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Notes on British *Octosporella* with a new genus, *Filicupula* (Pezizales)

Y. -J. YAO^{1,2} & B. M. SPOONER¹

Summary. British species of *Octosporella* are considered and a new genus *Filicupula* is proposed to accommodate *Pseudonectria suboperculata* (syn. *Octosporella suboperculata*) based on a revision of the type collection.

Octosporella Döbbeler was established to accommodate several discomycete species previously placed in *Nectria* (Fr.) Fr. or *Pseudonectria* Seaver (Döbbeler, 1980), which are parasitic on liverworts. Two species of *Octosporella*, *O. jungermanniarum* (P. Crouan & H. Crouan) Döbbeler and *O. suboperculata* (Döbbeler & P. James) Döbbeler have been recorded as British (Cannon *et al.*, 1985). *Octosporella jungermanniarum* was reported from Britain by Corner (1929) as *Neottiella crozalsiana* Grelet, which is considered to be a synonym of the former by Döbbeler (1980). Corner (1929) provided a detailed account of *N. crozalsiana*, based on a collection from Buckinghamshire, England, showing it to have a perithecioid ascoma parasitic on leaves of *Plagiochila asplenioides* (L.) Dumort. Examination of a later collection from the same locality (England, Buckinghamshire, Wendover, Hampden Leaf Wood, 14 June 1933, Corner, K) confirms the structure of the ascoma as reported by Corner (1929) except that the apical opening was not seen and the operculate character of the asci could not be proved.

Octosporella suboperculata was originally described in *Pseudonectria* (Döbbeler, 1978), based on a British collection having perithecia parasitic on leaves of *Frullania tamarisci* (L.) Dumort. Re-examination of the holotype of this species reveals a typical discoid ascoma which is structurally quite different from that of the type species of *Octosporella*, *O. jungermanniarum*. A revised description of this species is provided based on examination of the type material, and a new genus is proposed to accommodate it.

The methods employed in this study were described in Yao & Spooner (1995). The herbarium specimens studied are indicated individually below.

Filicupula *Y. J. Yao & Spooner, gen. nov.* Apothecia primum clavata, demum obovoidea vel turbinata, supra applanata. Discus aurantiacus. Receptaculum cupulatum, ad basin hyphis ramosis affixum. Excipulum ectale ad basin e textura prismatica compositum, ad lateris e hyphis subparalleliis septatis compositum, muris hypharum

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crassis gelatinosisque; hyphae ad angulum parvum ad superficiem depositi. Asci operculati, jodo non caerulescenti, clavati. Ascosporae unicellulares, hyalinae, laeves, fusioideae, guttulae. Paraphyses filiformes, septatae, rectae vel curvatae. Species typica: *Pseudonectria suboperculata* Döbbeler & P. James

Apothecia clavate at first, becoming obovoid or turbinate, flattened above. *Disc* orange. *Receptacle* cupulate, surface rough, with branched anchoring hyphae present at the base and lower receptacle. *Ectal excipulum* comprising *textura prismatica* at the base, and septate, sub-parallel hyphae above; excipular hyphae radially arranged, lying at a low angle to the surface, their walls thickened and strongly adherent. *Asci* operculate, iodine-negative, clavate, thin-walled. *Ascospores* unicellular, colourless, smooth, fusoid, often inaequilateral, guttulate. *Paraphyses* filiform, septate, straight or curved, flexuous. *Type species*: *Pseudonectria suboperculata* Döbbeler & P. James

The discoid form of the ascoma and iodine-negative, uniformly thin-walled, apparently operculate asci (Figs 1 – 3) indicate the placement of this genus in *Otideaceae*. The genus differs from *Octosporella* in several respects: *O. jungermanniarum* has a perithecioid ascoma with a plectenchymatous peridium and abundant thick-walled, colourless, cylindrical or slightly tapering, obtuse hairs covering the ascoma (Fig. 4); *F. suboperculata* has typical apothecia with an excipulum of sub-parallel hyphae radially curved towards the surface and margin, and lacks thick-walled, obtuse hairs. In addition, the paraphyses in *O. jungermanniarum*, as illustrated by Corner (1929), are peculiar in character and unlike typical members of *Otideaceae*. However, *Octosporella* was placed in *Humariaceae* by Döbbeler (1980) and is retained in *Otideaceae* by Eriksson & Hawksworth (1993).

The filamentous construction of the excipulum and parasitic habit on liverworts separate *Filicupula* from *Octospora* Hedw. and related genera such as *Lamprospora* De Not and *Ramsbottomia* W. D. Buckley.

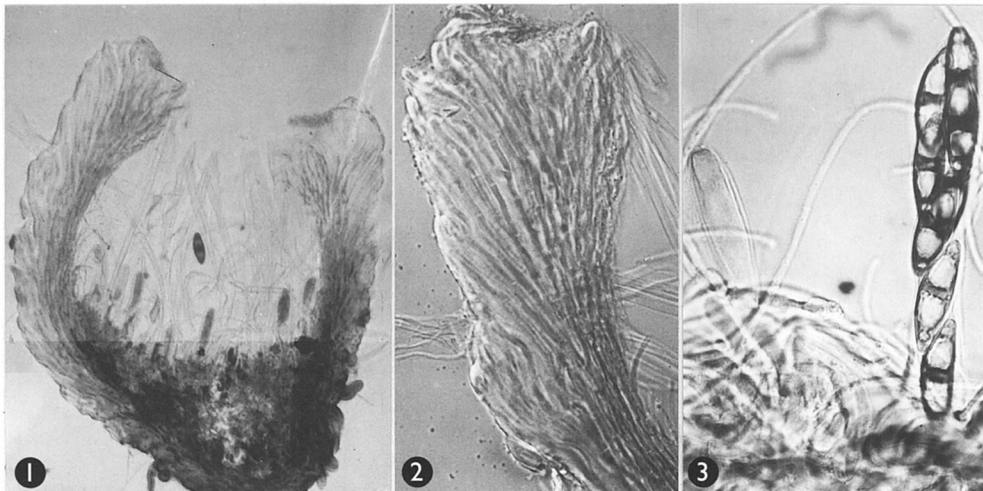
Etymology: *filum*, Latin, filament; *cupula*, Latin, cup; referring to the cupulate ascoma with filamentous excipulum comprising sub-parallel hyphae.

***Filicupula suboperculata* (Döbbeler & P. James) Y. J. Yao & Spooner, comb. nov.**

Pseudonectria suboperculata Döbbeler & P. James in Döbbeler in *Mitt. Bot. München* **14**: 113 (1978). Type: Scotland, Argyll, Head of Loch Creran, Glasdrum, Inver, *James* in IMI 229044 (holotype, IMI!; isotypes, GZU, M, K!).

Octosporella suboperculata (Döbbeler & P. James) Döbbeler in *Nova Hedwigia* **31**: 828 (1980).

Apothecia solitary, clavate at first, becoming obovoid to turbinate, flattened above; higher than broad, 270 – 500 × 160 – 370 μm; sometimes partly covered by phyllodia of the host. *Disc* flat, orange, smooth. *Receptacle* deeply cupulate, concolorous with the disc, outer surface finely rough with protruding hyphal tips; thick-walled, colourless, branched anchoring hyphae 6.0 – 12.0(– 14.0) μm diam. present at the base and lower receptacle. *Ectal excipulum* 30 – 50 μm thick, comprising *textura prismatica* at base, and septate, sub-parallel hyphae 2.5 – 4.0 μm diam. above;



Figs 1 – 3. Photomicrographs of *Filicupula suboperculata* from isotype. Fig. 1. Vertical section of apothecium. $\times 160$. Fig. 2. Vertical section to show structure of marginal excipulum. $\times 340$. Fig. 3. Ascospores in ascus, young ascus and surrounding paraphyses. $\times 510$.

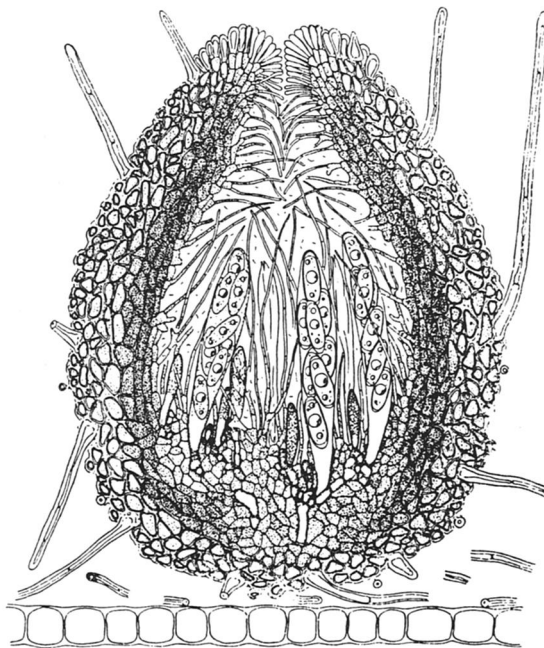


Fig. 4. Vertical section of ascoma of *Octosporella jungermanniarum*, reproduced from Corner (1929). $\times 250$.

excipular hyphae radially curved towards the surface and the margin with walls thickened and strongly adherent. *Asci* operculate, iodine-negative, clavate, $80 - 140 \times 15.0 - 20.0 \mu\text{m}$, wall uniformly thin; 8-spored, spores biseriate or crowded in upper part. *Ascospores* unicellular, colourless, fusoid with blunt or truncate ends, often inaequilateral, $27 - 33(-35) \times 8.0 - 9.5(-12.0) \mu\text{m}$; usually containing two large central, two smaller polar and several very small guttules. *Paraphyses* filiform, straight or curved, flexuous, $1.5 - 2.5 \mu\text{m}$ diam., slightly attenuate at the apex, sometimes branched below, often indistinctly septate. (Figs 1 - 3).

DISTRIBUTION. Known only from the type collection from Argyll, Scotland.

COLLECTIONS EXAMINED. Scotland, V.C. 98, Argyll, Head of Loch Creran, Glasdrum, Inver, on *Frullania tamarisci*, 23 June 1976, *James* (holotype, IMI 229044; isotype, K).

HABITAT. Parasitic on phyllodia of liverwort *Frullania tamarisci*.

Similarities with *O. jungermanniarum* in habitat, ascospore shape and paraphysis characters have led to the placement of the species in *Octosporella*. However, the typical discoid ascoma and filamentous structures of the excipulum are considered as generic characters sufficient to segregate this species from *Octosporella*.

For comparative purposes, the illustration of a vertical section of the ascoma of *O. jungermanniarum* published by Corner (1929) is reproduced here (Fig. 4).

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