Notes RBG Edinb. 41(2): 395–399 (1983)

A NEW SPECIES OF PANAEOLOPSIS SINGER

ROY WATLING & TONY YOUNG*

ABSTRACT. A new species of *Panaeolopsis* (Coprinaceae), *P. nirimbii* Watling & Young, is described from Australia.

The genus *Panaeolopsis* was introduced by Singer (1969) to accommodate a single gasteroid basidiomycete related to the black-spored agarics placed in *Panaeolus* (Fries) Quélet. Singer in the generic description compared his new genus to *Montagnea* Fries, with which it has the black-brown basidiospores in common, and to *Galeropsis* Velenovský & Dvořak, with which it has similar basidiome-shape but more prominent hymeniform pileipellis and darker basidiospores.

Panaeolopsis sanmartiana Singer is the type of the genus and has been recorded from two localities in Argentina. Singer (1969) hinted at the presence of a second taxon in Brazil, which he later described (1976). During 1981, and again in 1982, a third taxon of this genus was collected in the Sydney region of New South Wales, Australia. This is the first time the genus has been recorded outside S America and the newly proposed species is the subject of this communication.

Panaeolopsis nirimbii Watling & Young, **sp. nov.** Fig. 1 & 2.

A *P. brasiliensi* Singer cystidiis angustioribus et fortiter pedicellatis, basiodiosporis minus subglobosis, basidioma brunnea (nec atrogrisea), pileo sine mucrone apicali et habitu multo robustiore differt; a *P. sanmartianae* Singer basidiosporis manifeste lenticulato-mitriformibus et basidioma nigro-brunnea recedit.

Pileus 10–15 × 20mm, fusiform-ellipsoid with margin firmly adpressed to stipe and forming distinct sterile flap (2mm broad) around stipe, not expanding or expanding slowly and only slightly, pallid fawn except for darker marginal band; margin lacking velar remnants. *Stipe* 30–50 × 2–3mm, cylindric, whitish or pale brown (fulvous), pruinose but soon becoming smooth, dry, solid. *Gills* crowded, ascending, greyish black with distinctly paler margin. *Flesh* thin, whitish to pallid brown. *Basidiospores* 12–14 × 8.5–9.5 × 7–7.5μm, lenticular-mitriform, elliptic in side-view, truncate because of large, distinct very slightly excentric germ-pore, smooth, black tinted bronze s.m., not discolouring in conc. sulphuric acid. *Basidia* 2- or 4-spored, 22–25 × 11–12μm, with prominent sterigmata. *Cheilocystidia* in a broad strongly adhering band, 24.5–36.5 × 5–6.5μm, ampullaceous to fusiform with cylindric (4.5–5.5μm) neck and obtuse apex, hyaline, thin-walled, frequently very strongly pedicellate; *pleurocystidia* apparently absent. *Hymenophoral trama* regular of narrow, slightly coloured (fulvous) interwoven hyphae 2.5–5μm broad; sub-hymenium and lateral strata reduced. *Pileipellis* a palisadoderm of globose or isodiametric, hyaline, thin-walled cells, 15–21μm broad; pilocystidia absent. *Stipe cortex*

* Lieut. Cdr. A. M. Young, Wardroom, HMAS Nirimba, Quakers' Hill, New South Wales 2764, Australia.

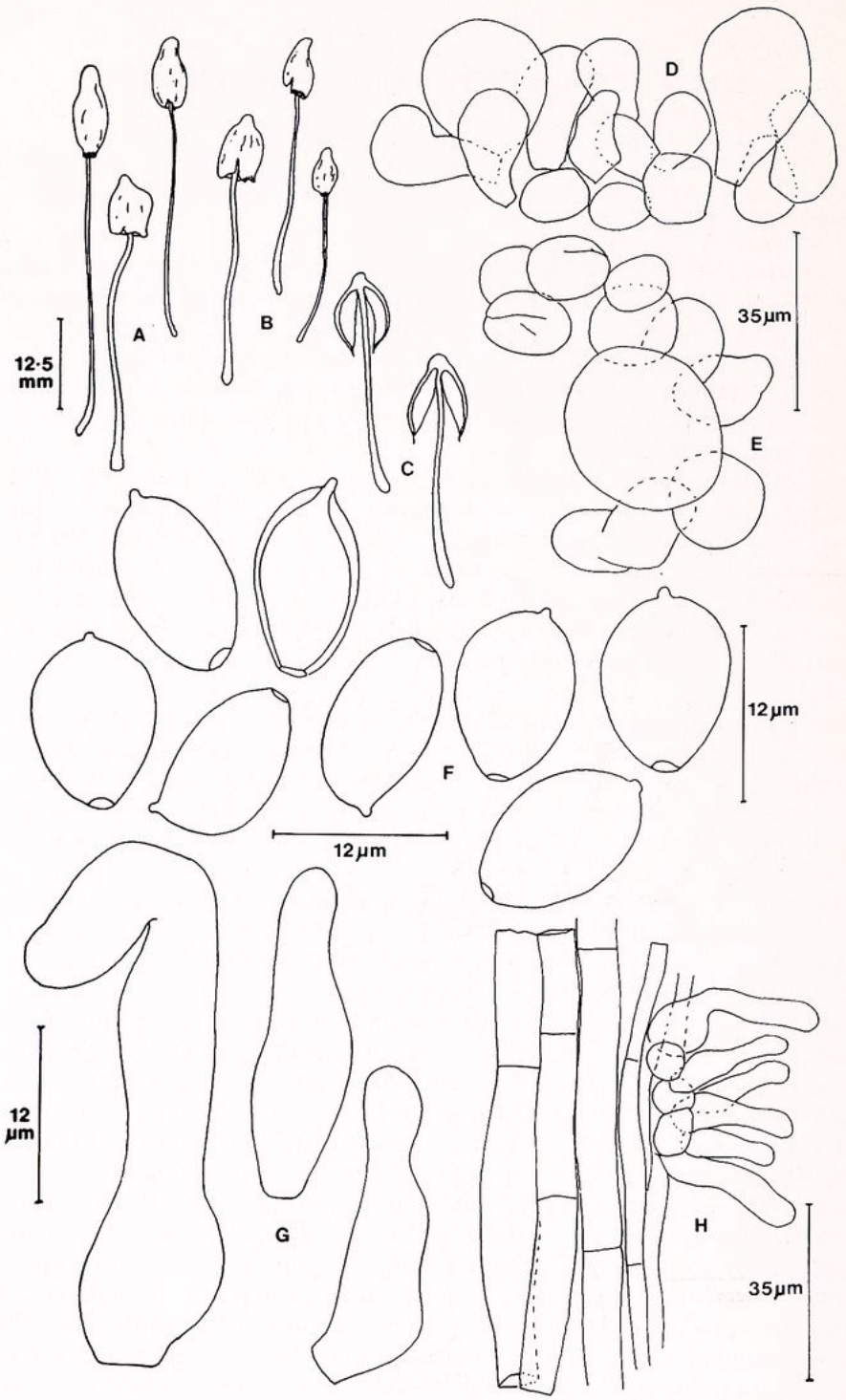

FIG. 1. *Panaeolopsis nirimbii*: A–C, habit sketches and sections: A & C, holotype; B, *Wat.* 16453; D, LS of pileipellis; E, 'scalp'; F, basidiospores from holotype; G, caulocystidia from stipe-apex of holotype; H, LS of stipe-cortex showing clusters of caulocystidia.

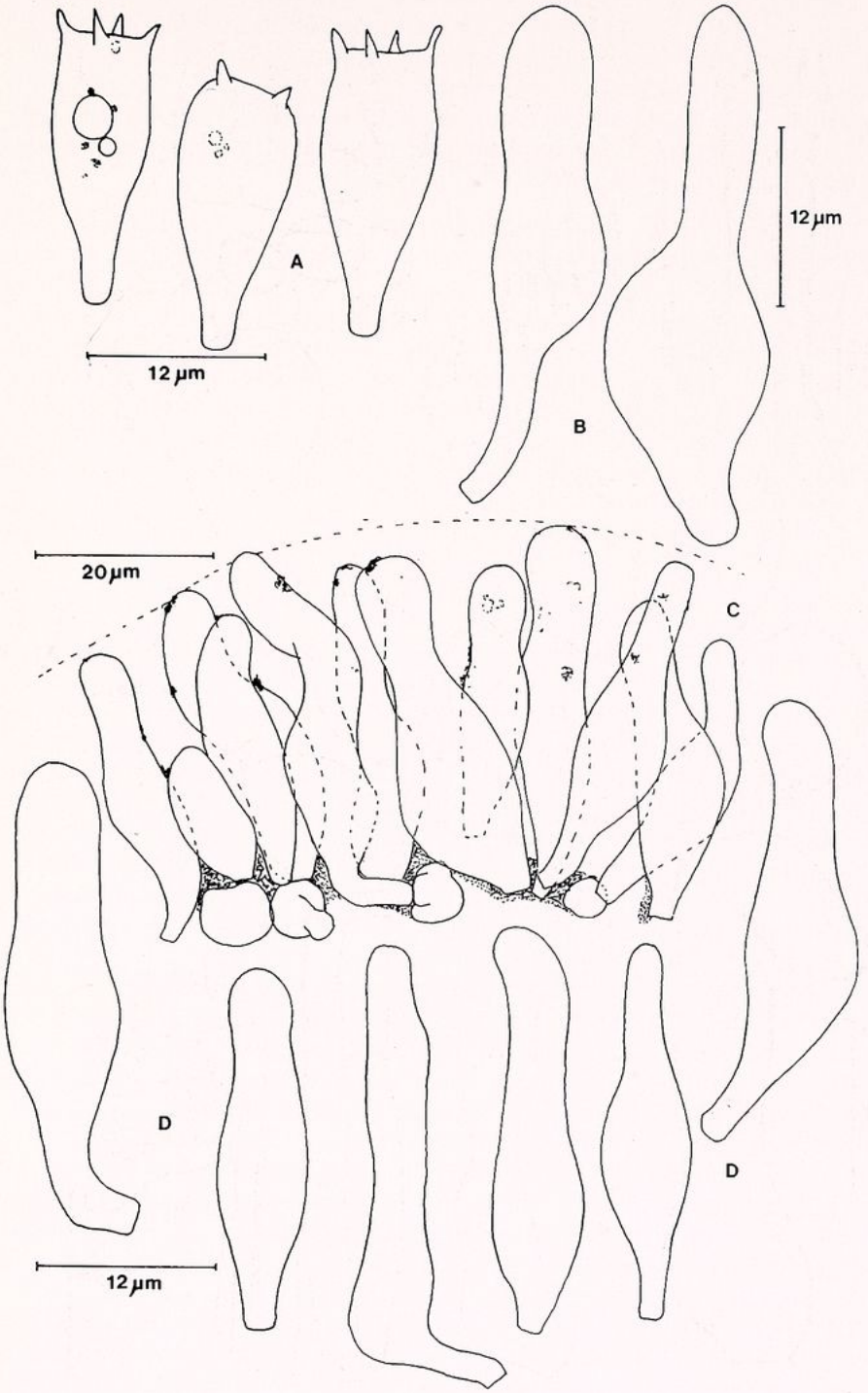

FIG. 2. *Panaeolopsis nirimbii*: A, 2- and 4-spored basidia; B, extremes of cheilocystidial morphology; C, numerous tightly packed cheilocystidia; D, range of cheilocystidia.

of parallel, hyaline, cylindric hyphae 5–12.5μm broad giving rise at stipe-apex to irregularly fusiform to ampulliform caulocystidia, 27.5–42.5 × 12.5–15μm, apex<4μm intermixed with elongate ellipsoid cells. *Clamp-connections* present but not abundant.
Australia, New South Wales, Quakers' Hill, 31 i 1981, *Young,* DAR 42009 (holotype DAR; iso. E (under *Young in Wat.* 16452), herb. Young); same locality, 24 i 1982, *Wat.* 16453.

This species differs from *Panaeolopsis brasiliensis* Singer in the strongly pedicellate cystidia, narrower, less subglobose basidiospores, coloration of the basidiome in shades of brown, as opposed to dark grey ('atro griseus'), lack of apical mucro to the pileus and much more robust habit. From *P. sanmartiana* Singer it differs in the distinctly lenticular-mitriform basidiospores and the darker colour of the basidiome, and possibly in the more robust stature, although the last character will have to be re-assessed in the light of future collections. The present fungus has, however, been collected in considerable quantity on two separate occasions and, on both, the characters have been constant.

Discussion

Panaeolopsis is undoubtedly related to *Panaeolus* (Fries) Quélet as already noted by Singer (1969). In common with *Panaeolus* the basidiospores are triaxial, smooth, blackish brown (fuscous black) and retain their pigmentation even when treated with concentrated sulphuric acid; the spores also possess a large, distinct germ-pore. Both *Panaeolus* and *Panaeolopsis* lack pleurocystidia; the latter differs, however, principally in the non-expanding pileus, the margin of which is either persistently and firmly adpressed to the stipe, or only separates slightly at maturity. When dry the basidiomes uncannily resemble those of *Psilocybe semilanceata* (Fr. :Secr.) Kummer but the latter possesses a filamentous pileipellis.

Panaeolopsis is to *Panaeolus* as *Gastrocybe* is to *Bolbitius.* The senior author prefers to place *Gastrocybe* in the Bolbitiaceae and not in the Galeropsidaceae as advocated by Singer & Ponce de Leon (1981), and similarly considers *Panaeolopsis* a secotioid equivalent of the agaricoid *Panaeolus* and assigns it to the Coprinaceae: Panaeoloideae, and not to the Montagneaceae as was done by Singer (1976).

Although found in disturbed areas, it is anticipated that the species will be collected elsewhere and very probably in the native communities from whence it colonised the playing fields. Like *Gastrocybe,* and indeed *Agrocybe angusticeps* (Peck) Watling, *Panaeolopsis* might be considered adventitious.

The stipe of *Panaeolopsis nirimbii* is covered, especially at the apex, with well-differentiated caulocystidia similar to those found in several species of *Conocybe* subgenus Conocybe sect. *Pilosellae. P. nirimbii* differs from these *Conocybe* spp., however, in the caulocystidia not being accompanied by the long hairs so characteristic of sect. *Pilosellae* and the *Conocybe pubescens* group, and which were unfortunately in error referred to by the

senior author as pilocystidia. Patrick & Barrows (1979) are correct in arguing that Buller (1924) who introduced the term pilocystidium, correctly applied the Greek, where *pilos* = pileus and not *pilus* (Latin) = hair. We therefore use the term hair for the very long, flexuous, very narrow, sometimes swollen-based dermatocystidia.

The recording of *Panaeolopsis* from Australia is particularly interesting as it parallels the finding of *Coprinus herbivorus* Singer in Centennial Park, near Sydney, New South Wales (*Wat.* 10892 in E) and is yet another S American element in the Australian flora. The fungal floras of these two land-masses are drawn closer together and would-be agaricologists in Australia are reminded once again that reference should always be made to accounts of S American agarics before indulging in the slavish adoption of European names.

Acknowledgements

The senior author is grateful to Prof. D. Rogers, Univ. of Urbana, Illinois, USA, and the late Prof. G. Martin, Univ. of Iowa, Iowa, USA, for helpful discussion.

References

Buller, A. H. R. (1924). *Researches on fungi.* Vol. 3. London.

Patrick, W. W. Jnr & Barrows, C. (1979). A New Mexico Psathyrella in the Cystidiosae of subgenus Homophron. *Mycotaxon* 9: 493–500.

Singer, R. (1969). Mycoflora Australis. *Beih. Nova Hedw.* 29: 1–405.

—— (1976). Amparoinaceae & Montagneaceae. *Rev. Mycol.* 40: 57–64.

—— & Ponce de Leon, P. (1982). Galeropsidaceae west of Rocky Mountains. *Mycotaxon* 14: 82–90.

Printed in Scotland for HMSO, Dd. 0735670/4348 C7 12/83