

A NEW SAXICOLOUS SPECIES AND NEW RECORDS OF *PORINA* (LICHENISED ASCOMYCOTINA: TRICHOTHELIACEAE) FROM AUSTRALIA

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ABSTRACT

McCarthy, P.M. A new saxicolous species and new records of *Porina* (lichenised Ascomycotina: Trichotheliaceae) from Australia. *Muelleria* 8(3): 265–268 (1995). — *Porina chlorotricula* sp. nov. is described from rainforest in NE Queensland. *Porina malmi* P. M. McCarthy and *P. ulceratula* Zahlbr. are reported from Australia for the first time. Other recent collections of interesting saxicolous species of *Porina* are also noted.

INTRODUCTION

A recent conspectus of the saxicolous species of *Porina* Müll. Arg. in the Southern Hemisphere included descriptions and illustrations of most of the 39 species recognised (McCarthy 1993). Subsequently, field-work carried out by the author in Tasmania and Queensland resulted in new and noteworthy records including a specimen of *P. chlorotricula* P.M. McCarthy which is described here.

THE SPECIES

1. *Porina aptrootii* P.M. McCarthy, *Bibliotheca lichenol.* 52: 29 (1993).

Porina aptrootii is a rather distinctive species with moderately large, black perithecia and a dark green to blackish thallus. It has been reported from its type locality in southern Tasmania and from south-western New Zealand (McCarthy 1993). A recent collection from aquatic rocks in northern Tasmania has an involucrellum which is not as uniformly dark as was previously observed; rather, a greenish black outer part is subtended by a progressively paler and ultimately hyaline inner layer.

SPECIMEN EXAMINED

Tasmania — Cradle Mountain-Lake St Clair National Park, Cradle Valley, Dove R., alt. c. 800 m, on aquatic sandstone, 21 May 1993, P.M. McCarthy 647 & G. Kantvilas (MEL 1057469).

2. *Porina chlorotricula* P.M. McCarthy sp. nov.

Thallus effusus vel determinatus, pallido griseoviridis vel atroviridis, 15–30 µm crassus, ecorticatus, K–. Algae 6–10(–12) × 6–10 µm. Perithecia hemisphaerica, superficialia, (0.14–)0.19(–0.26) mm diametro. Involucrellum atroviride, 20–25(–35) µm crassum, ad basim excipuli descendens. Centrum 0.1–0.16 mm diametro. Asci 60–74 × 7–9 µm. Ascospores 3-septatae, (13.5–)16(–20) × (2.5–)3.1(–3.8) µm. Conidia 2–3 × 1 µm.

TYPUS: Australia, Queensland, Great Barrier Reef, Fitzroy I., 25 km E of Cairns, 16°56'S, 145°59'E, alt. 50–100 m, growing among bryophytes on a granite boulder in relict forest, Mar. 1988, A. & M. Aptroot 22384 [HOLOTYPE: MEL 1057424; ISOTYPE: MEL 1057425 (Aptroot 22376), Hb Aptroot].

Thallus epilithic, effuse to determinate, pale grey-green and inconspicuous to dark green, matt, 15–30 µm thick, filmy, continuous, smooth to minutely rugulose, somewhat gelatinous when wetted, ecorticate, K–. *Algae* subglobose to globose, 6–10(–12) × 6–10 µm. *Hyphae* 2–4 µm wide. *Prothallus* not apparent. *Perithecia* superficial, numerous, usually solitary. *Perithecial apex* rounded to slightly pointed. *Ostiole* inconspicuous or in a shallow depression. *Involucrellum* black, green-black in thin section, K–, hemispherical, subconical or subglobose, arching away from the excipulum, (0.14–)0.19(–0.26) mm diam., 20–25(–35) µm thick, extending to excipulum-base

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level. *Centrum* globose to depressed-ovate, 0.1–0.16 mm diam. *Excipulum* uniformly pale brown to, less commonly dark brown, 12–15 μm thick. *Paraphyses* unbranched, 0.8–1.2 μm wide. *Periphyses* absent. *Asci* elongate-cylindrical, with rounded or truncate ends, 60–74 \times 7–9 μm . *Ascospores* 3-septate, fusiform to elongate-fusiform, straight, slightly curved or faintly sigmoid, with rounded to subacute ends, irregularly biseriate in the asci, (13.5–)16(–20) \times (2.5–)3.1(–3.8) μm (60 measured); contents clear. *Conidiomata* moderately numerous, semi-immersed to almost superficial, olive brown above, pale brown below, 60–90 μm diam., with a convoluted conidiogenous layer. *Conidia* narrowly ellipsoid to fusiform, 2–3 \times 1 μm . (Fig. 1)

REMARKS

This lichen has a thin and inconspicuous K – thallus, very small perithecia with a thin K – involucrellum and short and exceptionally narrow ascospores. Although it is broadly similar to the cosmopolitan *P. chlorotica* (Ach.) Müll. Arg., that species has larger perithecia, a thicker, K + reddish involucrellum, 75–90(–100) μm long asci and, among the Southern Hemisphere specimens examined by me, 3–5(–6) μm wide ascospores (McCarthy 1993).

Porina chlorotica is known from granite and basalt in rainforest at two localities in NE Queensland, Australia.

ADDITIONAL SPECIMEN EXAMINED

Queensland — Atherton Tableland, by Kennedy Highway, 2.8 km SW of Barron R. crossing, Longlands Gap State Forest, Raspberry Creek, on shaded semi-aquatic basalt, 11 Sep. 1993, P.M. McCarthy 855 (MEL).

3. *Porina crassa* P.M. McCarthy, *Bibliotheca lichenol.* 52: 41 (1993).

The type specimen of *P. crassa* consists of several small fragments (McCarthy 1993). Following the description of this species an opportunity arose to visit its type locality in NE Queensland where *P. crassa* was found to be very abundant on the steep, north-facing cliffs of a rainforest gorge. Many large colonies were observed, the smooth and thick, pale creamy brown thalli with immersed perithecia being particularly noticeable in the field.

SPECIMEN EXAMINED

Queensland — Atherton Tableland, 30 km WSW of Innisfail, Palmerston National Park, below Tchupala Falls and above Wallicher Falls, tributary of North Johnstone R., on shaded rocks in a rainforest gorge, 10 Sep. 1993, P.M. McCarthy 815 (BRI, MEL).

4. *Porina malmei* P.M. McCarthy, *Bibliotheca lichenol.* 52: 70 (1993).

This lichen is reminiscent of the anti-tropical *P. guentheri* (Flotow) Zahlbr. However, its perithecia are very small and have a thin, black involucrellum and smaller ascospores (McCarthy 1993).

Porina malmei was found on semi-aquatic rocks in rainforest at two localities in SE Queensland. It was previously known only from its type locality in Rio Grande do Sul, southern Brazil.

SPECIMENS EXAMINED

Queensland — Lamington National Park, Green Mountains, near Border Track, below Boxlog Falls, Canungra Creek, on deeply shaded semi-aquatic basalt, 4 Sep. 1993, P.M. McCarthy 736 (MEL); near Brisbane, D'Aguilar Range, Northbrook Creek, by Mt Glorious Road, on semi-aquatic rocks, 5 Sep. 1993, P.M. McCarthy 754 (MEL).

5. *Porina mastoidea* (Ach.) Müll. Arg., *Bot. Jahrb.* 6: 399 (1885).

Porina mastoidea is a common and mainly corticolous lichen especially in the Neotropics; it has also been confirmed from the Philippines, Malaysia, Papua New Guinea and SE Queensland (McCarthy 1993). Saxicolous specimens are known from southern Brazil, Paraguay, Uruguay, Malaysia and, now, NE Queensland.

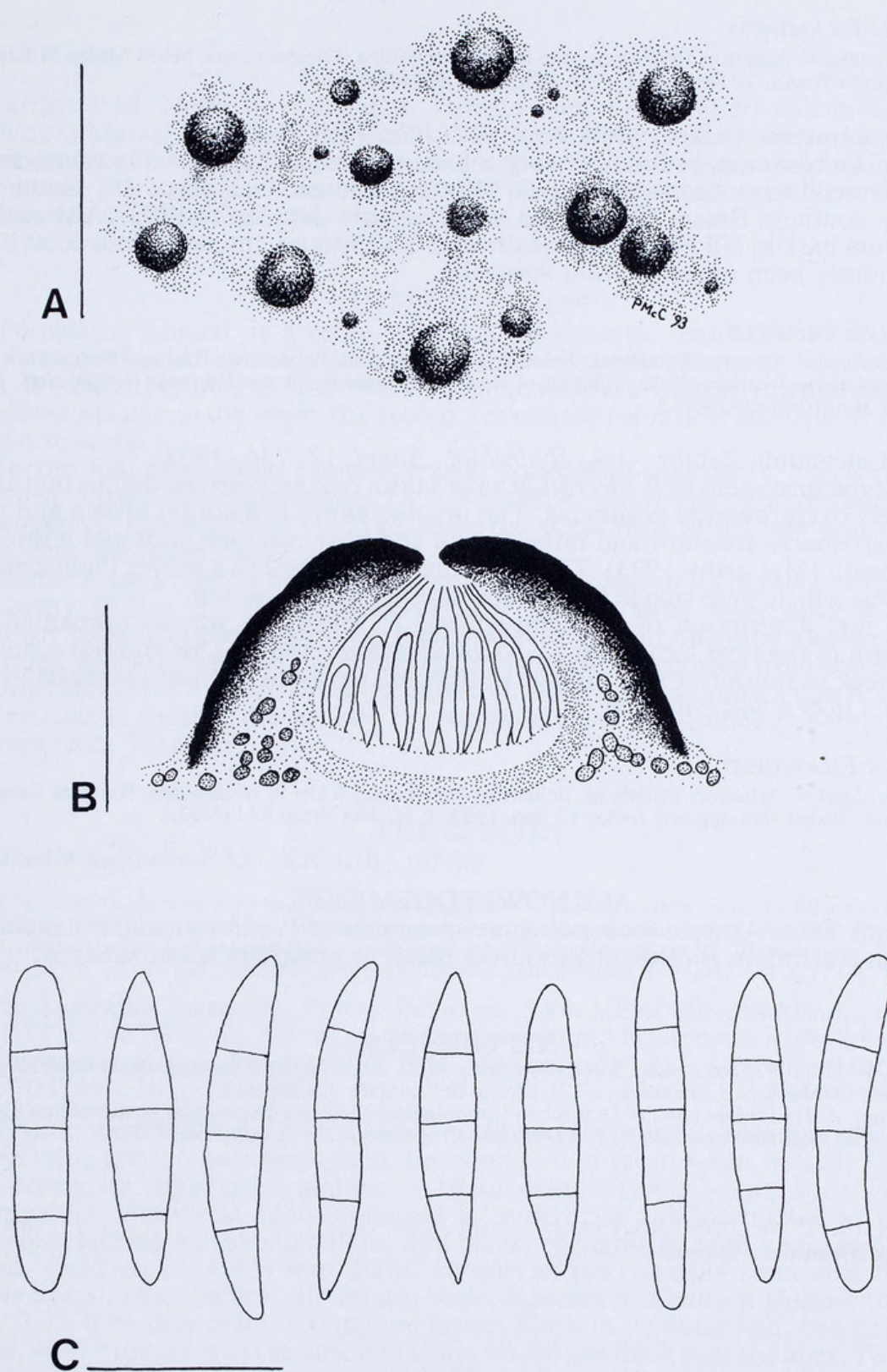


Fig. 1. *Porina chloroticula* (holotypus). a — habit of thallus and perithecia; scale 1 mm. b — vertical section of perithecium; scale 0.1 mm. c — ascospores; scale 10 μ m.

SPECIMEN EXAMINED

Queensland — Atherton Tableland, 2 km E of Millaa Millaa, Theresa Creek, below Millaa Millaa Falls, on semi-aquatic basalt, 10 Sep. 1993, P.M. McCarthy 832 (MEL).

6. *Porina tetracerae* (Afzel.) Müll. Arg., *Bot. Jahrb.* 6: 401 (1885).

This is a common, but mainly corticolous, pantropical species. However, saxicolous specimens have been collected in Western Samoa, Galápagos Is., Costa Rica, Paraguay, southern Brazil, West Africa and Tanzania (McCarthy 1993). Although it is known from bark in NE New South Wales and Queensland, the saxicolous ecotype had not previously been reported from Australia.

SPECIMEN EXAMINED

Queensland — Atherton Tableland, 30 km WSW of Innisfail, Palmerston National Park, below Tchupala Falls and above Wallicher Falls, tributary of North Johnstone R., on shaded rocks in rainforest, 10 Sep. 1993, P.M. McCarthy 819 (MEL).

7. *Porina ulceratula* Zahlbr., *Ark. Hydrobiol., Suppl.* 12: 734 (1934).

The type specimens of *P. ulceratula* have a thin, pale grey-brown thallus that almost completely overgrows the perithecia. The involucrellum is medium brown and the 3-septate ascospores are short and rather broad and have rounded ends and a thin gelatinous sheath (McCarthy 1993). The Australian specimen has a greyer thallus and the periphyses, which were sparse in the type specimens, are absent.

The first description of the semi-aquatic *P. ulceratula* was accompanied by a photograph of the type locality in Java (Zahlbruckner 1934). This showed a boulder-strewn creek in rainforest very similar to Babinda Creek in tropical Queensland from which this lichen was collected.

SPECIMEN EXAMINED

Queensland — Atherton Tableland, Bellenden Ker Range, 6 km W of Babinda, Babinda Creek, The Boulders, on shaded semi-aquatic rocks, 12 Sep. 1993, P.M. McCarthy 911 (MEL).

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