

GROUP M

[Thallus saxicolous, sterile; sorediate or isidiate]

- 1 Thallus isidiate; squamatic acid present **P. nerrigensis**
1: Thallus sorediate; squamatic acid absent 2
2 Thallus KC+ violet, UV+ yellow; lichexanthone present **P. subventosa**
2: Thallus KC-, UV-; lichexanthone absent 3
3 Soralia K+ yellow then red, containing norstictic acid; thallus olive-green **P. miniatescens**
3: Soralia K-; norstictic acid absent; thallus off-white **P. sordida**

Pertusaria miniatescens A.W.Archer & Elix, *Telopea* 6: 20 (1994)

T: Max Nicholls Track, Lord Howe Island, 31°31'08"S, 159°03'03"E, alt. 50 m, on basalt rocks in dry lowland forest, 20 June, 1992, *J.A.Elix* 32728; holo: CANB.

Illustration: A.W.Archer & J.A.Elix, *op. cit.* 16, fig. 6.

Thallus olive-green, conspicuously cracked, smooth and shiny, lacking isidia, sorediate. Soralia numerous, conspicuous, somewhat concolorous with the thallus, subspherical, 0.5–2.0 mm diam. Apothecia not seen.

Chemistry: Thallus K+ yellow then red, KC-, C-, Pd+ yellow; containing norstictic acid (major) and connorstictic acid (trace).

This endemic, saxicolous species is known only from the type locality in Lord Howe Island.

Lord Howe Island: type locality, *J.A.Elix* 32733 (CANB).

The species is characterised by the sorediate thallus combined with the presence of norstictic acid.

Pertusaria nerrigensis A.W.Archer & Elix, in A.W.Archer, *Biblioth. Lichenol.* 69: 195 (1997)

T: Morton Natl Park, 8 km NE of Nerriga, N.S.W., 35°06'S, 150°08'E, 12 July 1992, *J.A.Elix* 33024; holo: CANB.

Thallus greyish white, areolate and cracked, smooth and dull. Soredia absent. Isidia inconspicuous, simple, numerous, often broken, concolorous with the thallus, 0.2–0.4 mm tall, 0.15–0.25 mm wide. Apothecia not seen.

Chemistry: Thallus K+ yellow, KC-, C-, Pd+ yellow; containing squamatic acid (major), baeomycesic acid (major) and barbatic acid (minor).

This endemic, saxicolous species is known only from the type locality in south-eastern N.S.W.

The species is characterised by the isidiate thallus and the presence of squamatic and baeomycesic acids. β -Orcinol depsides such as squamatic, baeomycesic and barbatic acids are characteristic of *Pertusaria* subg. *Monomurata*.

Pertusaria sordida A.W.Archer, *Mycotaxon* 41: 241(1991)

T: Brandy Ck Rd, 2 km NE of Proserpine, Qld, 20°21'S, 148°41'E, 28 June 1986, *J.A.Elix* 20816; holo: CANB.

Thallus off-white to pale grey, or appearing dull brownish white due to the substratum, with a paler margin, thin, granular, discontinuous. Isidia absent. Soralia numerous, crowded, adnate, circular or irregular in outline, off-white, 0.5–1.5 mm diam. Apothecia not seen.

Chemistry: Thallus K+ yellow, KC-, C-, Pd+ red; containing atranorin (major) and fumarprotocetraric acid (major).

This endemic, saxicolous species is known only from the type locality in north-eastern Qld.

Characterised by the sterile, sorediate thallus and the presence of atranorin and fumarprotocetraric acid. It resembles *P. subventosa* s. lat., but it can be distinguished from that species (and its varieties) by the absence of lichexanthone and the presence of fumarprotocetraric acid.

***Pertusaria subventosa* Malme, *Ark. Bot.* 28A(9): 7 (1936)**

T: Burity, Serra da Chapada, Mato Grosso, Brazil, 24 June 1894, *G.O.A. Malme* 3936; holo: S.

Pertusaria paeminosa A.W.Archer, *Nova Hedwigia* 50: 3 (1990). T: Bairne Track, c. 30 km N of Sydney, N.S.W., 14 Jan. 1989, *A.W.Archer* P38; holo: NSW; iso: CANB.

Pertusaria sorediata C.Knight, in J.Shirley, *Proc. Roy. Soc. Queensland* 6: 141 (1889), *nom. illeg., non P. sorediata* (Fr.) Fr., *Summ. Veg. Scand.* 1: 119 (1846). T: Moreton Bay, Qld, *J.Shirley* 67; holo: WELT.

Illustrations: A.W.Archer, *Nova Hedwigia* 50: 4, fig. 1 (1990), as *P. paeminosa*; A.W.Archer, *Biblioth. Lichenol.* 69: 214, fig. 79 (1997).

Thallus off-white to greyish white, thick, cracked and areolate, smooth. Isidia absent. Soralia conspicuous, white, becoming numerous and often confluent away from the margin, subglobose, occasionally slightly stipitate, 0.5–1.5 mm wide. Apothecia very rare, disciform; disc dark brown, white-pruinose, 0.2–0.5 mm diam., becoming exposed in stipitate soralia in groups of 1–3. Ascospores rare, 1 per ascus, elongate-ellipsoidal, rarely lachrymoid, sometimes slightly curved, 120–160 × 35–50 µm; wall c. 1 µm thick.

This is the most common saxicolous *Pertusaria* species in eastern Australia. The three varieties are morphologically identical, but they are differentiated by their chemistry. Lichexanthone and picrolichenic acid are present in all three.

- 1 Soralia K-; thamnolic acid and hypothamnolic acid absent **b. var. deficiens**
- 1: Soralia K+ yellow or violet; thamnolic or hypothamnolic acid present 2
- 2 Soralia K+ yellow; thamnolic acid present (*I*:) **a. var. subventosa**
- 2: Soralia K+ violet; hypothamnolic acid present **c. var. hypothamnolica**

a. *Pertusaria subventosa* Malme var. *subventosa*

Chemistry: K+ yellow, KC+ violet, C-, Pd+ yellow, UV+ bright yellow; containing lichexanthone (major), thamnolic acid (major) and picrolichenic acid (major); rarely with additional norstictic acid.

The most widely distributed of the three varieties. It occurs in Qld, N.S.W., A.C.T. and Vic.; also in Lord Howe Is., New Zealand and Brazil. Often with *P. xanthoplaca* in south-eastern Australia and with *P. hypoxantha* in north-eastern Qld.

Qld: tip of Cape York Penin., *A.Filson* s.n. (MEL 1018913); Mt Catherine, 10 km NE of Ingham, *J.A.Elix* 15438 (CANB). N.S.W.: Hat Head summit, Hat Head Natl Park, 25 km ENE of Kempsey, *A.W.Archer* P386 (NSW, PERTH). A.C.T.: Gudgenby Gorge, 27 km S of Canberra, *H.T.Lumbsch* 5629b (CANB, M, NSW). Vic.: W side of Mallacoota Inlet, Mallacoota, *A.W.Archer* P547 (MEL, NSW).

This variety is characterised by the presence of thamnolic acid. It is rarely found with apothecia, and fertile specimens of the other two varieties are so far unknown.

b. *Pertusaria subventosa* var. *deficiens* A.W.Archer & Elix, *Mycotaxon* 49: 146 (1993)

T: Hughenden–Townsville highway, 28 km SW of Pentland, Qld, 20°43'S, 145°14'E, 25 June 1986, *J.A.Elix* 20753; holo: CANB.

Chemistry: K-, KC+ violet, C-, Pd-, UV+ bright yellow; containing lichexanthone (major) and picrolichenic acid (major); rarely with additional norstictic acid (major).

Occurs in Qld, N.S.W. and Vic.; also in Lord Howe Is. and Uruguay.

Qld: Great Keppel Is., *U.Allan* (HO 50911); Porcupine Creek Gorge, 16 km NNE of Hughenden, *H.Streimann* 37315 (CANB). N.S.W.: track to Pigeon House Mtn, 15 km W of Ulladulla, *J.A.Elix* 3908 (CANB). Vic.: Mt Arapiles, *W.H.Ewers* 425 (CANB).

This variety is characterised by the absence of thamnolic and hypothamnolic acids.

c. *Pertusaria subventosa* var. *hypothamnolica* A.W.Archer & Elix, *Mycotaxon* 49: 147 (1993)

T: between Breakneck Ck and Quandong Ck, 24 km WSW of Proserpine, Qld, 20°29'S, 148°22'E, 2 July 1986, *J.A.Elix* 21160; holo: CANB.

Chemistry: K+ violet, KC+ red-violet, C-, Pd-, UV+ bright yellow; containing lichexanthone (major) and picrolichenic acid (major) and hypothamnolic acid (major).

Less widely distributed than the other two varieties and, in Australia, it occurs only in eastern Qld and north-eastern N.S.W.; also in Papua New Guinea.

Qld: Rainbow Beach Rd, 12.5 km S of Tin Can Bay, *J.A.Elix* 22783 *p.p.* (CANB). N.S.W.: Diehard Ck, Mann River Nature Reserve, 50 km E of Glen Innes, *J.A.Elix* 37093 (CANB).

Pertusaria subventosa var. *hypothamnolica* is characterised by the presence of picrolichenic acid, lichexanthone and hypothamnolic acid in the thallus.