

PORINACEAE

A NEW SPECIES OF *PORINA* ON LIMESTONE*Porina balanina* Brusse, sp. nov.

Thallus endolithicus. *Tunica thallina* peritheciis hemispherica, fusca, ad basem constricta, 300–700 μm crassa, 1,0–1,5 mm lata, superficialis crystallis grandibus 50–250 μm crassis (oxalas calcii) inclusis. *Algae* sphaericae vel ellipsoideae, 7–24 μm diametro, ad *Trentepohliam* pertinentes. *Perithecia* hyalina, in textura thallina omnino immersa, 600–800 μm diametro, globosa. *Parietes* hyalini vel straminei, in hydroxido kalii crocescens, verticale et periclinale prosoplectenchymati, 25–30 μm crassi, ostiolum versus incrassati et paraplectenchymati, cellulis 3–6 μm diametro, badiis, in acido nitrico roscenscentibus. *Area circa ostiolum* applanata vel concava, sed non peltulata. *Hymenium* hyalinum, circa 500 μm altum, guttulis inspersis. *Subhymenium* hyalinum, circa 100 μm crassum. *Paraphyses* simplices, perlongae, flaccidae, graciles, 1,0–1,5 μm crassae, ecapitatae, septatae, septis 7–11 μm distantibus, in gelatina inclusae, gelatina hyalina, J–. *Asci* cylindrici, 8-sporei, parietibus, apicum inclusis, tenuibus, J–. *Ascospores* oblique uniseriatae, hyalinae, J–, longe ellipsoideae, triseptatae, 14–19 \times 5–7 μm , halone tenue 0,8–1,3 μm crassa circumdatae, parietibus tenuibus. *Pycnidia* globosa, hyalina, 160–180 μm diametro, in textura thallina superficiali immersa, parietibus hyalinis sed apices versus brunneolis. *Pycnidiosporae* bacillares, hyalinae, 3,5–4,2 \times 1,0–1,2 μm .

TYPUS.—Cape, 3419 (Caledon): Gansbaai area, Byneskranskop near Strandskloof overlooking the Uilkraals River Valley, on a sandy limestone kranz (–CB). F. Brusse 3835, 1981.05.14 (PRE, holo.). Fig. 20.

Thallus endolithic. *Thalline* covering of the perithecium hemispherical, fuscous, constricted at base, 300–700 μm thick, 1,0–1,5 mm broad, superficial, embedded with large crystals 50–250 μm thick (calcium oxalate). *Algae* spherical to ellipsoid, 7–24 μm across, *Trentepohlia*. *Perithecia* hyaline, completely immersed in thalline tissue, globose, 600–800 μm in diameter. *Walls* hyaline to stramineous, K+, dingy orange, vertically and periclinally prosoplectenchymatous, 25–30 μm thick, thickened in the ostiolar region and paraplectenchymatous, cells 3–6 μm in diameter, brown, becoming pinkish in concentrated nitric acid. *Ostiolar region* flat or concave (i.e. with a thickened ring around it) but not peltulate. *Hymenium* hyaline, about 500 μm high, inspersed with 'oil droplets'. *Subhymenium* hyaline, about 100 μm thick. *Paraphyses* simple, very long and slender, flaccid, 1,0–1,5 μm thick, septate, septa 7–11 μm apart, ecapitate, embedded in gel, gel hyaline, J–. *Asci* cylindrical, 8-spored, with walls, apices included, thin, J–. *Ascospores* hyaline, long ellipsoid, triseptate, 14–19 \times 5–7 μm , obliquely uniseriate, thinly halonate, halo 0,8–1,3 μm thick, walls thin. *Pycnidia* hyaline, globose, 160–180 μm in diameter, immersed in superficial thalline tissue, walls hyaline but brownish above. *Pycnidiospores* hyaline rods, 3,5–4,2 \times 1,0–1,2 μm . *Chemistry*: no lichen substances detected by TLC.

This new species is most similar to *Porina corrugata* Müll. Arg., also on limestone, from the Melbourne-Adelaide area of Australia, with a Mediterranean climate similar to that of the south-western Cape. *Porina balanina* is, however, more robust, with larger perithecia and associated thalline tissue.

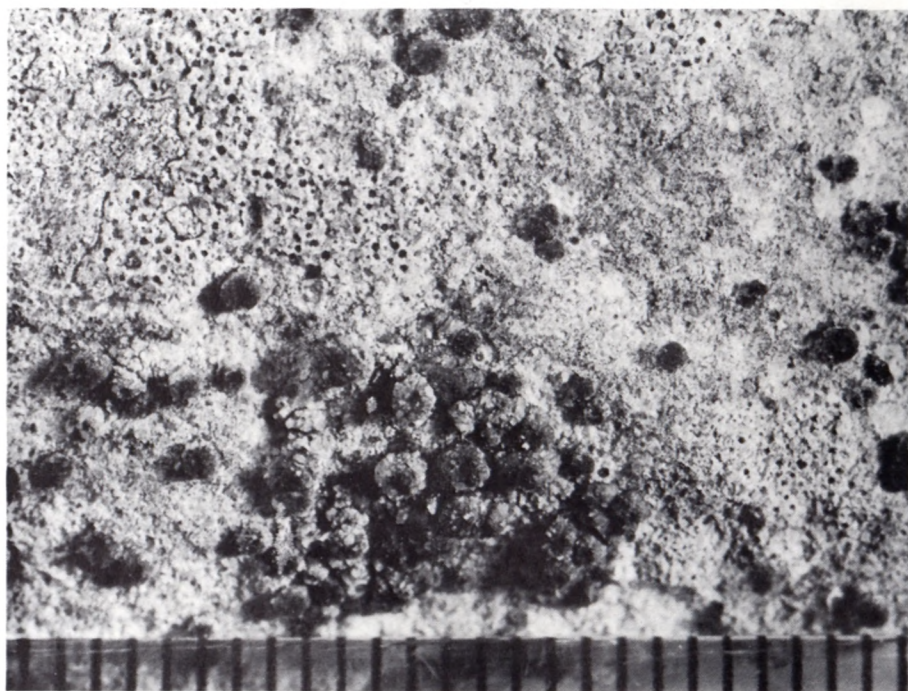


FIG. 20. — *Porina balanina* Brusse, Brusse 3792. Scale in mm.

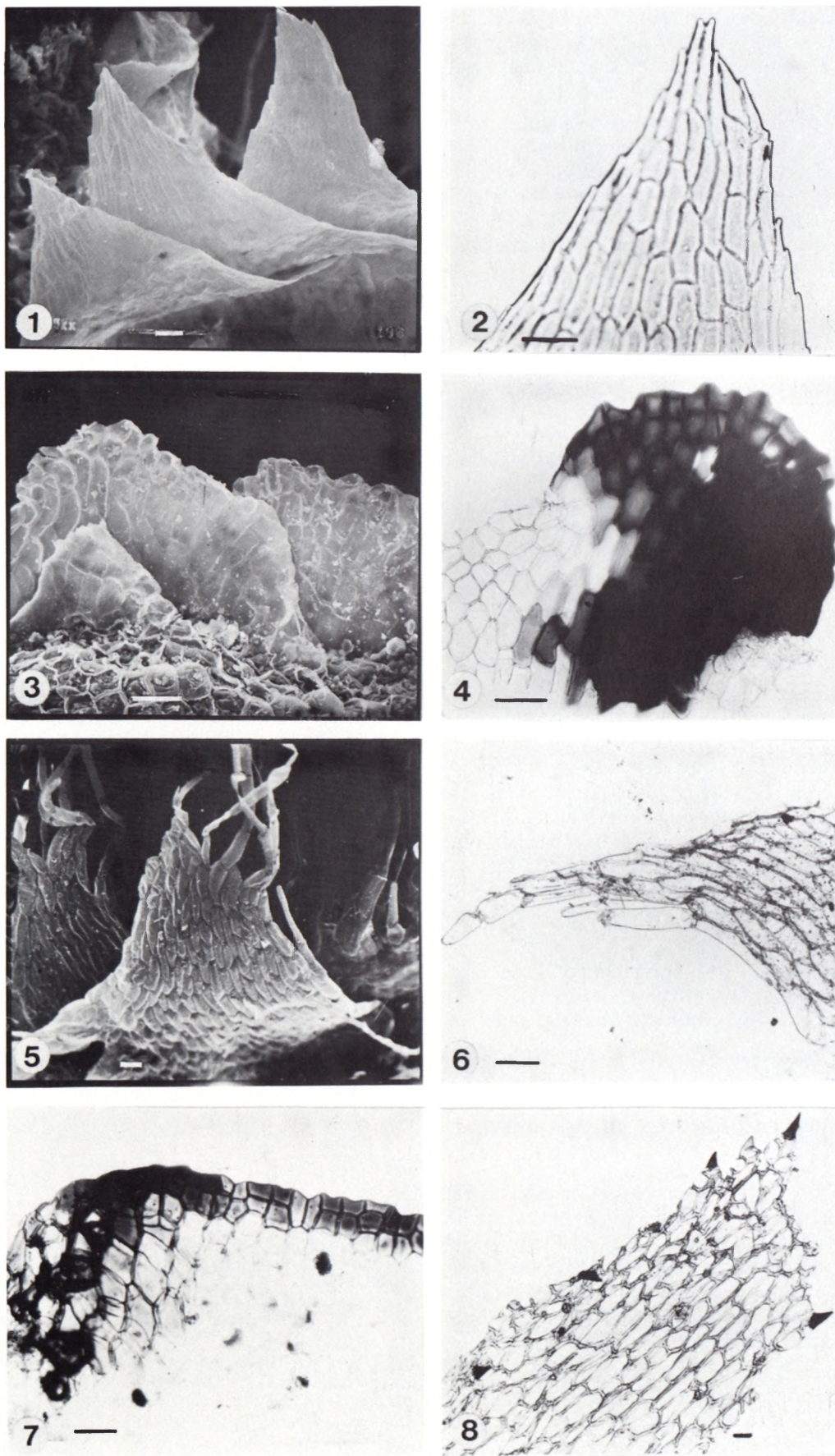


FIG. 21. — Scale margins in different species of *Riccia* and in *Ricciocarpus*. 1, 2, *R. villosa* denticulate at apex; 3, 4, *R. okahandjana* with crenate margins; 5, 6, undescribed *Riccia* species with multicellular appendages; 7, *R. rhodesiae* with crenate margins; 8, *Ricciocarpus natans*, tip of scale, margins dentate. (1, 3, 5, SEM micrographs; 2, 4, 6–8, LM (light microscope) photographs by S. M. Perold). Scale bar = 100 μ m.

More importantly, the ascospores are not as delicate and fusiform as in *Porina corrugata*, being narrowly ellipsoid, with sturdier, but still evenly thin, walls and septa.

The walls of the perithecium are pale yellowish or straw-coloured and immediately become dingy orange in a 2 molar solution of potassium hydroxide (K). The pigment does not diffuse and no crystals develop in association with this colour in K.

The new species is known from several limestone

localities in the Gansbaai-Bredasdorp area of the south-western Cape, at altitudes lower than 100 m.

CAPE.—3419 (Caledon): Gansbaai area, Byneskranskop near Strandskloof overlooking the Uilkraals River Valley, on a sandy limestone kranz (–CB), *F. Brusse* 3835, 1981.05.14 (PRE). 3420 (Bredasdorp): Bredasdorp District near Mierkraal, Die Poort (Heuningsnes River Valley) on a S-facing sandy limestone kranz (–CA), *F. Brusse* 3815, 1981.05.14 (PRE; LD); Cape Agulhas, limestone ridge behind the town, on limestone on steep S slope (–CC), *F. Brusse* 3792, 1981.05.13 (PRE).

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