PROBLEMS AROUND A NEW MUCRONELLA

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Oegstgeest

Mucronella styriaca Maas G., *spec. nov.*[1]

Habitu coloreque *Mucronellae flavae* Corner similis, ab hac tamen diversa subiculo manifesto, proventu caespitoso, sterigmatibus longioribus, sporis majoribus, cystidiis hymenialibus. Holotypus in GZU, fragmentum typi in L.

Fungus resembling by its habit and colour *Mucronella flava* Corner, from which it differs in possessing a well-developed subiculum, caespitose growth, longer sterigmata, larger spores, and hymenial cystidia.

Corner (1953: 356) mentioned the presence of abundant crystals in the tissue and on the surface of the stem of *M. flava*. There are none in *M. styriaca*.

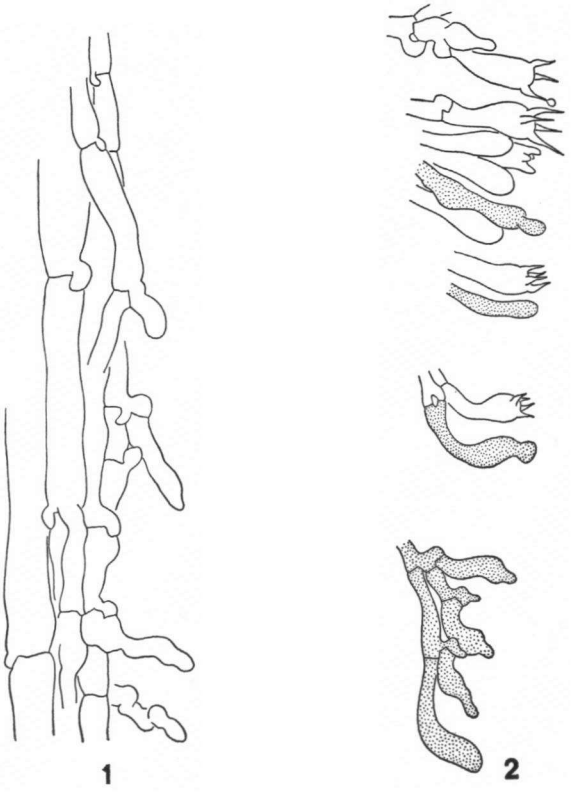
Basidiome consisting of spines hanging down from a subiculum. Subiculum very sparse or more or less densely arachnoid to almost pulverulent-tomentose, yellowish white, producing stipitate spines. Stipe (dried) up to about 1 mm long, 0.1 mm wide, cylindrical, minutely powdered, whitish to corneous-translucent. Spines (dried) up to 2 mm long, up to 0.2 mm wide, pointing downwards, caespitose, more rarely growing separately, simple or coalesced or furcate at the base, subulate, with acute apex, yellowish white to pale straw yellow (fresh: vitellin with paler tips).

Context of the spines monomitic, made up of generative hyphae only. Subicular hyphae up to 9 μm wide, moderately thick-walled, with clamp-connections. Generative hyphae 3.6–10 μm wide, thin-walled, with clamp-connections, branched, anastomosing, somewhat inflating, firmly coherent, in the stipe becoming narrower towards the sides and producing hair-like excrescences (Fig. 1). Basidia 20–25 × 6.5–7 μm, clavate, with 4 sterigmata up to 7 μm long, with basal clamp (Fig. 2). Spores 5.5–7.3 × 3.8–4.3 μm, pip-shaped and often slightly triangular, smooth, colourless, without oil-drops, pale blue amyloid. Cystidia of hymenial origin, thin-walled, somewhat narrower than the basidia and little or not projecting (Fig. 2), contrasting with the latter in that their contents are stained a different shade of red in Congo Red, not becoming stained by sulfo-benzaldehyde.

Holotype: '[Österreich,] Ostalpen, Koralpe, Steiermark: Garanas bei Schwanberg, nahe der Pauritsch Kapelle im Wald, ca. 640 m', 26 Sept. 1976, *S. Michelitsch*, apparently growing on very rotten wood (GZU; fragment of holotype in L).

In trying to identify the present fungus, Corner's keys (1970) left no other choice but to regard the species as a member of *Mucronella*, although this assignment raised some questions, the most important one being that this genus was reputed normally to have no cystidia. These questions, as so often happens, proved to be tied to others,

[1] Etymology: *styriaca*, derived from Styria, Steiermark.



Figs. 1–2. *Mucronella styriaca* (holotype). — 1. Outer part of the stipe, showing hair-like excrescences. — 2. Detail of the hymenium with basidia, cystidia, and sterile cells near the tip of the spine. (Both Figs., × 700.)

of which, I am sure, Donk must have been aware. He may have considered it inappropriate to go into greater detail at the time (1971), but the matter seems to me to be sufficiently important to be outlined on the following pages.

Corner (1950: 95) said of some of the species of *Mucronella* that 'their structure is the same as in the truly Clavarioid fruit-bodies of Ceratellopsis, which differ in growing upward instead of downward as those of Mucronella'. It was too early, as yet, to formulate a more definite statement.

Donk (1964: 252) placed *Mucronella* with the Clavariaceae, but there is a telltale line on p. 270 indicating that he obviously had thought of incorporating the genus into the Hericiaceae, but refrained from doing so because *Mucronella* lacked a 'conspicuous gloeocystidial system ... taken to be of primary importance [in characterizing the Hericiaceae]'.

At this juncture it seems appropriate to reproduce Donk's (1964: 233) definition of gloeocystidia: 'Gloeocystidia are usually more or less inflated, often ventricose or even vesicular bodies clearly differentiated from the hyphae from which they originate not only in their contents but also in diameter and shape'. He admitted, however, that gloeocystidia may also be hypha-like, with gloeocystidia-like terminations in the hymenium. With this emendation he introduced an element that would cause him to deviate from his original concepts.

In his card index I found that Donk evidently had changed his mind later on and had entered not only *Mucronella* but also *Amylodontia parmastii* Nikol. among the genera of the Hericiaceae. The Latin description of the latter species (Nikolajeva, 1967: 238)—the specific epithet of which I would have preferred to spell *parmastoi*—mentions the rare presence of cystidia. The true nature of these organs greatly puzzled Nikolajeva, as is borne out by the sentence: 'Species ... *Hericio fragili* (Fr.) Nikol. [=*Dentipellis fragilis* (Pers. ex Fr.) Donk] simillima est, sed gloeocystidiis nullis (nunquam bene evolutis) ... differt'.

The two examples mentioned above show that Donk no longer felt any scruples in incorporating into the Hericiaceae (a family he had proposed himself) genera which lacked an essential familial character—the gloeocystidial system. But there is more.

Corner (1970: 171–173) similarly placed *Mucronella* in the Hericiaceae, stating of the genus that 'there are no gloeocystidia or well-formed cystidia'. The latter part clearly refers to a description given by Malençon but is open to comment. Malençon (1958: 321), in redescribing the species Corner was to rename *Mucronella bresadolae* (Quél.) Corner (1970: 172), found the species to possess 'cystidioles ... tantôt rares ou même absentes, tantôt très nombreuses, d'origine hyménienne et répondant à des basides stériles étirées en poils étroits, simples ... demeurant inclus entre les basides ou dépassant l'hyménium de 10–20 μ'.

Firstly, even if it is true that the cystidia in *M. bresadolae* are very slender indeed and may with some imagination be compared to sterile basidia, this certainly does not apply in the case of *M. styriaca*. Secondly, in her description of *Amylodontia parmastii* Nikolajeva observed that the hyphae in the apex of the spines were sometimes filled with yellow matter and terminated with swollen tips. Thirdly, Corner (1970: 170) in a figure drawn after Siberian material (Parmasto 12993) showed the hymenial details of a fungus which, although possessing gloeocystidia, differed from *Dentipratulum bialoviesense* as described by Domański (1965: 7) in lacking a gloeoplerous[2] system, of which in general the gloeocystidia constitute the terminal ends.

The above three points, in connection with the aspect of the cystidia of *M. styriaca* as shown in Fig. 2, strengthen my opinion that in some of their characters the smaller-sized Hericiaceae display a truly remarkable series of smoothly graded steps: well-developed gloeoplerous hyphae terminating in gloeocystidia (*Dentipellis* Donk, *Dentipratulum* Domański); no gloeoplerous hyphae but unambiguous gloeocystidia

[2] The term 'gloeoplerous hyphae' was coined by Donk (1971: 18).

present (*Dentipratulum* sp.: Parmasto 12993); gloeocystidia-like hyphae present among the basidia (*Mucronella styriaca*, *Amylodontia* Nikol.); basidia mixed with sterile organs which do not resemble gloeocystidia and which are numerous or rare or may be absent altogether (*Mucronella bresadolae*); hymenium with no cystidia at all (*Mucronella* Fr.).

There are yet other series in this group, although they may prove to be of lesser importance, as e.g. basidiome made up of a single spine (*Mucronella*, Corner, 1950: 95)—basidiome consisting of clustered or branched spines (*M. styriaca*); without a subiculum (*Dentipratulum*) — with a thin, arachnoid subiculum (some species of *Mucronella*)—with a dense, almost tomentose subiculum (*M. styriaca*)—with a thin, woolly subiculum and a long rooting base penetrating the substratum (*M. bresadolae*) —consisting of a membranous basal layer (*Dentipellis*, *Amylodontia*).

Overlooking these multiple series, I am under the steadily growing impression that not all of the genera so far mentioned constitute separate taxa. *Dentipratulum*, by way of example, could easily be merged with *Dentipellis*, from which it merely differs in lacking a membranous basal layer, a feature that in my eyes is of specific rather than generic significance. Further considerations, however, seem to make it inadvisable as yet to take this step, since it eventually would lead to all three genera —*Amylodontia*, *Dentipellis*, and *Dentipratulum*—becoming united with *Mucronella*. Keeping in mind moreover (1) that *Mucronella bresadolae* with its long rooting base 'may well be regarded as an intermediate' (Corner, 1970: 173) and (2) how little it would actually take to amalgamate a greatly enlarged *Mucronella* (with correspondingly vaguer generic limits) with *Hericium* Pers. ex S. F. Gray, it becomes clear that here looms the other extreme, and certainly one which is equally unsatisfactory.

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