

## GROUP G

### [Thallus saxicolous; apothecia verruciform; asci 2- or 4-spored]

- 1 Ascospores 4 per ascus; inner ascospore wall smooth; ascospores 85–105 µm long ..... **P. trevethensis**  
1: Ascospores 2 per ascus; inner ascospore wall smooth or rough .....2  
2 Inner ascospore wall smooth; stictic acid present ..... **P. vulpina**  
2: Inner ascospore wall rough; 4,5-dichlorolichexanthone present .....3  
3 Divaricatic acid present; most ascospores 120–140 µm long ..... **P. flindersiana**  
3: Norstictic acid present; most ascospores > 140 µm long ..... **P. knightiana**

#### ***Pertusaria flindersiana*** Kantvilas & Elix, *Sauteria* 15: 256 (2008)

T: Red Bluff, Patriarch Inlet, Flinders Island, Tas., 39°57'S, 148°12'E, on granite boulders along seashore, 3 m alt., 1 Apr, 2007, *G.Kantvilas 139/07*; holo: HO; iso: CANB.

Illustration: G.Kantvilas & J.A.Elix, *op. cit.* 357, fig. 3.

Thallus whitish grey, areolate and deeply cracked, to c. 350 µm thick, ecorticate. Apothecia verruciform, concolorous with and dominating the thallus; individual verrucae 1.5–2.0 mm wide, ± globose, usually somewhat flattened at the apex, mostly fused in clumps of 3–10 which are irregular, ±cerebriform, wrinkled, basally constricted, 3–5 mm wide. Ostioles black, rather sunken, mostly 2–4 per verruca. Asci 2-spored, narrowly oblong, soon rupturing at maturity. Ascospores ellipsoidal to oblong, hyaline, (80–) 120–140 (–192) × (34–) 53 (–66) µm; inner wall internally rough and sculptured. Pycnidia not found.

*Chemistry*: Thallus K–, KC± faint pink, C–, P± faint orange, UV+ whitish; containing divaricatic acid (major), subdivaricatic acid (minor), 4,5-dichlorolichexanthone (minor), 4,5-dichloro-3-*O*-methylnorlichexanthone (trace).

A very rare maritime saxicolous species in Flinders Island, Bass Strait, Tas.

*Pertusaria flindersiana* is superficially similar and very closely related to *P. knightiana* (*q.v.*). While the latter species occurs in a very similar habitat, the two can be distinguished unequivocally only by their chemistry, with *P. knightiana* containing norstictic acid in addition to 4,5-dichlorolichexanthone.

#### ***Pertusaria knightiana*** Müll.Arg., *Bull. Soc. Roy. Bot. Belg.* 31: 31 (1892)

T: New Zealand, *s. loc.*, 1882, *C.Knight 25*; holo: G.

*Pertusaria ceuthocarpa* \* [var.] *crenulata* Stirt., *Proc. Philos. Soc. Glasgow* 10: 296 (1877). T: near Wellington, New Zealand, *J.Buchanan s.n.*; holo: BM.

*Pertusaria whinrayi* A.W.Archer, *Mycotaxon* 45: 423 (1992), as *whinrayii*. T: c. 1.7 km ENE of the tip of Unicorn Point, Badger Is., Furneaux Group, Bass Strait, Tas., 10 Oct. 1975, *J.S.Whinray s.n.*; holo: MEL.

Illustration: A.W.Archer, *op. cit.* 419, fig. 6, as *P. whinrayii*.

Thallus fawn to pale brown, thick, areolate and cracked, smooth and dull. Soredia and isidia absent. Apothecia sparse, verruciform, usually confluent, subhemispherical to flattened-hemispherical, concolorous with the thallus, constricted at the base, 0.8–2.0 mm diam. Ostioles black, conspicuous, noticeably sunken, 0.10–0.15 mm diam., 1 or 2 per verruca. Ascospores 2 per ascus, ellipsoidal, rough, 140–200 × 40–50 µm.

*Chemistry*: Thallus K+ yellow then red, KC–, C–, Pd+ yellow; containing norstictic acid (major), 4,5-dichlorolichexanthone (major to minor) and connorstictic acid (trace).

This rare, saxicolous species is known from islands in Bass Strait, Tas.; also in New Zealand.

Tas: North Patriarch, Flinders Is., *G.Kantvilas 128/07* (HO); summit of Mt Killiecrankie, Flinders Is., *G.Kantvilas 33/06* (HO).

Characterised by asci with 2 rough ascospores and the presence of 4,5-dichlorolichexanthone and norstictic acid in the thallus. It resembles the saxicolous New Zealand species *P. subverrucosa* Nyl., which has smooth-walled ascospores and different chemistry (lacking 4,5-dichlorolichexanthone).

***Pertusaria trevethensis*** A.W.Archer, *Mycotaxon* 41: 248 (1991)

T: The Black Gap, Black Trevethen Ra., 21 km SSW of Cooktown, Qld, 4 July 1984, *J.A.Elix* 17336; holo: CANB.

Illustration: A.W.Archer, *op. cit.* 243, fig. 10.

Thallus dull yellow-brown, smooth and glossy, slightly cracked; margin well defined. Soredia and isidia absent. Apothecia conspicuous, verruciform, concolorous with the thallus, scattered, rarely confluent, flattened-hemispherical, 0.5–1.0 mm diam. Ostioles inconspicuous, black, punctiform, 1–4 per verruca. Ascospores 4 per ascus, fusiform, smooth, 80–105 × 28–35 µm.

*Chemistry*: Thallus K<sup>-</sup>, KC<sup>-</sup>, C<sup>-</sup>, Pd<sup>-</sup>; containing stictic acid (major), 4,5-dichlorolichexanthone (minor) and constictic acid (trace).

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

Qld: type locality, *H.Streimann* 30934 (B, CANB).

Characterised by the 4-spored asci and the presence of 4,5-dichlorolichexanthone and stictic acid in the thallus.

***Pertusaria vulpina*** A.W.Archer, *Mycotaxon* 41: 249 (1991)

T: Mt Fox, 43 km SW of Ingham, Qld, 18°15'S, 145°42'E, 19 June 1986, *J.A.Elix* 20326; holo: CANB.

Thallus pale olive-green, thin, wrinkled and cracked, tuberculate and glossy. Soredia and isidia absent. Apothecia inconspicuous, verruciform, scattered, flattened-hemispherical, constricted at the base, concave above, 0.7–1.5 mm diam.; often confluent and 2–3 mm diam. Ostioles conspicuous, black, 2–5 per verruca or 10–15 on confluent verrucae. Ascospores 2 per ascus, elongate-ellipsoidal, smooth, 140–175 × 40–55 µm.

*Chemistry*: Thallus K<sup>+</sup> weak yellow, KC<sup>-</sup>, C<sup>-</sup>, Pd<sup>-</sup>; containing stictic acid (major), 4,5-dichlorolichexanthone (minor) and constictic acid (trace).

This rare, saxicolous species is known from the type locality in north-eastern Qld and from Papua New Guinea.

Characterised by 2-spored asci and the presence of 4,5-dichlorolichexanthone and stictic acid in the thallus. The chemically similar *P. trevethensis* has 4-spored asci and smaller ascospores.