoid, more rarely amyloid in Melzer's reagent. Cystidia none; Basidia clavate, with 4-sterigmate, with a basal clamp. Basidiospores thin- to thick-walled, globose to ellipsoid, drop shaped to truncate, hyaline, non-dextrinoid to strongly dextrinoid in Melzer's reagent, often variable within the same basidiome. On dead and living hardwoods and conifers, causing white rots.

Remarks – *Perenniporia* is characterized by the poroid basidiomes with ellipsoid to distinctly truncate spores, usually thick-walled and with a variable dextrinoid reaction, combined with a di- to trimitic hyphal system where the vegetative hyphae are dextrinoid to a variable degree (Decock & Stalpers 2006, Ryvarden 1991, Ryvarden & Melo 2017, Bernicchia & Gorjón 2020).

Perplexostereum Ryvarden & Tutka, Synopsis Fugnorum 32: 72, 2014.

Type species – *Stereum endocrocinum* Berk., Hooker's J. Bot. Kew Gard. Misc. 6: 169, 1854.

Basidiome perennial, pileate dimidiate, pileus dark brown, zonate, finely velutinate to pubescent. Hymenial surface smooth, ochraceous, in section with a thin black zone between the hymenial part and the upper surface of the pileus. Hyphal system dimitic, generative hyphae hyaline and with clamps, skeletal hyphae pale brown and almost solid. Cystidia present in the hymenium, hyaline tubular, thin-walled. Basidia clavate, with 4-sterigmate, basally clamped. Basidiospores subglobose hyaline, ornamented and strongly amyloid in Melzer's reagent. On coniferous wood.

Remarks – *Perplexostereum* is a monotypic genus macroscopically identical to *Xylobolus subpileatum* (Berk.) Boidin by its smooth brown zonate pubescent pileus and smooth hymenophore. However, the cystidia and the ornamented amyloid basidiospores exclude any relationship to that genus. The spores remind one of those seen in *Dichostereum*, a genus however, where all species have resupinate basidiomes and hyaline cystidia are unknown (Ryvarden & Tutka 2014).

Phaeophlebia W.B. Cooke, Mycologia 48: 401, 1956.

Type species – *Merulius strigosozonatus* Schwein., Trans. Am. phil. Soc., Ser. 2 4(2): 160, 1834.

Remarks – A synonym of *Punctularia* Pat.

Phaeophlebiopsis Floudas & Hibbett, Fungal Biology 119: 707, 2015.

Type species – *Phaeophlebiopsis caribbeana* Floudas & Hibbett, Fungal Biology 119: 707, 2015.

Basidiome resupinate, adnate, smooth, and hard, beige to pale brown to grey-brown and occasionally with purple tints, slightly or extensively cracking, periphery either concolorous or brown with very thin white margin, subiculum beige or brown, no hyphal cords. Hyphal system monomitic, without or very rare clamp connections, thin or thick-walled, occasionally with crystals,

hyphae usually agglutinated, hyaline and very difficult to separate, reminding *Phlebiopsis*. Cystidia of metuloid appearance, with heavy encrustation of usually coarse crystals, some with brown colors. Basidia clavate to subcylindrical, thin-walled, with four sterigmata and without basal clamp. Basidiospores smooth, thin-walled, subcylindrical, ellipsoid or ovoid, usually one side flattened and very slightly bent, inamyloid.

Remarks – *Phaeophlebiopsis* is very similar to *Phlebiopsis* and their separation is not easy only on morphology. Authors introduced the genus mainly based on the strongly supported phylogenetic separation (Floudas & Hibbett 2015). The beige to the brown color in the basidiomes and the brown colored cystidia in *Phaeophlebiopsis* may be a good character to distinguish both genera.

Phaeoradulum Pat., Bull. Soc. mycol. Fr. 16: 178, 1900.

Type species – *Phaeoradulum guadelupense* Pat., Bull. Soc. mycol. Fr. 16: 178, 1900.

Basidiome resupinate, membranous, context brown and compact, hymenial surface tuberculate to odontoid, brown. Hyphae without clamps. Cystidia cylindrical, thin-walled, 40–60 × 8–10 µm. Basidiospores ovoid, smooth, 10–12 × 6 µm, brownish, with a distinct germ pore.

Remarks – *Phaeoradulum guadelupense* is a species with brown spores and seems to belong in Coniophoraceae (Hjortstam & Ryvarden 2007). According to the original description it is close to *Radulum* (however a name of uncertain application) but differing in the brown basidiospores. It would be desirable to examine the generic type to confirm its position among the corticioid fungi.

Phanerochaete P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 426, 1889.

Type species – *Thelephora velutina* DC., in De Candolle & Lamarck, Fl. franç., Edn 3 (Paris) 5/6: 33, 1815.

Basidiome resupinate, closely attached to the substrate or commonly more or less detachable, ceraceous when fresh and wet, membranaceous when dried, whitish to yellowish, red-orange or brown, hymenophore smooth, tuberculate, hydnceous or velutinous due to the projecting cystidia, margin fibrillose, fimbriate or with hyphal cords. Hyphal system monomitic, subicular hyphae mostly 5 µm wide or more, as a rule thick-walled, with simple septa or occasional to rare single, double or multiple clamps, straight and parallel with scattered ramifications while the subhymenial hyphae are thin-walled, richly branched and intertwined, without clamps, all hyphae smooth or encrusted to some degree. Cystidia numerous, cylindrical or more or less tapered, usually aseptate, always simple septate at the base, naked or strongly encrusted. Basidia narrowly clavate to cylindrical, hyaline, thin-walled, with a simple basal septum. Basidiospores usually narrowly ellipsoid, allantoid to subglobose, hyaline, smooth, thin-walled, usually with small apiculus, IKI–, CB–.

Remarks – *Phanerochaete* is a large genus, characterized mainly by the ceraceous basidiome, simple-septate generative hyphae (even single or verticillate clamps may occur in basal hyphae), clavate basidia and smooth inamyloid basidiospores. *Phanerochaete*, according to several molecular studies, is polyphyletic (Lim 2001, De Koker et al. 2003, Wu et al. 2010). De Koker et al. (2003) pointed out that the core of *Phanerochaete* group contains the type species *P. velutina* and corresponds more or less to *Phanerochaete* subgen. *Phanerochaete* as defined by Burdsall (1985); these taxa develop true hymenial cystidia. Some species of *Phanerochaete* were clearly shown to have closer affinities with other polyporoid lineages. This could indicate that convergent morphology to a phanerochaetoid type has occurred several times. The molecular studies by Wu et al. (2010) confirm the complex delimitation with most of *Phanerochaete* species dispersed in the phlebioid clade of the Polyporales.

Phanerodontia Hjortstam & Ryvarden, Syn. Fung. (Oslo) 27: 26, 2010.

Type species – *Phanerodontia dentata* Hjortstam & Ryvarden, Syn. Fung. (Oslo) 27: 27, 2010.

Basidiome resupinate, closely adnate, hymenophore rarely smooth, tuberculate or raduloid to distinctly hydroid, whitish to pale brown, subiculum thin to moderately thick, pale coloured. Hyphal system monomitic, mostly hyphae with simple-septa, some scattered clamps may be present in the subicular hyphae, thin- to thick-walled in the subiculum, aculeal hyphae usually thin-walled, rarely thickened, parallel and closely arranged in the trama of the aculei. Cystidia few or absent, tubular, hyaline, thin or with thickened walls, smooth or encrusted with granular material. Basidia with 4-sterigmata, simple-septate at the base. Basidiospores ellipsoid, smooth, thin-walled, IKI-, CB-.

Remarks – *Phanerodontia* was erected to accommodate species formerly placed in *Phanerochaete* with a typical raduloid to hydroid hymenophore and thick-walled subicular hyphae. *Phaneroites* differs morphologically by the absence of cystidia and thin-walled subicular hyphae (Hjortstam & Ryvarden 2010b).

Phaneroites Hjortstam & Ryvarden, Syn. Fung. (Oslo) 27: 30, 2010.

Type species – *Radulum subquercinum* Henn., in Warburg, Monsunia 1: 46, 1899.

Basidiome resupinate, adnate, hymenophore slightly tuberculate or odontoid to hydroid. Hyphal system monomitic, hyphae with simple-septa but scattered clamps may occur in the subicular hyphae, all hyphae thin-walled. Cystidia absent but subcapitate hyphal ends may be present. Basidia terminal, clavate, with 4-sterigmata and a simple basal septum. Basidiospores ellipsoid or subglobose, smooth, thin-walled, IKI-, CB-.

Remarks – *Phaneroites* was described to accommodate *Radulum subquercinum* a species characterized mainly by the odontoid hymenophore and hyphae thin-walled and simple septate. It differs from *Phanerodontia* by the thin-walled hyphae and absence of cystidia (Hjortstam & Ryvarden 2010b).

Phellinus Quél., Enchir. fung. (Paris): 172, 1886.

Type species – *Boletus igniarius* L., Sp. pl. 2: 1176, 1753.

Basidiome perennial, resupinate to pileate, single or imbricate with decurrent pore surface, pileus if present, yellowish, rusty brown, grey to black, tomentose, hispid, glabrous or deeply cracked. Pore surface brownish, pores isodiametric, more rarely irregular and angular and slightly split; context dark reddish brown, umber or yellowish brown, mostly woody, more rarely tough-fibrous. Hyphal system dimitic with transitions between thin-walled generative hyphae and this thick-walled skeletal type hyphae, generative hyphae hyaline to pale yellow, narrow, thin-walled, simple-septate, skeletal hyphae yellowish to rusty brown, non-septate or with occasional simple septa, mostly thick-walled and wider than the generative hyphae. Hymenial setae and tramal setae absent or present; setal hyphae absent or present in margin, context or hymenium. Basidia broadly clavate to subglobose, 4-sterigmate, simple-septate at the base. Basidiospores globose to cylindrical, smooth, hyaline to rusty brown, thin- to thick-walled, dextrinoid to negative in Melzer's reagent. On dead or living conifers and hardwoods, causing a white rot.

Remarks – *Phellinus* is a cosmopolitan large genus of polypores with many species of difficult classification and numerous small genera have been proposed the different species. We include it in this manual in a broad sense, just to cover a large number of resupinate poroid species. For a detailed discussion on nomenclature and taxonomy the reader is referred to specific hymenochaetoid polypore papers and manuals (Bernicchia 2005, Bernicchia & Gorjón 2020, Fiasson & Niemelä 1984, Larsen & Cobb-Pouille 1990, Murrill 1907, Rajchenberg et al. 2015, Ryvarden & Gilbertson 1994, Ryvarden & Melo 2017).

Phlebia Fr., Syst. mycol. (Lundae) 1: 426, 1821.

Type species – *Phlebia radiata* Fr., Syst. mycol. (Lundae) 1: 427, 1821.

Synonyms – *Cabalodontia* Piątek, *Hermanssonia* Zmitr., *Merulius* Fr., *Jacksonomyces* Jülich, *Lilaceophlebia* (Parmasto) Spirin & Zmitr., *Mycoacia* Donk, *Mycoaciella* J. Erikss. & Ryvarden, *Stereophlebia* Zmitr.

Basidiome resupinate, rarely pileate, with a subceraceous to subgelatinous consistency when fresh, membranaceous to coriaceous when dry, hymenophore smooth, tuberculate, phlebioid, odontoid, meruloid or poroid. Hyphal system monomitic (rare dimitic), hyphae as a rule clamped (few species with simple-septate generative hyphae), embedded in a gelatinous matrix. Cystidia present or absent. Basidia usually narrowly clavate, arranged in a dense palisade, septa difficult to discern due to the gelatinous matrix. Basidiospores allantoid to ellipsoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Phlebia*, according to molecular data by Larsson et al. (2004), is closely related to *Phlebiella*, *Mycoacia* and *Mycoaciella*, all these genera share, among other characteristics: basidiome gelatinous to corneous, narrowly clavate basidia arranged in a dense palisade and small inamyloid basidiospores. All those genera form the phlebioid clade with other species of *Hyphoderma*, *Ceriporia*, *Gloeoporus*, *Ceraceomyces*, and *Byssomerulius*. The synonymy of *Merulius*, *Mycoacia*, and *Mycoaciella* with *Phlebia* proposed by Nakasone (Nakasone & Burdsall, 1984, Nakasone 1997, 2002) seems to be molecularly and morphologically justified and it is adopted here. *Mycoaciella* is the more deviating genus from *Phlebia* due to its dimitic hyphal system. Many species of *Phlebia* developing an odontoid to hydroid hymenophore, need to add supporting structures in the hymenial configuration, and more or less sclerified generative hyphae are indeed present. Therefore, typical skeletons are not deviating elements if are considered to add strength to a more structured basidiome. Parmasto & Hallenberg (2000) also preferred to keep *Phlebia s.l.* undivided. *Hermanssonia* and *Stereophlebia* were also recently described by Zmitrovich (2018) to accommodate *Phlebia centrifuga* P. Karst. and *Grandinia tuberculata* Berk. & M.A. Curtis as the generic type species, respectively.

Phlebiella P. Karst., Hedwigia 29: 271, 1890.

Type species – *Phlebia vaga* Fr., Syst. mycol. (Lundae) 1: 428, 1821.

Basidiome resupinate, effused, adnate, thin, often inconspicuous, hymenophore smooth, ceraceous to subgelatinous, margin fibrillose with hyphal strands. Hyphal system monomitic, hyphae smooth, thin-walled, with clamps or simple-septa, usually agglutinated and difficult to discern. Cystidia absent. Basidia pleural, cylindrical, with 4-sterigmata. Basidiospores warted, thin- to slightly thick-walled, non-amyloid.

Remarks – Oberwinkler (1965) described *Xenasmatella* to include pleurobasidiate corticioid species without cystidial elements and smooth to warted basidiospores (with *Corticium subflavidogriseum* Litsch. as the generic type species), including in the subg. *Xenasmatella* those species with inamyloid basidiospores and in the subg. *Amyloxenasma* species with amyloid basidiospores. In the same contribution, he also erected the Xenasmataceae family including the next genera: *Acanthobasidium*, *Xenosperma*, *Xenasmatella*, *Litschauerella*, and *Xenasma*. Later, Oberwinkler (1977) considered that *Corticium subflavidogriseum* could be separated from *Phlebia vaga* (generic type of *Phlebiella*) only at specific (not generic) level, rejecting the genus *Xenasmatella* and re-establishing *Phlebiella* for species with warted basidiospores. Hjortstam (1983) preferred to keep separated *Xenasmatella* for the species with ‘basidiospores apparently pale brown in the microscope (KOH) and showing a dextrinoid reaction (pale yellowish)’. *Phlebiella* in a wide old sense included species with smooth and ornamented amyloid or inamyloid basidiospores. Jülich (1979) erected the genus *Aphanobasidium* for amyloid or inamyloid, smooth spored species. Hjortstam & Larsson (1987) divided *Phlebiella* into three subgenera: subg. *Phlebiella*, with ornamented basidiospores; subg. *Aphanobasidium*, with smooth and inamyloid spores and subg. *Amyloxenasma*, with smooth and amyloid basidiospores. Boidin & Gilles (1989) accepted that arrangement and Hjortstam & Ryvarde (2005) raised *Amyloxenasma* to a generic level. In the molecular study by Larsson (2007b), *Phlebiella* does not show clear relationships with other genera, *Amyloxenasma* joins other amyloid-spored species in the family Amylocorticiaceae Jülich and *Aphanobasidium* appears in the family Perulaceae Corner next to, among others, *Radulomyces*. Relationships between *Phlebiella* and *Radulomyces* have also been recently evaluated by Ghobad-Nejhad & Kotiranta (2007).

Phlebiopsis Jülich, Persoonia 10: 137, 1978.

Type species – *Thelephora gigantea* Fr., Observ. mycol. (Havniae) 1: 152, 1815.

Basidiome annual, resupinate, effused, membranaceous to subceraceous, hymenophore smooth to odontoid. Hyphal system monomitic, hyphae simple septate, hyaline, compactly arranged, basal hyphae thick-walled, subiculum well developed. Cystidia hyaline, thick-walled, encrusted. Basidia narrowly clavate, with 4-sterigmata and a simple basal septum. Basidiospores cylindrical to ellipsoid, hyaline, thin-walled, IKI–.

Remarks – *Phlebiopsis* is closely related to *Phanerochaete* and both share the simple-septate generative hyphae and the presence of cystidia. *Phlebiopsis*, as well *Scopuloides*, are regarded by some mycologists as congeneric with *Phanerochaete* (Burdall 1985, Nakasone 1990a), but the phylogeny of this group is somewhat more complex as it was recently shown by Wu et al. (2010). Morphologically, *Phlebiopsis* differs from *Phanerochaete* mainly in the subceraceous basidiome, with a thick and dense subiculum with almost indistinctly agglutinate subicular hyphae. *Scopuloides* differs from the previous genera in the distinct ceraceous basidiome with a dense context and less developed subiculum. Even if these differences seem to be not important and a matter of basidiome configuration as an ecological adaptation, it seems that these genera, although closely related, are phylogenetically more or less separated. See also *Phaeophlebiopsis* for comparison.

Phlebiporia Jia J. Chen, B.K. Cui & Y.C. Dai, Mycological Progress 13: 568, 2013.

Type species – *Phlebiporia bubalina* Jia J. Chen, B.K. Cui & Y.C. Dai, Mycological Progress 13: 569, 2013.

Basidiome annual, resupinate, hard corky upon drying, hymenophore poroid, pore surface buff to pinkish buff when dry, pores angular to irregular, dissepiments thin, entire to lacerate, margin thin, cream to buff, cottony. Hyphal system monomitic, generative hyphae with simple-septa, dextrinoid, CB+, thick-walled, tissues becoming brownish in KOH. Thin-walled, frequently branched and aseptate quasi-binding hyphae present in the subiculum. Cystidia absent, cystidioles present. Basidia subclavate to barrel shaped, bearing four sterigmata and a basal simple septum. Basidiospores ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–.

Remarks – The genus seems to be related with other species of *Phlebia* s.l. in the Meruliaceae (Chen & Cui 2013). It is characterized by the poroid hymenophore, a monomitic hyphal system with simple-septate and dextrinoid hyphae, and smooth, non-reacting in Melzer's reagent basidiospores.

Phlyctibasidium Jülich, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 77(2): 154, 1974.

Type species – *Corticium polyporoideum* Berk. & M.A. Curtis, Grevillea 1(no. 12): 177. 1873.

Remarks – A synonym of *Ramaricium* J. Erikss.

Physisporinus P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 324, 1889.

Type species – *Poria vitrea* Pers., Observ. mycol. (Lipsiae) 1: 15, 1796.

Basidiome resupinate, annual, soft to ceraceous, often changing colour on bruising or drying. Pore surface with round pores. Hyphal system monomitic, generative hyphae with clamps or simple septa. Cystidia absent. Basidia clavate, 4-sterigmate, simple-septate or basally clamped. Basidiospores globose to ovoid, smooth, thin-walled, negative in Melzer's reagent. Causing a white rot in rotten wood.

Remarks – *Physisporinus* presents soft to waxy ceraceous or subgelatinous basidiomes that often change colour when they are bruised or dried, being very fragile when dry, in contrast to *Rigidoporus* with very hard basidiomes. Also, in *Rigidoporus* basal hyphae are very thick-walled and can be easily taken as skeletal hyphae. Both genera, have been treated as synonyms by some authors. See also Bernicchia & Gorjón (2020).

Physodontia Ryvar den & H. Solheim, Mycotaxon 6: 375, 1977.

Type species – *Physodontia lundellii* Ryvar den & H. Solheim, Mycotaxon 6(2): 376, 1977.

Basidiome resupinate, hymenophore grandinoid, odontoid to hydroid, porose-reticulate among the aculei, white to pale cream. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia of two kind: 1) gloecystidia oblong, very numerous in the hymenium, subhymenium and trama, 2) leptocystidia present in the hymenium subulate, smooth, hyaline, thin-walled and projecting. Basidia clavate with 4-sterigmata, and with a basal clamp. Basidiospores subglobose, smooth, IKI–, CB–.

Remarks – *Physodontia* reminds in some respects *Trechispora* by the consistence of the basidiome and the similar basidia, but the latter lacks gloecystidia; *Cystostereum* by the numerous gloecystidia but differing in the presence of skeletal in the latter; and *Gloeocystidiellum* s.l. differs clearly in the amyloid basidiospores. Phylogenetically the position of *Physodontia* is still unclear, but it could belong to the Hymenochaetales (Larsson 2007b).

Physospora Fr., Fl. Scand.: 360, 1835.

Type species – *Sporotrichum rubiginosum* Fr., Syst. mycol. (Lundae) 3(2): 417, 1832.

Remarks – A name based on an anamorph. Anamorphic state of *Botryobasidium* Donk.

Pileodon P. Roberts & Hjortstam, in Hjortstam, Roberts & Spooner, Kew Bull. 53(4): 817, 1998.

Type species – *Pileodon megasporus* P. Roberts & Hjortstam, in Hjortstam, Roberts & Spooner, Kew Bull. 53(4): 817, 1998.

Basidiome tough, perennial, effuse-reflexed with distinct pileus in the type species, hymenial surface finely odontoid with numerous hyphal pegs often fused in a semi reticulum, brown throughout. Hyphal system dimitic, generative hyphae hyaline, with clamp-connections, skeletal hyphae brown, thick-walled, often nodulose. Cystidia absent, but with brown skeletal hyphae in the hyphal pegs. Basidia large, stalked, with 4 sterigmata. Basidiospores very large, hyaline becoming brown, thin to slightly thick-walled, inamyloid, non-dextrinoid, acynophilous.

Remarks – *Pileodon* is characterized by a dark brown, effuse-reflexed basidiome, dimitic hyphal system, hyphal pegs, hyphidia, and large basidiospores. For further details see Nakasone (2004). Morphological limits with *Veluticeps* are uncertain. The hyphal pegs of *Pileodon* often fuse laterally to form short, thin plates that resemble an extensively developed shallow semi reticulum whereas species in *Veluticeps* have a smooth to diverse odontoid hymenophore. Also, basidiospores are usually larger (> 25 µm long) than those of *Veluticeps*. *Campylomyces* differs in the cupulate or disciform, deeply lobed basidiomes.

Piloderma Jülich, Ber. dt. bot. Ges. 81: 415, 1969.

Type species – *Corticium bicolor* Peck, Bull. Buffalo Soc. Nat. History 1(2): 62, 1873 (= *Sporotrichum fallax* Lib., Pl. crypt. Arduenna, fasc. (Liège), 1832).

Basidiome resupinate, effused, loosely adnate, thin, hymenophore smooth to porulose, margin indeterminate, hyphal strands often present. Hyphal system monomitic, hyphae simple-septate, thin-walled, loosely intertwined in the subiculum, smooth or encrusted. Cystidia absent. Basidia clavate, with 2–4-sterigmata, without a basal clamp. Basidiospores ellipsoid to globose, smooth, slightly thick-walled, IKI–.

Remarks – *Piloderma* is morphologically closely related to *Athelia* in basidiome structure with the hyphae loosing intertwined but mainly differs in the distinct thick-walled basidiospores (Jülich 1969). Phylogenetical analysis confirms this relationship (Larsson et al. 2004, Larsson 2007b). *Piloderma* species are reported to be ectomycorrhizal, like other species in *Amphinema*, *Tylospora*, etc. (Binder et al. 2005).

Piloporia Niemelä, Karstenia 22(1): 13, 1982.

Type species – *Antrodia sajanensis* Parmasto, Botanicheskie Materialy 15: 134, 1962.

Basidiomes pileate, effused-reflexed to resupinate; upper surface tomentose, dark brown; pore surface whitish to cork-colored; tubes concolorous; context duplex with a black line separating the lower cork-colored part from the upper rusty brown part; hyphal system dimitic; generative hyphae with clamps; skeletal hyphae hyaline to brown in upper part of context, finely encrusted in the dissepiments; cystidia none; basidiospores allantoid, hyaline, thin-walled and negative in Melzer's reagent; causing a white rot in conifers and hardwoods.

Remarks – *Piloporia* is similar to *Incrustoporia* and *Skeletocutis* but differs in the brown pigmentation of the hyphae and the duplex structure of the context and subiculum. Phylogenetically, *Piloporia* is recovered in the Incrustoporiaceae, with *Incrustoporia* and *Skeletocutis* as the closest relatives (Justo et al. 2017).

Pirex Hjortstam & Ryvarde, Mycotaxon 24: 287, 1985.

Type species – *Radulum concentricum* Cooke & Ellis, Grevillea 14(no. 69): 13, 1885.

Basidiome resupinate, effused. Hymenophore odontoid or hydroid to subporoid. Subiculum dark brown. Hyphal system monomitic, hyphae with clamps, subicular hyphae dark coloured. Cystidia absent. Basidia clavate, with 4 sterigmata and a basal clamp. Basidiospores, ellipsoid to subcylindrical, smooth, thin-walled, IKI–, with oily inclusions.

Remarks – Among corticioid genera with aculei and clamped hyphae, *Pirex* is most similar to *Pseudolagarobasidium* and *Radulodon* (Hallenberg et al. 1985). Following Nakasone & Linder (2012) *Radulodon* include aculeate species with a ceraceous or cartilaginous texture, mostly agglutinated, hyaline hyphae, with or without hyphidia, and acyanophilous, slightly thick-walled basidiospores containing a resinous globule. In contrast, *Pseudolagarobasidium* species have a soft to subceraceous, fragile or brittle texture with mostly non-agglutinated, hyaline to light brown hyphae in the aculeus trama and subiculum, tramal cystidia, basidiospores without resinous material, and lack hyphidia. *Radulomyces* is somewhat similar to the previous genera, however, is distinguished by its ceraceous, hygrophane basidiome, large basidia and basidiospores, hyphidia, and lack of cystidia. In addition, its hyphae, basidia and basidiospores are filled with resinous matter.

Plicatura Peck, Ann. Rep. Reg. St. N.Y. 24: 75, 1872.

Type species – *Plicatura alni* Peck, Ann. Rep. N.Y. St. Mus. 24: 75, 1872 (= *Merulius niveus* Fr., Elench. fung. (Greifswald) 1: 59, 1828).

Syn.: *Plicaturopsis* D.A. Reid.

Basidiome pileate, more or less cupulate to flabelliform, abhymenial surface velutinous, hymenophore plicate, with bifurcate lamellae, margin involute. Hyphal system monomitic, hyphae with large and conspicuous clamps, thin- to thick-walled, hyaline or brownish in the trama. Cystidia absent. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores allantoid, smooth, thin-walled, with a variable amyloid reaction.

Remarks – *Plicaturopsis* is here treated as a synonym of *Plicatura*. There are not reliable morphological and molecular characters to keep both genera separated. *Plicaturopsis* differs from *Plicatura* in the more folded hymenophore with branched ridges whereas in *Plicatura* is only irregularly plicate. Both generic type species, *Plicaturopsis crispa* and *Plicatura nivea* are also similar in culture (Nakasone 1990a). According to molecular data, it seems to belong to the Amylocorticiaceae (Larsson 2007b).

Plicaturopsis D.A. Reid, Persoonia 3: 150, 1964.

Type species – *Cantharellus crispus* Pers., Neues Mag. Bot. 1: 106, 1794.

Remarks – A synonym of *Plicatura* Peck.

Podoscypha Pat., Essai Tax. Hyménomyc. (Lons-le-Saunier): 70, 1900.

Type species – *Sterum surinamense* Lév., Annl. Sci. Nat., Bot., sér. 3 2: 209, 1844.

Basidiome flabelliform to infundibuliform, pilei fused, more or less stipitate, hymenophore more or less rugose. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled. Cystidia (gloeocystidia) present. Basidia clavate, with 2–4-sterigmata, with a basal clamp. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, hyaline, IKI–.

Remarks – *Podoscypha* is mainly characterized by the stipitate and flabellate basidiome, the dimitic hyphal system and the presence of gloeocystidia. According to Binder et al. (2005), *Podoscypha* is phylogenetically related to *Abortiporus biennis* in the polyporoid clade; in the molecular analysis by Larsson (2007b) it is also placed in the Polyporales and related with other corticioids as *Phlebia* in the Meruliaceae.

Podoserpula D.A. Reid, Kew Bull. 16(3): 437, 1963.

Type species – *Craterellus pusio* Berk., in Hooker, Flora Tasman., Fungi 2: 258, 1859.

Basidiome stipitate, simple to ramose, with usually numerous reniform to spatulate pilei, glabrous. Hymenophore longitudinally to irregularly rugose or merulioid. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled. Cystidia absent. Basidiospores small, ellipsoid to subglobose, smooth, thick-walled, hyaline, IKI–.

Remarks – *Podoserpula pusio* (Berk.) D.A. Reid (the “pagoda fungus”) is characterized by the stipitate basidiomes with a merulioid hymenophore. It belongs to the Amylocorticiales (Binder et al. 2010). Another species, *Podoserpula miranda* B. Buyck, B. Duhem, G. Eyssartier & M. Ducouso, was described recently (Buyck et al. 2012).

Poria Adans., Fam. Pl. 2: 10, 1763.

Remarks – A *nomen dubium* as stated by Ryvarden (1991). The name has usually been used for resupinate poroid fungi and several interpretations have been made from the generic concept.

Poriodontia Parmasto, Mycotaxon 14: 103, 1982.

Type species – *Poriodontia subvinosa* Parmasto, Mycotaxon 14(1): 104, 1982.

Remarks – A synonym of *Trichaptum* Murrill.

Porogramme (Pat.) Pat., Essai Tax. Hyménomyc. (Lons-le-Saunier): 63, 1900.

Basionym – *Poria* subgen. *Porogramme* Pat., Bull. Soc. mycol. Fr. 15: 199, 1899.

Type species – *Poria dussii* Pat., Bull. Soc. mycol. Fr. 15: 199, 1899.

Basidiome resupinate, adnate, bluish grey, reddish to almost blackish, pores angular and irregular, in parts labyrinthine or consisting of irregular plates, hymenium restricted to the base of the pores, context dark and resinous hard, old tubes filled with white mycelium, substrate reddened in zones. Hyphal system monomitic, generative hyphae with clamps, first hyaline, later thick-walled and tinted brownish, and then darker in KOH and dextrinoid, densely intertwined and agglutinated, clamps often difficult to observe. Cystidia and dendrohyphidia absent. Basidiospores ellipsoid, smooth, thin-walled and non-amyloid.

Remarks – The genus is easy to recognize because of the unusual colour and the reddening of the substrate. The hyphal system may be mistaken to be dimitic, but an examination of the thick-walled hyphae demonstrated clamps, thus, they must be interpreted as sclerified generative hyphae. Their reaction in Melzer and in KOH is quite unique. It may be related to *Grammothele* where the same type of reaction does occur in the skeletal hyphae and where the same darkening of the fruitbody occurs with age. However, the dendrohyphidia of *Grammothele* are absent in *Porogramme* (Ryvarden 1991).

Porostereum Pilát, Bull. Soc. mycol. Fr. 52: 330, 1936.

Type species – *Porostereum phellodendri* Pilát, Bull. trimest. Soc. mycol. Fr. 52(3): 331, 1937.

Basidiome resupinate, effuse-reflexed to pileate, upper sterile surface tomentose, brown to greyish coloured, hymenophore smooth to tuberculate, usually with brown colours and often with a

pinkish tint. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled and brown coloured. Cystidia (skeletocystidia or hymenial cystidial) pale brown, thick-walled, smooth or encrusted. Basidia clavate, with 4-sterigmata, with a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, hyaline, IKI–, CB–.

Remarks – We follow Hjortstam & Ryvar den (1990) and keep *Porostereum* separated from *Lopharia* on the base of the brown basidiome, brown metuloids, and smaller spores present in *Porostereum*. This separation is also supported by molecular data (Yoon et al. 2003). Boidin & Gilles (2002) described the genus *Hjortstamia* for the aribulate *Porostereum* species.

Porothelium Fr., *Observ. mycol. (Havniae)* 2: 272, 1818.

Type species – *Poria fimbriata* Pers., *Neues Mag. Bot.* 1: 109, 1794.

Basidiome annual, resupinate, effused, hymenophore formed by small cupuliform pores densely aggregated in a stroma, margin rhizomorphic. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled, aseptate. Cystidia absent, cystidiols may be present. Basidia cylindrical, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, IKI–.

Remarks – *Porothelium* is characterized by the particular basidiome structure with cupuliform pores embedded in stroma. It has been traditionally treated under the Polyporales, and phylogenetically it is related to other cyphelloid fungi (Bodensteiner et al. 2004).

Porpomyces Jülich, *Persoonia* 11(4): 425, 1982.

Type species – *Poria mucida* Pers., *Observ. mycol. (Lipsiae)* 1: 87, 1796.

Basidiome resupinate, cream-colored or ochraceous, membranaceous, with small, subangular pores. Hyphal system monomitic, hyphae hyaline, thin- to somewhat thick-walled, always with clamps, smooth or the basal ones covered with granules. Cystidia absent. Basidia hyaline, small, distinctly clavate, four-spored. Basidiospores hyaline, broadly ellipsoid, thin-walled, smooth, IKI–, CB–.

Remarks – *Poria mucida* has usually classified in *Ceriporiopsis* Domański. *Porpomyces* is nested in the trechisporoid clade, with other *Trechispora* species, and other corticioid genera such as *Tubulicium* and *Sistotremastrum* (Larsson 2001).

Postia Fr., *Hymenomyc. Eur. (Upsaliae)*: 586, 1874.

Type species – *Polyporus lacteus* Fr., *Syst. mycol. (Lundae)* 1: 359, 1821.

Basidiome annual, resupinate to pileate, fleshy when fresh, brittle to hard when dry, mostly white to light coloured, some species changing to bluish or reddish brown when touching, sometimes becoming darker by drying; hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled; cystidia mostly absent, present in a few species; basidia 4-sterigmate and with basal clamp; basidiospores thin- to thick-walled, smooth, hyaline, allantoid to ellipsoid, negative in Melzer's reagent but in some species weakly amyloid in mass, cyanophilous in some species; causes a brown rot, mostly in conifers, more rarely in hardwoods.

Remarks – According to Ryvar den (1991) a *nomen provisorium* or *nudum*. See comments in *Oligoporus*. *Oligoporus* can be separated from *Postia* in a more restricted sense, for its cyanophilous and thick-walled basidiospores, contrary to the acyanophilous, thin-walled basidiospores of most species in *Postia*. However, *Oligoporus rennyi*, the type species of *Oligoporus*, received variable bootstrap values according to the analyses by Rajchenberg et al. (2013). Now, we consider all the species under the oldest name of *Postia*.

Pouzaroporia Vampola, *Česká Mykol.* 46(1-2): 59, 1992.

Type species – *Poria subrufa* Ellis & Dearn., *Proc. Roy. Canad. Inst., Ser. Nov. (Ottawa)* 1: 89, 1897.

Basidiome annual, resupinate, adnate, soft when fresh, hard and fragile when dried, margin thin and floccose, hymenophore poroid, pore surface whitish to cream when fresh and young,

reddening at first after bruising. Hyphal system mono- to dimitic, generative hyphae are thin-walled, hyaline, with clamps, skeletal or skeletoid hyphae both thin- and thick-walled, unbranched or only exceptionally branched, present in subiculum and trama, neither amyloid or dextrinoid, terminal parts of hyphae filled with mass of numerous refractive grains. Cystidia and cystidioles absent. Basidia broadly clavate, some of them nearly cylindrical, 4-sterigmatic, hyaline, with a basal clamp. Basidiospores numerous in fresh specimens, elliptical to ovoid, hyaline, smooth, in KOH mostly with solitary large spherical drop, IKI-. Causing a white rot.

Remarks – Often regarded as a synonym of *Ceriporiopsis*, the generic name *Pouzaroporia* was proposed to accommodate *Poria subrufa*, differing from *Ceriporiopsis* in the dimitic hyphal system and from *Fibroporia* in the white type of root (Vampola 1992). *Pouzaroporia* belongs to Podoscyphaceae D.A. Reid that comprises genera such as *Podoscypha*, *Abortiporus*, and *Pouzaroporia*. *Poria subrufa* is not related to *Poria gilvescens*, the generic type of *Ceriporiopsis* recovered in the Meruliaceae (Justo et al. 2017).

Prototremella Pat., J. Bot. 2: 269, 1888.

Type species – *Prototremella tulasnei* Pat., J. Bot. 2: 270, 1888.

Remarks – A synonym of *Tulasnella* J. Schröt.

Pseudochaete T. Wagner & M. Fisch., Mycol. Progr. 1(1): 100, 2002.

Type species – *Auricularia tabacina* Sowerby, Brit. Fung., pl. 25, 1797.

Remarks – nom. illegit.; non *Pseudochaete* W. West & G.S. West 1903 (Algae).

Pseudofibroporia Yuan Y. Chen & B.K. Cui, Mycological Progress 16 (5): 527, 2017.

Type species – *Pseudofibroporia citrinella* Yuan Y. Chen & B.K. Cui, Mycological Progress 16 (5): 528, 2017.

Basidiome annual, pileate, pileus sessile, flabelliform to dimidiate, fleshy when fresh, crumbly or chalky, and light in weight after drying. Pileal surface white to lemon yellow when fresh, becoming cream to cinnamon buff upon drying. Pore surface lemon yellow to curry buff when fresh, becoming cinnamon buff to clay buff upon drying. Pores angular, dissepiments thin and entire. Context white to lemon yellow, fleshy when fresh, cottony, or corky after drying. Tubes concolorous with pore surface, crumbly or chalky after drying. Hyphal system dimitic in context, monomitic in trama, generative hyphae with clamp connections, skeletal hyphae IKI-, CB-. Cystidia absent but bottle shaped cystidioles occasionally present. Basidiospores are oblong to broadly ellipsoid, hyaline, slightly thick-walled, smooth, IKI-, CB-. Grows on angiosperm wood.

Remarks – *Pseudofibroporia* is different from *Fibroporia* in its distinct pileate basidiomes with entire margin and lacking rhizomorphs. For further information and relations with other poroid genera see Chen et al. (2017).

Pseudolagarobasidium J.C. Jang & T. Chen, Trans. Br. mycol. Soc. 85(2): 374, 1985.

Type species – *Pseudolagarobasidium leguminicola* J.C. Jang & T. Chen, Trans. Br. mycol. Soc. 85(2): 374, 1985. (= *Hydnum subvinosum* Berk. & Broome, J. Linn. Soc., Bot. 14(2): 60, 1875).

Basidiome resupinate, effuse, adnate, soft, subceraceous, membranaceous, or cretaceous, hymenial surface odontoid, or raduloid, occasionally reticulate to subporoid. Hyphal system monomitic or dimitic, generative hyphae with clamps, hyaline, yellow to light brown, cyanophilous, all microscopical elements often finely encrusted with resinous material (observed in water mounts) that readily dissolves in KOH; microbinding hyphae aseptate, frequently branched, non-staining. Cystidia originating in aculei trama, subiculum, or subhymenium (tramal cystidia) and hymenium (hymenial cystidia), cylindrical, clavate, or subfusiform, clamped at base, contents homogeneous, staining deeply in phloxine and cotton blue, SV-, walls hyaline, thin, cyanophilous. Basidia clavate to cylindrical, sometimes with a median constriction, clamped at base, walls hyaline, thin, 4-sterigmate. Basidiospores globose to ellipsoid with a small, inconspicuous apiculus,

contents homogeneous, walls hyaline, thin to slightly thickened, smooth, not or weakly cyanophilous, IKI–.

Remarks – *Pseudolagarobasidium* is distinguished by the soft-textured basidiome, non-agglutinated hyphae throughout the aculei and context (except in one species), the distinct, even, clamped hyphae of the aculei trama, the numerous tramal and hymenial cystidia with homogenous contents that stain deeply in phloxine and cotton blue, and the small, globose to ellipsoid basidiospores. Species of *Pseudolagarobasidium* are saprobes although several are known to be facultative or opportunistic pathogens or endophytes. See Nakasone & Linder (2012).

Pseudomerulius Jülich, Persoonia 10: 350, 1979.

Type species – *Merulius aureus* Fr., Observ. mycol. (Havniae) 1: 101, 1815.

Basidiome resupinate, effused or effuse-reflexed, ceraceous to membranaceous, adnate, hymenophore meruloid, rhizomorphs absent. Hyphal system monomitic, clamps present at all or most septa, some ansiform, hyphae hyaline, thin-walled or somewhat thick-walled and distinctly swelling in KOH. Cystidia absent or only as hyphoid septate-hyphae. Basidia suburniform or narrowly clavate, with 4-sterigmata and a basal clamp. Basidiospores cylindrical or slightly curved, smooth, slightly thick-walled, light yellowish, inamyloid, slightly dextrinoid, cyanophilous.

Remarks – *Pseudomerulius* is a deviating genus in the corticioid fungi, and phylogenetically it is placed in the Boletales (Larsson et al. 2004, Larsson 2007b, Kotiranta et al. 2011). It is mainly characterized by the open ansiform clamps and by the slightly dextrinoid basidiospores. It is however morphologically similar to *Leucogyrophana* in the basidiome structure and in the more or less coloured, thick-walled and cyanophilous basidiospores (Eriksson et al. 1981).

Pseudotomentella Svrček, Česká Mykol. 12(2): 67, 1958.

Type species – *Hypochnus mucidulus* P. Karst., Bidr. Känn. Finl. Nat. Folk 37: 163, 1882.

Basidiome resupinate, separable from the substratum, pelliculose, continuous or discontinuous. Hymenophore smooth, concolorous with or paler than subiculum. Sterile margin indeterminate or determinate. Hyphal cords present in subiculum and margins, mostly dimitic or rarely monomitic. Subicular hyphae usually simple-septate, clamp connections absent to frequent in some species, thin- or thick-walled, hyaline, brownish or partly greenish in KOH. Subhymenial hyphae simple-septate or clamped, thin-walled, hyaline or partly greenish in KOH. Cystidia absent. Basidia utriform (mostly clavate when immature), stalked, sinuous, rarely with transverse septa, hyaline or partly greenish in KOH, 4-sterigmata. Basidiospores lobed, triangular (with widened proximal part) or slightly globose frontal and ellipsoid lateral face, bi- or trifurcate, hyaline or brownish in 3% KOH and in distilled water. Chlamydospores present or absent.

Remarks – *Pseudotomentella* may be distinguished from species of *Tomentella* from a combination of characters as the basidiospores ornamented with bifurcate aculei, hymenophore smooth, spaheropedunculate basidia, and usually simple-septate hyphae (Svrček 1958, Kõljalg 1996).

Pseudowrightoporia Y.C. Dai, Jia J. Chen & B.K. Cui, Persoonia 37: 28, 2015.

Type species – *Wrightoporia cylindrospora* Ryvarden, Nordic Journal of Botany 2 (2): 147, 1982.

Basidiome annual, sessile, pileate, effused-reflexed or re-supinate, soft corky to corky when fresh, corky when dry. Pileal surface beige, pale brown to ochraceous. Pore surface cream, buff-yellow, yellowish brown, orange to ochraceous, usually shining; pores large to tiny, round to angular. Context cream, buff, pale orange, ochraceous to brown, corky to cottony. Tubes corky to fibrous-corky. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dextrinoid or IKI–. Gloeoplerous hyphae present or absent. Gloeocystidia present or absent. Cystidia present or absent. Basidiospores oblong, broadly ellipsoid, ellipsoid to subglobose, hyaline, thin- to thick-walled, finely asperulate, IKI+, CB+ or CB–. Causing a white rot.

Remarks – *Pseudowrightoporia* is characterized by soft corky to corky basidiomes when fresh, corky basidiomes when dry, usually with shining pores, corky to fibrous-corky tubes, a dimitic hyphal structure, oblong, broadly ellipsoid, ellipsoid to subglobose, finely asperulate and amyloid basidiospores, and a subtropical to tropical distribution. *Pseudowrightoporia* differ from *Wrightoporia* s.str. and other russuloid polypores by poroid basidiomes, more or less yellowish to pale brown pore surface, shining pores, corky to fibrous-corky tubes, and a dimitic hyphal structure with clamped generative hyphae. Based on phylogenetic analyses by Chen et al. (2016) both *Wrightoporia cylindrospora* and *W. japonica* were clustered in the Hericiaceae clade that is distant from *Wrightoporia lenta*, the type species of *Wrightoporia*.

Pseudoxenasma K.H. Larss. & Hjortstam, in Hjortstam & Larsson, Mycotaxon 4: 307, 1976.

Type species – *Pseudoxenasma verrucisporum* K.H. Larss. & Hjortstam, Mycotaxon 4(1): 307, 1976.

Basidiome resupinate, effused, thin, hymenophore smooth, ceraceous. Hyphal system monomitic, hyphae with clamps, densely interwoven, indistinct. Cystidia (sulphocystidia) SA+, cylindrical, with apical schizopapillae. Basidia clavate, mostly pleurobasidial, with 4-sterigmata and a basal clamp. Basidiospores broadly ellipsoid to subglobose, verrucose, thick-walled, with a strong amyloid reaction.

Remarks – *Pseudoxenasma* is easy to recognize by the presence of pleurobasidia, papillate sulphocystidia, and the verrucose amyloid basidiospores (Hjortstam & Larsson 1976). It seems to belong to the Russulaceae, but its position is still not completely clear (Larsson 2007b).

Pteridomyces Jülich, Persoonia 10(3): 331, 1979.

Type species – *Epithele galzinii* Bres., Bull. Soc. mycol. Fr. 27(2): 264, 1911.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore minutely odontoid with sterile hyphal pegs. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled, densely arranged. Hyphal pegs consisting of parallel arranged and hyaline clamped hyphae. Cystidia absent. Basidia clavate, small, hyaline, thin-walled, with 4-sterigmate, with a basal clamp. Basidiospores hyaline, smooth, thin-walled, IKI–, CB–.

Remarks – *Pteridomyces* was erected to accommodate *Epithele galzinii*, an inconspicuous species growing on ferns, with a fragile and closely adnate basidiome, hymenophore with sterile hyphal pegs, short basidia, and smooth curved basidiospores (Jülich 1979). Hjortstam (1991) considered *Pteridomyces* a synonym of *Athelopsis* emphasizing the similar shape of the basidia and basidiospores. *Epithele galzinii* shows a quite different structure of the basidiome, not pellicular and the hyphae are not loosely arranged, contrary to *Corticium glaucinum* Bourdot & Galzin, the type species of *Athelopsis*. We prefer to retain *Pteridomyces*, based on the presence of sterile hyphal pegs and the absence of well a developed subiculum, at least to the moment that phylogenetic relationships of *E. galzinii* (still not sequenced) with other athelioid genera can be established. The type species of *Pteridomyces* has exclusively found growing on ferns.

Ptychogaster Corda, Icon. fung. (Prague) 2: 23, 1838.

Type species – *Ptychogaster albus* Corda, Icon. fung. (Prague) 2: 24, fig. 90, 1838.

Remarks – A poroid species often referred to *Postia* Fr. or *Oligoporus* Bref., with an imperfect stage of a brown mass of chlamydospores. Stalpers (2000) considered the species at a generic level.

Pulcherricium Parmasto, Consp. System. Corticiac. (Tartu): 132, 1968.

Type species – *Byssus coerulea* Lam., Fl. franç. (Paris) 1: (103), 1779.

Remarks – A synonym of *Terana* Adans.

Punctularia Pat., in Patouillard & Lagerheim, Bull. Herb. Boissier 3: 57, 1895.

Type species – *Corticium tuberculosum* Pat., Bull. Soc. mycol. Fr. 8: 118, 1892.

Basidiome resupinate to effuse-reflexed or dimidiate, abhymenial surface zonate, hymenophore tuberculate or with radial ridges, gelatinous when fresh. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Dendrohyphidia present, yellowish to brown. Cystidia absent. Basidia flexuose with an elongated base, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, yellowish to brown, IKI–, CB–.

Remarks – Eriksson et al. (1981), basing on the presence of dendrohyphidia and nature of basidia and basidiospores, pointed out a relationship of *Punctularia* with *Laeticorticium* (*Corticium*). Molecular studies confirm this hypothesis and *Punctularia* is included in the Corticiaceae with other genera such as *Corticium*, *Dendrocorticium*, and *Vuilleminia* (Larsson 2007b).

Punctulariopsis Ghobad-Nejhad, in Ghobad-Nejhad et al. *Taxon* 59(5): 1529, 2010.

Type species – *Vuilleminia subglobispora* Hallenb. & Hjortstam, *Mycotaxon* 57: 121, 1996.

Basidiome resupinate, closely adnate, subgelatinous when wet, corneous when dry. Hymenial surface smooth, reddish-ochraceous, velutinous to pruinose under the lens. Hyphal system monomitic, all hyphae with clamps, hyphae hyaline and thin-walled in the subhymenium, yellowish brown and thickened in the subiculum. Cystidia absent. Dendrohyphidia hyaline, smooth or irregularly encrusted, sparsely branched. Basidia elongate, large clavate, flexuous, with four sterigmata and a basal clamp. Basidiospores broadly ellipsoid, smooth, with granular contents, moderately thick-walled, IKI–, CB–.

Remarks – *Punctulariopsis* resemble microscopically to *Punctularia*, *Dendrocorticium*, and *Vuilleminia*. It resembles *Punctularia* but with thinner basidiome, less developed and hyaline layer of dendrohyphidia, and larger basidia and basidiospores. *Dendrocorticium* differs in a different basidiome configuration, lacking gelatinous consistency and smaller basidia formed in a distinguishable layer. *Vuilleminia* is characterized and differentiated mainly by the decorticating habit. Phylogenetically it is related to *Punctularia* and *Dendrocorticium* in the Punctulariaceae (Ghobad-Nejhad et al. 2010).

Purpureocorticium Sheng H. Wu, *Mycological Progress* 17 (3): 360, 2017.

Type species – *Purpureocorticium microsporium* Sheng H. Wu, *Mycological Progress* 17 (3): 360. 2017.

Basidiome effused, adnate, membranaceous. Hymenial surface white when fresh, turning purple in KOH, becoming purplish pink or pinkish purple after storage of several years, smooth. Hyphal system monomitic; hyphae nodose-septate. Subiculum fairly uniform, composed of medullary layer, with compact texture; hyphae colourless, interwoven and with irregular orientation, tortuous, indistinct, ± agglutinated, occasionally irregularly swollen. Hymenial layer not clearly differentiated from subiculum, possibly thickening. Cystidia lacking. Basidia subclavate with a medium constriction, or utriform, 4-sterigmate. Basidiospores ovate-ellipsoid, smooth, thin-walled, often with one oily drop, IKI–, CB–.

Remarks – *Purpureocorticium* is characterized by having a resupinate basidiome with smooth hymenial surface which turns purple in KOH, and becomes purplish after storage, microscopically having the compact texture of subiculum, nodose-septate thin-walled generative hyphae, absence of cystidia, basidia subclavate with a median constriction, or utriform, bearing ovate-ellipsoid small-sized basidiospores. *Purpureocorticium* is similar to *Phlebia* Fr., due to the presence of the dense texture of subiculum, nodose-septate hyphae, and small basidiospores. However, basidia of *Phlebia* are strictly clavate or subclavate, while those of *Purpureocorticium* are subclavate with a median constriction or utriform. The phylogenetic analyses by Wu et al. (2017) showed that *Purpureocorticium* does not belong to the phlebioid clade. *Purpureocorticium* also resembles *Rhizochaete* Gresl., Nakasone & Rajchenb., because hymenophores of both turn violet in KOH, while *Rhizochaete* differs from the former in having clavate to subcylindrical basidia, and its cystidia contain two types of encrustation.

Pycnodon Underw., Bull. Torrey Bot. Club 25: 631, 1898.

Type species – *Thelephora setigera* Fr., Elench. fung. (Greifswald) 1: 208, 1828.

Remarks – A substitute for *Kneiffia* Fr. and a synonym of *Hyphoderma* Wallr.

Pycnoporellus Murrill, Bull. Torrey bot. Club 32(9): 489, 1905.

Type species – *Polyporus fibrillosus* P. Karst., Sydvestra Finlands Polyporeer, Disp. Praes. Akademisk Afhandling (Helsingfors): 30, 1859 (= *Hydnum fulgens* Fr., Öfvers. K. Svensk. Vetensk.-Akad. Förhandl. 9: 130, 1852).

Basidiome annual, pileate or resupinate, when pileate, broadly attached and semicircular or somewhat elongated; pileus tomentose and zonate, bright orange to rust coloured; pore surface orange, pores medium to large, angular; tubes concolorous with pore surface; context orange to orange-buff, soft and fibrous; all tissues deep red in KOH; hyphal system monomitic; generative hyphae thin-walled to thick-walled, mostly encrusted, simple septate; cystidia present in the hymenium, not encrusted, mostly thin-walled, tubular and projecting; spores cylindrical to oblong-ellipsoid, thin-walled, smooth, hyaline, negative in Melzer's reagent. On dead conifers causing a brown rot.

Remarks – *Pycnoporellus* is easy to identify by the bright orange to reddish-orange colors, and microscopically by the simple-septate hyphae, presence of cystidia. *Pycnoporellus* is classified in the Polyporales in the 'Antrodia clade' among other genera such as *Sparassis*, *Crustoderma*, and *Sarcoporia* in the Sparassidaceae (Justo et al. 2017).

Raduliporus Spirin & Zmitr., Mycena 6: 24, 2006.

Type species – *Polyporus aneirinus* Sommerf., Suppl. Fl. lapp. (Oslo): 273, 1826.

Basidiome annual or persistent, hymenophore poroid, with wide shallow pores, sometimes splitting and becoming irpicoid, soft-corky to membranaceous or ceraceous; trama irregular; context relatively soft, fleshy-ceraceous or membranaceous; hyphal system monomitic; hyphae clamped, thin- to moderately thick-walled. sometimes with verticillate clamps and crystalline encrustation; cystidia absent: basidia clavate-pedunculate, constricted, often long (more than 25 µm); basidiospores comma-shaped to broadly ellipsoid, sometimes with medial constriction, faintly cyanophilous.

Remarks – Type species of *Ceriporiopsis*, *C. gilvescens* (Bres.) Domański, differs from *P. aneirinus* by narrow subballantoid spores, relatively small basidia, and rod-shaped reddish crystals on basal hyphae. In the phylogeny of Tomšovský et al. (2010), *P. aneirinus* is recovered in the phlebioid clade with *Polyporus resinascens* Romell and *Poria pseudogilbescens* Pilát and more distant *C. gilvescens* (recently classified in *Resiniporus* Zmitr.). For now, we consider *Ceriporiopsis* as a polyphyletic clade, but, according to molecular data, maintaining *Raduliporus* and *Resiniporus* as possible synonyms.

Radulochaete Rick, Annl. mycol. 38(1): 58, 1940.

Type species – *Radulochaete ceracea* Rick, Annl. mycol. 38(1): 58, 1940.

Remarks – A name of uncertain application. Some species classified by Rick in *Radulochaete* are transferred to other genera: *Radulochaete horridula* (Rick) Rick as *Hypochnicium horridulum* (Rick) Baltazar & Rajchenb., and *Radulochaete flavoalutacea* Rick in *Hyphoderma corrugata* (Fr.) J. Erikss. & Ryvarde (Baltazar et al. 2016).

Radulodon Ryvarde, Can. J. Bot. 50: 2073, 1972.

Type species – *Radulodon americanus* Ryvarde, Can. J. Bot. 50(10): 2074, 1972.

Basidiome resupinate, effused, adnate, hymenophore hydroid, with usually long cylindrical or flattened aculei. Subiculum pale, mainly thin. Hyphal system monomitic, hyphae thin-walled or with a slight thickened wall, all hyphae with clamps. Cystidia lacking or present, thin-walled, more or less tubular. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores globose to subglobose, smooth, moderately thick-walled, rarely thin-walled, IKI–, CB–.

Remarks – *Radulodon* differs from related genera such as *Hyphoderma* in its globose thick-walled basidiospores (Ryvarden 1972). From other hydroid species of *Phanerochaete* it is distinguished also by the presence of clamped generative hyphae. It is molecularly classified in the Meruliaceae (Larsson 2007b).

Radulodontia Hjortstam & Ryvarden, Synopsis Fungorum 25: 31, 2008.

Type species – *Radulodontia pyriformis*, Synopsis Fungorum 25: 32, 2008.

Basidiome resupinate, effused, hymenophore distinctly hydroid, with aculei often aggregated in small outgrowths, ochraceous coloured. Hyphal system monomitic, hyphae with clamps, hyaline, thin-walled in the trama of the aculei, in the subiculum thickened and abundantly encrusted. Cystidia absent. Basidia clavate, narrowing towards the base, with 4-sterigmata, and a basal clamp. Basidiospores pyriform, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Radulodontia* is characterized by the distinctly hydroid hymenophore, absence of cystidial elements, and pyriform basidiospores. The basidiospores remind those of *Cylindrobasidium* (Hjortstam & Ryvarden 2008).

Radulomyces M.P. Christ., Dansk bot. Ark. 19: 230, 1960.

Type species – *Thelephora confluens* Fr., Observ. mycol. (Havniae) 1: 152, 1815.

Synonym – *Adustomyces* Jülich.

Basidiome resupinate, adnate, effused, ceraceous, hygrophanous, hymenophore smooth, tuberculate, odontoid to raduloid. Hyphal system monomitic, hyphae with clamps, hyaline, thin- to slightly thick-walled. Cystidia absent, hyphal ends frequently present. Basidia clavate, sinuous, with 4-sterigmata and a basal clamp, with abundant oil drops. Basidiospores ellipsoid to globose, smooth or minutely ornamented (spore dimorphism occurs in some species), slightly thick-walled, IKI–, CB–, with abundant oil content.

Remarks – Some controversies exist on the delimitation of the genus. Jülich & Stalpers (1980) included *Radulomyces*, *Globulicium*, *Flavophlebia*, and *Uncobasidium* as synonyms of *Cerocorticium* P. Henn. *Cerocorticium* is mainly distinguished by large narrowly ellipsoid to subcylindrical thin-walled basidiospores; *Globulicium* has globose thin-walled basidiospores and a kind of lagenocystidia or encrusted hyphal ends; *Flavophlebia* is usually well delimited by its yellowish basidiome, ellipsoid thin-walled basidiospores and cylindrical to subfusiform leptocystidia; *Uncobasidium* differs in the thin-walled basidiospores with apical apiculus, and above all in the characteristic hooked basidia. Jülich & Stalpers (1980) included *Stereum repandum* var. *lusitanicum* Torrend in *Cerocorticium* although it was later included in the new genus *Adustomyces* by Jülich (1979) on the basis of the crustaceous basidiome and brownish subicular hyphae. We are of the opinion that these characters can be perfectly considered as an ecological adaptation to dry environments and not a generic deviating element (more or less coloured subicular hyphae can be found among different species in other genera such as *Peniophora*, *Phlebia*, *Xylobolus*). Since molecular studies do not resolve the phylogenetic relationships of *Adustomyces* (Larsson 2007b) we, following Hjortstam (1998), including *Stereum repandum* var. *lusitanicum* in *Radulomyces*. Molecular data by Hibbett & Binder (2002) and Larsson et al. (2004) placed *Radulomyces* in the euagarics clade next to *Phlebiella* and *Coronicium*, separated from the rest of the corticioid fungi.

Radulomycetopsis Dhingra, Priyanka & J. Kaur, Mycotaxon 119: 133, 2012.

Type species – *Radulomycetopsis cystidiata* Dhingra, Priyanka & J. Kaur, Mycotaxon 119: 135, 2012.

Basidiome resupinate, adnate, effused, membranous-ceraceous, hymenophore smooth to slightly tuberculate, orange to brownish orange to reddish brown, margin fibrillose, concolorous but paler. Hyphal system monomitic, generative hyphae branched at wide angles, without clamps, basal hyphae covered with a thick sheath of brownish red matter, which dissolves in 3% KOH. Cystidia projecting, thin- to slightly thick-walled. Hyphidia simple to somewhat branched in the hymenium.

Basidia clavate to subclavate, 4-sterigmate, without a basal clamp. Basidiospores broadly ellipsoid to subglobose, smooth, thin- to slightly thick-walled, IKI–, CB–. Both basidia and basidiospores rich in oil drops.

Remarks – *Radulomycetopsis* is similar to *Radulomyces* differing in the absence of clamp connections and presence of cystidia (Dhingra et al. 2012).

Radulotubus Y.C. Dai, S.H. He & C.L. Zhao, *Nova Hedwigia* 103 (1-2): 270, 2016.

Type species – *Radulotubus resupinatus* Y.C. Dai, S.H. He & C.L. Zhao, *Nova Hedwigia* 103 (1-2): 271.

Basidiome annual, resupinate, adnate, waxy to hygrophanous when fresh, becoming soft corky to slightly brittle when dry, hymenophore white to cream when fresh, which become pale brown when bruised, and the bruised part becoming greyish brown to brown when dry. Hyphal system monomitic, generative hyphae hyaline, thin- to thick-walled with clamps, IKI–, CB–. Basidia pleural, pyriform to barrel shaped, with four sterigmata and a basal clamp. Basidiospores hyaline, thin- to slightly thick-walled, smooth, globose, IKI–, CB–. Causing a white rot.

Remarks – *Radulotubus* is characterized by annual and resupinate basidiomes, white to cream pores when fresh, darkening after bruising and drying, a monomitic hyphal system with clamped generative hyphae, pleural basidia, and globose, hyaline, thin- to slightly thick-walled, smooth, basidiospores without reactions in Melzer's reagent and Cotton Blue. The phylogenetic analyses based on ITS and nLSU sequences showed that *Radulotubus* belonged to the Pterulaceae clade in Agaricales and was closely related to *Aphanobasidium* and *Radulomyces* that included species with smooth to hydroid hymenophore. *Radulotubus* is the sole genus with poroid hymenophore in Pterulaceae (Zhao et al. 2016).

Radulum Fr., *Syst. orb. veg. (Lundae)* 1: 81, 1825.

Type species – *Hydnum aterrimum* Fr., *Syst. mycol. (Lundae)* 1: 416, 1821.

Remarks – *Radulum*, as described by the type is a species belonging to the Diatrypaceae, where traditionally were classified many corticioids with a more or less odontoid to raduloid hymenophore.

Ramaricium J. Erikss., *Svensk bot. Tidskr.* 48: 189, 1954.

Type species – *Ramaricium occultum* J. Erikss., *Svensk bot. Tidskr.* 48(1): 189, 1954.

Basidiome resupinate, effused, hymenophore smooth, ceraceous when fresh, fragile when dry, margin rhizomorphic. Hyphal system monomitic, hyphae with clamps, often with ampullaceous septa, thin- to thick-walled, smooth or encrusted. Hyphidia poorly differentiated, dendrohyphidia present. Cystidia absent. Basidia terminal or pleural, clavate, more or less sinuous, with 4-sterigmata and a basal clamp. Basidiospores globose, ellipsoid or cylindrical, smooth or ornamented, thin- to thick-walled, IKI–, cyanophilous.

Remarks – *Ramaricium* is characterized above all by dendrohyphidia and the cyanophilous, usually warted basidiospores (Eriksson 1954). *Ramaricium* and the resupinate hydroid genera *Kavinia* and *Hydnocristella* are members of the Gomphales and probably derived from clavarioid forms (Binder et al. 2005, Giachini et al. 2010).

Repetobasidiellum J. Erikss. & Hjortstam, in Eriksson, Hjortstam & Ryvarden, *Cortic. N. Eur. (Oslo)* 6: 1247, 1981.

Type species – *Repetobasidiellum fusisporum* J. Erikss. & Hjortstam in Eriksson, Hjortstam & Ryvarden, *Cortic. N. Eur. (Oslo)* 6: 1247, 1981.

Basidiome resupinate, adnate, effused, thin, ceraceous to crustaceous, hymenophore smooth, continuous, margin indeterminate. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia absent. Dendrohyphidia present. Basidia urniform, with 4-sterigmata, with a basal clamp, produced by internal repetition from old basidia. Basidiospores subfusiform, smooth, thin-walled, IKI–, CB–.

Remarks – *Repetobasidiellum* differs from *Repetobasidium* in the urniform basidia, and in the presence of dendrohyphidia (Eriksson et al. 1981). From a phylogenetical point of view, the relationships of *Repetobasidiellum* are unclear (Larsson 2007b).

Repetobasidiopsis Dhingra & Avneet P. Singh, Mycotaxon 97: 115, 2006.

Validated by *Repetobasidiopsis* Dhingra & Avneet P. Singh, Mycotaxon 105: 421, 2008.

Type species – *Repetobasidiopsis grandisporus*, Dhingra & Avneet P. Singh, Mycotaxon 97: 116, 2006.

Basidiome resupinate, closely adnate effuse, hymenial surface smooth, subceraceous. Hyphal system monomitic, hyphae without clamps, basal hyphae irregularly branched and interwoven into a dense texture, subhymenial hyphae short-celled and compactly packed and appear like pseudo-parenchymatous tissue. Cystidia thin-walled, negative to sulfovainillin. Basidia subclavate to suburniform, showing linear repetition, 4-sterigmate. Basidiospores ellipsoid to subfusiform or suballantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Repetobasidiopsis* is characterized by the repetitive basidia, absence of clamps, and smooth inamyloid basidiospores. It differs from *Repetobasidiellum* and *Repetobasidium* in the absence of clamp connections (Dhingra et al 2006, Dhingra & Singh Avneet 2008).

Repetobasidium J. Erikss., Symb. bot. upsal. 16(1): 67, 1958.

Type species – *Peniophora vilis* Bourdot & Galzin, Hyménomyc. de France (Sceaux): 282, 1928.

Basidiome resupinate, adnate, effused, thin, ceraceous, hymenophore smooth, margin indeterminate. Hyphal system monomitic, hyphae with clamps, thin-walled. Cystidia (leptocystidia) present. Basidia subglobose to pyriform, with 4-sterigmata, with a basal clamp, produced by internal repetition from old basidia. Basidiospores globose to allantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Repetobasidium* is characterized above all by the presence of leptocystidia and repetobasida, even the formation of repetitive basidia occurs occasionally in other genera. The phylogenetic position of *Repetobasidium* and the relationships with other genera is still unclear, but according to some molecular studies it belongs to the Hymenochatales (Larsson et al. 2006, Larsson 2007b).

Resinicium Parmasto, Consp. System. Corticiac. (Tartu): 97, 1968.

Type species – *Hydnum bicolor* Alb. & Schwein., Consp. fung. (Leipzig): 270, 1805.

Basidiome, resupinate, effused, adnate, hymenophore smooth, grandinioid, odontoid to hydroid, membranous to ceraceous, white to yellowish, margin thinning out, indeterminate, pruinose. Hyphal system monomitic, hyphae with clamps (one species with simple septate hyphae is present), thin-walled. Cystidia of two kinds: 1) halocystidia and 2) astrocystidia. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid, cylindrical or allantoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Resinicium*, according to some phylogenetic studies, is a polyphyletic genus, where the circumscription should be restricted to species with astrocystidia and large halocystidia (Larsson 2007b). *Skvortzovia* is an available genus name for species previously placed in *Resinicium* lacking typical astrocystidia.

Resiniporus Zmitr., Folia Cryptogamica Petropolitana 6: 98, 2018.

Type species – *Polyporus resinascens* Romell, Arkiv för Botanik 11 (3): 20, 1911.

Basidiome of ceriporioid habitus, annual, orbicular, confluent into large effused patches or local stalactite-like formations; hymenophore poroid, ceraceous, with resinous deposits. Subiculum white to cream, soft-fibrous. Hyphal system pseudodimitic. Generative hyphae with clamp connections, hyaline, often encrusted by resinous granules, CB–. Pseudoskeletal hyphae thick-walled, yellowish, with scattered phanerochaetoid clamps, CB+. Leptocystidia hyphoid,

intrahymenial. Basidia utriform, with central constriction, 4-spored, with clamp at the base. Basidiospores oblong-ellipsoid to lacrymoid thin-walled, IKI–, CB–. Causing a white rot.

Remarks – *Resiniporus* was established for *Polyporus resinascens* Romell and *Poria pseudogilbescens* Pilát, two closely related species classified in *Ceriporiopsis* and separated only based on basidiospore dimensions. The separation is however, supported by molecular data (Tomšovský et al. 2010). We adopt here a broad concept of *Ceriporiopsis* even it is clear the genus is polyphyletic.

Resinoporia Audet, Mushrooms nomenclatural novelties 7: 1, 2017.

Type species – *Physisporus crassus* P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 319, 1889.

Basidiome perennial, resupinate, soft when fresh, hard and brittle when dry, separable, odor pleasant, taste bitter, margin white, smooth and narrow; pore surface white to cream, tubes white to slightly yellowish as if partly soaked with resinous substances, especially in old specimens, young parts of tubes distinct, lower parts white, disintegrated and crumbly with a cheesy consistency. Hyphal system dimitic; generative hyphae with clamps, skeletal hyphae thick-walled to solid, sinuous, unbranched to occasionally dichotomously branched, non-amyloid, 3-5 µm in diam; microscopical preparations often filled with oily to resinous, irregular globules. Cystidia none, but fusoid, non-projecting cystidioles usually abundant among the basidia. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores broadly cylindrical to oblong ellipsoid, hyaline, smooth, negative in Melzer's reagent. Causing a brown rot in dead conifers.

Remarks – According to Audet (2017g), *Resinoporia* differs from *Antrodia* s.str. or *Amyloporia* s.str. by abundant resinous matter occurs in the context and tubes, tortuous and variably inflated skeletal hyphae, basidia broadly clavate to barrel-shaped, with thickened walls after spore detachment. The genus circumscribes the *Antrodia crassa* group as selected by Spirin et al. (2015), but more studies are needed to elucidate to relationships in the *Antrodia crassa* group.

Rhizochaete Gresl., Nakasone & Rajchenb., Mycologia 96(2): 261, 2004.

Type species – *Rhizochaete brunnea* Gresl., Nakasone & Rajchenb., Mycologia 96(2): 264, 2004.

Basidiome resupinate, effused, pellicular to membranaceous, subceraceous when fresh, coriaceous when dry, hymenophore smooth to slightly tuberculate, velutinous, yellowish, orange or brownish coloured, turning red to violet with KOH, margin distinct, fimbriate to fibrillose, hyphal cords usually abundant, turning red to violet in KOH. Hyphal system monomitic, generative hyphae with clamps or simple-septa, thin to thick-walled, usually encrusted with dark yellow to yellowish brown granules that dissolve in KOH turning the solution pale violet; some hyphae also encrusted with hyaline crystals that do not dissolve in KOH. Cystidia as a rule present, cylindrical to subfusiform, thin to thick-walled, encrusted. Basidia clavate to subcylindrical, with 4-sterigmata. Basidiospores cylindrical to ellipsoid, smooth, thin-walled, IKI–.

Remarks – *Rhizochate* is morphologically and phylogenetically closely related to *Phanerochate*, but it mainly differs in the characteristic basidiome and hyphal cords reaction to KOH, that turns them red or violet. It also reminds some species of *Crustoderma* by the tubular cystidia with thickened walls but differs in the crystal and granular encrustations (cf. Greslebin et al. 2004).

Rhizoctonia DC., in Lamarck & De Candolle, Fl. franç., Edn 3 (Paris) 2: 110, 1805.

Type species – *Rhizoctonia solani* J.G. Kühn, Ann. Sper. agr., N.S.: 224, 1858.

Remarks – A name based on an anamorph. Anamorphic state of *Thanatephorus* Donk.

Rhizoporia Audet, Mushrooms nomenclatural novelties 8: 1, 2017.

Type species – *Antrodia hyalina* Spirin, Miettinen & Kotir., Mycol. Prog. 12(1): 56, 2013.

Remarks – According to the original description by Audet (2017h), *Rhizoporia* differs from *Antrodia* s.str. by basidiomata with margin byssoid, poorly developed rhizomorphs, tubes first

fleshy, later soft leathery, in some cases partly agglutinated, often easily crumbling, subiculum with generative hyphae somewhat thick-walled, smaller basidia, often slightly constricted in the middle, and, cylindrical, mostly slightly curved but also straight basidiospores. The new genus is supported by the molecular analyses in Ortiz-Santana et al. (2013) and Spirin et al. (2016).

Rhodonía Niemelä, *Karstenia* 45(2): 79, 2005.

Type species – *Polyporus placenta* Fr., *Öfvers. K. Svensk. Vetensk.-Akad. Förhandl.* 18(1): 30, 1861.

Basidiome annual, effused, poroid, fairy thick, juicy and soft, pale rose-colored or white. Hyphal system monomitic, hyphae with clamp connections, at first thin-walled but in mature basidiome thick-walled; cystidia absent; basidia clavate, tetrasterigmate, with a basal clamp; basidiospores hyaline, smooth, IKI–, thin-walled, cylindrical slightly curved. Causing a brown rot on coniferous trees.

Remarks – *Rhodonía* was the first brown-not polypore in which was completely sequenced the complete genome. The type species of *Rhodonía* appears nested within *Amyloporia* sensu lato, but according to Justo et al. (2017), at the moment it is not clear what is the best taxonomic solution for this group (one or multiple genera). Traditionally, *Polyporus placenta* has been classified in *Postia-Oligoporus* with other monomitic polypores that causes a brown rot.

Rickiopora Westph., Tomšovský & Rajchenb., *Fungal Biology* 120(8): 1005, 2016.

Type species – *Daedalea latemarginata* Rick, in Rambo (Ed.), *Iheringia, Sér. Bot.* 7: 263, 1960. (= *Antrodiella angulatopora* Ryvarden, *Mycotaxon* 28(2): 525, 1987).

Basidiomes effuse-reflexed to pileate, whitish, soft and somewhat flexible when fresh, becoming brittle and corky to tough when dried. Hymenophore poroid, pores mostly angular, splitted in parts. Hyphal system monomitic to pseudo-dimitic, generative hyphae clamped, thin to thick-walled, thick-walled hyphae with sparse clamps, hyphae metachromatic, IKI–. Cystidia absent, but cystidioles with variable shape abundant in the hymenium. Basidiospores subglobose to ellipsoid, hyaline, smooth, thin-walled, IKI–.

Remarks – *Rickiopora* is characterized by effused-reflexed basidiomes, often with large resupinate parts, with angular and somewhat split pores and the presence of a monomitic hyphal system with thin to thick-walled metachromatic generative hyphae. Phylogenetically, *Rickiopora* is included in the residual polyporoid clade (Binder et al. 2013) in the vicinity of *Climacocystis borealis* (Fr.) Kotl. & Pouzar (Westphalen et al. 2016).

Rigidoporopsis I. Johans. & Ryvarden, *Trans. Br. mycol. Soc.* 72(2): 192, 1979.

Type species – *Rigidoporopsis amylospora* I. Johans. & Ryvarden, *Trans. Br. mycol. Soc.* 72(2): 192, 1979.

Remarks – A synonym of *Amyloporus* Ryvarden.

Rigidoporus Murrill, *Bull. Torrey bot. Club* 32(9): 478, 1905.

Type species – *Polyporus micromegas* Mont., *Annls Sci. Nat., Bot., sér. 2* 17: 128, 1842.

Basidiome annual to perennial, coriaceous to bony hard when dry, resupinate to pileate, reddish orange to pinkish, isabelline or ochraceous; pileus tomentose to glabrous, usually zonate. Pore surface concolorous, in some species becoming gray to almost black on drying; context dense and fibrous. Hyphal system monomitic to apparently dimitic, generative hyphae with simple septa, variable in width and wall thickness, in some species strongly sclerified skeletoid hyphae. Cystidia absent or present, encrusted at the apex, cystidiols mammillate, smooth. Basidia clavate, 4-sterigmate, simple-septate at the base. Basidiospores ovoid to globose, smooth, thin-walled, negative in Melzer's reagent. Causing a white rot in hardwoods, rarely in coniferous wood.

Remarks – *Rigidoporus* is close to *Oxyporus* sharing the same type of generative hyphae and cystidia in most species. Basidiome of all species of *Oxyporus* are usually light colored, and the thick-walled cystidia are hymenial and not tramal as in *Rigidoporus*. In addition, the mammillate

cystidiols of *Rigidoporus* are unknown in *Oxyporus*. See also Bernicchia & Gorjón (2020).

Riopa D.A. Reid, Revue Mycol., Paris 33: 244, 1969.

Type species – *Riopa davidii* D.A. Reid, Rev. Mycol, (Paris) 22: 47, 1969 (= *Polyporus metamorphosus* Fuckel, Jahrb. Nassauischen Vereins Naturk. 27-28: 87, 1874).

Basidiome white, resupinate with shallow pores, 2-5 per mm. Hyphal system monomitic, clamps absent. Hyphal thin- to slightly thick-walled, similar throughout the basidiome, hyphae not swollen, wider (3-5 µm in diameter) in subiculum, a bit narrower in trama (2.8-3.5 µm). Hymenial branching corymb-like. Thin-walled, poorly differentiated hymenial cystidia and conidia in one species. Spores curved cylindrical, allantoid, thin-walled, mid-sized (4.5-6.5 × 2-3 µm).

Remarks – Reid (1969) described *Riopa* as a monotypic genus with *Riopa davidii*. Miettinen et al. (2016) studied the type of *Riopa davidii*, and it turned out to be a more recent synonym for *Ceriporia metamorphosa* (Fuckel) Ryvarden & Gilb. According to Justo et al. (2017), *Riopa* belongs to Phanerochaetaceae Jülich with other resupinate polypores and corticioid fungi.

Ripexicium Hjortstam, Mycotaxon 54: 191, 1995.

Type species – *Trechispora spinulifera* Jülich, Persoonia 8: 437, 1976.

Basidiome resupinate, effuse, closely adnate, firm membranaceous to corneous when dry, hymenial surface distinctly hydroid. Hyphal system monomitic, hyphae with clamps, some septa with ampullaceous swellings, hyaline to pale yellowish. Cystidia absent. Basidia suburniform to clavate, with 4-sterigmata, and a basal clamp. Basidiospores subglobose, verrucose, thin-walled, inamyloid, indextrinoid, with a weakly cyanophilous reaction.

Remarks – *Ripexicium* was described to accommodate *Trechispora spinulifera*. Hjortstam (1995) pointed a relation to *Mycoacia* (*Phlebia*) by its strongly hydroid hymenophore with corneous aculei but differing in the verrucose basidiospores and loose basidial layer, not arranged in a dense palisade as in *Mycoacia*. Hjortstam (1995) also described the hyphae with no typical ampullate septa even Jülich (1976a) in the original description, both Latin, English and in the line-drawings, described and illustrated ampullate swellings. Larsson (1992) excluded *T. spinulifera* in the revision of the genus *Trechispora*. The phylogenetic relationships of *T. spinulifera* remain still unclear (Larsson 2007).

Rodwaya Syd. & P. Syd., Hedwigia 40: 2, 1901.

Type species – *Merulius infundibuliformis* Cooke & Masee, Grevillea 16(no. 79): 73, 1888.

Remarks – A homonym of *Rodwaya* F. Mueller, 1890 (Burmanniaceae).

Rogersella Liberta & A.J. Navas, Can. J. Bot. 56(15): 1777, 1978.

Type species – *Rogersella asperula* Liberta & A.J. Navas, Can. J. Bot. 56(15): 177, 1978. (= *Corticium griseliniae* G. Cunn., Bull. N.Z. Dept. Sci. Industr. Res., Pl. Dis. Div. 145: 71, 1963).

Basidiome effused, thin, subceraceous to chalky or farinose, white or cream coloured to yellowish, under the lens the surface reticulate and nodulose to odontoid, margin thinning. Hyphal system monomitic, hyphae fibulate, the walls not or slightly cyanophilous, crystalline material abundant in the context. Cystidia cylindrical to capitate. Basidia subcylindrical to suburniform, with four sterigmata and a basal clamp. Basidiospores hyaline, globose to ellipsoid, the wall thin or slightly thickened, asperulate, non-amyloid, not or slightly cyanophilous.

Remarks – *Rogersella* is characterized by sharing typical *Hyphodontia*-like hyphae, odontoid hymenophore, cylindrical cystidia with a subcapitate apex, and asperulate basidiospores. It is easily distinguished from members of *Hyphodontia* s.l. because it produces asperulate spores (Langer 1994a). It may be distinguished from other species of *Trechispora* because it lacks ampulliform hyphae and possesses capitate cystidia. The thin- rather than thick-walled, and smaller basidiospores exclude it from *Hypochnicium*. Phylogenetically it is closely related to *Hyphodontia sambuci* and other species in *Xylodon*.

Roseograndinia Hjortstam & Ryvarde, Syn. Fung. (Oslo) 20: 40, 2005.

Type species – *Grandinia rosea* Henn., Bot. Jb. 38: 108, 1907.

Basidiome resupinate, effused, adnate, distinctly grandinioid or with small aculei, ceraceous, rosy pinkish. Hyphal system monomitic, hyphae with simple-septa, thin-walled, sometimes encrusted. Cystidia absent. Basidia narrowly clavate, with 4-sterigmata, and a simple basal septum. Basidiospores ellipsoid to subglobose, smooth, thin-walled, IKI–, CB–.

Remarks – *Roseograndinia* was created to accommodate *Grandinia rosea* a common species distributed in South and Eastern Africa and New Zealand. It is morphologically closely related to *Phanerochaete* but differs in the grandinioid hymenophore with rosy to pinkish colours. It is also characterized by the absence of cystidial elements, simple-septate hyphae, and smooth basidiospores (Hjortstam & Ryvarde 2005). Phylogenetic relationships are unclear, but it seems to belong to the Polyporales (Larsson 2007b).

Sarcodontia Schulzer, in Schulzer von Muggenburg et al. Verh. zool.-bot. Ges. Wien 16: 41, 1866.

Type species – *Sarcodontia mali* Schulzer, in Schulzer, Kanitz & Knapp, Verh. zool.-bot. Ges. Wien 16(Abh.): 41, 1866 (= *Sarcodontia crocea* (Schwein.) Kotl., Česká Mykol. 7: 117, 1953).

Basidiome resupinate, effused, ceraceous, hymenophore hydroid with long aculei. Hyphal system monomitic (pseudodimitic), all hyphae with clamps, subicular hyphae thick-walled. Cystidia absent. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to subglobose, smooth, thick-walled, IKI–, CB–.

Remarks – *Sarcodontia* is characterized by the long aculeate hymenophore, the thick-walled subicular hyphae, and the smooth thick-walled basidiospores (Schulzer et al. 1866). Phylogenetically it seems to belong to the Meruliaceae (Larsson 2007b).

Sarcoporia P. Karst., Hedwigia 33: 15, 1894.

Type species – *Sarcoporia polyspora* P. Karst., Hedwigia 33: 15, 1894.

Basidiome annual, resupinate to effused-reflexed or sessile, white to light brown, soft when fresh, fragile when dry. Pores angular; context duplex, with a dense dark gelatinous layer next to the tubes and a white, soft-fibrous layer next to the substrate. Hyphal system monomitic, generative hyphae with clamps. Cystidia none. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores cylindrical, smooth, hyaline, slightly thick-walled, dextrinoid in Melzer's reagent. On conifers and hardwoods, causing a brown rot.

Remarks – The genus is closely related to *Oligoporus* sharing the monomitic hyphal system and a distinct brown rot. The dextrinoid reaction of the thick-walled spores is a diagnostic character. According to Justo et al. (2017), *Crustoderma*, *Pycnoporellus*, and *Sarcoporia* appear in the same clade as *Sparassis*, but without strong support, and their placement in or out the Sparassidaceae needs to be confirmed in future studies.

Sceptrulum K.H. Larss., Index Fungorum 131: 1, 2014.

Type species – *Peniophora inflata* Burt, Ann. Mo. bot. Gdn 12: 267, 1926 (= *Palifer seychellensis* Dämmrich & Rödel, Z. Mykol. 76(2): 211, 2010).

Basidiome resupinate, effused, thin, adnate to membranous. Hyphal system monomitic, hyphae with clamps. Hymenial cystidia fusoid and more or less apically encrusted; subicular hyphoid projections with a double cup encrustation. Basidia short, cylindrical to clavate or pedunculate, with four sterigmata and a basal clamp. Basidiospores elliptical to subcylindrical or slightly allantoid, thin-walled, smooth, IKI–.

Remarks – *Sceptrulum* is easily recognized by the subicular cystidial elements, some striking thick-walled hyphal projections with a double small umbrella-like cup encrustation. Phylogenetic relationships with other corticioid genera are unclear. See also Gorjón (2012).

Schizopora Velen., České Houby 4-5: 638, 1922.

Type species – *Polyporus laciniatus* Velen., České Houby 4-5: 638, 1922 (= *Hydnum paradoxum* Schrad., Spicil. fl. Germ. 1: 179, 1794).

Basidiome annual to perennial, resupinate to pileate with narrow, imbricate pilei over a decurrent pore layer, pore surface and context white to cream, pores angular, round to split or as irregular teeth, often of variable length and partly flattened. Hyphal system dimitic; generative hyphae narrow to wide, thin to moderately thick-walled with distinct clamps; skeletal hyphae sparsely represented and mostly as very long cystidial organs. Cystidia none, but subulate or bottle-shaped cystidiols, often present in the hymenium, enclosed or partly projecting. Basidia clavate to suburniform, with four sterigmata, and a basal clamp. Basidiospores broadly ellipsoid, hyaline, thin-walled, smooth and non-amyloid.

Remarks – *Schizopora* is obviously closely related to *Xylodon* but differing mainly in the poroid hymenophore. Phylogenetically, it is included among other species of *Hyphodontia* s.l. in the same clade of *Odontia quercina* Pers., the generic type of *Xylodon*. Is considered a synonym of *Xylodon* by most authors. See also Bernicchia & Gorjón (2020).

Sclerodon P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 348, 360, 1889.

Type species – *Hydnum strigosum*, Sw., K. Vetensk-Acad. Nya Handl. 31(3): 250, 1810.

Remarks – A synonym of *Gloiodon* P. Karst.

Scopulodontia Hjortstam, in Hjortstam, Roberts & Spooner, Kew Bull. 53(4): 820, 1998.

Type species – *Scopulodontia loricata* Hjortstam & P. Roberts, in Hjortstam, Roberts & Spooner, Kew Bull. 53(4): 821, 1998 (= *Scopulodontia webbii* (Berk.) Nakasone, Sydowia 61: 277, 2009).

Basidiome resupinate, closely adnate, dense, hard, stratose and probably perennial, hymenial surface grandinioid, becoming distinctly hydroid. Hyphal system monomitic, hyphae closely interwoven in a dense tissue, thin-walled, almost smooth, with clamps. Cystidia abundant, often clustered, thin-walled or with slightly thickened walls, encrusted. Basidia short-clavate, with 4-sterigmata and a basal clamp. Basidiospores small, ellipsoid, thin-walled, smooth, IKI–, CB–.

Remarks – *Scopulodontia* is identifiable because of the stratified, rimose, dense basidiomes with rounded tubercles, encrusted, thick-walled cystidia, and small, ellipsoid basidiospores. See Nakasone (2003, 2009).

Scopuloides (Masse) Hjortstam & Ryvarde. Mycotaxon 9: 509, 1979.

Basionym – *Peniophora* subg. *Scopuloides* Masee, J. Linnean Soc., Botany 25: 154, 1889.

Type species – *Peniophora hydroides* Cooke & Masee, in Cooke, Grevillea 16(79): 77, 1888 (= *Peniophora rimosa* Cooke, Grevillea 9(51): 94, 1881).

Basidiome resupinate, adnate, effused, ceraceous, hymenophore odontoid. Hyphal system monomitic, hyphae without clamps, thin- to slightly thick-walled. Cystidia numerous, conical, thick-walled, heavily encrusted. Basidia narrowly clavate, with 4-sterigmata and without a basal clamp. Basidiospores cylindrical to ellipsoid, thin-walled, smooth, IKI–, CB–.

Remarks – *Scopuloides* is characterized by its dense ceraceous hymenium and thick-walled, strongly encrusted cystidia. *Scopuloides* was put in synonymy with *Phanerochaete* by Burdsall (1985), but it differs in the thin subiculum with a distinct ceraceous structure more typical in *Phlebia*. The recent molecular study of Wu et al. (2010) shows that most of the phanerochaetoid fungi are distributed here and there in the phlebioid clade, with a complex phylogenetic relationship. *Metulodontia* also has a quite firm fruitbody and encrusted cystidia but differs in having small sulfopositive gloeocystidia.

Scotoderma Jülich, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 77(2): 149, 1974.

Type species – *Corticium viride* Berk., The botany of the Antarctic Voyage II, Flora Novae-Zelandiae 2: 184, 1855.

Basidiome resupinate, effused, membranaceous, hymenial surface smooth, brown tinged with olive-green, subiculum pale brown, margin tomentose. Hyphal system monomitic, hyphae yellowish brown, thin- to slightly thick-walled, clamped, only in the subhymenial region some secondary septa lacking clamps, not incrustated with granules or crystals, about 2.5-5 µm in diam., not inflated, in some hyphae the cytoplasm turning brown in KOH. Cystidia lacking. Basidia large, broadly cylindrical to subclavate, somewhat stalked, basal part of the basidia occasionally produces a lateral swelling, about 100 µm long, 4-spored, yellowish, clamped at the base. Basidiospores large, c. 15 µm long, ellipsoid, yellowish or pale brown in water and weak KOH and darkening to blackish brown, finely roughened, somewhat thick-walled, non-amyloid, non-cyanophilous.

Remarks – *Scotoderma* is characterized by the monomitic hyphal system with clamped hyphae, large basidia, absence of cystidia, and large, somewhat thick-walled, finely ornamented basidiospores, yellowish turning darker after some minutes (Jülich 1974b).

Scotomyces Jülich, Persoonia 10: 139, 1978.

Type species – *Corticium fallax* G. Cunn., Trans. Roy. Soc. New Zealand 82: 309, 1954. (= *Hypochnus subviolaceus* Peck, Ann. Rep. N.Y. St. Mus. 47: 25, 1894)

Syn.: *Hydrabasidium* Park.-Rhodes ex J. Erikss. & Ryvardeen.

Basidiome annual, resupinate, effused, adnate, hypochnoid to subceraceous, hymenophore smooth, margin indistinct, not rhizomorphic. Hyphal system monomitic, hyphae with clamps, thin-walled, hyaline. Cystidia lacking. Basidia obconical to narrowly clavate, thin-walled, with 4 large sterigmata and a basal clamp. Basidiospores repetitive, more or less ellipsoid, smooth, thin-walled, guttulate, IKI–, CB–.

Remarks – *Scotomyces* is characterized by the greyish to violaceous subceraceous basidiome, the obconical basidia with four large sterigmata, and the repetitive ellipsoid basidiospores. The phylogenetic relationships of *Scotomyces* remain still unclear (Larsson 2007b).

Scytinostroma Donk, Fungus, Wageningen 26: 19, 1956.

Type species – *Corticium portentosum* Berk. & M.A. Curtis, Grevillea 2(13): 3, 1873.

Basidiome resupinate, effused, adnate, coriaceous, hymenophore smooth to tuberculate, usually cream to ochraceous coloured. Hyphal system dimitic; generative hyphae with clamps or simple septa, thin-walled, skeletal hyphae densely branched and sometimes forming dendrohyphae or dichohyphae, narrow and thick-walled, strongly dextrinoid and cyanophilous. Cystidia (gloeocystidia) present in most species, SA+ or SA–, frequently with apical schizopapillae. Basidia tubular to utriform, with 4-sterigmata, basally clamped or simple-septate. Basidiospores subglobose to ellipsoid, smooth, variably amyloid.

Remarks – *Scytinostroma* is morphologically very close to *Vararia*, differing in the presence of distinct and numerous dichohyphae in *Vararia*, which gives a looser consistency to the Basidiome, but frequently it is not difficult to find some intermediate forms, as in *Vararia maremmana* where dichohyphae are not very differentiated and the basidiome presents a tough texture. Several studies (Larsson & Larsson 2003, Larsson et al. 2004, Binder et al. 2005, Larsson 2007b) include *Scytinostroma* close to other russuloid members in the family Peniophoraceae Lotsy. Phylogenetic data seem to indicate that dextrinoid hyphae do not define a monophyletic group.

Scytinostromella Parmasto, Consp. System. Corticiac. (Tartu): 171, 1968.

Type species – *Peniophora heterogenea* Bourdot & Galzin, Bull. Soc. mycol. Fr. 28(4): 39, 1913.

Basidiome resupinate, effused, crustaceous or membranaceous to pellicular, hymenophore smooth, whitish to pale yellow, margin usually rhizomorphic. Hyphal system dimitic, generative hyphae with clamps, hyaline to pale yellow, thin-walled, skeletal hyphae originated from thin-walled clamped hyphae, narrow, thick-walled. Cystidia of two kinds: 1) gloeocystidia SA+, and 2)

pseudocystidia, encrusted (not in all species). Basidia suburniform, with 4-sterigmata and a basal clamp. Basidiospores ovoid, broadly ellipsoid or subglobose, smooth or ornamented, thin- to slightly thick-walled, amyloid, CB-.

Remarks – *Scytinostromella* morphologically seems to be related to other species of *Gloeocystidiellum* s.l. with gloecystidia and amyloid and ornamented basidiospores; with *Boidinia* shares also the basidial morphology but differs in the dimitic hyphal system. According to molecular studies, the phylogenetic relationships of *Scytinostromella* are still unclear, but it seems to be a polyphyletic genus (Larsson 2007b). *Corticium olivaceoalbum* Bourdot & Galzin was chosen by Jülich (1972) as the generic type of the genus *Confertobasidium*, but it is a dimitic species with gloecystidia and amyloid spores, now referred to *Scytinostromella* and not related with other athelioid fungi.

Sebacinella Hauerslev, Friesia 11(2): 95, 1977.

Type species – *Sebacinella nodosa* Hauerslev, Friesia 11(2): 95, 1977.

Remarks – A synonym of *Oliveonia* Donk., according to Roberts (1998).

Sebipora Miettinen, Mycol. Progr. 11(1): 144, 2012.

Type species – *Sebipora aquosa* Miettinen, Mycol. Progr. 11(1): 144, 2012.

Basidiome resupinate to pileate, annual, pure white when fresh, upper surface hairless, azonate, pore surface turning greyish, sometimes with yellow or brown hues, consistency rubber-like but easy to tear apart when fresh, often watery, hard when dry, pores round to angular, mycelial cords absent. Hyphal system monomitic, CB-, IKI-, KOH-, CRB+, hyphae with clamps, crystals present as sandy encrustation in tube mouths and trama or small thorny crystal clusters attached to tramal hyphae, scanty to abundant; sometimes also large rhomboidal plates and irregular crystal clusters in subiculum and upper trama. Cystidia and cystidiols absent. Basidia clavate, with 4 sterigmata, basally clamped. Basidiospores cylindrical, often slightly curved, thin-walled, smooth, IKI-, CB-. Causing a white rot on buried wood.

Remarks – *Sebipora aquosa* belongs to the ‘*Cinereomyces* clade’ sharing with *Gelatoporia*, *Cinereomyces* and *Obba* the resupinate pale-colored and poroid basidiomes, encrustation in trama or tube mouths, medium-sized spores, a hyaline or shiny oily substance in trama. All species in the clade, except *Sebipora aquosa*, have hyphal walls swelling in KOH (Miettinen & Rajchenberg 2012).

Serpula (Pers.) Gray, Nat. Arr. Brit. Pl. (London) 1: 637, 1821.

Basionym – *Merulius* sect. *Serpula* Pers., Syn. meth. fung. 2: 496, 1801.

Type species – *Merulius destruens* Pers., Syn. meth. fung. (Göttingen) 2: 496, 1801 (= *Serpula lacrymans* (Wulfen) J. Schröt., Meddn Soc. Fauna Flora fenn. 11: 21, 1885)

Basidiome resupinate to effuse-reflexed, or pileate, membranaceous, soft, easily detachable, hymenophore merulioid to poroid, orange to brownish or with olivaceous tints, margin rhizomorphic. Hyphal system dimitic, hyphae polymorphic, generative hyphae with clamps, skeletoid hyphae present in the context, true skeletal hyphae occur in the rhizomorphs. Cystidia absent, hyphoid cystidiols may be present. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to ovoid, smooth, thick-walled (double layered), brownish, not or weakly dextrinoid, cyanophilous.

Remarks – *Serpula* differs from *Leucogyrophana* in the presence of skeletal and in the larger basidiospores (Hallenberg 1985). *Serpula*, *Leucogyrophana*, *Coniophora*, and *Hydnomerulius* belong to the Boletales, and they are phylogenetically closely related to other gastroid or mushroom-forming fungi (Binder & Hibbett 2006). Zmitrovich & Spirin (2002), synonymized *Serpula* to *Leucogyrophana* and although they are morphologically closely related, molecular studies seem to indicate that they are phylogenetically separated (Larsson 2007b).

Serpulomyces (Zmitr.) Zmitr., in Zmitrovich & Spirin, Mikol. Fitopatol. 36(1): 20, 2002.

Type species – *Merulius borealis* Romell, Ark. Bot. 11(3): 27, 1911.

Basidiome annual, resupinate, membranaceous to ceraceous when dry, hymenophore merulioid to almost smooth after drying. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled, hyaline. Cystidia absent. Basidia clavate, with four sterigmata, and a basal clamp. Basidiospores cylindrical to fusiform, smooth, thin-walled, IKI–.

Remarks – The generic type of *Serpulomyces* was traditionally classified in *Ceraceomyces*. It mainly differs from other species in the genus by the clearly merulioid hymenophore and fusiform basidiospores. Its separation seems phylogenetically supported (Larsson 2007b, Binder et al. 2010).

Sidera Miettinen & K.H. Larss., Mycol. Progr. 10(2): 136, 2011.

Type species – *Physisporus lenis* P. Karst., in Rabenhorst, Fungi europ. exsicc.: no. 3527, 1886.

Basidiome resupinate, annual to perennial, hymenophore tubular to hydroid, pores regular, middle-sized to small, aculei less than 1 mm long, margin thinning out. Hyphal system monomitic or dimitic, generative hyphae with clamps, thin-walled, acyanophilous or slightly cyanophilous, skeletal hyphae relatively loosely arranged, straight and without branches, acyanophilous. Rosette-like crystals usually abundant in subiculum and sometimes in trama, also irregular rhomboidal plates may be present. Cystidia present as cystidiols (hyphidia, thin-walled cystidia) in hymenium, subulate and long-necked (polypores) to cylindrical and slightly capitate (*S. lunata*), naked, thin-walled, occasionally surrounded by a halo or vesicle with a very thin wall in the tube mouths. Basidia ellipsoid, cylindrical or clavate, with 4-sterigmata, and a basal clamp. Basidiospores allantoid, curved often strongly, thin-walled, smooth, under 5 µm long, CB⁺, IKI–.

Remarks – *Sidera* is a recently created genus to accommodate the dimitic polypores *Skeletocutis lenis* (P. Karst.) Niemelä and *S. vulgaris* (Fr.) Niemelä & Y.C. Dai, the monomitic polypore *Ceriporiopsis lowei* Rajchenb., and the monomitic, hydroid *Athelopsis lunata* (Romell ex Bourdot & Galzin) Parmasto. *Sidera* thus, includes species with monomitic and dimitic hyphal system, poroid and hydroid hymenophore, and even seemingly morphologically very different, they form a monophyletic, well-defined group with strong support in phylogenetic analysis. It is characterised by white-rot, whitish resupinate fruiting bodies, crystal rosettes on specialised hyphae, and allantoid spores (Miettinen & Larsson 2011).

Sistotrema Fr., Syst. mycol. (Lundae) 1: 426, 1821.

Type species – *Sistotrema confluens* Pers., Neues Mag. Bot. 1: 108, 1794.

Basidiome resupinate or pileate, soft, hymenial surface smooth, grandinioid, odontoid or poroid, pellicular, membranous or ceraceous. Hyphal system monomitic, hyphae usually thin-walled, usually with clamps but few species with simple-septate hyphae, often and characteristically with oily content, frequently ampullate at the septa. Cystidia present or absent. Basidia urniform, mostly with 6–8-sterigmata. Basidiospores varying in shape, smooth, thin-walled, IKI–.

Remarks – *Sistotrema* is a well delimited genus by the urniform basidia with usually 6-8-sterigmata and the hyphae with oily inclusions (Eriksson et al. 1984, Gorjón & Hallenberg 2008). It contains terricolous to lignicolous species, but recently mycorrhizal associations have also been indicated (Nilsson et al. 2006). Phylogenetically, *Sistotrema* is polyphyletic belonging to the Hydneae in the Cantharellales, closely related to *Hydnum*, *Clavulina*, and *Membranomyces* (Moncalvo et al. 2006).

Sistotremastrum J. Erikss., Symb. bot. upsal. 16(1): 62, 1958.

Type species – *Sistotremastrum suecicum* Litsch. ex J. Erikss., Symb. bot. upsal. 16(1): 62, 1958.

Basidiome resupinate, effused, thin, hymenophore smooth, porulose to reticulate, whitish. Hyphal system monomitic, hyphae clamped, thin-walled, hyaline. Cystidia absent. Basidia more or

less clavate to tubular, often constricted, 4-8-sterigmata, with a basal clamp. Basidiospores ellipsoid to cylindrical or subballantoid, smooth, thin-walled, IKI–.

Remarks – *Sistotremastrum* resembles superficially *Sistotrema* in the number of sterigmata but differing in the shape of the basidium and in the nature of the hyphae. Molecular studies by Larsson et al. (2004), Binder et al. (2005) and Larsson (2007b) include *Sistotremastrum* in the trechisporoid clade and not related to *Sistotrema* as was pointed out by Eriksson et al. (1984).

Sistotremella Hjortstam, in Eriksson, Hjortstam & Ryvarden, *Cortic. N. Eur. (Oslo)* 7: 1379, 1984.

Type species – *Sistotremella perpusilla* Hjortstam, in Eriksson, Hjortstam & Ryvarden, *Cortic. N. Eur. (Oslo)* 7: 1381, 1984.

Basidiome resupinate, adnate, effused, hymenophore surface smooth, margin indeterminate. Hyphal system monomitic, hyphae with or without clamps, smooth, thin-walled. Cystidia present or absent. Basidia urniform with 6-8-sterigmata. Basidiospores thick-walled, non-amyloid, cyanophilous.

Remarks – *Sistotremella* is morphologically close to *Sistotrema*, differing in the thick-walled basidiospores (Eriksson et al. 1984). Phylogenetically, the systematic position of *Sistotremella* is unclear (Larsson 2007b).

Skeletocutis Kotl. & Pouzar, *Česká Mykol.* 12(2): 103, 1958.

Type species – *Polyporus amorphus* Fr., *Observ. mycol. (Havniae)* 1: 125, 1815.

Basidiome annual to perennial, resupinate to pileate, white, cream pink to lilac, often slightly discoloured when dry. Pores usually small, many species with a dense cartilaginous zone above the tube layer. Hyphal system di- to trimitic, generative hyphae with clamps, often encrusted, especially in the dissepiments, skeletal hyphae hyaline. Cystidia absent, cystidioles present in most species. Basidia clavate, 4-sterigmate, with a basal clamp. Basidiospores cylindrical to ellipsoid, smooth, hyaline, negative in Melzer's reagent. Causing a white rot.

Remarks – *Skeletocutis* is morphologically related to *Diplomitoporus* and *Antrodiella*. Except for the finely encrusted hyphae of *Skeletocutis*, these genera share the same basic dimitic hyphal system with skeletal hyphae and clamped generative hyphae, smooth non-amyloid spores and lack of cystidia and the type of white rot. According to Justo et al. (2017), *Skeletocutis* is classified in Incrustoporiaceae, with *Incrustoporia*, *Piloporia* and *Tyromyces*, a group of polypores producing a white rot with encrusted generative hyphae in the dissepiments, but the generic limits of this genera are still unclear.

Skeletohydnum Jülich, *Persoonia* 10(3): 331, 1979.

Type species – *Epithele nikau* G. Cunn., *Trans. Roy. Soc. N.Z.* 83: 629, 1956.

Basidiome resupinate, effused, adnate, membranaceous. Hymenial surface minutely hydroid with sterile aculei (hyphal pegs) consisting of hyaline skeletal hyphae. Hyphal system dimitic with skeletal hyphae. Generative hyphae hyaline, cylindrical to torulose, thin-walled, with clamps. Hyaline dendrohyphidia or torulose paraphysoid hyphae present. Cystidia absent. Basidia distinctly constricted in the middle, with a basal clamp, four-spored. Basidiospores hyaline, elongated, ellipsoid, thin-walled, smooth, not amyloid.

Remarks – *Skeletohydnum* is characterized among the epithelioid fungi by the presence of skeletal hyphae in the core of the hyphal pegs and thin-walled, acyanophilous, and negative in Melzer's reagent basidiospores. *Epithelopsis* differs in the thick-walled and cyanophilous basidiospores. *Skeletohydnum* was synonymised to *Epithele* by Boidin & Lanquetin (1983) and Hjortstam & Ryvarden (2005).

Skvortzovia Bononi & Hjortstam, *Mycotaxon* 28: 12, 1987.

Type species – *Odontia furfurella* Bres., *Mycologia* 17: 71, 1925.

Basidiome resupinate, effused, hymenial surface distinctly odontoid, moderately fragile. Hyphal system monomitic, all hyphae with clamps, hyphae in the trama of the aculei slightly

conglutinated, thin- to moderately thick-walled. Cystidia (leptocystidia) subulate with a rounded apex, or more or less capitate to lageniform. Basidia clavate, with 4-sterigmata, and a basal clamp. Basidiospores allantoid to subreniform, smooth, thin-walled, IKI-, CB-.

Remarks – *Skvortzovia* reminds hydroid *Phlebia* but is separated by a more fragile basidiome and loose hymenium (Hjortstam & Bononi 1987). It belongs to the Hymenochaetales in the *Rickenella* family, and probably it is phylogenetically related to *Resinicium*.

Sphaerobasidium Oberw., Sydowia 19: 57, 1965.

Type species – *Xenasma minutum* J. Erikss., Symb. bot. upsal. 16(1): 65, 1958.

Basidiome resupinate, adnate, effused, very thin, hymenophore smooth, margin indeterminate. Hyphal system monomitic, hyphae with clamps, smooth, thin-walled. Cystidia (leptocystidia) present. Basidia subglobose to obconical with a basal clamp, with 4-sterigmata. Basidiospores smooth, thin-walled, IKI-.

Remarks – *Sphaerobasidium* is mainly characterized by the subglobose basidia and the presence of leptocystidia. The phylogenetic position of *Sphaerobasidium* is still controversial, according to Binder et al. (2005) it is related to *Repetobasidium*. This relationship was firstly stated by Eriksson et al. (1984) according to morphological characters; however, in another molecular study by Larsson (2007b), it is placed in the vicinity of *Tubulicrinis*.

Sphaerophora Bonord., Abh. naturforsch. Ges. Halle 2: 52, 1870.

Type species – *Thelephora byssoides* Pers., Syn. meth. fung. (Göttingen) 2: 577, 1801.

Remarks – A later homonym of *Sphaerophora* (A. H. Hassall) J. Lindley 1845 (Bacillariophyceae) and a synonym of *Amphinema* P. Karst.

Spiniger Stalpers, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 77(4): 402, 1974.

Type species – *Cunninghamella meineckella* A.J. Olson, Phytopathology 31: 1076, 1941.

Remarks – *Spiniger* was proposed by Stalpers (1974) to accommodate imperfect states of aphyllorphoroid basidiomycetes. Originally was proposed for the anamorphic state of *Heterobasidium annosum* (Fr.) Bref., so can be considered a synonym of *Heterobasidium* Masee.

Sporocephalium Chevall., Fl. Gén. Env. Paris (Paris) 1: 59, 1826.

Type species – *Haplotrichum capitatum* Link, in Willdenow, Sp. pl., Ed. 4 6(1): 52, 1824.

Remarks – A name based on an anamorph. Anamorphic state of *Botryobasidium* Donk.

Stecchericium D.A. Reid, Kew Bull. 17(2): 270, 1963.

Type species – *Steccherinum fistulatum* G. Cunn., Trans. Roy. Soc. N.Z. 85(4): 598, 1958.

Basidiome annual, membranous, effused-reflexed to pileate, hymenial surface aculeate. Hyphal system dimitic, generative hyphae with clamps, thick-walled, hyaline, staining, branched, skeletal hyphae thin-walled, hyaline, staining, and forming conducting hyphae arising in the context, traversing aculei and projecting slightly at aculei apices, naked, filled with refractive oily contents. Paraphyses subclavate. Hymenial layer a dense palisade of basidia, paraphyses and conducting hyphae. Basidia subclavate, with 4-sterigmata. Basidiospores oval or obovate, small, usually up to 3 µm, smooth, hyaline, thin-walled.

Remarks – *Stecchericium* resembles *Steccherinum* but differs in the presence of conducting hyphae and absence of encrusted skeletocystidia (Reid 1963).

Steccherinum Gray, Nat. Arr. Brit. Pl. (London) 1: 597, 651, 1821.

Type species – *Hydnum ochraceum* Pers., in Gmelin, Syst. Nat., Edn 13 2: 1440, 1792.

Synonym – *Mycoleptodon* Pat.

Basidiome resupinate, effuse-reflexed to subpileate or pileate, membranaceous, hymenophore odontoid to hydroid, usually cream coloured with pinkish, orange, violaceous or brown tints, margin differentiated, frequently fibrillose. Hyphal system dimitic or pseudodimitic, generative

hyphae thin-walled, with clamps or simple-septa, skeletal hyphae thick-walled, with some simple septa, some with characteristically encrusted apex penetrating as pseudocystidia into the hymenial layer. Basidia subclavate, with 4-sterigmata and usually with a basal clamp. Basidiospores ellipsoid to subcylindrical, smooth, thin-walled, IKI–, cyanophilous.

Remarks – *Steccherinum* is characterized by its odontoid hymenophore, encrusted pseudocystidia and small, smooth basidiospores. In a study by Boidin et al. (1998), *Meripilus* and *Steccherinum* form a monophyletic group together with *Antrodiella*, *Junghuhnia*, *Galzinia*, *Spongipellis*, *Physisporinus*, *Hypochnicium*, and *Rigidoporus* in the order Hyphodermatales. Kim & Jung (2000) included *Diplomitoporus*, *Steccherinum*, *Meripilus*, *Columnocystis*, *Junghuhnia*, *Albatrellus*, *Antrodiella*, *Ceriporiopsis* and *Spongipellis* in the family Steccherinaceae. Larsson (2007b) included *Steccherinum* in the family Meruliaceae with *Junghuhnia* as the closest related genus (*Junghuhnia* differs morphologically only by its poroid hymenophore), these results are in accordance with previous studies by Hibbett & Binder (2002). Miettinen & Ryvardeen (2016) and Westphalen et al. (2018) and Bernicchia & Gorjón (2020) consider *Junghuhnia* as a synonym of *Steccherinum*.

Sterellum P. Karst., Bidr. Känn. Finl. Nat. Folk 48: 405, 1889.

Type species – *Thelephora pini* Schleich. ex Fr., Observ. mycol. (Havniae) 1: 154, 1815.

Remarks – A synonym of *Peniophora* Cooke.

Stereofomes Rick, Egatea 13: 435, 1928.

Type species – *Stereofomes nodulosus* Rick, Egatea 13: 435, 1928.

Remarks – A synonym of *Scytinostroma* Donk. See Boidin & Lanquetin (1997).

Stereogloeocystidium (Rick) Rick, Brotéria, sér. Ci. Nat. 9: 79, 1940.

Type species – *Stereogloeocystidium lobatoplicatum* Rick, Rick, Ann. K. K. naturh. Hofmus. Wien 9: 79, 1940. (= *Stereum viridans* Lloyd., Mycol. Writ. 7: 1339, 1925).

Remarks – A synonym of *Podoscypha* Pat.

Stereophlebia Zmitr., Folia Cryptogamica Petropolitana 6: 98, 2018.

Type species – *Grandinia tuberculata* Berk. & M.A. Curtis, Hooker's J. Bot. Kew Gard. Misc. 1: 237, 1849.

Remarks – A synonym of *Phlebia* Fr. *Stereophlebia* is here considered a synonym of *Phlebia* and waiting for phylogenetic and sexual studies we prefer to adopt a wide concept of *Phlebia*.

Stereophyllum P. Karst., Hedwigia 28: 190, 1889.

Type species – *Stereophyllum pallens* P. Karst., Hedwigia 28: 191, 1889.

Remarks – A synonym of *Cyphellostereum* D.A. Reid.

Stereopsis D.A. Reid, Nova Hedwigia, Beih. 18: 290, 1965.

Type species – *Thelephora radicans* Berk., J. Bot., London 3: 190, 1844.

Basidiome flabelliform to infundibuliform, stereoid, stipitate, upper sterile surface and hymenophore smooth to rugose. Hyphal system monomitic, hyphae with simple-septa or clamps, thin-walled. Gloeocystidia usually absent. Basidia clavate, with 4-sterigmata, with a simple septum or a basal clamp. Basidiospores ellipsoid to subglobose, smooth, thin-walled, IKI–, CB–.

Remarks – *Stereopsis* is closely related to *Cotylidia*, but it differs in the absence of cystidia. The phylogenetical relationships remain still unclear (Larsson 2007b).

Stereum Hill ex Pers., Neues Mag. Bot. 1: 110, 1794.

Type species – *Thelephora hirsuta* Willd., Fl. berol. prodr.: 397, 1787.

Synonym – *Haematostereum* Pouzar.

Basidiome annual to perennial, resupinate, effused, effuse-reflexed to pileate, upper sterile surface glabrous to tomentose or hirsute, hymenophore smooth to slightly tuberculate, usually with light colours, some species excreting a reddish liquid when cut or touched. Hyphal system dimitic, generative hyphae simple-septate, thin- to thick-walled, skeletal hyphae thick walled. Cystidia of several kinds: skeletocystidia, acutocystidia, acanthocystidia. Basidia clavate to tubular, with 4-sterigmata, simple-septate at the base. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, amyloid.

Remarks – *Stereum* is one of the easily recognized genus at macroscopic level due to its characteristic effuse-reflexed to pileate basidiome with a usually yellowish to orange coloured smooth hymenophore. Some confusion exists regarding to the species because many of them have been described under different names, and too many forms and varieties are found in the literature based only on slight macroscopic differences such as shape, size and/or colour of the basidiome (Jahn 1971). Phylogenetically *Stereum* is included among other russuloid species; the conducting hyphae, functionally or not, seem to be homologous to the gloeoplerous hyphae present in the rest of the russuloid lineage (Larsson & Larsson 2003).

Stromatoscypha Donk, Reinwardtia 1: 218, 1951.

Type species – *Poria fimbriata* Pers., Neues Mag. Bot. 1: 109, 1794.

Remarks – A synonym of *Porotheleum* Fr.

Subantrodia Audet, Mushrooms nomenclatural novelties 9: 1, 2017.

Type species – *Agaricus juniperinus* Murrill, Bull. Torrey bot. Club 32(2): 85, 1905.

Remarks – According to Audet (2017i) *Subantrodia* differs from *Antrodia* s.str. by smaller basidia, chlamydospores from trama, and by basidiospores with no tapering distal end.

Subulicium Hjortstam & Ryvarde, Mycotaxon 9: 511, 1979.

Type species – *Peniophora lauta* H.S. Jacks., Can. J. Res., Section C 26: 129, 1948.

Basidiome resupinate, effused, adnate, hymenophore smooth, pilose by projecting cystidia. Hyphal system monomitic, hyphae with simple-septa, distinct and with thin- to thickened walls. Cystidia of two kinds: 1) subulate, lateral, smooth or encrusted, thick-walled, IKI–, 2) gloeocystidia present or absent, SA–. Basidia clavate or subcylindrical, more or less constricted, with 4-sterigmata, with a simple basal septum. Basidiospores globose to subglobose, with thin- to slightly thickened walls, IKI–, not or slightly cyanophilous.

Remarks – *Subulicium* is a genus with thick-walled, non-amyloid, and lateral cystidia (Hjortstam & Ryvarde 1979a). The genus is close to *Subulicystidium* and the main differences are the absence of clamps, globose basidiospores and lateral cystidia. Phylogenetically it could belong to the Hymenochaetales but its relationships are still unclear (Larsson 2007b).

Subulicystidium Parmasto, Consp. System. Corticiac. (Tartu): 120, 1968.

Type species – *Hypochnus longisporus* Pat., J. Bot. Morot 8(12): 221, 1894.

Basidiome resupinate, effused, more or less arachnoid, smooth to slightly velutinous by the projecting cystidia, margin undifferentiated. Hyphal system monomitic, hyphae clamped, encrusted. Cystidia subulate, characteristically encrusted with rectangular crystals. Basidia urniform, with 4-sterigmata and a basal clamp. Basidiospores fusiform to sigmoid, smooth, hyaline, IKI–.

Remarks – *Subulicystidium* is above all characterized by the particular cystidia encrusted with rectangular crystals; the ornamentation consists of two rows of ribbon-shaped structures, arranged crosswise to the main axis of the cystidia, the free ends of these structures are double-refractive. (Jülich 1975, 1984). Molecular studies by Hibbett & Binder (2002) and Larsson et al. (2004) show that *Subulicystidium* is closely related to *Tubulicium vermiferum* and both are included in the trechisporoid clade next to other *Trechispora* species, even if they do not share the same morphological and ecological characters.

Suillosporium Pouzar, Česká Mykol. 12: 31, 1958.

Type species – *Pellicularia cystidiata* D.P. Rogers, Farlowia 1: 101, 1943.

Basidiome resupinate, effused, hymenophore flocculose to porulose, whitish, margin undifferentiated. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled. Cystidia (septocystidia) with clamped septa, thin-walled, more or less encrusted. Basidia round, shortly clavate, with 4-sterigmata, and a basal clamp. Basidiospores fusiform to navicular, smooth, thin-walled, IKI–, weakly cyanophilous.

Remarks – *Suillosporium* by the nature of hyphae, basidia and basidiospores, seems to be related to *Botryobasidium*, but phylogenetically its relationships remain still unclear (Larsson 2007b).

Syzygospora G.W. Martin, J. Wash. Acad. Sci. 27: 112 (1937)

Type species – *Syzygospora alba* G.W. Martin, J. Wash. Acad. Sci. 27: 112 (1937)

Remarks – *Syzygospora* has traditionally been included in the Corticiaceae (e.g. Eriksson & Ryvarden 1973, under *Christiansenia*) because of the holobasidia. The gelatinous basidiomes, the mycoparasitic behavior, the presence of tremelloid haustorial branches, the basidiospores germinating by budding and the structure of the septal pores show, however, that they should be placed amongst the heterobasidiomycetes (Diederich 1996).

Szczepkamyces Zmitr., Folia Cryptogamica Petropolitana 6: 52, 2018.

Type species – *Trametes campestris* Quél., Mém. Soc. Émul. Montbéliard, Sér. 2 5: 286, 1872.

Basidiome annual, persistent, nodulose, cushion-shaped, upper margin forms pseudopilei. Context white to cream, fibrous. Hyphal system dimitic, generative hyphae clamped, skeletal hyphae hyaline, regularly branched, dendrites with inflated axis, appendages sympodially branched. Cystidia absent. Basidia clavate to suburniform, 4-spored, with a basal clamp. Basidiospores large, smooth, fusoid, IKI–, CB–.

Remarks – *Trametes campestris* Quél. is similar in some respects to species in *Polyporus* by the binding hyphae *Bovista*-type. It is very easy to recognize by the pulvinate basidiome, large basidia and basidiospores. It has previously been classified in *Dichomitus* and *Polyporus*. According to Zmitrovich (2018) it forms an independent lineage from a molecular perspective.

Taeniospora Marvanová, Trans. Br. Mycol. Soc. 69(1): 146, 1977.

Type species – *Taeniospora gracilis* Marvanová, Trans. Br. Mycol. Soc. 69(1): 146, 1977.

Remarks – A name based on an anamorph. Anamorphic state of *Leptosporomyces galzinii* (Bourd.) Jülich. See also Marvanová & Stalpers (1987).

Terana Adans., Fam. Pl. 2: 5, 1763.

Type species – *Byssus caerulea* Lam., Fl. franç. (Paris) 1: 103, 1779.

Synonym – *Pulcherricium* Parmasto.

Basidiome resupinate, effused, hymenophore smooth to slightly tuberculate, bluish. Hyphal system monomitic, hyphae with clamps. Dendrohyphidia present. Cystidia absent. Basidia clavate, often with dendritical prolongations, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid, smooth, thin-walled, hyaline, IKI–.

Remarks – *Terana* is characterized above all by the bluish iridescent basidiome. The phylogenetic relationships are unclear (Larsson 2007b).

Thanatephorus Donk, Reinwardtia 3: 376, 1956.

Type species – *Hypochnus cucumeris* A.B. Frank, Ber. dt. bot. Ges. 1: 62, 1883 (anamorph – *Rhizoctonia solani* J.G. Kühn, Krankh. Kulturgew.: 224, 1858)

Synonyms – *Aquathanatephorus* C.C. Tu & Kimbr., *Cejpomyces* Svrček & Pouzar, *Oncobasidium* P.H.B. Talbot & Keane, *Uthatobasidium* Donk, *Ypsilonidium* Donk.

Basidiome effused, thin, hypochnoid to ceraceous or subgelatinous, hymenophore smooth, whitish to ochraceous. Hyphal system monomitic, hyphae simple-septate, thin to thick-walled. Cystidia absent. Basidia, ellipsoid to oblong or cylindrical, with (1-)2-4(-8) sterigmata. Basidiospores smooth, globose, ellipsoid, citriform or oblong, hyaline to ochraceous, thin-to slightly thick-walled, usually producing secondary spores by replication. Anamorph present.

Remarks – *Thanatephorus* is characterized by the repetitive spores, the absence of cystidial elements, and by the oblong to clavate basidia usually arranged in a more or less dense palisade (Hjortstam et al. 1988). It with *Ceratobasidium* seem to form a monophyletic group in the cantharelloid clade, for further comments see Roberts (1999) and Moncalvo et al. (2006).

Thelephora Ehrh. ex Willd., Fl. berol. Prodr.: 396, 1787.

Type species – *Thelephora terrestris* Ehrh., Pl. Crypt. Linn. Exsicc.: no. 178, 1787.

Remarks – Many Corticiaceae s.l. were firstly described in *Thelephora*. The generic type is a mycorrhizal stipitate species with a smooth to tuberculate hymenophore, coloured, and angularly echinulate basidiospores. It belongs to the Thelephorales, and mainly some resupinate species of the order are considered in this manual.

Theleporus Fr., Kung. Vet. Akad. Handl. 11: 138, 1848.

Type species – *Theleporus cretaceus* Fr., Kung. Vet. Akad. Handl. 11: 138, 1848.

Basidiome resupinate, adnate, irregularly poroid, light cream to ochraceous, pores angular or interconnected seemingly labyrinthine, hymenium as a whiter and denser layer restricted to the base of the pores. Hyphal system di-trimitic, generative hyphae with clamps, vegetative hyphae of two types, partly as skeletal hyphae more or less unbranched and parallel in the tube walls, and binding arboriform hyphae present, all vegetative hyphae hyaline to very pale yellowish, not reacting in Melzer's reagent. Dendrohyphidia present or absent. Basidia clavate, with 4-stergimate, and a basal clamp. Basidiospores broadly ellipsoid, thin-walled, smooth, non-amyloid.

Remarks – *Theleporus* is related to *Grammothele* and the main difference is the di-trimitic hyphal system, with straight and arboriform hyphae, and vegetative hyphae not reacting in Melzer's reagent. In *Grammothele* skeletal hyphae are dextrinoid and darkening with age, this make the basidiomes of *Grammothele* darker with age. Contrary, *Theleporus* keep their whitish to pale colours (Ryvarden 1991).

Thujacorticium Ginns, Mycologia 80: 69, 1988.

Type species – *Thujacorticium mirabile* Ginns, Mycologia 80(1): 69, 1988 (= *Corticium zurhausenii* Bres., Öst. bot. Z. 48: 136, 1898).

Basidiome resupinate, pulvinate, crustaceous, hymenophore smooth, margin more or less abrupt. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled, hyaline. Cystidia absent, cystidiols rare, cylindrical to narrowly clavate or subulate. Basidia clavate, pedunculate, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to subcylindrical, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Thujacorticium* seems to be related to *Cerocorticium*, but hyphoid elements and larger basidiospores are present in the latter. It differs from *Hyphoderma* in the typically pedicellate basidium. In addition, the conspicuous development of large crystal when section is mounted in heated cotton blue is an interesting feature (Ginns 1988). Phylogenetically its position is still unclear (Larsson 2007b).

Thwaitesiella Masee, Grevillea 21: 2, 1893.

Type species – *Radulum mirabile* Berk. & Broome., J. Linn. Soc., Bot. 14(2): 61, 1875.

Remarks – A synonym of *Lopharia* Kalchbr. & MacOwan.

Tinctoporellus Ryvarden, Trans. Br. mycol. Soc. 73(1): 18, 1979.

Type species – *Polyporus epimiltinus* Berk. & Broome, J. Linn. Soc., Bot. 14(no. 73): 54, 1873.

Basidiome resupinate, pore surface bluish to light violet, pores angular. Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled, hyaline to light golden yellow in KOH, weakly dextrinoid in Melzer's reagent. Cystidia none. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to subglobose, smooth, hyaline and non-amyloid. Causing a white rot and turns the substratum reddish in zones.

Remarks – *Tinctoporellus* is characterized by the dimitic hyphal system, smooth basidiospores negative in Melzer's reagent, and by turning the substrate reddish. This change of colour to red in the rotten substrate is also present in *Porogramme albocincta* (Cooke & Masee) J. Lowe (Ryvarden 1991).

Tofispora G. Langer, Bibliothca Mycol. 158: 32, 1994.

Type species – *Tofispora repetospora* G. Langer & Ryvarden, in Langer, Bibliothca Mycol. 158: 338, 1994.

Basidiome resupinate, loosely adnate, hypochnoid, hymenophore smooth, whitish to ochraceous or, especially when dried or old, yellowish brown to brownish. Hyphal system monomitic, basal hyphae almost hyaline to pale brown, thick-walled, subhymenial hyphae hyaline to subhyaline, slightly narrower and generally thin-walled. All hyphae without clamp connections. Cystidia absent. Basidia stout, with (1)(2)4(5) sterigmata. Basidiospores globose or distinctly biapiculate, thick-walled, with small verrucae, hyaline or brownish, with a distinct apiculus. All species in the genus except *Tofispora hebelomatospora* producing secondary spores.

Remarks – According to Roberts (1999) a synonym of *Thanatephorus* Donk but differing in the asperulate basidiospores. At least, the generic type seems to be separated from *Thanatephorus* by the ornamented basidiospores.

Tomentella Pers. ex Pat., Hyménomyc. Eur. (Paris): 154, 1887. (*nom. cons.*)

Type species – *Corticium ferrugineum* Pers., Observ. mycol. (Lipsiae) 2: 18, 1800.

Basidiome annual, resupinate, effused, byssoid, arachnoid, mucedinoid or pelliculose, adherent to separable, sometimes encrusting, fertile areas continuous or discontinuous, red, ferruginous, yellow, tan, brown, green, olive, grey, or black, margin arachnoid, byssoid, villose, fibrillose, or fimbriate, normally paler than the fertile area, hymenial surface smooth, granulose, colliculose, or aculeate, basidiomes often darkening or changing colour in KOH. Hyphal system monomitic or dimitic, generative hyphae often of more than one kind, thin- or thick-walled, septate, clamp connections abundant, normally pigmented; cordons present or absent. Basidia clavate, often with transverse septa, 4-sterigmate. Cystidia absent or present, acuminate, clavate, obclavate or capitulate. Basidiospores normally pigmented some shade of brown, green or red (in H₂O) and usually appearing some shade of brown in KOH, variable in shape but usually subglobose to lobed in outline, ornamented.

Remarks – *Tomentella* is a large genus with numerous and difficult species. For more information see Larsen (1974) and Køljalg (1996). Species of *Tomentella* are ectomycorrhizal fungus, being of ecological importance in the forest dynamic.

Tomentellago Hjortstam & Ryvarden, Mycotaxon 31(1): 40, 1988.

Type species – *Tomentellago aeruginascens* Hjortstam & Ryvarden, Mycotaxon 31(1): 40, 1988.

Remarks – A synonym of *Amaurodon* J. Schröt.

Tomentellastrum Svrcek, Ceska Mykol. 12: 68, 1958.

Type species – *Thelephora fuscocinerea* Pers., Mycol. eur. (Erlanga) 1: 114, 1822.

Remarks – A synonym of *Tomentella* Pat.

Tomentellina Höhn. & Litsch., Sber. Akad. Wiss. Wien, Math.-naturw. Kl., Abt. 1 115: 1604, 1906.

Type species – *Tomentellina ferruginosa* Höhn. & Litsch., Beitr. 1: 1604, 1906.

Remarks – A synonym of *Tomentella* Pat.

Tomentellopsis Hjortstam, Svensk bot. Tidskr. 64(4): 425, 1970.

Type species – *Corticium echinosporum* Ellis, Bull. Torrey bot. Club 8: 64, 1881.

Basidiome resupinate, separable or rarely adherent to the substratum, arachnoid or pelliculose, continuous, hymenophore smooth, concolor with or turning paler than subiculum, sterile margin usually indeterminate. Hyphal cords absent. Hyphal system monomitic, subicular hyphae simple-septate, cross-shaped branching common, thin-walled, without encrustation, hyaline to pale brown in KOH, subhymenial hyphae simple-septate, thin-walled, hyaline in KOH. Cystidia absent. Basidia up to 40 µm long, simple-septate at base, utriform, not stalked, sometimes sinuous, without transverse septa, hyaline in KOH and in distilled water, 4 sterigmata. Basidiospores up to 7.5 µm long in lateral and frontal face, slightly globose or ellipsoid frontal and lateral faces, echinulate, hyaline or rarely very pale brown in KOH and in distilled water. Chlamydospores absent.

Remarks – *Tomentellopsis* is defined by the simple-septate hyphae and echinulate basidiospores that are usually hyaline in KOH. See Kõljalg (1996) for more information.

Trechinothus E.C. Martini & Trichies, Mycotaxon 90(2): 262, 2004.

Type species – *Tomentella smardae* Pilát, Stud. Bot. Čechoslav. 5: 75, 1942.

Basidiome pellicular, separable, membranaceous, hymenophore smooth, porulose, whitish to pale yellowish, margin indeterminate to fibrillose, rhizomorphs present. Hyphal system monomitic, hyphae with evident clamps, some ampullate septa present, short-celled in the subhymenium, long-celled in the subiculum, becoming brown next to the substrata, hyphal strands originated from subicular hyphae. Cystidia absent. Basidia subcylindrical to clavate, with (2)4-sterigmata, and with a basal clamp. Basidiospores ovoid to dacryoid or ellipsoid, echinulate, thick-walled, hyaline, IKI–, CB–. Chlamydospores numerous in subiculum and in the rhizomorphs, globulose, berry-like, at first hyaline, then typically yellowish to brown.

Remarks – *Trechinothus* was described to include *Tomentella smardae*, a deviating species in *Tomentella*. It is characterized by the echinulate basidiospores with ornamentation that mostly develops during the following stages of maturation, the ampullate hyphae, the presence of numerous chlamydospores in the subiculum and in the rhizomorphs, and the absence of any cyanophilous reaction. For further comments see Martini & Trichies (2004). Phylogenetically, the systematic position of *Trechinothus* is unclear (Larsson 2007b).

Trechispora P. Karst., Hedwigia 29: 147, 1890.

Type species – *Trechispora onusta* P. Karst., Hedwigia 29: 147, 1890.

Synonyms – *Cristelloporia* I. Johans. & Ryvar den, *Dextrinodontia* Hjortstam & Ryvar den, *Echinotrema* Park.-Rhodes, *Fibriciellum* J. Erikss. & Ryvar den.

Basidiome resupinate or pileate, thin to thick, hymenophore smooth, grandinioid, odontoid or poroid, usually light coloured. Hyphal system monomitic or dimitic, hyphae clamped, usually with typical ampullate septa, subhymenial cells short, skeletal hyphae present in some species. Cystidia usually absent, but some hyphoid cystidia can be present. Basidia short, cylindrical to clavate, with 4-sterigmata and a basal clamp. Basidiospores small, usually subglobose to ellipsoid, rarely allantoid, smooth or ornamented, usually with some thickened walls, IKI–, acyanophilous or with a slight cyanophilous reaction.

Remarks – *Trechispora* is above all characterized by the fragile basidiome, with a variable hymenophore configuration, and by the frequently ampullate hyphae. According to molecular data, *Trechispora* belongs to the Hydnodontaceae Jülich with *Brevicellicium*, *Fibrodontia* and other genera with no common morphological features as *Luellia*, *Subulicystidium*, and *Tubulicium* (Larsson 2007b).

Tretomyces K.H. Larss, Kotir. & Saaren., Ann. Bot. Fennici 48: 41, 2011.

Type species – *Byssocorticium lutescens* J. Erikss. & Ryvardeen, Cort. North Europe 2: 185, 1973.

Basidiome byssoid, yellowish or greyish, hymenophore smooth. Hyphal system monomitic, hyphae usually with clamps but partly simple-septate. Cystidia absent, but hyphidia may be present. Basidia clavate or subcylindrical, with a basal clamp. Basidiospores globose or subglobose, smooth, with thickened walls, inamyloid, cyanophilous.

Remarks – *Tretomyces* is characterized by a yellowish, soft, byssoid basidiome, monomitic hyphal system, hyphae with both clamped and simple septa, stalked, relatively small basidia and small, almost spherical, slightly thick-walled cyanophilous basidiospores. It lacks typical bluish-green colour of *Byssocorticium* where the generic type was previously classified. Microscopically it is reminiscent of *Piloderma*, whose hyphae are always simple-septate. It seems that *Piloderma* is phylogenetically the closest relative (Kotiranta et al. 2011).

Trichaptum Murrill, Bull. Torrey Bot. Club 31: 608, 1904.

Type species – *Polyporus trichomallus* Berk. & Mont.

Basidiome annual, resupinate to reflexed, often pileate with imbricate growth, hymenial surface poroid, irpicoid to lamellate, purplish to brownish when old or dry but with a typical violet shadow when young. Hyphal system di-trimitic, generative hyphae with clamps, skeletal hyphae thick-walled, sometimes more or less branched. Cystidia usually as hymenial cystidia encrusted in the apical part, thin- to usually thick-walled. Basidia clavate, with 4-sterigmate, and a basal clamp. Basidiospores cylindrical to allantoid, smooth, thin-walled, hyaline, IKI–. On deciduous or coniferous wood, causing a white rot.

Remarks – *Trichaptum* is characterized above all by the purplish to the violet hymenial surface, and microscopically by the di- to trimitic hyphal system, encrusted cystidia, and smooth basidiospores without any reaction in Melzer's reagent (Ryvardeen 1991).

Trimitiella Dhingra, Mycotaxon 97: 125, 2006.

Validated by *Trimitiella* Dhingra, Mycotaxon 105: 422, 2008.

Type species – *Trimitiella indica* Dhingra, Mycotaxon 97: 126, 2006.

Basidiome resupinate, adnate, effused, membranous-ceraceous, hymenial surface smooth, margin turned when drying. Hyphal system trimitic, generative hyphae with clamps, skeletal hyphae thick-walled, acyanophilous, binding hyphae richly branched, thick-walled, context composed of densely interwoven generative, skeletal, and binding hyphae. Dendrohyphidia present. Cystidia absent. Basidia clavate, 4-sterimate, with a basal clamp. Basidiospores broadly ellipsoid, smooth, thin-walled, non-amyloid, CB–, with numerous oil drops.

Remarks – *Trimitiella* is characterized by the trimitic hyphal system, presence of dendrohyphidia, and smooth non-amyloid basidiospores. *Laurilia* also possesses a trimitic hyphal system but differs in the encrusted cystidia and amyloid and ornamented basidiospores (Dhingra 2006, Dhingra & Singh Avneet 2008).

Trulla Miettinen & Ryvardeen, in Miettinen & Ryvardeen, Ann. bot. fenn. 53(3-4): 168, 2016.

Type species – *Antrodiella dentipora* Ryvardeen & Iturr., Mycologia 95 (6): 1066, 2004.

Remarks – A homonym of *Trulla* T.M. Harris 1979 (Pinopsida).

Trullella Zmitr., Folia Cryptogamica Petropolitana 6: 104, 2018.

Type species – *Antrodiella dentipora* Ryvardeen & Iturr., Mycologia 95 (6): 1066, 2004.

Basidiome of polyporoid, trametoid or fibroporoid habitus, annual, with poroid or odontoid hymenophore. Hyphal system monomitic in sterile context and dimitic in tube trama. Generative hyphae with clamp connections, hyaline, CB+, skeletal hyphae mostly hyaline, fibroid, CB+. Leptocystidia short-clavate. Basidia short clavate, with a central constriction, 4-spored, with clamp

at the base. Basidiospores phaseoleform to allantoid, smooth, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – The genus *Antrodiella* Ryvarden & I. Johans. is similar but differs by dimitic context, acyanophilous generative hyphae and less curved basidiospores (Zmitrovich 2018).

Tsugacorticium Nakasone & Burds., North American Fungi 7(1): 3, 2012.

Type species – *Tsugacorticium kenaicum* Nakasone & Burds., North American Fungi 7(1): 6, 2012.

Basidiome effuse, adnate, soft, smooth, with distinct, abrupt margin. Hyphal system monomitic with clamped generative hyphae. Subhymenium thickening, composed of hyphae and dendrohyphidia. Dendrohyphidia filamentous to frequently branched, smooth. Cystidia subfusiform, thin-walled, hyaline, smooth. Basidia suburniform, elongate, with a distinct stalk, 4-sterigmate. Basidiospores globose to subglobose with thin walls, hyaline, smooth, IKI–, CB–.

Remarks – The most striking features of *Tsugacorticium* are the soft textured basidioma, elongate, stalked suburniform basidia bearing subglobose to globose basidiospores, and large, smooth, branched dendrohyphidia. Also, the thickened subhymenium that constitutes most of the context and is composed primarily of collapsed, deteriorated hymenial elements (Nakasone & Burdsall 2012).

Tubulicium Oberw., Sydowia 19: 53, 1965.

Type species – *Peniophora vermifera* Bourdot, Rev. Sci. Bourb. Centr. Fr. 23(1): 13, 1910.

Basidiome resupinate, effused, adnate, hymenial surface smooth, velutinous under the lens. Hyphal system monomitic, hyphae with clamps, thin- to slightly thick-walled. Cystidia (lyocystidia) numerous, conical, multi-rooted, encrusted and covered with dendroid branching hyphae. Basidia clavate, more or less pedunculate, smooth, thin-walled, with 4-sterigmata and a basal clamp. Basidiospores navicular, sigmoid to vermicular, smooth, thin-walled, IKI–, CB–.

Remarks – *Tubulicium* is characterized by the multi-rooted lyocystidia covered by dendroid hyphae and by the sigmoid smooth basidiospores. According to molecular data, *Tubulicium* is included in the trechisporoid clade, but there are no common morphological characters to support this phylogenetic relationship (Larsson et al. 2004, Larsson 2007b).

Tubulicrinis Donk, Fungus, Wageningen 26: 13, 1956.

Type species – *Thelephora calcea* var. *glebulosa* Fr., Elench. fung. (Greifswald) 1: 215, 1828.

Basidiome resupinate, firmly adnate, often inconspicuous, more rarely thick and cracking in irregular pieces, hymenophore smooth pruinose to porulose, but commonly with a pilose appearance due to the protruding cystidia, whitish, cream or with greyish tint. Hyphal system monomitic, hyphae with clamps. Cystidia (lyocystidia) conspicuous, projecting, cylindrical or conical, with capitate or subulate apex, usually bi-rooted, dissolving in KOH (5-10%), mostly encrusted, with a weak or strongly amyloid reaction, capillary lumen ending gradually or more abruptly. Basidia small, thin-walled or sometimes thickened in the basal part, arranged in a dense palisade, often strongly amyloid, with 4-sterigmata and a basal clamp. Basidiospores cylindrical to allantoid or globose to ellipsoid, smooth, thin-walled often, IKI–, CB–.

Remarks – *Tubulicrinis* was described by Donk to accommodate *Corticium glebulosum* Bres. (Donk 1956). It comprises a group of well-defined corticioid species characterized by its typical thick-walled (lyocystidia), usually bi-rooted and more or less amyloid cystidia that dissolve totally or partially in 5-10% KOH. The particular kind of cystidia, variable in shape and size, and the basidiospores, both constitute the most reliable features to distinguish the different species (Oberwinkler 1966). *Tubulicrinis* shares morphological affinities with other genera such as *Dextrinocystis*, *Tubulicium* and *Litschaurella*. *Dextrinocystis* is characterized by its dextrinoid lyocystidia and *Litschaurella* and *Tubulicium* mainly differ from *Tubulicrinis* in the multi-rooted lyocystidia with a weak amyloid reaction. For a synopsis of this genera see Hjortstam (2001). According to several DNA molecular analysis, *Tubulicrinis* belong to the hymenochaetoid clade

and is related to species of *Hyphodontia*, *Schizopora*, *Basidioradulum*, *Resinicium*, *Sphaerobasidium* and *Hymenochaete* (Hibbett & Binder 2002, Larsson et al. 2004, Larsson et al. 2006, Larsson 2007b). The last tentative classification of corticioid fungi by Larsson (2007b) recognizes *Tubulicrinis* in the family Tubulicrinaceae, in the order Hymenochaetales Oberw., with *Hyphodontia* as the closest related genus. *Tubulicium* is assigned to the trechisporioid clade (family Hydnodontaceae Jülich, order Trechisporales K.H. Larss.), on the basis of molecular analysis even if *Tubulicium* is not morphologically related to *Trechispora*. *Tubulicrinis* and *Tubulicium*, belonging to different clades, could indicate that lycocystidia must have evolved at least twice (Larsson et al. 2004).

Tubulicrinopsis Hjortstam & Kotir., in Kotiranta, Hjortstam, Miettinen & Kulju, Ann. bot. fenn. 44(2): 129, 2007.

Type species – *Tubulicrinopsis ellipsospora* Kotir., Hjortstam & M. Kulju, in Kotiranta, Hjortstam, Miettinen & Kulju, Ann. bot. fenn. 44(2): 129, 2007.

Basidiome resupinate, effused, hymenophore farinaceous, porulose to grandinoid. Hyphal system monomitic, hyphae with clamps, thick-walled. Cystidia usually absent or present, thick-walled. Basidia clavate to subcylindrical, with 4-sterigmata, with a basal clamp, distinctly thick-walled. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, IKI–.

Remarks – *Tubulicrinopsis* was described with *Tubulicrinopsis ellipsospora* as the generic type species and including two more species. In addition, *Amauromyces farinaceus* Boidin, Lanq. & Gilles was transferred to *Tubulicrinopsis* (Kotiranta et al. 2007). *Amauromyces pallidus* Jülich, the generic type of *Amauromyces* seems not to be related to *A. farinaceus*. *Tubulicrinopsis* is characterized by the thick-walled hyphae and basidia. *Tubulicrinis* and *Sistotremastrum* have also somewhat thick-walled basidial bases but differing in the presence of amyloid lycocystidia and basidia with 6-sterigmata respectively.

Tubulixenasma Parmasto, Izv. Akad. Nauk Estonsk. SSR, Ser. Biol. 14: 231, 1965.

Type species – *Peniophora vermifera* Bourdot, Rev. Sci. Bourb. Centr. Fr. 23(1): 13, 1910.

Remarks – A synonym of *Tubulicium* Oberw.

Tulasnella J. Schröt., in Cohn, Krypt.-Fl. Schlesien (Breslau) 3.1(25–32): 397, 1888.

Type species – *Tulasnella lilacina* J. Schröt., in Cohn, Krypt.-Fl. Schlesien (Breslau) 3-1(4): 397, 1888.

Basidiome effused, ceraceous to subgelatinous, typically violaceous grey, but often macroscopically subinvisible, hymenophore smooth. Hyphal system monomitic, hyphae with or without clamp connexions. Hyphidia and/or cystidia present in some species. Basidia clavate to sphaeropedunculate, often pleural and with papillate or snout-like projections, with distinct globose to ellipsoid sterigmata becoming obclavate and then variously extending, separated from the basidium by a simple septum. Basidiospores variable in size and shape, variously globose to vermiform or helicoid, smooth, producing secondary spores by replication, IKI–. Microconidia may also be produced following basidiospore germination. Chlamydospores present in some species.

Remarks – *Tulasnella* is a cosmopolitan genus of saprobes species, some of them also orchid endomycorrhizal. It is quite easy to recognize by the particular basidia with large obclavate sterigmata that are separated between them and from the rest of the basidia by a simple septum.

Tylospora Donk, Taxon 9: 220, 1960.

Type species – *Hypochnus asterophorus* Bonord., Handb. Allgem. mykol. (Stuttgart): 160, 1851.

Basidiome resupinate, effused, loosely adnate, hymenophore smooth, arachnoid to byssoid, white to greyish, margin indeterminate. Hyphal system monomitic, all hyphae with clamps, thin- to thick-walled, usually encrusted. Cystidia absent. Basidia clavate, with 4-sterigmata and a basal clamp. Basidiospores lobed or triangular, smooth or ornamented, IKI–.

Remarks – *Tylospora* is easily to identify due to the lobed or triangular basidiospores. *Tylospora* shares many characteristics in hymenial configuration with other athelioid fungi and was included in the *Atheliae* by Jülich (1972); molecular data support this relationship (Larsson 2007b).

Tylosperma Donk, Fungus 27: 28, 1957.

Type species – *Hypochnus asterophorus* Bonord., Handb. Allgem. mykol. (Stuttgart): 160, 1851.

Remarks – A later homonym of *Tylosperma* Botsch. 1952 (Rosaceae).

Tyromyces P. Karst., Revue mycol., Toulouse 3(no. 9): 17, 1881.

Type species – *Polyporus chioneus* Fr., Observ. mycol. (Havniae) 1: 125, 1815.

Basidiome annual, resupinate to pileate, watery to waxy when young, rigid and fragile when dry; usually with a bitter taste; upper surface white, darkening when drying; hymenophore tubular with round to angular pores, white to cream or greenish; hyphal system monomitic to dimitic, generative hyphae with clamps, skeletal hyphae when present straight, thick-walled, gloeoplerous hyphae present in some species; cystidia absent, but cystidiols sometimes present; basidia clavate, tetrasterigmate, with a basal clamp; basidiospores cylindrical to ellipsoid or ovoid, hyaline, smooth, thin-walled, IKI–. Causing a white rot on hardwoods or conifers. Cosmopolitan genus.

Remarks – From morphology, *Tyromyces* seems related to *Ceriporiopsis*, sharing the monomitic hyphal system, and white type or rot, differing mainly in the usually pileate basidiomes in *Tyromyces* contrary to the resupinate basidiomes of *Ceriporiopsis*. Phylogenetic relationships of both genera are unclear also taking in consideration of the polyphyletic status of *Ceriporiopsis*. *Tyromyces* is nested in Incrustoporiaceae Jülich, but the generic limits of *Incrustoporia*, *Skeletocutis* and *Tyromyces* are not currently settled, and additional sampling of this clade is needed before a taxonomic arrangement can be put forward (Justo et al. 2017).

Uncobasidium Hjortstam & Ryvarde, Mycotaxon 7: 407, 1978.

Type species – *Uncobasidium luteolum* Hjortstam & Ryvarde, Mycotaxon 7(2): 408, 1978.

Basidiome resupinate, effused, membranaceous to byssoid, hymenophore smooth. Hyphal system monomitic, hyphae with clamps, thin- to thick-walled, straight in the subiculum and tortuous in the subhymenium. Cystidia absent. Basidia suburniform, pleurobasidiate, constricted, with a lateral hook-like protuberance, with 4-sterigmata, and a basal clamp. Basidiospores ellipsoid to ovoid, smooth, thin-walled, IKI–, CB–.

Remarks – *Uncobasidium* is characterized above all by the typical pedunculate basidia with a basal protuberance (Hjortstam & Ryvarde 1978, Gorjón et al. 2012). Phylogenetic relationships of *Uncobasidium* are still unclear (Larsson 2007b).

Urnobasidium Parmasto, Consp. System. Corticiac. (Tartu): 38, 1968.

Type species – *Gloeocystidium sernanderi* Litsch., Svensk bot. Tidskr. 25(3): 437, 1931.

Remarks – A synonym of *Sistotrema* Fr.

Uthatobasidium Donk, Reinwardtia 3: 376, 1956

Type species – *Hypochnus fusisporus* J. Schröt., Kryptogamenflora der Schweiz 3(1): 416, 1888.

Remarks – A synonym of *Thanatephorus* Donk.

Vanderbylia D.A. Reid, J. Soc. Afr. Bot. 39(2): 166, 1973.

Type species – *Polyporus vicinus* Lloyd, Mycol. Writ. 7(Letter 74): 1331, 1924.

Basidiome annual to perennial, pileate, hard corky to woody hard, pilei appanate, slightly convex, semicircular; pileal surface slightly to distinctly warted, glabrous. Pore surface white to grayish cream; pores round; dissepiments thick, entire. Hyphal system dimitic, generative hyphae hyaline, thin-walled, rarely branched, bearing clamp connections, skeletal hyphae dominating in the

context, hyaline, subsolid to thick-walled with a wide lumen, branched, interwoven, variably dextrinoid, cyanophilous; hyphae occasionally swollen in KOH. Dichohyphidia-like (coral-like dendrohyphidia) element present at the dissepiment. Cystidia absent. Cystidioles variably present. Basidia clavate, with four sterigmata and a basal clamp connection; basidioles often dominant, in shape similar to basidia, but slightly smaller. Basidiospores subglobose to amygdaliform, non-truncate, hyaline, thick-walled, smooth, strongly dextrinoid, CB+.

Remarks – *Vanderbylia* is similar to *Perenniporia* sensu stricto on the basis of the thick-walled basidiospores, but it differs by its pileate, hard corky basidiocarps and strongly dextrinoid skeletal hyphae and subglobose to amygdaliform, non-truncate basidiospores. Molecular studies showed that this genus is distant from *Perenniporia* sensu stricto (Zhao et al. 2013a).

Vararia P. Karst., Kritisk Öfversigt af Finlands Basidsvampar, Tillägg 3: 32, 1898.

Type species – *Radulum investiens* Schwein., Trans. Am. phil. Soc., Ser. 2 4(2): 165, 1832.

Synonym – *Asterostromella* Höhn. & Litsch.

Basidiome resupinate, effused, adnate, membranaceous, hymenophore smooth, whitish to cream or ochraceous. Hyphal system dimitic, generative hyphae with or without clamps, with differentiate dextrinoid dichohyphae. Cystidia (gloeocystidia) present but variable in number, usually SA+. Basidia utriform, with 4-sterigmata. Basidiospores ellipsoid to subglobose, allantoid to fusoid, smooth (ornamented in some tropical species), amyloid or inamyloid, indextrinoid.

Remarks – *Vararia* is closely related to *Dichostereum* and mainly separated by the presence of ornamented basidiospores in the latter. It is also similar in some respects to *Scytinostroma*, and its generic separation is sometimes a matter of opinion because there are several intermediate stages between the two genera. Phylogenetic analyses show that dextrinoid hyphidia do not define a monophyletic group (Larsson 2007b). Actually, *Vararia*, *Dichostereum*, *Scytinostroma* and *Asterostroma*, traditionally included in the Lachnocladiaceae on the common presence of the dextrinoid skeletoid elements, are phylogenetically placed in Peniophoraceae belonging to the Russulales (Larsson & Larsson 2004). The analysis of the little-known tropical species, as in most of the corticioid fungi, will surely clarify the phylogenetic relationships.

Veluticeps (Cooke) Pat., Bull. Soc. mycol. Fr. 10: 78, 1894.

Basionym – *Hymenochaete* subgen. *Veluticeps* Cooke, Grevillea 8(48): 148, 1880.

Synonym – *Columnocystis* Pouzar.

Type species – *Veluticeps berkeleyi* Cooke, Bull. Soc. mycol. Fr. 10: 78, 1894.

Basidiome resupinate to effuse-reflexed or semipileate, hymenophore smooth or aculeate with hyphal pegs, usually brownish. Hyphal system dimitic, hyphae thin- or thick-walled, hyaline to pale yellowish brown, with or without clamps. Cystidia (skeletocystidia or pseudocystidia) abundant, either single or more commonly in fascicles, thick-walled, apically obtuse, and usually encrusted, pale to dark reddish-brown. Basidia narrowly clavate, with 4-sterigmata and a basal clamp. Basidiospores ellipsoid to cylindrical, often somewhat fusiform, smooth, thin-walled, hyaline, IKI–, CB–.

Remarks – *Veluticeps* is characterized by the dimitic hyphal system, usually encrusted pale to dark brown pseudocystidia, and more or less fusiform inamyloid basidiospores (Nakasone 1990b). It is phylogenetically included in the Gloeophyllaceae closely related to *Chaetoderma* and *Boreostereum* among others (Larsson 2007b).

Vesiculomyces E. Hagstr., Bot. Notiser 130: 53, 1977.

Type species – *Thelephora citrina* Pers., Mycol. eur. (Erlanga) 1: 136, 1822.

Basidiome resupinate, adnate, effused, hymenophore smooth to tuberculate. Hyphal system monomitic, hyphae with simple-septa. Cystidia (gloeocystidia) vesicular, with no guttulate content, SA–. Basidia narrowly clavate to cylindrical, with 4-sterigmata. Basidiospores ellipsoid to subglobose, with an evident apiculus, thin-walled, smooth, amyloid.

Remarks – *Vesiculomyces* was described to include *Gloeocystidiellum* species (*G. citrinum* group in Eriksson & Ryvarden 1976) with simple-septate hyphae, gloeocystidia SA– and smooth amyloid basidiospores (Hagström 1977). Wu (1996) includes *Vesiculomyces* as a synonym of *Gloiothele* (with gloeocystidia SA+) on the basis of the nuclear behaviour subnormal in both genera, and because according to Boidin (1958) some gloeocystidia SA+ can be found in some cultures of *Vesiculomyces citrinus*. However, molecular studies by Larsson & Larsson (2003) and Miller et al. (2006) suggested that *Vesiculomyces*, although closely related, it is a sister group of *Gloiothele* and it must be considered as a separate genus.

Vitreoporus Zmitr., Folia Cryptogamica Petropolitana 6: 99, 2018.

Type species – *Polyporus dichrous* Fr., Observationes mycologicae 1: 125, 1815.

Basidiome of tyromycetoid habitus with two-layered context, hymenophore poroid with sterile or fertile dissepiments, gelatinose, cornescent. Upper context soft-fibrous, white or ivory, with black line near the tubes; tube layer citrine, honey-brown, or with lilaceous tints, cartilaginous. Hyphal system pseudodimitic. Generative hyphae with clamp connections, hyaline, often encrusted with granules, CB–. Pseudoskeletal hyphae thick-walled, yellowish, with singular clamps, CB+. Leptocystidia fusoid of hyphoid, intrahymenial. Basidia short-clavate, with central constriction, 4-spored, with clamp at the base. Basidiospores allantoid, thin-walled, IKI–, CB–. Causing a white rot.

Remarks – According to Zmitrovich (2018), *Gloeoporus* Mont. is similar, but differs by thinner contextual/subicular layer, only slightly curved basidiospores, longer basidia, and simple-septate or nodose-septate hyphae.

Vuilleminia Maire, Bull. Soc. mycol. Fr. 18(Suppl.): 81, 1902.

Type species – *Thelephora comedens* Nees, Syst. Pilze (Würzburg): 239, 1816.

Basidiome resupinate, effused, decorticate (only some species not decorticate), ceraceous to gelatinous when fresh, hymenophore smooth to more or less tuberculate, whitish, greyish, cream, reddish brown or with violaceous tints. Hyphal system monomitic, hyphae clamped, usually thin-walled, hyaline, dendrohyphidia present and usually numerous. Cystidia present or absent. Basidia long, utriform to clavate, pedunculate, sinuous, 4-spored and with a basal clamp. Basidiospores allantoid to ellipsoid, large (ab. 15–20 µm), smooth, thin-walled, with oil drops, IKI–, CB–.

Remarks – *Vuilleminia* is easily to recognize by the decorticate basidiome (only a few species with no decorticate basidiome), the presence of hyaline dendrohyphae, clamped hyphae, large basidia and basidiospores (Maire 1902, Boidin et al. 1989, Gorjón 2008, 2009). It has a typical European distribution, with only few known records outside this area in North Africa, Asia and North America. The austral counterpart is referred to *Australovuilleminia*.

Waitea Warcup & P.H.B. Talbot, Trans. Br. mycol. Soc. 45(4): 503, 1962.

Type species – *Waitea circinata* Warcup & P.H.B. Talbot, Trans. Br. mycol. Soc. 45(4): 503, 1962.

Basidiome effused, thin, hypochnoid, smooth, white becoming ochraceous. Hyphal system monomitic, subhymenial hyphae thin-walled, hyaline, short-celled, somewhat swollen, often irregular, some convoluted branched, basal hyphae coloured, long-celled, straight, with somewhat thickened walls, all hyphae lacking clamp connexions. Cystidia absent. Basidia oblong to cylindrical often constricted about the middle, with 4-sterigmata. Basidiospores oblong to cylindrical, ventrally flattened, hyaline to ochraceous, smooth, thin-walled, sometimes with retraction septa, not producing secondary spores by replication, IKI–.

Remarks – The genus basically reminds *Thanatephorus*, but it is differentiated by the contorted hymenial hyphae branching and absence of repetition in the basidiospores (Warcup & Talbot 1962). It is mainly tropical, with the type species isolated from soil (also known on *Secale cereale* straw in greenhouse).

Wolfiporia Ryvar den & Gilb., Mycotaxon 19: 141, 1984.

Type species – *Poria cocos* (Schwein.) Wolf, J. Elisha Mitchell Sci. Soc. 38: 134, 1922.

Basidiome annual, resupinate, pore surface white to ochraceous, pores circular to angular, context white to pale buff, firm to fibrous. Hyphal system dimitic, generative hyphae simple-septate, thin- to thick-walled, some considerably inflated, skeletal hyphae thick-walled, hyaline to yellowish. Cystidiols fusoid present or absent. Basidia clavate, with 4-sterigmate, with a simple basal septum. Basidiospores ellipsoid to cylindrical, smooth, thin-walled, hyaline, IKI–.

Remarks – *Wolfiporia* is characterized by the simple-septate hyphae, some greatly inflated, presence of skeletal, and smooth basidiospores, negative in Melzer's reagent. According to Justo et al. (2017), *Wolfiporia* is nested with *Laetiporus* and *Phaeolus* in the Laetiporaceae remarking that the delimitation of *Wolfiporia* and *Laetiporus* needs further study.

Wrightoporia Pouzar, Ceska Mykol. 20: 173, 1966.

Type species – *Poria lenta* Overh. & Lowe

Basidiome annual to perennial, membranous to cottony, resupinate to pileate, pores small to medium size, white to cream or grey, margin usually with rhizomorphs. Hyphal system dimitic, generative hyphae with clamps (some species with simple-septa), skeletal hyphae thick-walled to solid, dextrinoid in most and in the type species or not in some other species. Cystidia and gloeocystidia present in some species. Basidia clavate, with 4-sterigmate. Basidiospores globose to cylindrical, ornamented, weakly to strongly amyloid. On deciduous and coniferous wood, causing a white rot.

Remarks – *Wrightoporia* is characterized by the membranous to cottony basidiome, poroid hymenophore, usually dextrinoid vegetative hyphae, and amyloid ornamented basidiospores (Pouzar 1966a, Gilbertson & Ryvar den 1987). The genus clearly belongs to the russuloid lineage even it seems to be polyphyletic (Larsson & Larsson 2003). Some of the species previously classified in *Wrightoporia* have been transferred to *Larssoniporia*, *Pseudowrightoporia*, and *Wrightoporiopsis* (Chen et al. 2016).

Wrightoporiopsis Y.C. Dai, Jia J. Chen & B.K. Cui, Persoonia 37: 31, 2015.

Type species – *Wrightoporia neotropica* Ryvar den, Karstenia 40: 156, 2000.

Basidiome annual or perennial, sessile, pileate, effused-reflexed or resupinate, soft to corky when fresh, corky to tough or brittle when dry. Pileal surface orange yellow to yellowish brown. Pore surface buff-yellow, ochraceous to olivaceous brown; pores small to tiny, round to angular. Context buff to cream, or pink to cinnamon-brown, cottony to hard corky. Tubes corky to tough, usually fragile. Hyphal system dimitic, generative hyphae with clamp connections, skeletal hyphae dextrinoid or IKI–. Gloeoplerous hyphae present or absent. Gloeocystidia present or absent. Cystidia present or absent. Basidiospores ellipsoid to subglobose, hyaline, thin- to thick-walled, finely asperulate, IKI+, CB– or CB+. Causing a white rot.

Remarks – *Wrightoporiopsis* is characterized by soft to corky basidiome when fresh, becoming tough and brittle upon drying small to tiny pores (5–10 per mm), corky to tough and usually fragile tubes, finely asperulate and amyloid basidiospores, and a tropical distribution. It is somewhat similar morphologically to *Larssoniporia* but differing in the smooth cystidia. The resulting phylogeny by Chen et al. (2016) do not resolve the phylogenetic status of some species of *Wrightoporiopsis* but the authors stated that they can be readily distinguished from *Wrightoporia* s.str. and other russuloid polypores by their poroid basidiomes, tough to brittle upon drying, and corky to tough, usually fragile tubes and a dimitic hyphal structure with clamped generative hyphae (Chen et al. 2016).

Xenasma Donk, Fungus, Wageningen 27: 25, 1957.

Type species – *Corticium rimicola* P. Karst., Hedwigia 35: 45, 1896.

Basidiome resupinate, adnate, ceraceous to gelatinous when fresh, membranaceous when dry, hymenophore smooth, margin indeterminate. Hyphal system monomitic, hyphae clamped, more or

less glued together. Cystidia and cystidiols present. Basidia cylindrical to subclavate, pleural, usually with 4-sterigmata and a basal clamp. Basidiospores globose to cylindrical, warted to striate, inamyloid, sometimes weakly dextrinoid.

Remarks – *Xenasma* is characterized among the pleurobasidiate corticioid species by the ornamented basidiospores and the presence of cystidia. Molecular studies by Binder et al. (2005) place *Xenasma* in the russuloid clade, but the relationships with other genera seem unclear as pointed out by Larsson (2007b).

Xenasmatella Oberw., Sydowia 19 (1-6): 28, 1966.

Type species – *Corticium subflavidogriseum* Litsch., Annls mycol. 39(2/3): 127, 1941.

Remarks – A synonym of *Phlebiella* P. Karst.

Xenosperma Oberw., Sydowia 19 (1-6): 45, 1966.

Type species – *Xenasma ludibundum* D.P. Rogers & Liberta, Mycologia 52(6): 902, 1962.

Basidiome resupinate, closely adnate to the substratum, inconspicuous, gelatinous, pruinose when dry. Hyphal system monomitic, hyphae with clamps, thin-walled, narrow, tortuous, not forming a subhymenium or a subiculum, basidia arising from only few hyphae. Cystidia absent. Basidia pleural, with 2-4-sterigmata, with a basal clamp. Basidiospores angular, tetrahedral, with some protuberances, hyaline, IKI–, CB–.

Remarks – *Xenosperma* is characterized by its thin and inconspicuous basidiome, pleurobasidia and angular basidiospores. Phylogenetic relationships in *Xenosperma* remain still unclear (Larsson 2007b).

Xerocarpus P. Karst., Revue mycol., Toulouse 3(no. 9): 22, 1881.

Type species – *Thelephora alnea* Fr., Syst. mycol. (Lundae) 1: 446, 1821.

Remarks – A latter homonym of *Xerocarpus* Guillermond & Perrot 1832 (Fabaceae) and a synonym of *Phanerochaete* P. Karst.

Xylobolus P. Karst., Meddn Soc. Fauna Flora fenn. 6: 11, 1881.

Synonym – *Acanthophysium* (Pilát) G. Cunn.

Type species – *Thelephora frustulata* Pers., Syn. meth. fung. (Göttingen) 2: 577, 1801.

Basidiome annual or typically perennial, resupinate, effused or effuse-reflexed, coriaceous. Abhymenial surface tomentose, often concentrically zoned. Hymenophore smooth to tuberculate, pale coloured, often cracked. Hyphal system monomitic, but in some species seemingly dimitic; generative hyphae with simple septa, vertically arranged, thin- to thick-walled, hyaline to pale yellowish or brown. Pseudocystidia and acanthocystidia present. Cystidiols often present. Basidia clavate to cylindrical, with 4-sterigmata and with a simple basal septum. Basidiospores smooth, ellipsoid to cylindrical, thin-walled, amyloid.

Remarks – *Xylobolus* looks like *Stereum* but it causes a white pocket rot not known in the latter. *Acanthophysium* shares with *Xylobolus* simple-septate hyphae, smooth basidiospores, holocoenocytic nuclear behavior and phenoloxidase negative reaction and it was considered as synonym of *Xylobolus* by Wu et al. (2000). *Acanthophysellum* is phylogenetically closely related to *Xylobolus* but differs in the white rot, phenoloxidase positive reaction and nuclear behaviour astatocoenocytic.

Xylodon (Pers.) Gray, Nat. Arr. Brit. Pl. (London) 1: 649, 1821.

Basionym – *Sistotrema* sect. *Xylodon* Pers., Syn. meth. Fung. 552, 1801.

Type species – *Odontia quercina* Pers., Observ. mycol. (Lipsiae) 2: 17, 1800.

Basidiome resupinate, adnate, confluent, hymenophore smooth to grandinioid, tuberculate, raduloid or distinctly hydroid, in some species poroid. Hyphal system monomitic, hyphae with clamps or rarely simple septate, thin- to commonly thick-walled, sometimes with a cyanophilous reaction. Cystidia variable, often not more than distinct hyphal ends, conical to more commonly

capitate, rarely septate smooth or incrusted. Basidia mainly suburniform, thin-walled or basally thickened, usually with four sterigmata and a basal clamp. Basidiospores globose to ellipsoid, cylindrical or allantoid, smooth, thin- to rarely thick-walled, IKI–, sometimes with a slight cyanophilous reaction.

Remarks – *Xylodon* is applied here to those *Hyphodontia* s.l. species without well-defined cystidia (lagenocystidia, tubular cystidia, encrusted cystidia, etc.) and where only cystidial elements or more or less distinct hyphal ends are found. See additional comments in *Hyphodontia*. *Xylodon* is actually accepted for species with a variable hymenial configuration (smooth, grandinioid, aculeate, odontoid, poroid, etc.). See also Riebesehl & Langer (2017).

Xylophagus Link, Mag. Gesell. naturf. Freunde, Berlin 3(1-2): 38, 1809.

Type species – *Merulius destruens* Pers., Syn. meth. fung. (Göttingen) 2: 496, 1801.

Remarks – A synonym of *Serpula* (Pers.) Gray.

Xylomyzon Pers., Mycol. eur. (Erlanga) 2: 26, 1825.

Type species – *Merulius destruens* Pers., Syn. meth. fung. (Göttingen) 2: 496, 1801.

Remarks – A synonym of *Serpula* (Pers.) Gray.

Yuchengia B.K. Cui & K.T. Steffen, in Zhao, Cui & Steffen, Nordic J Bot. 31(3): 333, 2013.

Type species – *Trametes narymica* Pilát, Bull. trimest. Soc. mycol. Fr. 51(3-4): 364, 1936.

Basidiome annual, resupinate. Pore surface cream to yellowish buff; pores angular, dissepiments thin, entire. Subiculum cream to buff, thin. Tubes concolorous with pore surface, hard corky. Hyphal system dimitic; generative hyphae hyaline, thin-walled, rarely branched, with clamp connections; skeletal hyphae dominant, hyaline, thick-walled with a wide to narrow lumen, usually unbranched, interwoven, weakly to distinctly amyloid in Melzer's reagent, acyanophilous, dissolving in KOH. Cystidia absent, cystidioles variably present; basidia clavate, with four sterigmata and a basal clamp connection; basidioles dominant, in shape similar to basidia, but slightly smaller. Basidiospores ellipsoid, not truncate, hyaline, thick-walled, smooth, IKI–, CB+. Causing a white rot.

Remarks – *Yuchengia* is proposed to accommodate *Perenniporia narymica* (Pilát) Pouzar. It represents a monophyletic lineage within the core polyporoid clade based on sequences of the rDNA ITS and nLSU regions, and it is distinct from *Perenniporia* s.str. *Yuchengia* shares some characters with *Perenniporia*, both having thick-walled and cyanophilous basidiospores, but differs by having acyanophilous and amyloid skeletal hyphae dissolving in KOH, and non-dextrinoid basidiospores (Zhao et al. 2013b).

Ypsilonidium Donk, Proc. K. Ned. Akad. Wet., Ser. C, Biol. Med. Sci. 75: 371, 1972.

Type species – *Corticium sterigmaticum* Bourdot, Rev. Sci. Bourb. Centr. Fr. 35(1): 4, 1922.

Remarks – A synonym of *Thanatephorus* Donk.

Acknowledgements

In the last years, many mycologists helped me in the search of bibliography, in the study of herbarium specimens or they contributed sending valuable specimens. I would like to especially thank those who welcomed me in their institutions (in chronological order of my research stays): Annarosa Bernicchia (Bologna, Italy), Leif Ryvarden (Oslo, Norway), Nils Hallenberg and Karl-Henrik Larsson (Gothenburg, Sweden), Alina Greslebin and Mario Rajchenberg (Esquel, Argentina), Maria Aparecida de Jesus (Manaus, Brazil) and Juliano M. Baltazar (Porto Alegre, Brazil). Francisco Javier Hernández García (curator of herbarium SALA, University of Salamanca, Spain) managed most of the reference studied herbarium specimens. This text is intended to be updated regularly so any reader is grateful for their comments, criticisms, and contributions.

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