PERSOONIA
Published by the Rijksherbarium, Leiden
Volume 10, Part 4, pp. 535–543 (1980)

NOTES AND BRIEF ARTICLES

ON MUCRONELLA RICKII AND PTERULA GRACILIS

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Among the minute clavarioid fungi, my attention was drawn to *Ceratellopsis* and the tiny *Pterula gracilis* of which the last one has been collected several times in the Netherlands. *Pterula gracilis* is a species not always easily recognized as a *Pterula* and more often identified as a *Typhula*, although the hyphae are too thick-walled for that genus.

Typhula, inclusive of *Cnazonaria*, *Pistillaria* and several other closely related genera, is characterized by a monomitic hyphal system, and so is the genus *Ceratellopsis*, which differs from *Typhula* mainly in the distinct sterile, apex of the basidiocarp and the absence of sclerotia.

Pterula, on the other hand, is characterized by a dimitic hyphal system with unbranched, hyaline to pale yellowish-brown skeletal hyphae. The latter are rather obvious in the large, much-branched, dark coloured tropical species, but are less easily observed in the small and unbranched *Pterula gracilis*. This not because there are so few of them, in fact they constitute the main part of the basidiocarp, but because they are not very thick-walled, densely packed and longitudinally arranged, while they show several secondary septa. A closer study of *P. gracilis* reveals without any doubt that the conspicuous hyphae are all skeletal hyphae which are closely interwoven with a few, mostly thin-walled and easily collapsed generative hyphae bearing clamp-connexions.

After having studied the Netherlands' material of *P. gracilis*, I came across the description of *Ceratellopsis rickii* which, judged by the description, seemed to be a very similar species.

Ceratellopsis rickii has been described by Oudemans (as *Mucronella rickii*) in 1902 and is based on a specimen collected by Rick on *Asparagus* in the Netherlands. The basidiocarp was described as measuring 3–5 mm × 100–125 μm, and as having ellipsoid spores (7–9.3 × 3.5–4.7 μm) and probably monosporous basidia.

Later Donk (1933) gave a more detailed description of the species and placed it in *Cnazonaria*, a genus closely allied to or probably identical with *Typhula*. He found the basidiocarps to be fertile except for the sterile apex, the hyphae slightly thick-walled and with rare septa lacking clamps, the basidia two-spored and the spores slightly larger than given by Oudemans, viz. 9.5–10–(12) × 4.5–5.5 μm. The character 'sterile apex' leads to the genus *Ceratellopsis* and it was Corner (1950) who transferred the species to that genus. In a recent key to the Netherlands' species of clavarioid fungi, Maas Geesteranus (1976) furnished a description of that species under the genus *Ceratellopsis*.

The holotype, restudied only by Donk, is preserved in Leiden and has been re-examined by me. It consists of several basidiocarps arranged singly or in small groups, without a subiculum, acicular or narrowly subulate, straight or in most cases strongly curved, cream-coloured to ochraceous (white when fresh), gradually tapering towards the apex, without a distinct sterile apex in mature specimens (as in *Ceratellopsis*), stipe indistinct under a handlens (but because of the absence of basidia very distinct under a microscope), the whole basidiocarp glabrous, 1–3 mm long and 50–120 μm thick. Hyphal system dimitic with skeletal hyphae. Generative hyphae difficult to observe, cylindrical, not inflated, thin- to slightly thick-walled (0.2–0.4 μm), 3–3.5 μm wide, with clamps. Skeletal hyphae hyaline to very pale yellowish-brownish, 2.5–4 μm wide, with thick walls (0.5–1 μm) but never solid, cylindrical, not branched. Leptocystidia few or absent, clavate to irregularly subulate, 30–40 × 5.5–7 μm, slightly projecting (10–20 μm). Basidia 22–28 × 6–8 μm, always two-spored. Spores hyaline, ellipsoid, thin-walled, smooth, 10–12 × 4.8–5.6 μm, with distinct apiculus, not amyloid.

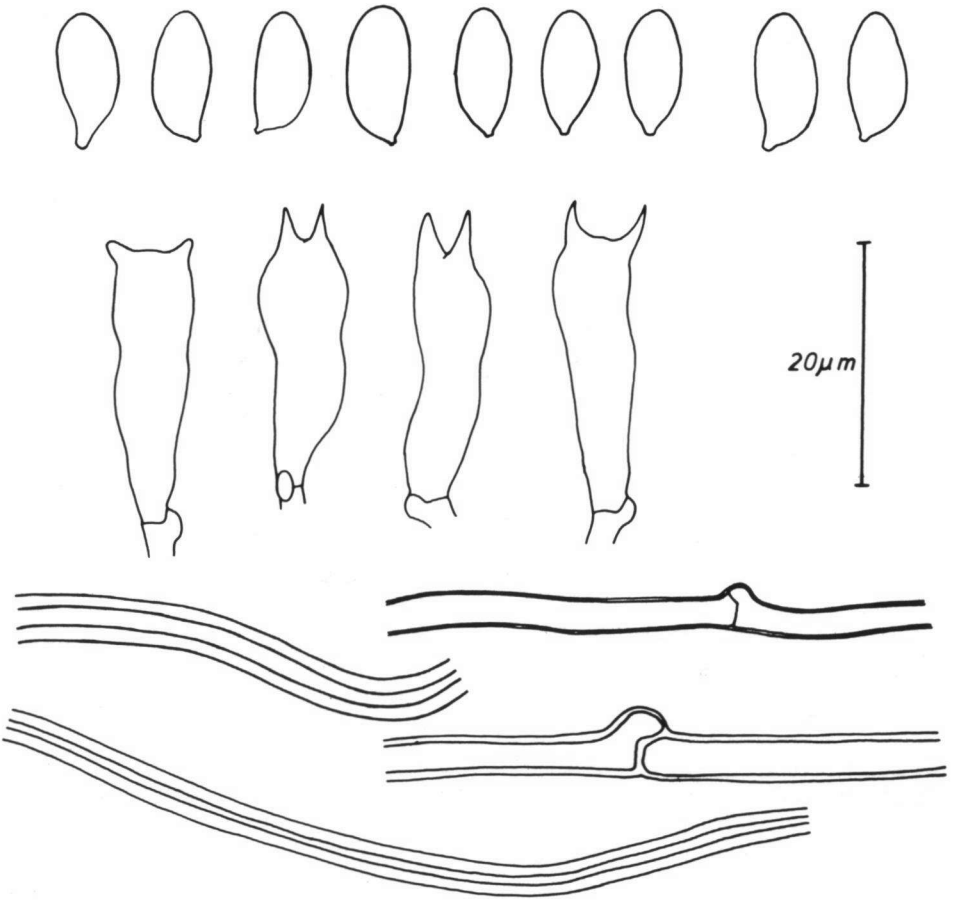

Fig. 1. *Mucronella rickii* Oud. — Holotype: spores, basidia, generative and skeletal hyphae.

Holotype: Netherlands, prov. Limburg, 'Valkenburg (L). Majo 1901. In caulibus herbarum variarum praesertim Asparagi off. *J. Rick*' (L: Herb. Oudemans).

The description leaves no doubt that this is typical *Pterula gracilis*, which among the European Pterulas is easily recognized because of its unbranched basidiocarps lacking a basal sclerotium, and its constantly two-spored basidia. The only similar species is *Pterula caricis-pendula* Corner which differs in having larger, normally four-spored basidia and larger spores.

PTERULA GRACILIS (Desm. & Berk. apud Berk.) Corner

Typhula gracilis Desm. & Berk. apud Berk. *in* Ann. Mag. nat. Hist. **1**: 202. pl. 7, fig. 1. 1838. — *Clavaria gracilis* (Desm. & Berk. apud Berk.) P. Karst. *in* Bidr. Känn. Finl. Nat. Folk **37**: 181. 1882; non ~ Pers. ex Fr. 1821; non ~ Bolt. ex Purt. 1821. — *Pistillaria gracilis* (Desm. & Berk. apud Berk.) Pat., Tab. anal. Fung. **2**: 30. 1887. — *Ceratella gracilis* (Desm. & Berk. apud Berk.) Pat. *in* J. de Bot. **3**: 36. 1889. — *Hirsutella gracilis* (Desm. & Berk. apud Berk.) Pat. Essai taxon, Hym.: 50. 1900. — *Pterula gracilis* (Desm. & Berk. apud Berk.) Corner, Monogr. *Clavaria*: 514. 1950.

Clavaria aculina Quél. *in* Compt.-Rend. Ass. franç. Avanç. Sci. **9**: 670, pl. 8, fig. 11. 1881. — *Pistillaria aculina* (Quél.) Pat., Tab. anal. Fung.: 29. 1887. — *Ceratella aculina* (Quél.) Pat., Hym. Eur.: 157. 1887. — *Cnazonaria aculina* (Quél.) Donk *in* Meded. Nederl. mycol. Ver. **22**: 97. 1933.

Typhula brunaudii Quél. *in* Compt.-Rend. Ass. franç. Avanç. Sci. **13**: 283. 1884.

Ceratella ferryi Quél. & Fantrey apud Roum. *in* Revue mycol. **15** (57): 15. 1893. — *Pistillaria ferryi* (Quél. & Fantrey apud Roum.) Sacc., Syll. Fung. **11**: 141. 1895.

Mucronella rickii Oud. *in* Beih. bot. Zbl. **11**: 525. 1902; *in* Ned. kruidk. Arch., ser. III, **2**: 667. 1902. — *Cnazonaria rickii* (Oud.) Donk *in* Meded. Nederl. mycol. Ver. **22**: 99. 1933. — *Ceratellopsis rickii* (Oud.) Corner, Monogr. *Clavaria:* 205. 1950.

Pistillaria equiseticola Boud. *in* Bull. Soc. mycol. France **33**: 13, pl. 4, fig. 5. 1917. — *Pistillaria aculina* subsp. *equiseticola* (Boud.) Bourd. & Galz., Hym. France: 138. 1928. — *Ceratellopsis equiseticola* (Boud.) Corner, Monogr. *Clavaria:* 204. 1950.

Pistillaria aculina subsp. *acicula* Bourd. & Galz., Hym. France: 139. 1928.

Pistillaria aculina subsp. *juncicola* Bourd. & Galz., Hym. France: 138. 1928.

Basidiocarp single or often more or less gregarious, seldom slightly fasciculate, normally without a mycelial patch on the substrate, erect, acicular to narrowly subulate, attenuate towards the obtuse or slightly filiform apex, often fertile at the top, 1–5–8 mm high and 80–250 µm thick, white when fresh, cream-coloured to ochraceous when dry, stipe indistinct (under a handlens), visible under the microscope as a sterile basal zone 100–300 × 30–60 µm.

Hyphal system dimitic with skeletal hyphae. Generative hyphae hyaline, cylindrical in the trama, often torulose and short-celled in the thin subhymenium where they are densely arranged, in the trama closely interwoven with the more abundant skeletal hyphae, branching from or near the clamps, thin- to slightly thick-walled (0.2–0.4 µm), 2–4(–5) µm wide, with smooth surface; clamps at all primary septa; secondary septa not rare; contents homogeneous or slightly guttulate. Skeletal hyphae pale yellowish brown, often becoming hyaline in KOH but remaining slightly coloured in lactophenol and Melzer's, cylindrical, parallel and densely arranged throughout the basidiocarp, unbranched, somewhat thick-walled (0.4–0.8 µm), but never solid, 2–3 µm wide, with smooth surface; contents homogeneous. Cystidia (leptocystidia) lacking or rare, of hymenial origin, hyaline, subulate or with slightly moniliform apex, 25–50 × 6–8 µm, thin-walled, smooth, with basal clamp, not or only slightly projecting. Basidia hyaline, slightly suburniform to clavate when mature, with or without a lateral outgrowth at the base, somewhat stalked or sessile; young basidia narrowly clavate, 25–40 × 6–8 µm, thin-walled, smooth, always with basal clamp, with homogeneous contents, and with two subulate sterigmata. Spores

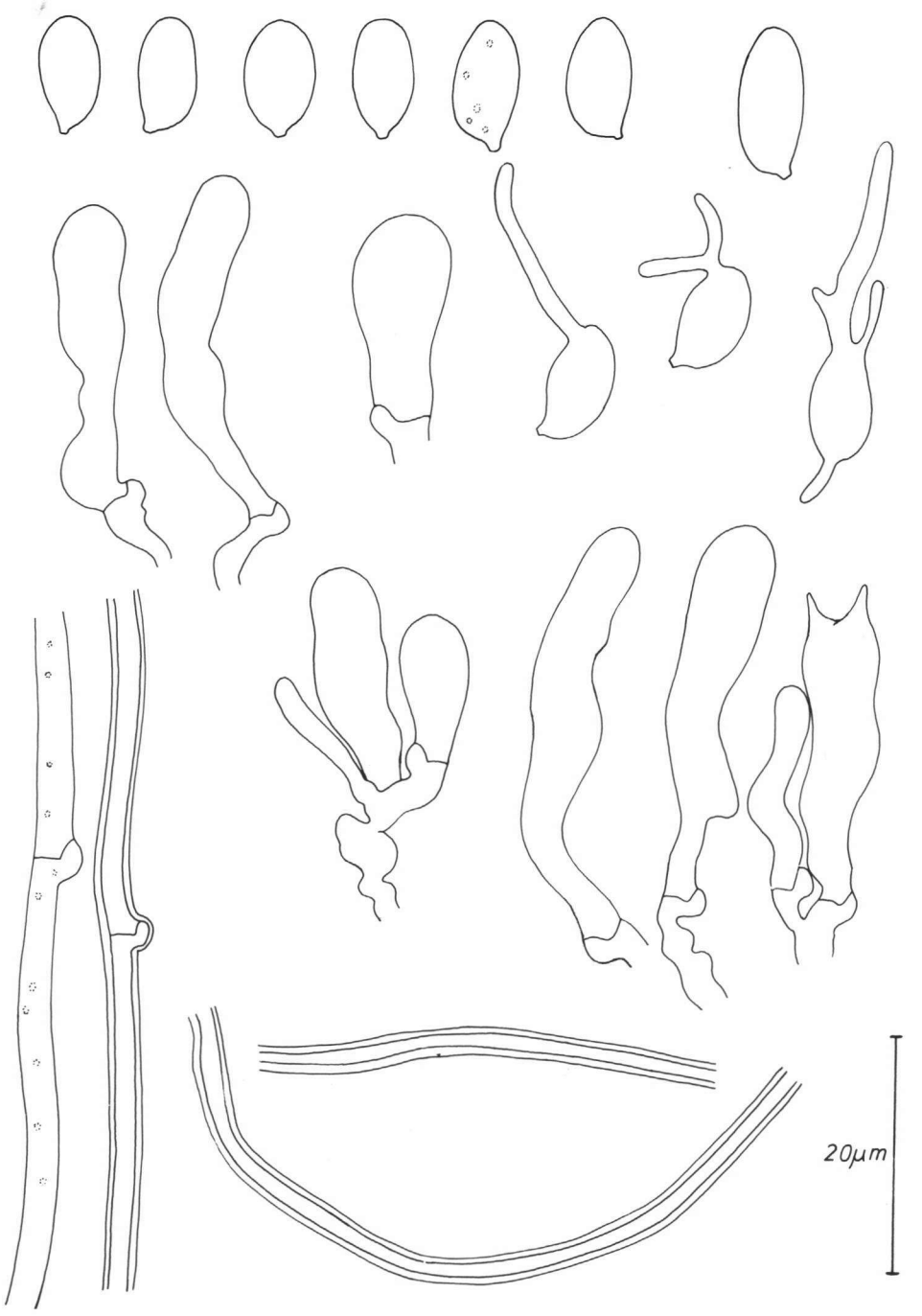

Fig. 2. *Pterula gracilis*. — *Bas 2446a*: spores, germinating spores, basidia, generative and skeletal hyphae.

hyaline, ellipsoid, thin-walled, smooth, 10–14 × 5.5–6.5 μm, with distinct apiculus, with contents homogeneous or slightly guttulate, neither amyloid, nor dextrinoid or cyanophilous.

SUBSTRATE. — Saprophytic on old stems and leaves of e.g. *Asparagus*, *Carex*, *Cladium*, *Equisetum*, *Eupatorium*, *Iris*, *Juncus*, *Typha*, also on straw in greenhouses, mostly found at wet or swampy places.

CHEMICAL REACTIONS.—No part of the basidiocarp is amyloid, dextrinoid, or cyanophilous.

GERMINATION.—Spores often germinating with only one cylindrical germ-tube opposite to the apiculus, but in some cases with two to three from other places inclusive of the apiculus area. Germ-tube mostly unbranched for a considerable length, occasionally branched already near the spore surface.

DISTRIBUTION.—Recorded from Czechoslovakia, France, Great Britain and the Netherlands.

MATERIAL STUDIED.—NETHERLANDS: prov. Noord-Brabant, Deurne, Peel W. of Helenaveen, 23.IX.1961, *C. Bas 2445a* (L); prov. Utrecht, Kortenhoef, 14.III.1968, *J. Daams* (L); prov. Noord-Holland, 's-Graveland, 24.X.1966 and 7.II.1968, *J. Daams* (L).

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