



AUSTROPARMELINA ¹

Gintaras Kantvilas ²

Austroparmelina A.Crespo, Divakar & Elix, *Syst. & Biodiv.* 8: 216 (2010).

Type: *A. endoleuca* (Taylor) A.Crespo, Divakar & Elix

Thallus foliose, with lobes flattened, dorsiventral, sometimes sparsely ciliate at the margins; upper surface whitish grey, rarely maculate, lacking cortical hairs and pseudocyphellae, corticate, with a pored epicortex; lower surface pale to dark brown to black, with simple rhizines. Photobiont trebouxoid. Ascomata apothecia, lecanorine, laminal; disc plane to concave, imperforate, pale to dark brown; proper exciple cupulate, lacking dark pigment in the uppermost part. Asci 8-spored, of the *Lecanora*-type: clavate; with a well-developed, amyloid tholus, pierced entirely by a narrow, non-amyloid *masse axiale* with parallel flanks; ocular chamber not developed. Paraphyses 2–2.5 µm thick, straight, sparsely branched; apices slightly swollen. Ascospores simple, hyaline, ellipsoid to subglobose, with a distinct perispore c. 0.5 µm thick. Conidiomata pycnidia, immersed, laminal; conidia acerose to narrowly fusiform. Chemistry: atranorin in the cortex, usually with lecanoric acid in the medulla; fatty acids or euplectin pigments sometimes present.

A genus of about 15 species of attractive, whitish grey, foliose lichens, found mainly in Australasia but with two species also occurring in southern Africa. It was originally subsumed within *Parmelina*, a genus now recognised as confined to the Northern Hemisphere, and was delimited chiefly on molecular data. These data also indicate that the closest relatives of *Austroparmelina* are *Flavoparmelia*, with a yellow upper surface, and *Parmotrema*, which has broad lobes with a prominent, naked, marginal zone (Crespo *et al.* 2010). However, *Austroparmelina* is most likely to be confused with *Canoparmelia*, a genus that has not been recorded for Tasmania.

Key references: Elix (1994); Elix & Kantvilas (2001); Kantvilas *et al.* (2002); Crespo *et al.* (2010).

1	Thallus sorediate, isidiate or pustulate	2
	Thallus lacking soredia, isidia or pustules	5
2(1)	Thallus isidiate	3
	Thallus sorediate, or with pustules that become abraded and sorediate	4
3(2)	Lower surface black, apart from a paler, brown, marginal zone; isidia with glossy apices; common	1 <i>A. conlabrosa</i>
	Lower surface pale tan throughout; isidia with apices becoming abraded; very rare	4 <i>A. pallida</i>
4(2)	Lower surface black, apart from a paler, brown, marginal zone; common and widespread	3 <i>A. labrosa</i>
	Lower surface pale brown throughout; very rare in coastal habitats.	7 <i>A. whinrayi</i>
5(1)	Lower part of medulla orange, K+ violet (containing euplectin); rare	2 <i>A. corrugativa</i>
	Medulla white throughout and lacking orange pigment	6
6(5)	Lower surface black, apart from a paler, brown, marginal zone; very common and widespread	5 <i>A. pseudorelicina</i>
	Lower surface pale brown throughout; very rare	6 <i>A. subarida</i>

1 This work can be cited as: Kantvilas G (2023). *Austroparmelina*, version 2023:1. In MF de Salas (Ed.) *Flora of Tasmania Online*. 5 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichen-genera/austroparmelina/>.

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

1 *Austroparmelina conlabrosa* (Hale) A.Crespo, Divakar & Elix

Syst. & Biodiv. 8: 216 (2010); —*Pseudoparmelia conlabrosa* Hale, *Smithsonian Contr. Bot.* 31: 25 (1976); *Parmelia conlabrosa* (Hale) Elix & G.N.Stevens, *Austral. J. Bot.* 27: 882 (1980); *Parmelina conlabrosa* (Hale) Elix & J.Johnst., *Brunonia* 9: 159 (1987).

Thallus adnate, to 8 cm wide; lobes 0.5–3 mm wide, tightly imbricate in the thallus centre, irregularly branched, discrete and usually rounded or, more rarely, truncate at the apices; upper surface plane to undulate, emaculate, isidiate; isidia terete, to c. 0.5 mm tall and 0.05 mm wide, simple or branched, glossy and discoloured brownish at the tips, at first scattered, soon becoming very densely crowded and the older, central parts of the thallus developing into a rather gnarled, coralloid, isidiate mass; axils irregular or rounded; marginal cilia absent or very sparse; lower surface black, with a narrow, pale brown, marginal zone lacking rhizines; medulla white throughout. Apothecia very rare, 1–3.5 mm wide; disc glossy, pale to deep red-brown, epruinose, concave; thalline margin isidiate. Ascospores subglobose to ellipsoid, 9–10.7–12 × (5–)6–7.1–8(–9) µm. Pycnidia very rare; conidia 7–8.5 × 0.5 µm.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K–, KC+ red; C+ red, P–, UV–.

Very common on bark, wood and, occasionally, on rocks at low elevations in dry sclerophyll forest, coastal heathland and scrub, and on remnant trees or fence posts in farming country. This species is essentially the isidiate counterpart of the similarly common *A. pseudorelicina*. It also widespread on the Australian mainland and in New Zealand.

Cape Deslacs, 42°59'S 147°33'E, 30 m, 1981, G. Kantvilas 430/81 (BM, HO); near Dora Point, 41°17'S 148°19'E, 5 m, 2001, G. Kantvilas 194/01(HO); Wineglass Bay, 42°11'S 148°19'E, 1 m, 2003, G. Kantvilas 734/03 (HO).

2 *Austroparmelina corrugativa* (Kurok. & Filson) Elix & Kantvilas

Pap. and Proc. Roy. Soc. Tasmania 154: 2 (2020); —*Parmelia corrugativa* Kurok. & Filson, *Bull. Natl Sci. Mus. ser. B*, 1: 38 (1975); *Pseudoparmelia corrugativa* (Kurok. & Filson) Hale, *Smithsonian Contr. Bot.* 31: 25 (1976); *Canoparmelia corrugativa* (Kurok. & Filson) Elix & Hale, *Mycotaxon* 27: 278 (1986).

Parmelina euplectina Kurok. ex Elix, *Mycotaxon* 47: 116 (1993); *Austroparmelina euplectina* (Kurok. ex Elix) A.Crespo, Divakar & Elix, *Syst. & Biodiv.* 8: 218 (2010).

Superficially identical to *A. pseudorelicina* (below), and likewise with a grey foliose thallus of imbricate lobes, a black lower surface with a pale brown marginal zone, and lacking isidia or soredia. It differs chiefly by containing the orange pigment euplectin (K+ violet), visible as a thin, orange layer in the lower part of the medulla. The lobes are always eciliate and rather broad (2.5–6 mm) and rounded at the thallus margins, and the pale marginal zone on the underside can be relatively wide (to 3 mm) and wrinkled. Ascospores subglobose to ellipsoid, (7.5–)8–9.9–11(–12) × 5–6.5–8 µm. Conidia 5.5–7.5 × 0.5 µm, occasionally ± bifusiform.

Chemistry: atranorin, chloroatranorin, lecanoric acid and euplectin; medulla K–, KC+ red; C+ red, P–, UV–; orange parts of medulla K+ violet.

An uncommon epiphyte in dry sclerophyll woodland and scrub, especially near the coast in the north-east, where it is usually sympatric with *A. pseudorelicina*. It has a similar distribution in south-eastern Australia.

Glen Esk Road near Middle Run Hill, 41°48'S 147°27'E, 220 m, 2001, G. Kantvilas 754/01 (HO); Tomahawk River, 40°52'S 147°45'E, sea-level, 2003, G. Kantvilas 108/03 (HO); Cape Portland, Musselroe Wind Farm, Tregaron Lagoons, "Copperhead Road", 40°46'49"S 147°58'00"E, 2 m, 2018, G. Kantvilas 326/18 (HO).

3 *Austroparmelina labrosa* (Zahlbr.) A.Crespo, Divakar & Elix

Syst. Biodiv. 8: 218 (2010); —*Parmelia tenuirima* var. *labrosa* Zahlbr., *Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl.* 104: 356 (1941); *Parmelia labrosa* (Zahlbr.) Hale, *J. Jap. Bot.* 43: 325 (1968); *Pseudoparmelia labrosa* (Zahlbr.) Hale, *Phytologia* 29: 190 (1974); *Parmelina labrosa* (Zahlbr.) Elix & J.Johnst., *Brunonia* 9: 160 (1986).

Thallus tightly adnate, or rather loosely attached, with margins ascending, to 10 cm wide; lobes 0.5–6 mm wide, irregularly branched, tightly imbricate in the thallus centre, discrete and rounded, or rather truncate at the apices; upper surface plane to undulate, sometimes faintly wrinkled, occasionally maculate, sorediate; soralia laminal or submarginal, mostly pustulate, at first discrete and rounded, soon coalescing and spreading across the thallus; soredia farinose, or coarse and gnarled, \pm concolorous with the thallus or discoloured dull greyish; axils irregular or rounded; marginal cilia sparse to frequent; lower surface black, with the pale brown, erhizinate marginal zone to 5 mm wide; medulla white throughout. Apothecia occasional, 0.8–4 mm wide, sessile to substipitate; disc glossy, pale to deep red-brown, epruinose, usually deeply concave and the apothecia therefore rather conical; thalline margin sorediate. Ascospores usually ellipsoid, $(11.5\text{--}12\text{--}14.3\text{--}17(-18) \times 6.5\text{--}9.1\text{--}11 \mu\text{m}$. Pycnidia uncommon; conidia $5.5\text{--}7.5 \times 0.5(-1) \mu\text{m}$.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K⁻, KC⁺ red; C⁺ red, P⁻, UV⁻.

A widespread species, also recorded from mainland Australia, New Zealand, the subantarctic islands and southern South America. It is very common in Tasmania, ranging from coastal to alpine elevations in heathland, sclerophyll forests and in the canopy of rainforest. Most collections seen are from rocks, although this species occurs equally on bark or wood. *Austroparmelina labrosa* is extremely variable. Thalli can be tightly adnate with plane, appressed lobes, or loosely adnate with undulate, apically ascending lobes. The lobes range from narrow and rather truncate to broad and rounded. The soredia can also be very variable: some thalli have discrete, rounded soralia with farinose soredia, whereas in others, the soredia arise in pustules, are very coarse and gnarled, and ultimately cover the entire thallus except for the very margins. Several cryptic entities may well be included under this name. The thallus is frequently infected by unidentified lichenicolous fungi.

Mt Direction, 42°48'S 147°18'E, 440 m, 1972, G.C. Bratt 72/630 (AD, HO); Tiger Range, Florentine Valley, 550 m, 1980, G. Kantvilas 352/80 (BM, HO); The Neck, Bruny Island, 43°16'S 147°21'E, 1 m, 1997, G. Kantvilas 35/98 (HO).

4 *Austroparmelina pallida* (Elix & Kantvilas) Kantvilas & Divakar

Australas. Lichenol. 73: 6 (2013); —*Parmelina pallida* Elix & Kantvilas, *Australas. Lichenol.* 49: 12 (2001). Type: Tasmania, South Arm, Fort Direction Road, 43°02'S 147°25'E, 50 m, on *Allocasuarina verticillata* in degraded, dry open woodland on roadside, 12 February 2001, G. Kantvilas 165/01 (holo—HO!).

Very similar to *A. conlabrosa* in its isidiate thallus but differing by having a pale tan lower surface. Furthermore, the thallus tends to be lobulate and the isidia are rather gnarled, granular and eroded at the apices. Apothecia and pycnidia are unknown.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K⁻, KC⁺ red; C⁺ red, P⁻, UV⁻.

Known only from the type collection, from an area now severely modified by roadworks and housing development. The tree from which it was collected has been felled and removed and searches for additional populations have been unsuccessful; the species is effectively extinct.

5 *Austroparmelina pseudorelicina* (Jatta) A.Crespo, Divakar & Elix

Syst. Biodiv. 8: 218 (2010); —*Parmelia pseudorelicina* Jatta, *Boll. Soc. Bot. Ital.* 1910: 254 (1911); *Parmelina pseudorelicina* (Jatta) Kantvilas & Elix, *Muelleria* 7: 513 (1992). Type: Tasmania, ad Sassafrages in Monte Wellington (Hobart Rivulet), 600 p [180 m,] W.A. Weymouth (holo—NAP!).

Parmelina stevensiana Elix & J. Johnst., *Brunonia* 9: 157 (1986).

Thallus adnate, to 10 cm wide; lobes 0.5–3.5 mm wide, irregularly branched, crowded and imbricate in the thallus centre, discrete and usually rounded at the apices, more rarely truncate; upper surface plane to undulate, becoming increasingly rugulose to wrinkled with age, emaculate, typically abundantly speckled with black pycnidia, lacking isidia or soredia; axils rounded or irregular; marginal cilia absent or very sparse; lower surface black, with a narrow, pale brown marginal zone lacking rhizines; medulla white throughout. Apothecia 0.5–4.5(–7) mm wide; disc glossy, pale to deep red-brown, epruinose, usually persistently concave and becoming plane only in the largest, oldest apothecia; thalline margin thin, persistent, smooth,

becoming a little cracked with age. Ascospores subglobose to ellipsoid, 10–10.7–13 × 6–7.6–9(–10) µm. Conidia 5.5–7 × 0.5 µm.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K–, KC+ red; C+ red, P–, UV–.

Very common and widespread in Tasmania from sea-level to alpine elevations, and also recorded from mainland Australia and New Zealand. It occurs mainly on smooth-barked, sub-dominant trees and shrubs in sclerophyll forests and woodlands, on isolated pasture and roadside trees, and on canopy twigs in rain-forest. Rarely it can also colonise rocks. This species is highly variable in terms of lobe width and lobe shape, which range from elongate and truncate to broadly rounded. Narrow-lobed forms tend to have sparsely ciliate margins and sinuate axils, whereas broader forms are eciliate and have irregularly incised axils. The characteristic black lower surface can be surrounded by a pale brown marginal zone that can extend well under the thallus.

Guy Fawkes Rivulet, 42°54'S 147°17'E, 1922, W.A. Weymouth 432 (HO); Barton Road, Epping, 41°48'S 147°18'E, 1972, G.C. Bratt 72/730 (HO); Welcome Swamp, 40°57'S 144°48'E, 40 m, 2001, G. Kantvilas 1212/01 (HO).

6 *Austroparmelina subarida* (Elix) A.Crespo, Divakar & Elix

Syst. & Biodiv. 8: 218 (2010); —*Canoparmelia subarida* Elix, *Mycotaxon* 47: 103 (1993).

Essentially identical to *A. pseudorelicina*, both having a thallus of imbricate lobes with rounded apices, lacking isidia or soredia. It differs by having a pale brown or ivory lower surface. Ascospores (7.5–)8–10.0–11 × 5.5–6.8–8(–9.5) µm. Conidia 5.5–8 × 0.5 µm.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K–, KC+ red; C+ red, P–, UV–.

Very rare in Tasmania and known from remnant trees in dry pasture where it is sympatric with *A. pseudorelicina* and therefore easily overlooked. It also occurs on the southern Australian mainland.

Dixon Point Road, 42°57'S 147°27'E, 40 m, 2001, G. Kantvilas 477/01 (HO); Esk Hwy, c. 7.7 km E of railway bridge near Llewellyn Siding, 42°49'S 147°36'E, 230 m, J. Elix 28790 & G. Kantvilas (CANB, HO).

7 *Austroparmelina whinrayi* (Elix) Kantvilas & Divakar

Australas. Lichenol. 73: 7 (2013); —*Canoparmelia whinrayi* Elix, *Mycotaxon* 47: 105 (1993); *Parmelina whinrayi* (Elix) Kantvilas & Elix, *Australas. Lichenol.* 49: 14 (2001). Type: Tasmania, west of the road from Marawah to Arthur River, SSE of West Point, 1 February 1969, J.S. Whinray (holo—MEL!).

Essentially identical to *A. labrosa*, from which it differs solely by having an entirely pale brown lower surface. Apothecia and pycnidia unknown.

Chemistry: atranorin, chloroatranorin and lecanoric acid; medulla K–, KC+ red; C+ red, P–, UV–.

Endemic to Tasmania and very rare, recorded from the bark of small trees and shrubs in coastal situations.

Mortimer Bay, 42°59'S 147°28'E, 1981, G. Kantvilas 179/81 (BM, HO); near Eddystone Lighthouse, 40°59'S 148°21'E, 10 m, 2001, G. Kantvilas 223/01 (HO).

REFERENCES

- Crespo A, Ferencova Z, Pérez-Ortega S, Elix JA, Divakar PK (2010) *Austroparmelina*, a new Australasian lineage in parmelioid lichens (Parmeliaceae, Ascomycota). *Systematics and Biodiversity* 8 209–221.
- Elix JA (1994) Parmeliaceae. *Flora of Australia* 55 1–360.
- Elix JA, Kantvilas G (2001) Two new species of Parmeliaceae (lichenized Ascomycotina) from Tasmania. *Australasian Lichenology* 49 12–15.
- Kantvilas G, Elix JA, Jarman SJ (2002) *Tasmanian Lichens. Identification, Distribution and Conservation Status. I. Parmeliaceae*. *Flora of Australia Supplementary Series no. 15*. (Australian Biological Resources Study: Canberra and Tasmanian Herbarium: Hobart).

INDEX

A

<i>Allocauarina verticillata</i>	3
<i>Austroparmelina</i>	1
<i>Austroparmelina conlabrosa</i>	2, 3
<i>Austroparmelina corrugativa</i>	2
<i>Austroparmelina endoleuca</i>	1
<i>Austroparmelina euplectina</i>	2
<i>Austroparmelina labrosa</i>	2, 3, 4
<i>Austroparmelina pallida</i>	3
<i>Austroparmelina pseudorelicina</i>	2, 3, 4
<i>Austroparmelina subarida</i>	4
<i>Austroparmelina whinrayi</i>	4

C

<i>Canoparmelia</i>	1
<i>Canoparmelia corrugativa</i>	2
<i>Canoparmelia subarida</i>	4
<i>Canoparmelia whinrayi</i>	4

F

<i>Flavoparmelia</i>	1
----------------------------	---

L

<i>Lecanora</i>	1
-----------------------	---

P

<i>Parmelia conlabrosa</i>	2
<i>Parmelia corrugativa</i>	2
<i>Parmelia labrosa</i>	2
<i>Parmelia pseudorelicina</i>	3
<i>Parmelia tenuirima</i> var. <i>labrosa</i>	2
<i>Parmelina</i>	1
<i>Parmelina conlabrosa</i>	2
<i>Parmelina euplectina</i>	2
<i>Parmelina labrosa</i>	2
<i>Parmelina pallida</i>	3
<i>Parmelina pseudorelicina</i>	3
<i>Parmelina stevensiana</i>	3
<i>Parmelina whinrayi</i>	4
<i>Parmotrema</i>	1
<i>Pseudoparmelia conlabrosa</i>	2
<i>Pseudoparmelia corrugativa</i>	2
<i>Pseudoparmelia labrosa</i>	2