34 Thallus K+ violet; hypothamnolic acid present ..... *L. subdactylina*
34: Thallus K+ red; salazinic or norstictic acid present 35

35 Norstictic acid present ..... *L. dactylinella*
35: Salazinic acid present ..... *L. pseudodactylina*

36 Thallus K+ red; norstictic acid present 37
36: Thallus K+ yellow or violet, or K–; norstictic acid absent 38

37 Thallus off-white; soralia ill-defined ..... *L. excludens*
37: Thallus pale green; soralia subglobose ..... *L. miniatescens*

38 Thallus K+ yellow or violet 39
38: Thallus K– 40

39 Thallus K+ yellow, thamnolic acid present ..... *L. subventosa* var. *subventosa*
39: Thallus K+ violet, hypothamnolic acid present ..... *L. subventosa* var. *hypothamnolica*

40 Thallus UV+ yellow; lichexanthone and picrolichenic acid present .....
..... *L. subventosa* var. *deficiens*
40: Thallus UV–; atranorin and fumarprotocetraric acid present ..... *L. sordida*

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Fissurina virensica, a new species in the Australian Graphidaceae (Lichenized Ascomycota, Ostropales) containing virensic acid

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Abstract

Fissurina virensica, characterized by fissurine apothecia, 4-locular ascospores and the presence of virensic acid, is reported as new to science. This is the first report of virensic acid in the genus *Fissurina*.

Introduction

The genus *Fissurina* was first described by Fée (1825). A detailed discussion of the 43 known species was given by Staiger in 2002. Since then, 31 additional taxa have been reported from tropical and subtropical regions (Makhija & Adawadkar 2007; Lumbsch *et al.* 2011; Sharma *et al*. 2012; Lendemer & Harris 2014; Mangold *et al.* 2014; Mercado-Diaz *et al.* 2014; Sipman 2014; Joshi *et al*. 2015; Komposch 2016). Fifteen species are known from Australia (McCarthy 2017).

Fissurina species are characterized by the presence of fissurine apothecia, usually simple but occasionally branched, immersed or sometimes opening and the lips thickening to form conspicuous lirellae. The proper exciple is non-carbonized, and the hymenium is not inspersed. Ascospores are usually 8 per ascus, ellipsoid, hyaline, 4-locular or submuriform to muriform.

The majority of *Fissurina* species lack lichen compounds, but some contain 2'-*O*-demethylpsoromic acid, 2-methoxypsoromic acid, psoromic acid, stictic acid or salazinic acid.

Fissurina virensica A.W.Archer & Elix, sp. nov. Figs 1, 2
Mycobank no: **MB 823828**

Similar to *Fissurina subcontexta* (Nyl.) Nyl., but differs in having smaller lirellae and in containing virensic acid.

Type: Australia, New South Wales, Buckenbowra River, 7.5 km WNW of Batemans Bay, 35°32'S, 150°07'E, alt. 2 m, on *Casuarina* in *Avicennia-Aegiceras*-dominated riverside, *J.A. Elix 26560*, 15.iii.1992; holotype – CANB.

Thallus corticolous, pale fawn; surface somewhat shiny, conspicuously tuberculate. Apothecia numerous, crowded, initially hemispherical, 0.5–1.5 mm diam., becoming elongate and fissurine, the lips thin, brown, rarely branching. Proper exciple non-carbonized, pale brown; hymenium not inspersed, iodine-negative. Ascospores hyaline, ellipsoid, 6–8 per ascus, uniseriate, 16–20 µm long and 8–10 µm wide, 4-locular, I+ blue.
Chemistry: virensic acid (major) and subvirensic acid (major).

OTHER SPECMEN EXAMINED
Type locality: ● *J.A. Elix 26562*, 15.iii.1992 (CANB).

Discussion

Fissurina virensica is characterized by a corticolous thallus, fissurine apothecia of Type V, "*subcontexta* type" (Staiger 2002:125), with small 4-locular ascospores and, in particular, the presence of virensic acid. This acid, a β-orcinol depsidone related to protocetraric acid, was first isolated from *Alectoria virens* Taylor, and characterized by Aghoramurthy *et al*. (1961). Virensic acid is known to occur in the Graphidaceae in *Phaeographis lecanographa* (Nyl.) Staiger (Staiger 2002: 334), but it has not been reported from the genus *Fissurina*.

The species occurs by the banks of the Buckenbowra River in south-eastern New South Wales, and is so far known only from this locality.

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Fig. 1. *Fissurina virensica*, holotype (CANB); scale bar = 1 mm

Fig. 2. *Fissurina virensica*, ascospores, in iodine; scale bar = 20 µm