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NOTES ON 'CYPHELLACEAE'—II *

M. A. Donk
Rijksherbarium, Leiden

The author introduces two new genera, *Mniopetalum* Donk & Sing. (based on a new species, *M. globisporum* Donk) and *Episphaeria* Donk (based on *Cyphella fraxinicola* Berk. & Br.). Three other genera in an emended circumscription are discussed: *Stigmatolemma* Kalchbr., *Phaeosolenia* Speg., and *Cyphellopsis* Donk. *Rhodocyphella* W. Cooke is reduced to the synonymy of *Stigmatolemma*; and *Maireina* (Pilát) W. Cooke, to the rank of a section of *Cyphellopsis*, which is tentatively considered to consist of a single complex species for which the name *Cyphella monacha* Speg. apud Roum. is temporarily used. New combinations are made in *Mniopetalum* (1), *Episphaeria* (1), *Stigmatolemma* (3), *Phaeosolenia* (2). Most of these names are used (but not validly published) in a recent work of Singer where also the genera mentioned above are described and discussed.

After the publication of the first instalment of the present series two publications appeared that were concerned with this artificial family. The first of these, by W. B. Cooke (*1961*), aimed at presenting a monograph of the whole family, except for a few smaller groups which were covered by some previous papers by the same author (*1951*, *1957*). I agree with very little of its contents, particularly with the artificial and erratic classification adopted in it. The second publication I have in mind is that of Singer (*1962*) who paid special attention to those 'Cyphellaceae' that are considered by him and myself as of an agaricaceous nature. On the whole, Singer's conclusions closely confirm my own view that many 'Cyphellaceae' are nothing but 'reduced' agarics. In my opinion a similar situation exists in connection with those gastromycetes that have been regarded as intimately related to agarics. Such gastromycetes I would consider derived from the agarics, having lost their ability to discharge their spores forcibly and all that this implies (to formulate for once my opinions in the language of phylogeny for brevity).

Not only does the artificial family of the 'Cyphellaceae' contain a significant agaricaceous element, it also includes some taxa that are related to various Aphyllophoraceae, for instance, *Aleurodiscus* Rab. ex J. Schroet. (in part), *Cytidia* Quél. (emended), *Auriculariopsis* Maire (cf. Donk, *1959*: 66, 70, 76). In addition, I find it difficult to make up my mind about a considerable residue. It is as yet impossible to be sure that these left-overs do not include groups worthy of recognition as one or more distinct familes, but I am inclined to think that on the whole this is not the case, and that most elements of the residue lacking pronounced tendencies to form more or less resupinate or effuso-reflexed fruit-bodies are agaricaceous. I would

* Part I was published *in* Persoonia 1: 25–110. 1959.

make this sweeping statement conditional in so far that I am not at all convinced that *Schizophyllum* is agaricaceous, and that it may well appear that some 'Cyphellaceae' will have to be transferred to a family Schizophyllaceae Quél. (Donk, *1959:* 37 & cf. also Singer, *1962:* 179). Such a family might cover not only *Schizophyllum* Fr. per Fr. but also (to mention some examples) *Plicatura* Peck, and, more doubtfully, *Stromatoscypha* Donk [= *Porotheleum* (Fr. per Fr.) Fr.], *Phaeodepas* Reid, and perhaps a few other taxa still to be delimitated.

The continued use of the family name 'Cyphellaceae' (even between inverted commas) has invoked misunderstanding and criticism, but is hardly in need of an explanation. As long as the 'family' is maintained for convenience's sake or is regarded as a rapidly dwindling one, there is little sense in replacing it (perhaps several times depending on the consecutive removal of type genera), so much the more as no legitimate substitute is available. The name Leptotaceae was never validly published and at any rate would be as inapt as 'Cyphellaceae' as soon as one transfers *Leptotus* to the Agaricales (where it belongs in my opinion). The name Porotheleaceae favoured by Cooke (*1961:* 13) is not maintainable either because the generic name *Porotheleum* is illegitimate as a later homonym.

However, the principal aim of the present instalment is not to discuss these questions in full, but rather to publish validly some names applied by Singer (*1962*). I also take this opportunity to add a few miscellaneous notes. I am much indebted to Dr. R. Singer for many fruitful discussions on these agaricaceous 'Cyphellaceae' and their relationship during the period in 1960–1 when he was a guest at the Rijksherbarium, Leiden.

Mniopetalum Donk & Sing., *gen. nov.*

Mniopetalum Donk & Sing.; Sing., Agar., 2nd Ed., 328. 1962 (lacking Latin description).

A *Leptoglosso* P. Karst. emend. pigmento membranarum nullo differt. Sporophorum album, ab origine cupulatum, sessile vel in pedunculum stipitiformem breviter attenuatum; contextus e hyphis uniformibus formatus, parietibus hypharum tenuibus, inamyloideis, haud gelatinosis, fibulas gerentibus, hyphis exterioribus vix diversis (pilis specialibus nullis), apice obtusis. Hymenophorum faciem interiorem vestiens, leve, vel lamellas paucas praebens, cremeum. Cystidia nulla. Basidia clavata, sterigmata apicalia 4 gerentia. Sporae subglobosae, manifeste apiculatae, hyalinae, parietibus tenuibus, levibus, inamyloideis. Muscicolum. — Typus: *Mniopetalum globisporum* Donk.

DESCRIPTION.—Sing., Agar., 2nd Ed., 328. 1962.
EXAMPLES.—*Mniopetalum globisporum* Donk; *M. bryophilum* (Pers. per Fr.) Donk.

This may be considered a segregate from *Leptoglossum* P. Karst. from which it differs *inter alia* in the lack of membrana-pigments (white fruit-bodies). The type species is decidedly 'cyphellaceous' in that it lacks gills in contrast to the second example which is decidedly agaricaceous when fully developed. For further discussion, see Singer (l.c.).

Mniopetalum globisporum Donk, *sp. nov.*

MISAPPLICATION.—*Cyphella muscicola* Fr. *sensu* Pat., Tab. anal. 1: 19 *f. 31.* 1883.

DESCRIPTIONS & ILLUSTRATIONS.—Pat., Tab. anal. **1**: 19 *f. 31*. 1883 (*Cyphella muscicola*); Bourd. *in* Bull. Soc. mycol. France **48**: 209. 1932 (*Phaeocyphella muscicola*); Donk *in* Meded. Nederl. mycol. Ver. **18–20**: 131. 1931 (*Cyphella muscicola*).

Sporophorum cupulatum, sessile vel substipitatum, demum disciformi-applanatum, plena maturitate saepe irregulare, 1–5 mm diam., extus album, subtomentoso-sericeum, intus semper leve, cremeum vel subochraceum. Hyphae parietibus tenuibus, saepe localiter inflatae. Sporae subglobosae, apiculo submediano prominente, 5.4–6 × 4.2–5.1 μ (apiculo excluso), incolores, parietibus levibus, inamyloideis. In *Mnio horno* Hedw. — Typus: Neerlandia, Zuid-Holland, Dubbeldam, leg. C. Venverloo (L 956.148–046).

Fruit-body scattered to crowded in small groups on a white cobwebby mycelium, when young cup-shaped and dorsally sessile or attached by the substipitate vertex, then disk- to shield-shaped with a tendency to develop more strongly at one side, up to 5 mm in diameter, usually smaller, thin-membranous with somewhat waxy disk; margin slightly incurved, finally usually wavy, but may become lobed and crisped; outside subtomentose-silky, white, pale cream coloured when dry in well developed fruit-bodies; disk smooth, not thrown into folds or veins, cream coloured (rather dark cream when mature). Hyphae thin-walled, anastomosing, 2.7–5.5(–7.2) μ wide, often with abrupt inflations (–8–12 μ wide) at one or both sides of a cross-wall (which then is often oblique) or where branching; toward outside becoming narrower and rarely inflated, branched, with blunt tips; clamps present, often irregular. Hymenium somewhat thickening; subhymenium of short branches. Basidia 5.4–7 × 23–27 (–30.6) μ, with 4 sterigmata, up to 7.5 μ long. Spores globular to mostly shortened-pipshaped, with very prominent, submedian apiculus, 5.4–6 × 4.2–5.1 μ (without 1.5–2 μ long apiculus), colourless or perhaps faintly yellowish; contents often with a large oil-drop (spores taken from dried specimens); walls firm, smooth, non-amyloid.

On living mosses, especially on *Mnium hornum* Hedw.

TYPE.—Netherlands, Zuid-Holland, Dubbeldam, leg. C. Venverloo, 11 Nov. 1956 (L 956.148–046).

DISTRIBUTION.—Netherlands (6 collections), Germany, and presumably throughout western Europe.

This species differs from the next (judging from Kühner's description) in that the hymenium remains smooth; even luxurious collections with numerous fruit-bodies do not show any tendency to form folds or gills. It may also be more selective as to host which in all collections I recently re-examined appeared to be *Mnium hornum*.

The spores may be slightly coloured but of this I am not quite certain. Previous indications of the spores being coloured in the above cited descriptions under the name *Cyphella muscicola* were perhaps correct to a slight extent but this could also have been caused by staining since the hymenium darkens to a saturated cream colour. No spore prints were obtained.

The specific epithet 'globisporum' was chosen to express that none of the muscicolous western European species of 'Cyphellaceae' (principally belonging to *Leptoglossum* P. Karst.) had such short spores, although the spores are rarely exactly globose.

The cyphellas on mosses have been so badly confused that it is impossible to discuss them without having them disentangled first, which would require many pages—and a profound knowledge on the subject which I do not claim. However,

if one excludes (a) the species with ornamented, dark coloured spores [*Chromocyphella muscicola* (Fr.) Donk, *1959:* 95] and (b) those with greyish-brown or brownish colours and smooth, pip-shaped to ellipsoid spores [which may be slightly coloured; viz. *Leptoglossum* P. Karst. pr. p., inclusive of *L. retirugum* (Bull. per Fr.) Ricken]; and concentrates one's attention on the remaining white-coloured species, then *Mniopetalum* is easily recognizable among the rest. In fact, as far as my knowledge goes, *M. globisporum* is unique among the muscicolous cyphellas of western Europe in having the following combination of characters: (i) originally cup-shaped, often short-stalked fruit-bodies, which are (ii) white outside and become cream inside, (iii) possess clamps, and (iv) smooth, colourless or perhaps faintly tinted spores of (v) nearly globular shape. It should not be confused with another similarly coloured species, viz. *Thelephora muscigena* Pers. ≡ *Cyphella laevis* (Fr.) Lundell, which has much less typically cyphelloid fruit-bodies, narrower hyphae, and differently shaped, smaller ovoid-ellipsoid spores (for a description, see for instance Donk, *1931:* 132).

I believe that the first description containing sufficient microscopical details for a correct interpretation is that by Patouillard (cited above) as *Cyphella muscicola* Fr.; although he does not mention clamps, the description and figure agree. The spores were stated to be globular, and measure about 4–4.5 μ in diameter when calculated from the figure. This spore size is too small but the discrepancy falls within the range of expectable inaccuracies of Patouillard's work of that time. The same fungus was described under the same name by Bourdot and Donk as cited above. [1]

The fungus does not seem to be very rare in western Europe and it has perhaps been previously described as a distinct species. For instance, it may be that *Helvella membranacea* Holmskj. [2] represents an exceptionally luxurious group of fruit-bodies of this species. Nannfeldt (*1955:* 31) referred Holmskjold's plate to *Leptotus* (= *Leptoglossum*) *retirugus*, but I am not certain that this was correct. On account of the definitely cupulate and short-stalked young fruit-bodies remaining white throughout their development as well as the branched but non-anastomosing veins I hesitate to follow him. On the other hand, owing to the persistently white hymenial surface (distincly coloured in *Mniopetalum globisporum*) and its venation, and perhaps also by the kind of moss it inhabits, I am not prepared to identify *Helvella membranacea* with the species under discussion. [3]

[1] Bourdot's description was based on the same specimens collected and described by Donk; Bourdot's indication "sans boucles" was a *lapsus*.

[2] *Helvella membranacea* Holm [later on Holmskjold] *in* Skr. Vidensk. Selsk. nye Saml. **1**: 286 *f.* 7 *on unnumbered pl.* 1781; Beata Ruris Otia Fung. dan. imp. **2**: 52 *pl. 28.* 1799; (devalidated name). — *Merulius membranaceus* (Holmskj.) per Purt., App. Midl. Fl. 180. 1821, in part.; = *Merulius lobatus* var. *crenatus* Pers., Mycol. eur. **2**: 23. 1825.

[3] Holmskjold's species name was misapplied by Dickson and others (Vahl), and Persoon introduced for *Helvella membranacea* Holmskj. sensu Dicks. the name *Merulius lobatus* Pers. ≡ *Leptoglossum lobatum* (Pers. per Fr.) Ricken. This species has become well known during the last decades.

The next species to be considered is *Thelephora lutescens* Pers.[4] Its original description runs: "gregaria concava lutescens, externe albicans. / Rarius eam in musci inveni, aestate. Formam habet magis regularem, fere uti *Peziza*. Hymenium lutescens aut subochraceum." This does not permit us definitely to accept Persoon's name: the all too short description could have been drafted from *Mniopetalum globisporum* but also from *Chromocyphella muscicola* ("albicans", "subochraceum") or other species, inclusive of some discomycetes. The name has been applied a few times; by Lloyd[5] to a quite insufficiently described fungus with fruit-bodies of the general habit of a species of *Calyptella* Quél.; and by Cooke[5] to a fungus which I do not recognize from his description, although the spores would agree, "subglobose . . . 4–5 × 4.5–6 μ". Cooke also reported that a specimen (K) labelled as *Thelephora lutescens* Pers. in Persoon's handwriting proved to be *Chromocyphella galeata* (Schum. per Fr.) W. Cooke [= *Chromocyphella muscicola* in my conception].

Other cyphellaceous species to be mentioned in this connection but too insufficiently described by their authors for certain recognition are *Cyphella neckerae* (Fr.) Fr.,[6] *Peziza muscigena* Desm.,[7] and *Cyphella elegans* Saut.[8] These are all muscicolous, with externally white, urceolate to campanulate fruit-body, but in none of them do I recognize *Mniopetalum globisporum*. Some may even be discomycetes.

Cyphella chromospora Pat.[9] differs in the minute fruit-bodies 0.25–0.5 mm across, the remarkably short sterigmata, and perhaps the darker coloured spores, which resemble those of *Mniopetalum globisporum* in being globular and about 4 μ in diameter (measured from the figure).

Recently Cooke (*1961:* 134, 135) described some muscicolous species with more or less globular spores, viz. *Leptoglossum peckii* W. Cooke, *L. septentrionale* W. Cooke, and *L. sublutescens* W. Cooke. The descriptions are inadequate for contemporary purposes and may also be expected to be inaccurate. Since these names were not validly published (no types indicated) they are merely briefly mentioned in the interest of future studies.

Mniopetalum bryophilum (Pers. per Fr.) Donk, *comb. nov.*

Agaricus bryophilus Pers., Obs. mycol. **1**: 8 *pl. 3 f. 1.* 1796 (devalidated name). — *Merulius bryophilus* (Pers.) Pers., Syn. Fung. 495. 1801 (devalidated name). — *Cantharellus bryophilus*

[4] *Thelephora lutescens* Pers., Mycol. eur. **1**: 116. 1822. — *Cyphella muscicola* var. *lutescens* (Pers.) Fr., Syst. mycol. **2**: 203. 1822. — *Cyphella lutescens* (Pers.) Streinz, Nomencl. Fung. 231. 1861 (as synonym); Lloyd, Mycol. Notes **7**: 1228 *pl. 257 f. 2553.* 1923, misapplied. — *Leptoglossum lutescens* (Pers.) W. Cooke *in* Beih. Sydowia **4**: 132. 1961. — *Phaeocyphella lutescens* (Pers.) Pilát ("in herb."); W. Cooke *in* Beih. Sydowia **4**: 135. 1961 (as synonym); ≡ *Cantharellus persoonii* Duby, Bot. gall. **2**: 1017. 1830.

[5] For references, see preceding footnote.

[6] *Peziza neckerae* Fr., Syst. mycol. **1**: 324. 1821 (nomen nudum). — *Cyphella muscicola* var. *neckerae* Fr., Syst. mycol. **2**: 202. 1822. — *Cyphella neckerae* (Fr.) Fr., Epicr. 568. 1838.

[7] *Peziza muscigena* Desm., Cat. Pl. omises 16. 1823.

[8] *Cyphella elegans* Saut. *in* Hedwigia **15**: 152. 1876.

[9] *Cyphella chromospora* Pat., Tab. anal. **1**: 19 *f. 32.* 1883.

(Pers.) *per* Fr., Syst. mycol. **1**: 325. 1821; not *C. bryophilus* Peck apud Sacc. & al. *in* Harriman Alaska Ser. **5**: 46. 1904. — *Merulius bryophilus* (Pers. per Fr.) Pollini, Fl. veron. **3**: 627. 1824; Pers., Mycol. europ. **2**: 25. 1825. — *Leptotus bryophilus* (Pers. per Fr.) P. Karst. *in* Bidr. Känn. Finl. Nat. Folk **32**: 243. 1879. — *Dictyolus bryophilus* (Pers. per Fr.) Quél., Ench. Fung. 140. 1886. — *Leptoglossum bryophilum* (Pers. per Fr.) Ricken, Blätterp. 6. 1910. — *Mniopetalum bryophilum* (Pers. per Fr.) Sing., Agar., 2nd Ed., 329. 1962 (generic name not validly published; incomplete reference).

DESCRIPTIONS & ILLUSTRATIONS.—Pers., Obs. mycol. **1**: 8 *pl. 3 f. 1.* 1796 (*Agaricus*); Kühner *in* Bull. Soc. Nat. Oyonnax **8**: 77 *f. 1.* 1954 (*Leptoglossum*).

Persoon was reluctant to ascribe the species to *Merulius* or *Cantharellus*; he considered it an agaric notwithstanding the fact that the gills were often branched toward the margin of the cap.

Episphaeria Donk, *gen. nov.*

Episphaeria Donk; Sing., Agar., 2nd Ed., 666. 1962 (lacking Latin description).

Sporophorum discoideum vel cupuliforme, sessile, minutum, tenue, extus album, villosum, intus cremeum vel pallide ochraceo-brunneum; contextus e hyphis uniformibus formatus, parietibus hypharum tenuibus, inamyloideis, haud gelatinosis, fibulas gerentibus, hyphis exterioribus vix diversis (pilis specialibus nullis), laxis, parum incrustatis, apice obtusis. Hymenophorum faciem interiorem vestiens, leve, cremeum. Cystidia nulla. Basidia clavata, sterigmata apicalia 4 gerentia. Sporae ovoideo-ellipsoideae, demum ochraceae, parietibus subincrassatis, levibus, inamyloideis, poro germinativo non observato. In fungis sphaeriaceis corticolis invenitur. — Typus: *Cyphella fraxinicola* Berk. & Br.

DESCRIPTION.—Sing., Agar., 2nd Ed., 666. 1962.
TYPE AND ONLY SPECIES.—*Episphaeria fraxinicola* (Berk. & Br.) Donk.

The only species now known to make up this genus was considered a generically distinct unit by Donk (*1959:* 93) in a discussion under *Chromocyphella* De Toni & Levi when the latter genus was redefined and *Phaeosolenia* Speg. as well as other species were excluded from that genus and where he remarked that *Cyphella fraxinicola* Berk. & Br. had no suitable described genus to receive it.

Singer considers the genus obviously related to *Crepidotus* (Fr.) Kumm. sect. *Crepidotus*, that is to the species of that genus with smooth spore-walls and of which *Crepidotus mollis* (Schaeff. per Fr.) Kumm. is an outstanding example. In a more general way I had come to a similar conclusion.

Cooke (*1961:* 123, 124) includes *Cyphella fraxinicola* as a synonym of *Phaeosolenia densa* (Berk.) W. Cooke. It is certainly not only quite distinct from that species but also has no relation to it.

Other cyphellaceous species reported as growing on sphaerias are *Cyphella parasitica* Berk. & Br. and *C. parasitica* subsp. *tenerrima* P. Karst. I have not yet studied their types, but they seem not to belong here.

Episphaeria fraxinicola (Berk. & Br.) Donk, *comb. nov.*

Cyphella fraxinicola Berk. & Br. *in* Rab., Fungi eur. exs. No. 1816 (nomen nudum); *in* Ann. Mag. nat. Hist. IV **15**: 32. 1895, basionym. — *Chaetocypha fraxinicola* (Berk. & Br.) O.K.,

Rev. Gen. Pl. **2**: 847. 1891. — *Phaeocyphella fraxinicola* (Berk. & Br.) Rea, Brit. Bas. 704. 1922. — *Episphaeria fraxinicola* (Berk. & Br.) Sing., Agar., 2nd Ed., 667. 1962 (generic name not validly published; incomplete reference).

DESCRIPTION & ILLUSTRATION.—Reid *in* Trans. Brit. mycol. Soc. **41**: 439 *f. 23*. 1958 (*Phaeocyphella*).

MONOTYPE.—England, Batheaston (Broome, K.); part of this collection distributed by Rabenhorst, cited above.

It is possible that this species has an earlier name, viz. *Peziza episphaeria* Mart. per Pers., [10] a minute species growing on "*Sphaeria adusta*", but the all too short and ambiguous description, would seem to exclude *Episphaeria fraxinicola*. The species called *Cyphella episphaeria* by Quélet may be Martius's, but Quélet gave the spores as 10–13 μ which is decidedly too big for the species under discussion.

STIGMATOLEMMA Kalchbr. emend.

Stigmatolemma Kalchbr. *in* Grevillea **10**: 104.1882.

Rhodocyphella W. Cooke *in* Beih. Sydowia **4**: 105. 1961. — Holotype: *Cyphella cupulaeformis* Berk. & Rav.

DESCRIPTION.—Sing., Agar., 2nd Ed., 281. 1962. The genus should be broadened to receive some species in which the spores are not even in outline as will be discussed below.

MONOTYPE.—*Stigmatolemma incanum* Kalchbr.

EXAMPLES.—*Stigmatolemma incanum* Kalchbr.; *S. conspersum* (Pers.) Donk; *Solenia subporiaeformis* Burt; *Cyphella taxi* Lév. sensu Pilát; *Stigmatolemma urceolatum* (Wallr. ex Fr.) Donk; *S. poriaeforme* (Pers. ex Mérat: Fr.) W. Cooke; *S. taxi* (Lév.) Donk; &c.

This emended genus *Stigmatolemma* seems homogeneous although some of its species are currently included in *Solenia* and others in *Cyphella*; these two groups are superficially dissimilar, but the microscopic characters testify to their mutual relationship. The individual fruit-bodies are sessile and have a more or less gelatinous context; the outside is greyish by a coating of lime oxalate crystals and the rather dark hymenium contrasts well with it. Microscopically, some features of the hyphae can be found in most species: short inflations at both sides of septa and numerous H-shaped anastomoses.

Stigmatolemma has long been considered a doubtful genus. However, the re-description of the type species by Talbot (*1956:* 479 *f. 21*) made it possible to emend it and to re-introduce it as a good genus. At first Cooke (*1957:* 687) treated the taxon as a subgenus of *Porotheleum* (Fr. per Fr.) Fr. (≡ *Stromatoscypha* Donk) and the type as a synonym of *Solenia poriaeformis* (Pers. ex Mérat) Fr. ≡ *Porotheleum poriaeformis* (Pers. ex Mérat) W. Cooke. This association of *Stigmatolemma* with *Stromatoscypha* has little merit because the two are only very superficially alike. Moreover, Cooke's restriction of '*Stigmatolemma*' to species with densely crowded

[10] *Peziza episphaeria* Mart., Fl. erlang. 465. 1817 (devalidated name). — *Peziza episphaeria* Mart. *per* Pers., Mycol. eur. **1**: 257. 1822; Fr., Syst. mycol. **2**: 100. 1822. — *Cyphella episphaeria* (Mart. per Pers.: Fr.) Quél., Champ. Jura Vosges **2**: 109. 1873 ["(Mart.?)"].

fruit-bodies can also not be upheld because some species with scattered fruit-bodies appear closely related.

Donk (*1959*) concluded that *S. incanum* (the type) seemed to come close to *Peziza conspersa* Pers. (*Solenia grisella* Quél.), and that if it could be proved to have a gelatinous context like this and some other species he mentioned, it should serve as the type of a well-defined genus, *Stigmatolemma*, which would not only contain species with cups crowded on a common stroma (and which Cooke referred to *Porotheleum*), but also others with scattered cups not connected by any stroma (p. 80). Moreover, he remarked that an agaric genus like *Resupinatus* (C. Nees) ex S. F. Gray had its counterpart among the 'Cyphellaceae' in *Stigmatolemma* (p. 37). Romagnesi (*1950*) reached a similar conclusion as to the affinities of one of the species: "*C[yphella] poriaeformis:* tissus gélifiés, flous, bruns, spore ronde, cf. *Scytinopsis Kavinii.*" The latter species will be found in Kühner & Romagnesi's flora (*1953:* 68) as *Geopetalum kavinii* (Pilát) Kühn. & Rom. Of particular interest is the following remark:—

"*Solenia poriaeformis* (D.C.) rappelle . . . à *Scytinotopsis Kavinii* Pilát . . . et cette ressemblance est tout aussi grande au microscope, qui laisse voir un tissu très spécial, d'aspect flou, partiellement coloré de brun (vers l'extérieur, le pigment est clairement incrustant) . . .. On retrouve d'ailleurs à l'extérieur de la cupule de cette *Solenia* des hyphes en cornes de cerf, à bourgeonnement obtus, comme notre *Scytinotopsis* nous en avait lui-même montré. Les relations des *Solenia* grises avec ces Pleurotacées sont donc particulièrement évidentes."—Romagnesi (*1953:* 409).

These remarks may have induced Cooke (*1961:* 128) to raise his subgenus to generic rank, but without extending it to species with scattered fruit-bodies and leaving some others in other genera. Singer (*1962:* 281) has accepted *Stigmatolemma* in the sense I suggested and agrees that it may be considered a reduced genus of his tribus Resupinatae which now includes *Asterotus* Sing., *Resupinatus*, and *Hohenbuehelia* S. Schulz. It would seem that Singer also studied the fragment of the type of *S. incanum* known to be in existence (BPI = "NFC").

Rhodocyphella W. Cooke was introduced for two species (type, *Cyphella cupulaeformis* Berk. & Rav. apud Berk.) of which the spores were considered to "bear a striking resemblance to those of certain pink-spored agarics". Apparently Cooke had the agaric genus *Rhodophyllus* Quél. in mind and it may be assumed that the first syllables of that name were used in the composition of the new name, otherwise 'Rhodocyphella' would be a misnomer because nothing of the cyphelloid genus is rose-coloured. The spores of *Rhodocyphella* are neither pink nor do they very much resemble the spores of *Rhodophyllus*. For some further details, see below under *Stigmatolemma taxi.*

STIGMATOLEMMA INCANUM Kalchbr.

Stigmatolemma incanum Kalchbr. *in* Grevillea **10**: 104. 1882. — *Porotheleum incanum* (Kalchbr.) Sacc., Syll. Fung. **6**: 423. 1888.

DESCRIPTION & ILLUSTRATION.—Talbot *in* Bothalia **6**: 479 *f. 21.* 1956 (*Porothelium*).

MONOTYPE.—Union of South Africa, Somerset East (MacOwan; portion in hb. Lloyd 17,601–BPI, comm. P. A. Karsten).

Some years ago Cooke (*1957:* 690) reported on "a portion of probable type of *Stigmatolemma incanum* Kalchbr., of which a specimen from Karsten is found in the Lloyd Herbarium as *Porothelium incanum.*" He identified it with *Solenia poriaeformis* (Pers. ex Mérat) Fuck., but did not give any other information about it than that it had spores 7 × 4 μ. In the original description the spores are described as "ovatae-globosae, inaequales, 0.0015 mm longae hyaliniae". Given the corrected measurements, the original description supplies a fair picture of a species of a genus for which I had been seeking a name, and to which such species as *Solenia poriaeformis, Peziza conspersa* Pers., *Cyphella taxi* Lév., and a few others belong. However, the corrected spore measurements Cooke gave for the type specimen show the spores to be ellipsoid and thus to be different from those of *Solenia poriaeformis* (which he interpreted too inclusively); in any case they show that *Stigmatolemma incanum* cannot be that species, which has globose spores 4.5–6 μ in diameter.

As far as my present knowledge goes *S. incanum* seems to fall in a small group of species that also combines the habit of cups crowded on a distinct 'stroma' with ellipsoid spores. They are *Peziza conspersa* Pers. (spores 6–11 × 3–4.5 μ, on bark of *Abies pectinata* in central Europe), *Solenia subporiaeformis* Burt (spores 5–6 × 3 μ, Venezuela), and *Porotheleum cinereum* Pat. (spores 8–9 × 5, Equador). Further studies of the types of the two latter species, of *S. incanum*, and of a few other species may prove some of them to belong to the same species. The published descriptions are all too incomplete to decide the matter.

Stigmatolemma conspersum (Pers.: Fr.) Donk, *comb. nov.*

Thelebolus hirsutus DC., Fl. franç. **2**: 272. 1805 (devalidated name). — Type locality: Switzerland, Neuchâtel (leg. Chaillet). → *Peziza conspersa* Pers.

Peziza conspersa Pers., Mycol. eur. **1**: 271. 1822; Fr., Syst. mycol. **2**: 108. 1822.—*Tapesia conspersa* (Pers.: Fr.) Sacc., Syll. Fung. **8**: 379. 1889; ≡ *Thelebolus hirsutus* DC. (a name listed as synonym under *Peziza conspersa* when the latter name was published by Persoon).

Solenia grisella Quél. *in* Bull. Soc. bot. France **24**: 329 *pl. 6 f. 13.* 1878. — *Henningsomyces grisellus* (Quel.) O.K., Rev. Gen. Pl. **3** (2): 483. 1898. — *Cyphella grisella* (Quél.) Bourd. & G., Hym. France 163. "1927" [1928]. — Type locality: France, Jura.

MISAPPLICATION.—*Solenia porioides* (A. & S. per Pers.: Fr.) Fuck *sensu* Fuck., Fungi rhenani exs. No. 2503. 1873; *in* Jb. nassau. Ver. Naturk. **27—28**: 6. 1873.

DESCRIPTIONS & ILLUSTRATIONS.—Secr., Mycogr. suisse **3**: 306. 1833 (*Peziza*); Quél. *in* Bull. Soc. bot. France **34**: 329 *pl. 6 f. 13.* 1878 (*Solenia grisella*); Bourd. & G., Hym. France 163. 1928 (*Cyphella grisella*).

TYPE LOCALITY. — Switzerland, Neuchâtel (leg. Chaillet).

SPECIMENS EXAMINED. — GERMANY. Schörzingen, Württemberg, F. L. Sautermeister (BP, as *Solenia porioides*). — SWITZERLAND. Neuchâtel, Morthier

(distributed by Fuckel, Fung. rhenani exs. No. 2503, as *Solenia porioides*; hb. Oudemans-GRO); Corielles near Neuchâtel, Morthier (as *Solenia grisella*). — FRANCE. Vosges, Corcieux, Galzin (hb. Bourdot 4740-PC, as *Solenia grisella*).

The type locality of this very distinct species is Neuchâtel (Switzerland), from where it was described as *Thelebolus hirsutus* by de Candolle after material received from Chaillet. The original description is not very detailed and the substrate is mentioned merely as "l'écorce des vieux arbres". De Candolle compared the fungus with *Thelebolus stercoreus* Tode, remarking that it differed from that species in the common membrane on which the fruit-bodies were seated. He considered the cups as globular bodies, open at the top by a pore, "par lequel s'échappe la matière interne qui renferme les graines".

This erroneous view was not adopted by Persoon, who recognized the true nature of the fruit-bodies as cups and renamed the species *Peziza conspersa*. We may safely assume that Persoon formed his opinion on material communicated to him by his industrious correspondent Chaillet who also furnished de Candolle with material. The substrate is still only given as bark of trees.

Fries (l.c.) adopted Persoon's name, indicating that he had seen a specimen sent by G. Kunze from Neuchâtel, "ad cortices arborum". [11] There may be grave doubt as to whether or not he received the present species. From his description one might suspect that Fries had *S. poriaeformis* which (in 1822) he did not yet know as such from specimens! An aggravating circumstance is that when he received *Peziza pruinata* Schw. from its author (a fungus now considered synonymous with *Solenia poriaeformis*) he promptly identified it with *P. conspersa:* "Postquam hujus specimina Schweiniziana cum *Pez. conspersae* Chaillet! scrupulose comparare licuit, utramque plantam conjungo. Ceterum paene certum mihi videtur hanc plantam cum Ill. Decandolle optime pro *Theleboli* species haberi."—Fries (*1828:* 10). Yet, I do not believe the point settled that Fries got the wrong fungus. The comparison by Fries with a lichen speaks rather for the present fungus than for *S. poriaeformis:* "Primo obtutu *Thelephoram* frequentissime papillosam (*T. granulosum*) l. potius Lichenem refert subiculo late effuso, indeterminato, furfuraceo. ... Ad *Pezizae* genus vix pertinet fungus maxime memorabilis. *Pyrenoteis* habitu proximus, sed vita non perennis neque capulae corneae quare vix Lichen." A decisive factor would have been a more precise indication of the habitat. *Solenia poriaeformis* grows on rotten frondose wood, while *Peziza conspersa* is found only on bark and on fallen branches of *Abies pectinata*. This latter substrate is for the first time mentioned in literature by Secretan (l.c.), who unequivocally described *Peziza conspersa* from "l'écorce des sapins" after a specimen from—Chaillet!: ". . . le farineux dont [les cupules] sont couvertes leur donne un aspect gris blanc . . .. Si on humecte la plante, le creux

[11] An exclamation mark was placed after the citation of *Thelebolus hirsutus* D.C. This would seem to indicate that Fries saw a specimen he considered certain, rather than that he had seen the specimen from Chaillet on which de Candolle based the specific name.

de la coupe est plus visible, et la pezize prend une teinte brun-roux. Cette espèce forme des taches grises . . .."

Stigmatolemma conspersa is identical with *Solenia grisella* Quél., well described by Bourdot & Galzin under the name of *Cyphella grisella.*

This species was distributed by Fuckel as *Solenia porioides*, implying that it was *Peziza porioides* A. & S. This is a misapplication, in my opinion, because the latter fungus represents nothing else but *Porotheleum fimbriatum* ≡ *Stromatoscypha fimbriatum* (Pers. per Fr.) Donk (cf. Donk, *1959:* 81, 82).

The present species is very distinct from *Stigmatolemma poriaeformis* with which it has been identified by Cooke (*1957:* 688).

Stigmatolemma urceolatum (Wallr. ex Fr.) Donk, *comb. nov.*

Solenia urceolata Wallr. ("in litt.") *ex* Fr., Elench. **2**: 28. 1828.—"*Peziza urceolata* W. in litt.", Wallr., Fl. crypt. Germ. **2**: 488. 1833 (as synonym). [18] — *Henningsomyces urceolatus* (Wallr. ex Fr.) O.K., Rev. Gen. Pl. **3** (2): 483. 1898. — *Solenia poriaeformis* var. *urceolatus* (Wallr. ex Fr.) Pilát *in* Ann. mycol., Berl. **23**: 168 *f. 19: 5–7.* 1925. — *Cyphella urceolata* (Wallr. ex Fr.) Bourd. & G., Hym. France 162. "1927" [1928]. → *Peziza aleuritica* Wallr.

Peziza aleuritica Wallr., Fl. crypt. Germ. **2**: 488. 1833 = *Solenia urceolata* Wallr.) ex Fr.

Cyphella brunnea Phill. apud Phill. & Plowr. *in* Grevillea **13**: 49. 1884. — *Chaetocypha brunnea* (Phill. apud Phill. & Plowr.) O.K., Rev. Gen. Pl. **2**: 847. 1891. — Type locality: Great Britain, Shrewsbury.

DESCRIPTIONS & ILLUSTRATIONS.—Fr., Elench. **2**: 8. 1828 (*Solenia*); W. G. Sm., Syn. Brit. Bas. 425 *f. 104.* 1908 (*Cyphella brunnea*; subhymenium incorrect); Pilát *in* Ann. mycol., Berl. **23**: 168 *f. 19: 5–7.* 1925 & *in* Publ. Fac. Sci. Univ. Charles No. 29: 14 *f. 3a: 5–7.* 1925 (*Solenia porieaformis* var.); Bourd. & G., Hym. France 162. 1928 (*Cyphella*).

Fruit-body gregarious, scattered, here and there somewhat crowded, cup-shaped or rather urn-shaped, sessile, 0.5–1.2 mm across; hymenium pale, then fuscous; outside micaceous-farinaceous by heavy incrustation, whitish, greyish; substance elastic toughish-waxy, somewhat gelatinous, fragile and somewhat rigid when dry. Hyphae in the main parallel to surfaces, thin, 1.5–3 μ in diameter, often branching from clamps, slightly inflated at both sides of cross-walls (inflations up to 4.5 μ in diameter), those of outer layer somewhat stouter, brownish, –4 μ in diameter, those of subhymenium ascendent, indistinct, imbedded in granular mass. Basidia 22–30 × 5–7 μ; sterigmata 4, very thin, straight, about 5 μ long. Spores globose with very small submedian apiculus, even in outline, smooth, with somewhat granular contents, 4.5–6 μ.

HABITAT.—On bark of frondose trees, shrubs, and liana: *Vitis vinifera, Syringa vulgaris, Clematis vitalba,* also, according to Bourdot & Galzin (l.c.) on *Ulmus, Acer, Sambucus.*

DISTRIBUTION.—Europe.

[18] See also next footnote.

TYPE.—Germany, Thuringia (UPS, labelled "*Solenia urceolata* mihi / n. 197 / *Clematis*").

SPECIMENS EXAMINED.—GERMANY. Saxony, near Grossenhain, on dry stalks of *Artemisia abrotanum*, Auerswald (hb. Schroeter-BRSL, as *Cyphella griseopallida*); Lichterfelde near Berlin on vine twigs, P. Sydow (Mycoth. marchica No. 3735, as *Cyphella cinereofusca*). — FRANCE. Trou d'Enfer near Millau, Aveyron, on *Clematis*, Galzin 13,344 (hb. Bourdot-PC); Montmorency, on bark of *Syringa*, Boudier (hb. Boudier-PC, as *Cyphella griseopallida*).

When Fries published this species as *Solenia urceolata* he indicated that Wallroth had sent him a sample under the name of *Peziza urceolata*. Fries, evidently, did not take up the earlier published name *Peziza urceolata* Vahl per Pers. although he suspected it to be the same: "Verosimile est *P. urceolatum* Fl. Dan. t. 1077. f. 1. huc pertinere quae vero extus pilosiuscula, cum nostra specimina flocculoso-farinacea." [13] In the Index to the "Systema mycologium" in Volume 3 (p. 158) the name is listed thus: "[SOLENIA] urceolata El. II. [28]", without any implication that *Peziza urceolata* Vahl was basionym. Wallroth rejected his earlier name and substituted it by *Peziza aleuritica*, which I consider an isonym of Fries's.

The species was determined as *Cyphella griseopallida* Weinm. by Schroeter and Boudier, under which name specimens are found in their herbaria as cited above. Since the original description of *C. griseopallida* calls the fruit-body wholly grey-pallid presumably inclusive of the disk it seems unlikely that Weinmann's fungus is identical with the one described above. *Cyphella griseopallida* sensu Fuck. is *Cellypha goldbachii* (Weinm.) Donk (*1959:* 85).

I am convinced that Cooke (*1961:* 101) erred when he cited *Cyphella brunnea* as a synonym of *Merismodes fasciculatus* (Schw.) Donk apud Sing.

Stigmatolemma taxi (Lév.) Donk, *comb. nov.*

Cyphella taxi Lév. *in* Ann. Sci. nat. (Bot.) II **8**: 336 *pl. 8 f. 10.* 1837 (figure of hymenium and explanation); II **16**: 237 *pl. 15 f. 6.* 1841. — *Chaetocypha taxi* (Lév.) O.K., Rev. Gen. Pl. **2**: 848. 1891.

Cyphella cupulaeformis Berk. & Rav. apud Berk. *in* Grevillea **2**: 5. 1873. — *Chaetocypha cupulaeformis* (Berk. & Rav. apud Berk.) O.K., Rev. Gen. Pl. **2**: 847. 1891 ("*cupuliformis*"). — Monotype: U.S.A., S. Carolina (Ravenel 1403, K).

DESCRIPTIONS & ILLUSTRATIONS.—Burt *in* Ann. Missouri bot. Gdn **1**: 369 *pl. 19*

[13] This conclusion is at variance with a previous one (Donk, *1959:* 64) which considered *Solenia urceolata* as published by Fries a mere recombination of *Peziza urceolata* Vahl per Pers. I now take the latter name as different from *Solenia urceolata*. Its corrected citation runs: *Peziza urceolata* Vahl *in* Fl. dan. **6**/Fasc. 17: 10 *pl. 1017 f. 3.* 1790 (devalidated name); not *P. urceolata* "Rutstr. diss. p. 19" (devalidated name; n.v.). — *Peziza urceolata* Vahl *per* Pers., Mycol. eur. **1**: 316. 1822; Schw. *in* Schr. naturf. Ges. Leipz. **1**: 124. 1822; Fr., Syst. mycol. **2**: 148, 201. 1822 (sp. inquir.). — A nomen dubium.

f. 9. 1914 (*Cyphella cupulaeformis*); Coker *in* J. Mitchell sci. Soc. **36**: 150 *pl. 30 f. 3.* 1921; **64**: 145 *pl. 25 fs. 14, 15.* 1948 (*Cyphella cupulaeformis*).

Fruit-bodies scattered, somewhat gregarious, at most a few crowded together, sessile, cup- or bowl-shaped, 0.5–0.95 mm high, 0.6–1.25 mm across; outside grey, micaceous by a heavy incrustation of easily detersile crystals; margin straight, entire, somewhat incurved when dry; hymenium even, fuscous; substance toughish-waxy, somewhat gelatinous, rigid and hard when dry. Hyphae partially flexuous, fine, 1.25–2.5 μ in diameter, more or less inflated often at both sides of cross-walls (inflations up to 5.5 μ in diameter), clamped. Basidia 18–25 × 4–6 μ, with 2–4, thin sterigmata 4–6 μ long. Spores globular or shortly ovoid, somewhat, but distinctly, angular in outline, with fine but distinct and slightly excentric apiculus, colourless, 4.75–5.75 × 4.5–5.25 μ.

On bark and rotten wood of *Taxus baccata* and *Juniperus virginianus.*

DISTRIBUTION.—Europe; North America.

TYPE.—France, Paris (Léveillé, PC).

SPECIMENS EXAMINED.—FRANCE. Paris, "in Horto Regio Musaei Parisiensis ad truncum scariosum *Taxi baccatae*" as published, Léveillé (PC). — U.S.A. Georgia, Darien (distributed by Ravenel, Fungi amer. exs. No. 224 & by Cooke, Fungi select. exs. s.n., as *Cyphella cupulaeformis*).

The outstanding feature is the angular spores by which this species can be easily distinguished from the other members of the genus. The scattered fruit-bodies remind one rather of *Stigmatolemma urceolatum* (Wallr. ex Fr.) than of *Stigmatolemma poriaeforme* (Pers. ex Mérat) W. Cooke. The occurence on coniferous hosts may be another important character.

The spores are usually devoid of 'spines' (which neither Burt nor I have ever seen), but Coker (*1948:* 145) described them as follows:—

"Spores (good spore print on slide) shaped like 'Jack rods,' a few showing only two or three papillae but most with four in outline, making the spore 'squarish' or slightly rectangular, 4–5 × 5–6 μ, not counting the projections, otherwise up to 6.5 × 7.4–8 μ."

The adoption of the name *Cyphella taxi* needs some explanation. The spores were given by the author as "ovales" and were depicted in a figure of a section through the hymenium, still attached to the basdia, as ellipsoid and even in outline. However, this figure is out of proportion and highly schematic. The other figures, showing fruit-bodies, leave no doubt that a species of *Stigmatolemma* was depicted; the description also bears this out. Examination of what was certainly the type revealed that the spores are almost globular and angular in outline. Practically the same spores were encountered in the American specimens cited above, determined as *Cyphella cupulaeformis* and distributed by the co-author of that species.

Misled by Léveillé's erroneous data on the spores, Pilát (*1927:* 116 *pl. 1 fs. 10–12*) described a species with the spores "kurz elliptisch, . . . 5.8–7 × 2.8–3 μ" as *Cyphella taxi.* His drawings show them somewhat flattened adaxially and ovoid-ellipsoid. The collection on which his report is based was found on *Juniperus communis.* Assuming the spores to have been correctly described and depicted, Pilát's fungus cannot be *S. taxi*; however, it may be *Cyphella subgelatinosa,* described from North America, South Carolina, on *Alnus serrulata.* Burt (*1914:* 370) recorded some detached spores

for this latter species which seem to agree, although slightly larger, 8 × 3.5 μ. (Burt's microscopical measurements are notoriously on the low side.)

Cooke (*1961:* 110) considered *Cyphella taxi* a synonym of *Cyphella ampla* Lév. [= *Auriculariopsis ampla* (Lév.) Maire] "on the basis of a specimen which appears to be the type, loaned by [PC]." Cooke may well have studied the same collection as I did 30 years ago.

Cyphella grisea Petch (*1922:* 7). — This species seems close to *Stigmatolemma taxi* (encrusted outside, subgelatinous substance). Its spores which were described as "globose, 4 μ diameter, with scattered spines up to 3 μ long". It was not stated whether the substrate was coniferous or not ("on bark of living trees").

PHAEOSOLENIA Speg.

Phaeosolenia Speg. *in* Anal. Mus. nac. Buenos Aires **8**: 53. 1902.

DESCRIPTIONS.—Donk *in* Persoonia **1**: 93. 1959 (in obs. under *Chromocyphella*; quoted below); Sing., Agar., 2nd Ed., 667. 1962.

MONOTYPE.—*Phaeosolenia platensis* Speg.

EXAMPLES.—**Phaeosolenia inconspicua** (Berk. & C.) Donk, *comb. nov.* [14] [basionym, *Peziza inconspicua* Berk. & C. *in* Proc. Amer. Acad. **4**: 128. 1858; *Phaeosolenia inconspicua* (Berk. & C.) Donk, Sing., Agar., 2nd Ed., 668. 1962, incomplete reference]; *P. pelargonii* (Kalchbr. apud Thüm.) W. Cooke [15]; *P. densa* (Berk.) W. Cooke (original sense); **Phaeosolenia endophila** (Ces.) Donk, *comb. nov.* [basionym, *Solenia endophila* Ces. *in* Rab., Fungi eur. exs. No. 1513. 1872 (with description) & cf. *in* Hedwigia **11**: 179. 1872; *Phaeosolenia endophila* (Ces.) Donk, Sing., Agar., 2nd Ed., 668. 1962, incomplete reference]; *P. platensis* Speg. is perhaps not specifically distinct from the preceding one.

This genus was taken up by Donk (*1959:* 93) when discussing the emended genus *Chromocyphella* De Toni & Levi: "Some of [the components that drifted into that genus] are congeneric with *Cyphella endophila* Ces., and if in its turn this species is congeneric with *Phaeosolenia platensis* Speg. (as I suspect from the description) then this group may be set apart under the generic name *Phaeosolenia* Speg. Such a genus would differ from *Chromocyphella* in a restricted sense by its characteristic hairs at the outside (patent, rather short, heavily encrusted by easily detersile crystals of lime-oxalate) and the more elongate, smooth, somewhat thick-walled spores."

Cooke (*1961:* 121) subsequently accepted the genus but made it an undefinable lot. Singer (*1962:* 669) took it up in the above sense. He placed it in the Crepidotaceae but did not compare it with any genus of that family. I consider the genus agaricaceous, but at the moment would rather not suggest relationship to any specified group, although one might mention *Phaeomarasmius* Scherffel in its connection as reminescent of *Phaeosolenia* in several respects.

[14] Talbot (*1956:* 474 *f.* 9) reviewed the species as it occurred in Africa, describing it under the name *Cyphella variolosa* Kalchbr. (synomyms listed). The species also occurs in Asia and a description of it under the name *C. versicolor* Berk. & Br. was published by Petch (*1912:* 278).

[15] For description and discussion, see Talbot (*1956:* 473 *f.* 13, as *Cyphella pelargonii* Kalchbr. apud Thüm.). It was tentatively treated as distinct from *Phaeosolenia inconspicua.*

Cooke (*1961:* 123) made his conception of *Phaeosolenia densa* almost identical with the genus as here circumscribed, except for *P. pelargonii* which he kept apart, and for the inclusion of some synonyms representing generically widely different species. In my opinion *P. densa* is specifically different from all the rest he included and as far as the specimens I saw is restricted to New Zealand.

Patouillard placed all cyphellaceous species with coloured spores together in *Phaeocyphella* Pat. [≡ *Chromocyphella* De Toni & Levi]. This single character has proved to be insufficient for characterizing a natural group and *Chromocyphella* has been emended and reduced to a few species (Donk, *1959:* 92). Other segregates from Patouillard's genus are the present genus *Phaeosolenia* Speg. and *Episphaeria* Donk (see p. 336).

The fruit-bodies are densely coated by crystalline matter deposited on the hairs and, hence, often appear white. This crystalline deposit is easily rubbed off and then shows the coloured tissue underneath. Usually the fruit-bodies are densely crowded (whether or not on a dark-coloured mycelium often appearing paler by incrustation) and then may resemble forms of *Cyphellopsis* Donk when the fruit-bodies are rather cup-shaped, or of *Solenia* Pers. per Fr. sensu stricto when the fruit-bodies are elongated. The resemblance between all three genera is only superficial. Forms with rather scattered fruit-bodies also occur.

CYPHELLOPSIS Donk emend.

Cyphellopsis Donk *in* Meded. Nederl. mycol. Ver. **18–20**: 128. 1931.

Cyphella subgen. *Mairina* Pilát *in* Ann. mycol., Berl. **23**: 160. 1925. — *Maireina* [!] (Pilát) W. Cooke *in* Beih. Sydowia **4**: 83. 1961. — Lectotype (W. Cooke, l.c.): *Cyphella bresadolae* Grelet (mentioned by W. Cooke, l.c., as "*Cyphella monacha* Speg."). → *Cyphella* subgen. *Maireiella* Pilát (typonym).

Cyphella subgen. *Maireiella* Pilát *in* Publ. Fac. Sci. Univ. Charles No. 29: 60. 1925 ≡ *Cyphella* subgen. *Mairina* Pilát (typonym).

? *Pseudodasyscypha* Velen., Novit. mycol. 167. 1939. — Lectotype (Donk *in* Reinwardtia **1**: 219. 1951): *Cyphella hyperici* Velen. — Cf. Donk, l.c.

DESCRIPTIONS.—Donk *in* Persoonia **1**: 98. 1959 (in obs. under *Lachnella*; quoted below); Reid *in* Kew Bull. **15**: 265. 1961; Sing., Agar., 2nd Ed., 405. 1962.

LECTOTYPE (Donk *in* Reinwardtia **1**: 210. 1951).—*Solenia anomala* (Pers. per Fr.) Fuck.

EXAMPLES.—Sect. *Cyphellopsis*.—*Cyphellopsis anomala* (Pers. per Fr.) Donk; *C. mellea* (Burt) Reid; *C. subglobispora* Reid.

Sect. **Maireina** (Pilát) Donk, *sect. & stat. nov.* (basionym, *Cyphella* subgen. *Mairina* [!] Pilat *in* Ann. mycol., Berl. **23**: 160. 1925; type species, *Cyphella bresadolae* Grelet).—*Cyphella monacha* Speg. apud Roum.

As originally conceived I included in *Cyphellopsis* the present emended taxon as well as *Lachnella* Fr. emend. Donk (*apud* Sing., *1951:* 343; *1959:* 97), "but soon concluded that *Cyphellopsis* may be kept apart generically because of the colour of the hairs (brown and somewhat darkening in KOH solution) and the fact that these hairs undergo neither any considerable transformation nor deformation in KOH

solution. There is one species of *Cyphellopsis* that shares with *Lachnella* the big basidia and spores. For the present I still believe the two genera as closely related" (Donk, *1959:* 98). [16]

Reid and Singer have adopted this emendation. However, Cooke (*1961:* 96) reduced the genus still more by including only the *Cyphellopsis anomala* complex, emphasizing the hairs in his key to the genera of Cyphellaceae (p. 15) as follows: "Receptacles covered with brown hairs, of which at least some have inflated tips." Such tips have been interpreted as conidia by some authors. I am not convinced that they really represent conidia.

The *Cyphellopsis anomala* complex (which includes *inter alia* also *Solenia populicola* Pat. and *S. confusa* Bres.) belongs taxonomically and nomenclaturally to the toughest problems I have as yet encountered. In my herbarium I have tentatively applied the name *Solenia populicola* to some collections with long, allantoid spores (much longer than in *S. confusa*) but I am not prepared at the moment to publish validly the combination "*C[yphellopsis] populicola* (Pat.) Donk" mentioned by Singer (*1962:* 406).

Cyphella subgen. *Maireina* Pilát was introduced for two species, viz. (i) *Cyphella albocarnea* Quél. which species as at that time interpreted by Pilát he would later call *Cyphella eruciformis* (Batsch per Pers.) Fr. (Pilát, *1933:* 47) and (ii) *Cyphella bresadolae* Grelet = *Cyphella monacha*, which is discussed below. When Cooke (*1961:* 83) raised this taxon to generic rank he selected "*Cyphella monacha* Speg." as type species. One will find the name he should have mentioned (*C. bresadolae*) listed by him (p. 90) as a synonym of *C. monacha*.

At the same time Cooke excluded the white-haired element (*C. eruciformis*) and raised the taxon to generic rank he emended *Maireina* to include species defined thus (in his key to the tribes and genera of his Solenoideae, pp. 14, 15): "Spores hyaline. / Spores smooth. / Receptacles separate, rarely occurring so close together as to appear fasciculate or conglobate, or rarely with branched stipes. / Receptacles without [brown] surface hairs [,of which at least some have inflated tips]. / Receptacles with special granule-incrusted surface hairs, hairs usually with thick walls. / Surface hairs yellow to brown". In several of the species Cooke included the spores are slightly, but distinctly, coloured, as they also may be in *Cyphellopsis*.

Apart from the fact that *Maireina* became the receptacle of several what I consider unrelated species, it appears that the one generic feature used for separating *Maireina* from *Cyphellopsis* (viz. the occasionally inflated hair tips) is a weak one, which I do not believe to be of generic value. It is a pity that Cooke did not elaborate on his reasons for delimiting these genera as he did.

Moreover, the introduction of the generic name *Maireina*, for the genus as conceived by Cooke, appears superfluous for he included *Cyphella hyperici* Velen.,

[16] Singer (*1962:* 413) recently extended *Lachnella* by two new sections, viz. '*Metuloidifera*' and '*Pulchra*', both of which should apparently be excluded again. I am sure of this as to the type species of section *Pulchra*; the type species of section *Metuloidifera* I have not yet studied.

the type species of the generic name *Pseudodasyscypha* Velen. (as cited above), an earlier and as far as I can see validly published name (alternative name dating from before 1953). Clearly he should have taken up *Pseudodasyscypha*. Both Velenovský's original account, and Cooke's re-description are inadequate to form a definite opinion about the type species of *Pseudodasyscypha*, which, however, might well appear closely related to *Cyphellopsis fusca*.

CYPHELLA MONACHA Speg. apud Roum.

MISAPPLICATION.—*Cyphella fulva* Berk. & Rav. apud Berk. & Br. sensu Berk. & Br. *in* Ann. Mag. nat. Hist. III **7**: 379. 1861 (British collection).

The big-spored complex making up section *Maireina* is perhaps nothing but a single somewaht variable species, the correct name of which has not yet been established. It is a very characteristic one and in certain respects intermediate between *Lachnella* and *Cyphellopsis* (typical section); the habit of the fruit-bodies as well as the basidia and spores are almost typical of the former; and the dark colour, of the latter. It is at once distinguishable from the other species of *Cyphellopsis* by the larger basidia and more voluminous spores and by its scattered fruit-bodies.

For the European component of this comlpex I temporarily use the name *Cyphella monacha* although it is presumably not the correct one. I do not venture to take up the early name *Cyphella fulva* as basionym. When Berkeley & Broome recorded a British collection (cited as "F. Currey, Esq.") they did so under the name "*C. fulva*, Berk & Rav.", adding the remark, "This seems to be the same species with what Mr. Ravenel has gathered in South Carolina, and which has also occurred in other parts of the United States, though the American specimens are generally fasciculate. The species is very near to *Cantharellus fasciculatus*, Schw." This American element represents *Merismodes fasciculata* (Schw.) Donk apud Sing. and the name *Cyphella fulva* Berk. & Rav. was on this occasion validy published for it by a short differential description ("generally fasciculate"). [17] The description of the British collection runs: "Membranaceous, cup-shaped, the mouth more or less directed downwards, tawny, externally tomentose. Spores ovate, .0006 inch long. On dead bark." This is not much, but shape and size of the spores turn the scale. The re-description by Massee (*1892:* 140) sufficiently supplements the gross as well as the microscopical characters to remove most of the doubt as to the identity of the British fungus: "Spores colourless, elliptical, 16 × 8 μ. . . . outside with long, brown, aseptate curved hairs." A study of the collection at Kew affirmed its identity with the fungus under discussion.

Other names belonging to the same complex are *Cyphella ravenelii* Berk. 1873, *C. monacha* Speg. apud Roum. 1880, *C. obscura* Roum. 1882 (nomen nudum; at least

[17] By using the author's citation "Berk. & Rav." Berkeley & Broome made it clear that the name was given to the American element; in the discussion they showed that they felt not quite certain, that the British collection was conspecific ("seems").

in part), *C. texensis* Berk. & C. ex Cooke 1891, *C. sydowii* Bres. 1892, *C. tephroleuca* Bres. 1898, *C. gregaria* H. & P. Syd. 1900, *C. leochroma* Bres. 1900, *C. marginata* McAlp. 1902, *C. bresadolae* Grelet 1922 (superfluous name), *Peziza cinereo-fulva* Schw. sensu Sacc. 1881 (as *Cyphella*), and undoubtedly some more. Several of these Cooke (*1961*) maintained as distinct species but his key is unsatisfactory and some of the characters used therein are hardly workable, so I am not yet convinced he has proved their specific status. Other examples of the above list were referred by Cooke (*1961:* 123) to *Phaeosolenia* Speg. [*Cyphella cinereofusca* sensu Sacc., as a synonym of *P. densa* (Berk.) W. Cooke] and *Lachnella* [*Cyphella sydowii*, on p. 69 as a synonym of *Lachnella alboviolascens* (A. & S. per Pers.) Fr., but on p. 91 as a synonym of *Maireina monacha* (Speg. apud Roum.) W. Cooke].

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