Flora of Tasmania online

CAMERONIA [1] [2]

Gintaras Kantvilas [3]

Cameronia Kantvilas, *Lichenologist* 44: 92 (2012).

Type: *C. pertusarioides* Kantvilas

Thallus crustose, ecorticate, with a hyaline epinecral layer 5–20 µm thick, occasionally delimited by a blackish, marginal prothallus. Photobiont a unicellular green alga with cells ± globose, 3–6 µm wide. Ascomata perithecioid, deeply immersed in the thallus, enclosed by a rudimentary, poorly differentiated proper exciple; involucrellum absent. Periphyses absent. Paraphysoids very abundant, branched and anastomosed, inspersed with oil droplets and scattered photobiont cells. Asci broadly obovate, 4-spored; outer coat hemiamyloid, KI+ blue; tholus well developed, non-amyloid or weakly KI+ blue; ocular chamber not developed. Ascospores broadly ellipsoid to ovate, hyaline, non-halonate, densely muriform, with irregularly rhomboidal cells. Conidiomata pycnidia, immersed. Conidia bacilliform to bone-shaped. Chemistry: dibenzofuranes and unknown substances.

A Tasmanian endemic genus of two, very conspicuous, alpine, saxicolous crustose species. It superficially resembles species of *Pertusaria*, whereas anatomical characters, such as the thick-walled, hemiamyloid asci, richly branched paraphysoids and eumuriform ascospores, suggest relationships to the Arthonialaes. On the basis of molecular data, it is placed in the family Cameroniaceae in the Ostromycetidae, where its higher rank relationships remain unclear.

Key references: Kantvilas (2012); Lumbsch *et al.* (2012).

1 Thallus pale lemon-yellow, UV+ bright yellow; very common and conspicuous on exposed alpine dolerite ..... 1 C. pertusarioides

Thallus pale brown, greyish or yellowish brown, UV–; occasional in deeply shaded, moist underhangs on alpine quartzite ..... 2 C. tecta

1 Cameronia pertusarioides Kantvilas

Lichenologist 44: 92 (2012). Type: Tasmania, Hartz Mountains Plateau near Lake Osborne, 43°13′S 146°46′E, on dolerite *roche moutonnée* in alpine heathland, 890 m, 30 January 2007, *G. Kantvilas 2/07 & J. Jarman* (holo—HO!; iso—BM!).

Thallus pale lemon yellow, forming extensive, irregular thalli to 50 cm wide or more, mostly smooth, a little glossy, usually deeply cracked, 0.7–1 mm thick, sometimes delimited by a blackish prothallus, but more commonly not delimited and with actively growing margins usually a little thickened, plicate-placodioid and at times somewhat blackened or greyish; medulla white, rather cretaceous, densely inspersed with minute crystals that fluoresce in polarised light and dissolve slowly in K, composed of compact, indistinct hyphae, patchily I+ violet, KI+ violet. Perithecia ± subglobose, c. 200–300 µm wide, usually visible as minute, 0.05–0.08 mm wide, greyish to flesh-coloured depressions or perforations in the thallus surface; exciple hyaline to pale brownish, 10–20 µm thick. Paraphysoids 1–1.5 µm thick; oil droplets scattered, to 10 µm diam.;

1 This work can be cited as: Kantvilas G (2023). *Cameronia*, version **2023:1**. In MF de Salas (Ed.) *Flora of Tasmania Online*. 3 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). **https://flora.tmag.tas.gov.au/lichen-genera/cameronia/**

2 This treatment was supported by the Australian Biological Resources Study's National Taxonomy Research Grant Program (grant no. 4-EHINNOL).

3 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, PO Box 5058, UTAS LPO, Sandy Bay, TAS 7005, Australia.

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hymenial photobiont cells globose to ellipsoid, 4–9 × 4–7 µm. Asci in clusters of 3–7 or more, 110–170 × 50–80 µm. Ascospores broadly ellipsoid to ovate, 48–*57.8*–72 × 24–*30.7*–40 µm. Pycnidia scattered, immersed in the thallus within scattered swellings or roundish verrucae, mostly 0.5–0.8 mm wide, with age becoming more prominent and to 1.5–2 mm wide, initially pierced apically by 1–4, minute, black ostioles, at length becoming apically cracked, in part somewhat blackened and abraded. Conidia bacilliform to ± "bone-shaped", 5–9 × 1–1.3 µm.

Chemistry: 9-*O*-methylpannaric acid (major), pannaric acid (minor), porphyrilic acid (trace), pannaric acid 2-methyl ester (trace) and methyl porphyrilate (trace); thallus K+ yellow, KC+ pale yellowish, C+ pale yellowish, P–, UV+ bright lemon-yellow. The major compound appears as a pale grey spot on developed TLC plates.

Confined exclusively to alpine dolerite where it is one of the most conspicuous and common lichens, forming extensive, roundish or irregular colonies to 50 cm wide, mostly on the exposed tops of boulders and rock plates but also on sheltered vertical rock faces. Its bright yellow colour produces an attractive mosaic with several other large, attractively coloured crustose species, including *Trapelia lilacea* Kantvilas & Elix (± pale violet), *Rhizocarpon geographicum* (L.) DC. (green), *Lecanora farinacea* Fée and *L. demersa* (Kremp.) Hertel & Rambold (white), and *Hymenelia gyalectoidea* Kantvilas (bright orange).

Fertile material is very uncommon. The locations of the asci are typically marked by shallow, crater-like, greyish depressions or by minute swellings with a tiny perforation, but the latter structures may also mark the location of pycnidia, which in general are far more common. Although some thalli or sections of thalli can be covered with large, *Pertusaria*-like verrucae, typically with prominent black 'ostioles', such verrucae are inevitably sterile and densely packed with hyphae and crystals. At length these verrucae become abraded and ultimately excavate. The thallus is very thick, tightly adnate to the substratum and distinctly hydrophobic, with water 'beading' on the thallus surface.

Hartz Mountains summit area, 43°15'S 146°46'E, 1255 m, 1963, *G.C. Bratt 706* (HO); Mt Victoria, 41°20'S 147°50'E, 1000 m, 1997, *G. Kantvilas 4/97* (HO); Turanna Bluff, 41°46'S 146°21'E, 1450 m, 2012, *G. Kantvilas 42/12* (F, HO).

2 Cameronia tecta Kantvilas

Lichenologist 44: 96 (2012). Type:Tasmania, Sentinel Range summit, 42°52'S 146°15'E, in sheltered crevices and overhangs on alpine quartzite boulders, 880 m, 3 November 2007, *G. Kantvilas 346/07* (holo—HO!).

Thallus pale beige-brown to mottled greyish or yellowish brown, forming irregular thalli to 10 cm wide, mostly smooth, usually deeply cracked, 0.2–0.5 mm thick, typically not delimited or at most with a blackish, prothallus-like leading edge; medulla white or discoloured orange-brown, cretaceous, inspersed with minute crystals that fluoresce in polarised light but do not dissolve completely in K, composed of compact, indistinct hyphae, patchily I+ violet, KI+ violet. Perithecia located in the thickest parts of the thallus, frequently clustered together, ± globose, (120–)160–280 µm wide, detected as minute, 0.05–0.1 mm wide, greyish black depressions or ostiole-like perforations with a rather ragged, elevated rim; exciple brownish, 10–20 µm thick. Paraphysoids 1–2 µm thick; oil droplets scattered, to 16 µm diam.; hymenial photobiont cells globose to ellipsoid, 5–8 × 3–5 µm. Asci in clusters of 4–7, 90–140 × 35–60 µm. Ascospores broadly ellipsoid to ovate, often a little tapered at one end, 34–*59.9*–72(–78) × (22–)24–*30.9*–36 µm. Pycnidia scattered, *c.* 200–250 µm wide, immersed in the thallus and sometimes forming irregular swellings or roundish verrucae, typically detected by their minute, black or brownish speck-like ostioles. Conidia mostly bacilliform, 6–8 × 1 µm.

Chemistry: an unknown triphenyl, usually in very low concentrations, appearing as a slow-moving, colourless spot on developed TLC plates; thallus and medulla K–, KC–, C–, P–, UV–.

Uncommon and restricted to the south-west where it occurs on very hard Precambrian quartzite or Ordovician conglomerate, typically in deeply shaded, sheltered, moist underhangs in alpine heathland. One unusual collection is from shaded, seasonally inundated rocks from the edge of an alpine lake. Fertile material and pycnidia are extremely rare and are located in the thickest parts of the thallus.

Crater Peak, 41°39′S 145°56′E, 1200 m, 1984, *G. Kantvilas 408/84 & P. James* (BM, HO); Lake Cygnus, 43°08′S 146°14′E, 880 m, 2006, *G. Kantvilas 498/06* (HO); Mt Sprent Track, 42°47′S 145°58′E, 930 m, 2016, *G. Kantvilas 21/16* (HO, MSC, NY).

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