

## BULBOTHRIX

*John A.Elix*

[From *Flora of Australia* volume 55 (1994)]

*Bulbothrix* Hale, *Phytologia* 28: 480 (1974); from the Latin *bulbo* (bulb) and Greek *-thrix* (hair), referring to the swollen (bulbate) cilia.

*Parmelia* sect. *Bicornuta* Lynge, *Ark. Bot.* 13: 17 (1915); *Parmelia* subg. *Bicornuta* (Lynge) Gyeln., *Repert. Spec. Nov. Regni Veg.* 30: 219 (1932); *Parmelia* subg. *Parmelia* sect. *Imbricaria* subsect. *Bicornutae* ser. *Bicornutae* Hale & Kurok., *Contr. U.S. Natl Herb.* 36: 135 (1964).

Type: *B. semilunata* (Lynge) Hale

Thallus foliose, adnate to tightly adnate. Lobes contiguous, rarely moderately imbricate (in *B. isidiza*), sublinear to subirregular, narrow to moderately broad; cilia bulbate. Upper surface grey (atranorin), smooth, maculate or not, with or without isidia and lobules, lacking soredia and pseudocyphellae. Upper cortex a basic palisade plectenchyma with pored epicortex. Cell walls containing isolichenan. Medulla loosely packed, white or partly pigmented. Lower surface pale tan to black; rhizines simple to densely dichotomously branched, usually concolorous. Ascomata apothecial, rare to common, laminal, subpedicellate or sessile; disc concave, imperforate, pale to dark brown; coronate with black bulbae around inner margin of thalline exciple, or ecoronate. Ascospores ellipsoidal or bicornute, 8 per ascus, 6–15 × 4–8 µm. Conidiomata pycnidial, common, immersed in thallus or in erect bulbae around inner margin of the thalline exciple. Conidia bifusiform, rarely bacilliform, 5–9 × 1 µm.

The lichen genus *Bulbothrix*, a segregate of *Parmelia* Ach. *s. lat.*, was monographed by Hale in 1976. He considered *Bulbothrix* to comprise 29 species with the major centres of distribution being in South America (14 species) and southern Africa (9 species). At that time, only one species was known to occur in Australia, but a further eight species have been recognised since, occurring on bark and rock. The majority of these species are common on trunks and branches in the canopies of tropical mangroves, and also occur on trees and rocks in coastal and hinterland forests and woodlands of Qld. They exhibit a significant overlap with the *Bulbothrix* flora of Papua New Guinea. Two species are essentially temperate and occur in coastal locations in N.S.W.

M.E.Hale, *Bulbothrix*, *Parmelina*, *Relicina* and *Xanthoparmelia*, four new genera in the Parmeliaceae (Lichenes), *Phytologia* 28: 479–490 (1974); M.E.Hale, A Monograph of the Lichen Genus *Bulbothrix* Hale (Parmeliaceae), *Smithsonian Contr. Bot.* 32: 1–29 (1976); J.A.Elix & G.N.Stevens, New Species of *Parmelia* (lichens) from Australia, *Austral. J. Bot.* 27: 873–883 (1979); G.N.Stevens, The Macrolichen Flora from the Mangroves of Moreton Bay, *Proc. Roy. Soc. Queensland* 90: 33–49 (1979); G.N.Stevens, The Macrolichen Flora on Mangroves of Hinchinbrook Island, Queensland, *Proc. Roy. Soc. Queensland* 92: 75–84 (1981); M.E.Hale, New species in the lichen family Parmeliaceae (Ascomycotina), *Mycotaxon* 25: 85–93 (1986); J.A.Elix, New species in the lichen family Parmeliaceae (Ascomycotina) from Australia, *Mycotaxon* 47: 101–129 (1993).

- |    |  |                            |
|----|--|----------------------------|
| 1  | Thallus not isidiate; ascospores bicornute .....             | 3. <b>B. bicornuta</b>     |
| 1: | Thallus isidiate; ascospores not bicornute .....             | 2                          |
| 2  | Lower surface brown (1:)                                     | 3                          |
| 2: | Lower surface black (at least in the centre) .....           | 4                          |
| 3  | Lobes broad, 2.5–5 mm wide; upper surface maculate (2) ..... | 5. <b>B. isidiza</b>       |
| 3: | Lobes narrow, 0.8–2 mm wide; upper surface emaculate .....   | 2. <b>B. australiensis</b> |
| 4  | Medulla K+ yellow then red; salazinic acid present (2:)      | 5                          |
| 4: | Medulla K-; salazinic acid absent .....                      | 7                          |

- 5 Lobes broad, 1.5–5 mm wide; cilia inflated (4) ..... **9. B. tabacina**
- 5: Lobes narrow, 0.1–1 mm wide; cilia slender or inflated ..... 6
- 6 Lobes 0.5–1 mm wide; cilia slender; upper surface maculate (5:) ..... **8. B. subtabacina**
- 6: Lobes 0.1–0.5 mm wide; cilia inflated; upper surface emaculate ..... **6. B. microscopica**
- 7 Medulla C+ rose; gyrophoric acid present (4:) ..... **4. B. goebelii**
- 7: Medulla C-; gyrophoric acid absent ..... 8
- 8 Medulla KC+ rose; lobaric acid present (7:) ..... **1. B. apophysata**
- 8: Medulla KC-; lobaric acid absent ..... **7. B. queenslandica**