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Normandina pulchella is readily identified by its distinctive blue-green colour and its ear-like squamules, which have raised and strongly inrolled margins. It colonizes a range of substrata, including rock, tree bark, moist humus, leaves, and even other lichens, and it's moderately tolerant of air pollution. It often produces dense patches of moss-green soredia on the surface and margins of its squamules, but ascomata and conidiomata are unknown. Occasional reports of perithecia have mostly been dismissed as fruiting bodies produced by *Lauderlindsaya borneri* or other lichenicolous Ascomycetes. Often overlooked because of its small size, it's nearly cosmopolitan in its distribution.

1 mm 

CONTENTS

ARTICLES

- McCarthy, PM—New and interesting species of *Opegrapha* (Ascomycota, Opegraphaceae) from eastern Australia 3
- Elix, JA; Mayrhofer, H—Two new species of buellioid lichens (Caliciaceae, Ascomycota) from South Africa 18
- Gueidan, C; Elix, JA—Synonymy in species of *Trapelia* (lichenized Ascomycota, Trapeliaceae) from Australia 22
- Elvebakk, A—*Pannaria microphyllizans* (Nyl.) P.M.Jørg. from New Zealand restudied and compared with *P. athrophylla* (Stirt.) Elvebakk & D.J.Galloway and the three new species *Pannaria cassa*, *P. kantvilasii* and *P. wrightiorum* 38
- McCarthy, PM—*Gyrographa fecunda* (Roccellaceae), a new saxicolous lichen from New South Wales, Australia 56
- Elix, JA—A new lichenicolous species of *Cratiria* (Caliciaceae, Ascomycota) from north Queensland, Australia 60
- Elix, JA—A new *Cratiria* (Caliciaceae, Ascomycota) with triseptate spores from Papua New Guinea 63
- ADDITIONAL RECORDS OF LICHENS FROM NEW ZEALAND (52)
- Glenny, D; Mosimann, J—Additional lichen records from New Zealand (52). *Xanthoparmelia dayiana* (Elix & P.M.Armstr.) Elix & J.Johnst. (Parmeliaceae) 66
- ADDITIONAL RECORDS OF LICHENS FROM AUSTRALIA (89)
- McCarthy, PM—Additional lichen records from Australia (89). *Acanthothecis consocians* (Nyl.) Staiger & Kalb 68
- RECENT LITERATURE ON AUSTRALASIAN LICHENS 72

A new lichenicolous species of *Cratiria* (Caliciaceae, Ascomycota) from north Queensland, Australia

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Abstract

Cratiria cinnamomea Elix, a lichenicolous species with 1-septate *Cratiria*-type ascospores, bacilliform conidia and containing norstictic and cinnamomeic acids, is described as new to science.

Introduction

This paper is a continuation of my investigations into *Buellia*-like lichens in the Southern Hemisphere (Elix 2019a, b, 2020, 2022 and references therein). The genus *Cratiria* Marbach includes species that are characterized by relatively large, submuriform or 1-septate ascospores, 15–28 × 7–13 µm, with apical wall-thickenings, short, bacilliform conidia 4–6 µm long, a hymenium that can be interspersed with oil droplets or not and an excipulum containing lichen substances (Marbach 2000; Elix 2014; Elix & Mayrhofer 2020). In this paper I describe a new, lichenicolous species of *Cratiria* from north Queensland, Australia. Methods are as described in previous papers cited above.

Cratiria cinnamomea Elix, sp. nov.
Mycobank No.: **MB 843272**

Fig. 1

Thallus lichenicolous on *Lecanora* cf. *pangarangoensis* Zahlbr., with broadly adnate to sessile apothecia 0.2–0.7 mm wide, an interspersed hymenium, a pigmented (K+ crimson) excipulum, 1-septate, *Cratiria*-type ascospores, 13–21 × 5–8 µm, and containing atranorin, norstictic acid and cinnamomeic acid C.

Type: Australia, Queensland, Zillie Falls, 12 km by road NE of Millaa Millaa, 17°28'29"S, 145°39'22"E, alt. 705 m, over *Lecanora* cf. *pangarangoensis* on fallen tree in remnant rainforest, *J.A. Elix 39505*, 29.viii.2006 (CANB – holotype).

Thallus lichenicolous, to 15 mm wide and 50 µm thick, developed over the surface of the host (*Lecanora* cf. *pangarangoensis*), the infected area surrounded by a brownish black ring; crustose, rimose, warted; upper surface yellow-brown, matt; prothallus brownish black and marginal; medulla white, lacking calcium oxalate (H₂SO₄-), I-; photobiont cells 7–16 µm diam. *Apothecia* 0.2–0.7 mm wide, lecideine, broadly adnate to sessile and constricted at the base, dispersed, rounded; disc black, epruinose, weakly concave to flat. *Excipulum* thick, persistent, raised above the disc, in section 40–80 µm thick, dark brown to brown-black, K+ crimson solution (no crystals), N-; inner zone pale brown. *Epihymenium* 8–10 µm thick, red-brown, interspersed with crystals, K+ yellow then red, with needle-like crystals, N-. *Hypothecium* 70–125 µm thick, K+ forming red, needle-like crystals. *Hymenium* 70–110 µm thick, colourless, densely interspersed with oil droplets; subhymenium 10–15 µm thick, pale brown, interspersed. *Paraphyses* 1.5–2 µm wide, sparsely branched, with apices 3–3.5 µm wide and pale brown caps. *Asci* *Bacidia*-type, 8-spored. *Ascospores* 1-septate, *Cratiria*-type, brown, ellipsoid, 13–[16.3]–21 × 5–[6.7]–8 µm, ± curved, becoming constricted at the septum, with moderate apical wall-thickenings; outer spore-wall weakly ornamented. *Pycnidia* not seen.

Chemistry: Thallus K+ yellow then red, C-, P+ yellow-orange; excipulum K+ crimson; containing atranorin (minor), norstictic acid (major), connorstictic acid (minor), cinnamomeic acid C (minor) and unknown (minor).

Etymology: The species is named after the red pigment, cinnamomeic acid C, present in the excipulum.

Remarks

Cratiria cinnamomea is characterized by initially being lichenicolous and then developing its own independent thick, yellow-brown, rimose, warted thallus, with broadly adnate to sessile, lecideine apothecia, an interspersed hymenium, a pigmented (K+ crimson) excipulum, 1-septate, *Cratiria*-type ascospores, 13–21 × 5–8 µm, and by the presence of atranorin, norstictic acid and cinnamomeic acid C. Cinnamomeic acid C was previously reported from *Rinodina cinnamomea* (Th.Fr.) Räsänen as 'cinnamomea unknown' (Resl *et al.* 2016) and from *Rinodina herteliana* Kaschik (Elix 2021). *Cratiria chloraceus* Marbach has similar-sized, *Cratiria*-type ascospores and a pigmented K+ red to violet excipulum, but that species differs in being corticolous and in containing arthothelin and thuringione (Marbach 2000). The primary *Lecanora* species contains atranorin (minor), chloroatranorin (minor), 2'-*O*-methylperlatolic acid (major), 3-chloro-2'-*O*-methylhyperanziaic acid (minor), 3,5-dichloro-2'-*O*-methylanziaic acid (minor) and thiophanic acid (minor).

Cratiria cinnamomea is known only from the type collection. Associated species include *Graphis vittata* Müll.Arg., *Lepidocollema brisbanense* (C.Knight) P.M.Jørg., *Letrouitia vulpina* (Tuck.) Hafellner & Bellem., *Lobaria discolor* (Delise) Hue, *Pertusaria albopunctata* (A.W.Archer & Elix) A.W.Archer & Elix, *Pseudocyphellaria brattii* D.J.Galloway & Kantvilas and *Sarcographa verrucosa* (Mont. & Bosch) Zahlbr.

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**A new *Cratiria* (Caliciaceae, Ascomycota) with
triseptate ascospores from Papua New Guinea**

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Abstract

The saxicolous *Cratiria buloloensis* Elix, from Papua New Guinea, is described as new to science.

Introduction

This paper continues my investigation of *Buellia*-like lichens in the Pacific islands; for recent additions see Elix (2016, 2019) and Elix & Mayrhofer (2019). The genus *Cratiria* Marbach includes species that are characterized by relatively large, submuriform, 1- or 3-septate ascospores, 15–28 × 7–13 μm, with apical wall-thickenings, short, bacilliform conidia 4–6 μm long, a hymenium that can be interspersed with oil droplets or not and an excipulum containing lichen substances (Marbach 2000; Elix 2014; Elix & Mayrhofer 2020). In this paper, I describe a new saxicolous species of *Cratiria* with 3-septate ascospores from Papua New Guinea. Methods are as described in the previous papers cited above.

***Cratiria buloloensis* Elix, sp. nov.**
Mycobank No.: **MB 843459**

Fig. 1

Similar to *Cratiria lauricassiae* (Fée) Marbach, but differs in having a saxicolous thallus and in containing atranorin and diploicin rather than norstictic acid.

Type: Papua New Guinea, Morobe Province, Road 4, 4.6 km SW of Bulolo, 07°14'S, 146°36'E, 1500 m alt., on boulder in regrowth forest at margin of *Araucaria* plantation, *H. Streimann 33480A*, 16.i.1983 (holotype – CANB).

Thallus crustose, to 20 mm wide and 0.2 mm thick, continuous, verrucose-areolate; individual areoles irregular, convex, 0.2–0.5 mm wide; upper surface grey-white, smooth; prothallus not apparent; medulla white, lacking calcium oxalate (H₂SO₄-), I-; photobiont cells 8–13 μm in diam. *Apothecia* 0.4–0.9 mm wide, lecideine, adnate to sessile, dispersed, round or distorted with age; disc black, epruinose, plane then markedly convex. *Excipulum* thin, excluded in older, convex apothecia, in section 40–55 μm thick, outer zone dark brown, K+ pale yellow, N-, inner zone brown. *Epithymenium* 8–10 μm thick, brown, K-, N-. *Hypothecium* 75–80 μm thick, extending to 150–200 μm thick in the central stipe, brown-black, K-, N-. *Hymenium* 50–75 μm thick, colourless, not or only sparingly interspersed; subhymenium 15–20 μm thick, colourless to pale brown. *Paraphyses* 1.5–2 μm wide, moderately branched, capitate, with apices 3–4.5 μm wide and brown caps. *Asci* *Bacidia*-type, 8-spored. *Ascospores* initially 2-septate but soon 3-septate, brown, elongate-ellipsoid, 14–[18.2]–22 × 6.5–[7.7]–9.5 μm; outer spore-wall weakly ornamented. *Pycnidia* not seen.

Chemistry: Thallus K+ yellow, P+ pale yellow, C-, UV-; containing atranorin (major), diploicin (minor).

Etymology: The species is named after the type locality.

Remarks

Cratiria buloloensis is characterized by the verrucose-areolate, pale grey crustose thallus, with a non-amyloid medulla that lacks calcium oxalate, the adnate to sessile, lecideine apothecia with epruinose discs, a non-interspersed or sparingly interspersed hymenium, 3-septate ascospores, 14–22 × 6.5–9.5 μm, and the presence of atranorin and diploicin. The pantropical



Figure 1. *Cratiria cinnamomea* (holotype in CANB). Scale = 2 mm.