

NOTES ON MARASMIUS—I

Marasmius pseudocaricis spec. nov. and the status of Gloiocephala Mass.

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A new caricicolous species of *Marasmius*, viz. *M. pseudocaricis*, is described and its taxonomic position within the genus *Marasmius* is discussed. As a consequence the genus *Gloiocephala* Mass. is reduced to a section of *Marasmius*, close to sect. *Epiphylli*. A key is given to all species known from the temperate northern hemisphere.

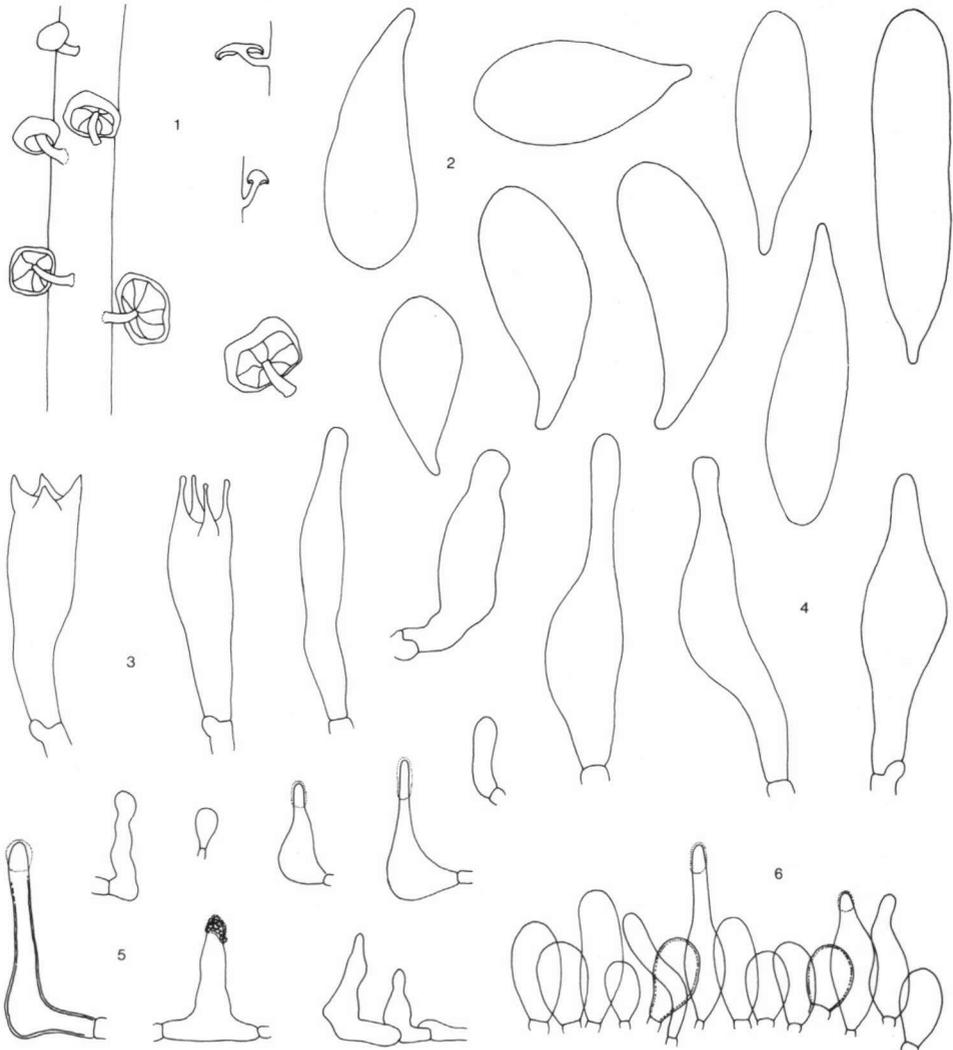
While collecting agarics in Scotland during the rather dry season of 1981, I came across a very small marasmiod fungus growing on dead leaves of a species of *Carex* at the edge of a half-dried pond. It appeared to be a new species closely related to *Marasmius caricis* P. Karst. and is described below.

Marasmius pseudocaricis Noordeloos, spec. nov.—Figs. 1-6

A *Marasmius caricis* P. Karst. differt in pileo ochraceo-roseo et basidiis tetrasporigeris. — Typus: *M. E. Noordeloos 1421*, 4 IX 1981, 'at edge of pond, 200 m NW. of Kindrogan Field Station, Enochdhu, Perthshire, Scotland' (holotypus, L; isotypus, E).

Fruitbodies very small, gregarious on putrescent leaves of a *Carex* species. Pileus 1-3 mm broad, hemispherical to convex, sometimes slightly radially wrinkled, with involute margin, not hygrophanous, not translucent, pinkish-ochraceous (Muns. 7.5 YR 7/6-6/4), slightly paler creamy to whitish at margin, dull. Lamellae 3-7; short lamellulae absent, usually \pm well-developed, not interveining or anastomosing, rarely \pm reduced, broadly adnate, thickish, pallid. Stipe 0.5-2.5 \times 0.5-1 mm, always distinct, central, rarely excentric, never lateral, pale pinkish-ochraceous, darker at base, entirely minutely white pruinose, base almost insititious, but slightly disc-shaped and woolly-tomentose, Flesh relatively thick in pileus, not distinctly gelatinised, white or creamy. Smell absent.

Spores 11.5-20(-22) \times 5.5-7 μ m, very variable in size and shape, from more or less obovoid to fusoid, more rarely subcylindrical (many ranging from 12-16 \times 5.5-6.5 μ m), usually inequilateral, with broadly rounded apex and tapering towards apiculus, rather thin-walled, usually with one large and several small oil-drops, inamyloid, not cyanophilous. Basidia 24-36 \times 8-16.7 μ m, 4-spored, with clamp. Cheilocystidia scattered among the basidia 27-56 \times 5.5-12 μ m, slenderly fusiform to lageniform, thin-walled, sometimes with hyalinous, granular mucous cap covering the tip. Hymenophoral trama irregular, non-gelatinised, made up of cylindrical hyphae. Pileipellis hymeniform, made up of more or less globose cells, 19-35 \times 9-19 μ m, often with slightly thickened, hyalinous or yellowish walls, interspersed with thin- or thickwalled, clavate-flexuose to lageniform pileocystidia, 28-62 \times 7.5-19 μ m,



Figs. 1-6. *Marasmius pseudocaricis* — 1. Fruitbodies ($\times 5$). — 2. Spores ($\times 2000$). — 3. Basidia ($\times 1000$). — 4. Cheilocystidia ($\times 1000$). — 5. Caulocystidia ($\times 500$). — 6. Pileipellis ($\times 500$). (All figs. from holotype.)

sometimes encrusted with yellowish pigment, rarely subcapitate, sometimes with granular mucous cap covering the tip. Pileitrama regular, made up of 2.5-7 μm wide, more or less cylindrical hyphae with hardly gelatinised, hyaline and colourless walls. Stipitepellis a compact cutis with numerous rather irregularly shaped caulocystidia, 12-90 \times 7-19 μm with acute or rounded, rarely subcapitate tip, thin- or thick-walled, colourless or yellowish, frequently with a hyaline mucous cap covering the tip. No part of the carpophore amyloid or dextrinoid.

HABITAT.—At the edge of half dried pond, gregarious on putrescent leaves of *Carex* sp.
 COLLECTION STUDIED.—Scotland, Perthshire, Enochdhu, pond along road about 200 m NW. of Kindrogan Field Station, 4 Sept. 1981, *M. E. Noordeloos 1421* (holotype, L; isotype, E).

Marasmius pseudocaricis differs from *M. caricis*, which grows in similar habitats, by the distinctly coloured pileus and the constantly 4-spored basidia; the last character probably causing the smaller spore-size in *M. pseudocaricis*. When fresh the colour and surface of *M. pseudocaricis* strongly reminds those of *Marasmiellus ramealis* (Bolt. ex Fr.) Sing.

Marasmius caricis and *M. pseudocaricis* belong to a small group of species that were placed by Bas (1961) and Singer (1975, 1976) in the genus *Gloiocephala* Mass. Singer (l.c.) placed in this genus all marasmoid species that differed from *Marasmius* sect. *Epiphylli* in one or more of the following characters: (1) The presence of metuloid and/or capitate and/or pigmented pileocystidia ('oleocystidia'). (2) A pigmented pileus. (3) The presence of hymenial cystidia which are not fusiform and not thin-walled. (4) A reduced carpophore. (5) The presence of a gelatinous matrix in the pileitrama.

Bas (l.c.) already expressed his doubts as to the value of these criteria. Dr. A. E. Jansen and myself, while studying marasmoid genera in the Netherlands during the years 1972–1975, found new arguments, supplemented by data in the publications of Gilliam (1975, 1976) on Northamerican *Marasmi*, to reduce *Gloiocephala* to the synonymy of *Marasmius*.—

(1) Pileocystidia are a normal character in sect. *Epiphylli* and in other sections of *Marasmius*, such as in sect. *Hygrometrici*, and their variation with thin, thick, and even encrusted walls (for example in *M. epiphylloides* and *M. recubans*) does not seem to be different from that found in *M. caricis* and *M. menieri*. Very interesting in that respect is also *M. epifagus*, described by Gilliam (1975: 821) from the U.S.A. This species, which undoubtedly belongs to sect. *Epiphylli*, has pileocystidia which have coloured projections and in addition a dextrinoid cell-content, similar to that found in *M. menieri*.

(2) A pigmented pileus occurs in *Marasmius epifagus*, a recently described member of sect. *Epiphylli* mentioned above. In connection with this it is interesting that Redhead (1981: 574–476) described a form of *M. menieri* from Manitoba, Canada, with an almost white pileus, due to the relative scarcity of pigmented cells.

(3) Thick-walled, almost setiform hymenial cystidia are not restricted to *Gloiocephala*. They are also found in sect. *Epiphylli*, e.g. in *M. epiphylloides* and *M. epifagus*.

(4) Reduced carpophores with fold-like and often anastomosing lamellae and a short, almost absent, excentric or lateral stipe can be observed in many genera of tribe *Marasmiaceae* Fayod (See Singer, 1975: 341). This can be observed in *Marasmius* sect. *Epiphylli* (*M. tremulae* and *M. epiphyllus*) and in sect. *Neosessiles* Sing. and cannot be considered a major argument in separating genera.

(5) Although a gelatinized trama seems to be a diagnostic character of great value for the distinction of some genera, it does not seem to be very constant in other genera. It may be present or absent e.g. in *Micromphale* and *Marasmiellus*. Also in *Gloiocephala* this character is very variable; in *M. pseudocaricis* and *M. caricis* it is almost absent. This was the main reason Redhead (1981: 580) placed *M. caricis* in the genus *Marasmius* and retained *M. menieri* in *Gloiocephala*.

(6) *Marasmius epiphylloides* shows a metachromatic reaction in the hymenium which resembles very much that described from *M. menieri* by Bas (l.c.).

Considering the arguments listed above there seem to be insufficient reasons for maintaining *Gloiocephala* as an independent genus.

Therefore we propose the following new combination: **Marasmius** Fr. sect. **Gloiocephala** (Mass.) A. E. Jansen & Noordeloos, *comb. & stat. nov.* — Basionym: *Gloiocephala* Mass. in *Grevillea* 21: 34. 1892.

We prefer to treat the species concerned as a section within *Marasmius*, close to section *Epiphylli*, from which it differs mainly in the relatively more reduced carpophores, the development of a basal mycelium and the occurrence of very long (up to 450 µm) strigose hairs on the pileus in some species.

KEY TO THE SPECIES OF MARASMIUS SECT. GLOIOCEPHALA KNOWN
FROM THE TEMPERATE NORTHERN HEMISPHERE

- 1a. Pileus white to pale ochraceous 2
- b. Pileus distinctly pigmented yellow to ochraceous, pale brown or reddish brown 4
- 2a. Stipe well-developed; pileipellis consisting of only one kind of cells and in addition non-capitate pileocystidia 3
- b. Stipe curved and often excentric; pileipellis with thin- and thick-walled cells and in addition capitate pileocystidia; on *Carex* *M. menieri* forma (see Redhead 1981: 574)
- 3a. Pileocystidia 32–53×7–15 µm, cylindrical to slender conical with narrow but rounded apex; fold-like gills with cheilocystidia present; on *Carex* *M. caricis*
- b. Pileocystidia 50–120×6–18 µm; with filiform apical appendage; hymenium smooth or at best with some folds or wrinkles; cheilocystidia absent; on *Carex*
M. menieri sensu Corner (*Gloiocephala* sp. with Bas)
- 4a. Lamellae merulioid; pileus yellow then ochraceous; on *Carex* in Canada *M. flavomerulius* Redhead
- b. Lamellae distinctly developed or fold-like, sometimes anastomosing but never merulioid; pileus without yellow tinges 5
- 5a. Pileus pale brown to reddish-ochraceous brown; stipe strongly reduced, almost always excentric or lateral; pileipellis of two types of cells with in addition, at least at margin, capitate pileocystidia; on *Typha* *M. menieri*
- b. Pileus pinkish-ochraceous; stipe almost always central, sometimes slightly excentric but never lateral, pileipellis with one type of cells and in addition fusiform to lageniform, never capitate pileocystidia; on *Carex* *M. pseudocaricis*

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