

MALLOCHIA, A NEW GENUS OF THE EUROTIALES

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Pseudoarachnietus echinulatus is classified in a new genus *Mallochia* of the Eurotiaceae. It also shows affinities to *Narasimhella* (Gymnoasceae) and *Eleutherascus* (Ascodesmidaceae).

In 1976, Dr. Sultan Ahmad (Lahore, Pakistan) sent a number of samples of fungal material collected on decaying plant material. Specimens identified as *Chaetomium* spec. were incubated in moist chambers at 28°C. The isolated *Chaetomium* species are discussed elsewhere (von Arx & al., 1986). Among the other fungi which could be isolated was a cellulose decomposing ascomycete, which was identified as *Pseudoarachnietus echinulatus* Dutta & Ghosh. The isolate was compared with a subculture of the type (CBS 278.64) and with a culture received from Dr. G. F. Orr (ATCC 24534 = CBS 168.73).

The description of *P. echinulatus* given by Dutta & al. (1963) is rather inadequate. They described and depicted stalked asci and spherical, echinulate ascospores. In fact the asci develop from conjugating hyphal tips or from croziers and the ascospores are distinctly dorsiventrally flattened, with an equatorial furrow. Von Arx (1971) synonymized *Pseudoarachnietus* with *Arachnietus* and transferred *P. echinulatus* to *Amauroascus*. All typical species of this genus have spherical, reticulate or echinulate, pigmented ascospores. Consequently, *P. echinulatus* has to be classified in a separate genus, which is dedicated to our colleague Dr. D. Malloch (Toronto, Canada).

MALLOCHIA v. Arx & Samson, *gen. nov.*

Ascomata absunt; ascogonia in mycelio aëria oriunda, clavata vel contorta; asci singuli vel pauci proferunt, obovati vel subglobosi, tenui tunicati, plerumque octospori; ascosporeae aseptatae, dorsiventrali compressae, bivolvatae, spinosae, cum 2 cristis aequatorialibus; paraphyses absunt; conidia absunt. — Typus: *Mallochia echinulata* (Dutta & Ghosh) v. Arx & Samson.

Mallochia echinulata (Dutta & Ghosh) v. Arx & Samson, *comb. nov.* — Figs. 1, 2

Pseudoarachnietus echinulatus Dutta & Ghosh in *Mycologia* 55: 775. 1963 (basonym). — *Amauroascus echinulatus* (Dutta & Ghosh) v. Arx in *Persoonia* 6: 375. 1971.

Colonies on cornmeal agar at 28°C with a daily growth rate of 2–3 mm, with a white or pale aerial mycelium, becoming yellow or pale ochraceous with age, without coloured exudates; expanding hyphae septate, rather thick-walled, hyaline, 4–6 µm broad, often

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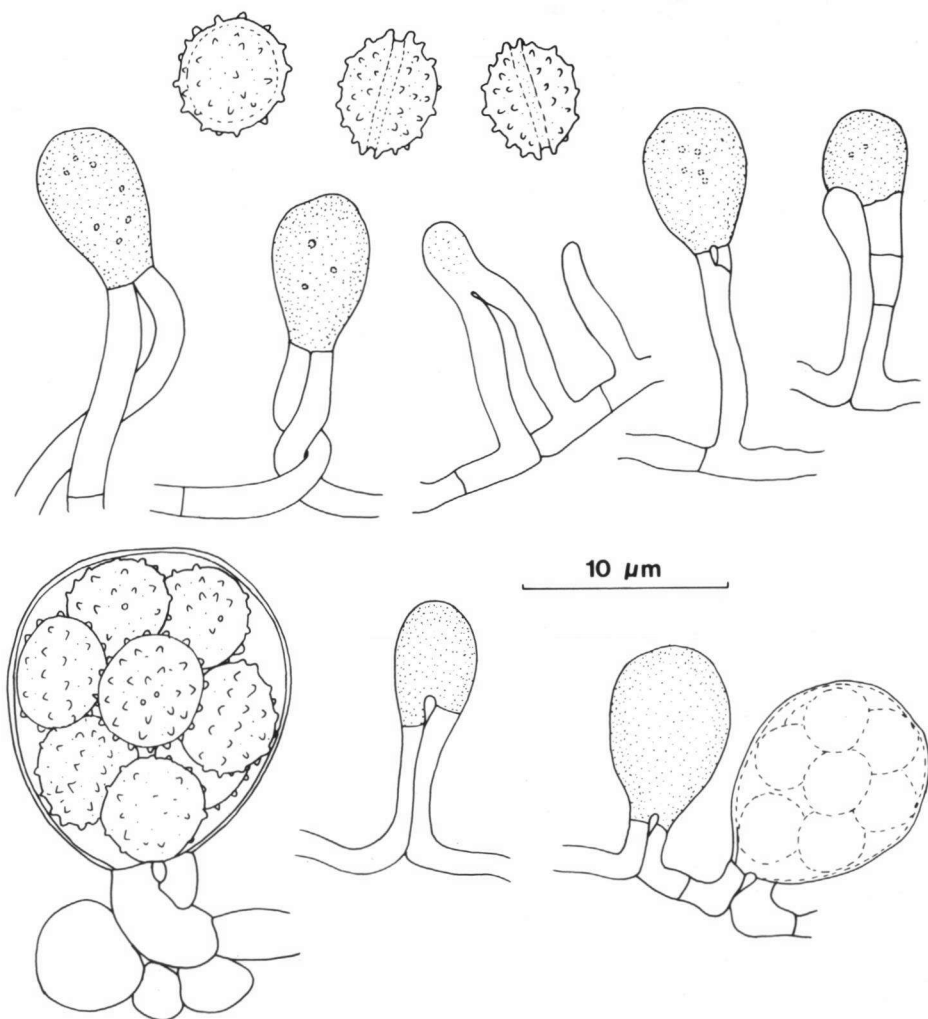


Fig. 1. *Mallochia echinulata*, initials, immature and mature asci, and ascospores (from CBS 139.86).

with some swollen cells; aerial hyphae septate, hyaline, $1.5\text{--}2.5\text{ }\mu\text{m}$ broad; ascigerous initials formed in the aerial mycelium, composed of two erect, conjugating hyphae, occasionally twisted at the base, usually clavate, septate, or composed of a clavate cell surrounded by a septate coil; asci single or in small clusters, formed from conjugating hyphal tips or from croziers, spherical, obpyriform or obovate, with an attenuated and truncate base, with a rather persistent wall, usually 8-spored, $13\text{--}18 \times 10\text{--}14\text{ }\mu\text{m}$; ascospores

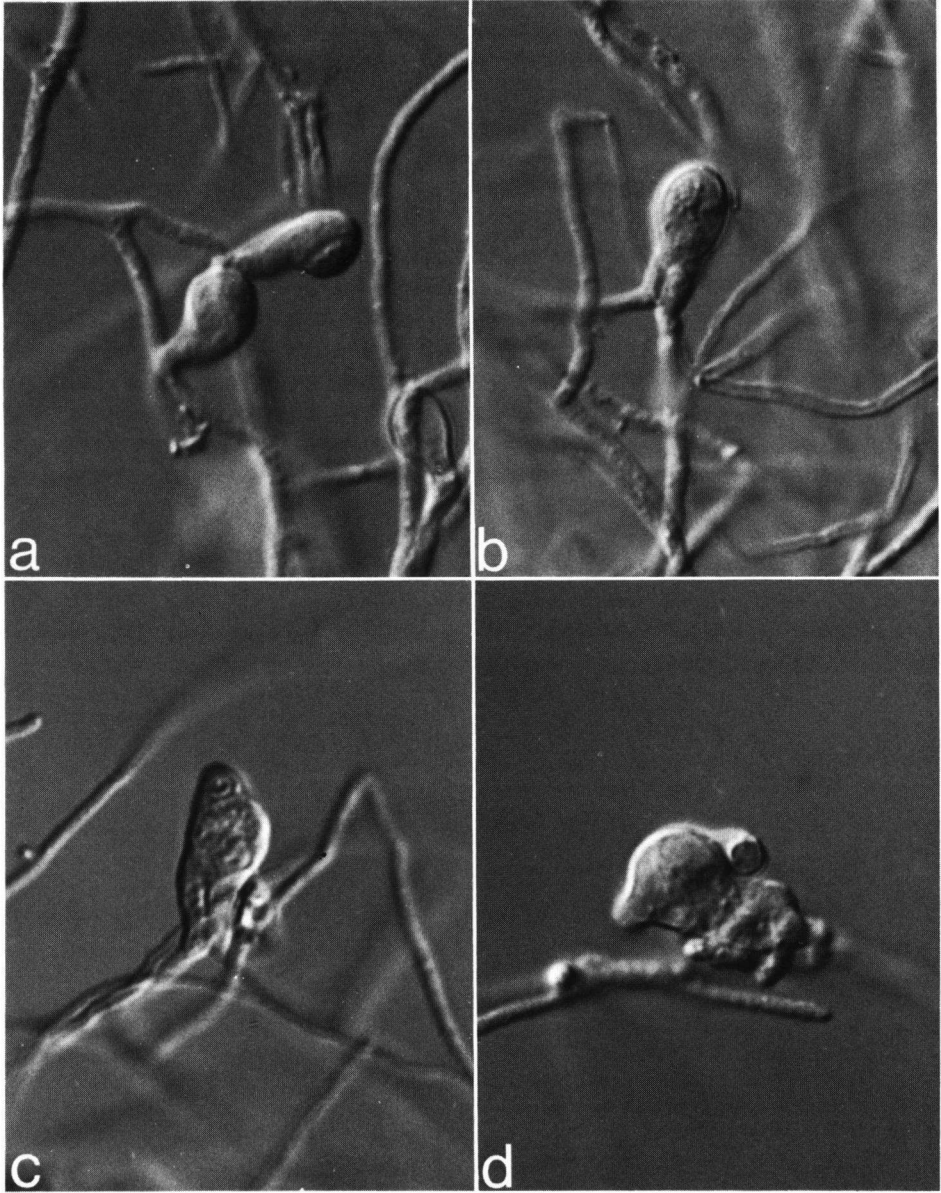


Fig. 2. *Mallochia echinulata* — a–d. Development of ascigerous initials $\times 1400$. Note the characteristic conjugating hyphae in Figs. b, c.

dorsiventrally flattened, bivalvate, roundish in face view, elliptical in lateral view, aseptate, with an equatorial furrow surrounded by two rims, covered with conical, blunt spines, hyaline or pale yellow when mature, $5-6.5 \times 4-5 \mu\text{m}$.

The description given above is based on a fresh isolate (CBS 139.86, ex plant debris, Lahore, Pakistan).

The ascospores of *Mallochia echinulata* are reminiscent of those of the Eurotiaceae, especially of species classified in *Emericella* and *Neosartorya* which include *Aspergillus* anamorphs. In these species, the asci develop in distinct asomata and usually are catenate and not formed from croziers. *Mallochia echinulata* shows also affinities to *Narasimhella* and *Eleutherascus*. In *Narasimhella poonensis* Thirumalachar & Mathur, the type species of the genus *Narasimhella*, the obovate asci also develop from croziers in a superficial mycelium, but the ascospores are unequally bivalvate and smooth, except some granulae often visible along the equatorial rim. *Eleutherascus lectardii* (Nicot) v. Arx, the type species of *Eleutherascus*, differs from *M. echinulata* by larger (about $10 \mu\text{m}$ diam.), spherical, spiny ascospores without equatorial furrow or rim. Von Arx (1971) classified *Eleutherascus* in the Pezizales.

Currah (1985) synonymized *Narasimhella* with *Gymnascella*. Both genera, however, are not closely related. *Gymnascella aurantiaca* Peck, the type species of the genus *Gymnascella*, has discoid (not bivalvate), pigmented ascospores without equatorial furrows or thickenings, and the asci are spherical and do not develop from croziers, but by budding. *Gymnascella aurantiaca* is congeneric with *Gymnoascus reessii* Baranetzki, the type of *Gymnoascus*, which has similar asci and similar, slightly smaller ascospores. Peridial structures are unknown in *Narasimhella* species.

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