

HYPOTRACHYNA

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Hypotrachyna (Vain.) Hale, *Phytologia* 28: 341 (1974); from the Greek *hypo* (below) and *trachy* (rough or shaggy), in reference to the conspicuously rhizinate lower surface of the lobes.

Parmelia sect. *Hypotrachyna* Vain., *Acta Soc. Fauna Fl. Fenn.* 7: 38 (1890).

Type: *H. brasiliana* (Nyl.) Hale

Thallus foliose, dorsiventral, loosely to tightly adnate. Lobes sublinear or rarely subirregular or linear-elongate, 0.5–6 mm wide; margins eciliate; apices truncate, incised or rarely subrotund. Upper surface whitish to grey (atranorin or lichexanthone) or yellow-green (usnic acid), with or without maculae, soredia, pustules and isidia, without pseudocyphellae; with palisade cortex and pored epicortex. Cell walls containing isolichenan. Medulla white or occasionally partly yellow or orange. Lower surface black, sometimes paler towards lobe apices, rhizinate to lobe margins; rhizines dichotomously branched, rarely squarrosely branched in part, conspicuously projecting beyond margins, black. Ascomata apothecial, laminal, sessile to subpedicellate, 1–10 mm wide; disc imperforate. Ascospores ellipsoidal, 8 per ascus, 6–16 × 3–10 µm. Conidiomata pycnidial, immersed, laminal. Conidia bifusiform, 5–8 × 1 µm.

Hypotrachyna is a segregate of *Parmelia* Ach. *s. lat.* containing c. 150 species, most of which are of tropical, montane distribution. A total of 16 species have so far been recorded for Australia, growing on bark and rock and, rarely, soil.

M.E.Hale, & S.Kurokawa, Studies on *Parmelia* subgenus *Parmelia*, *Contr. U.S. Natl Herb.* 36: 121–191 (1964); M.E.Hale, Delimitation of the lichen genus *Hypotrachyna* (Vainio) Hale, *Phytologia* 28: 340–342 (1974); M.E.Hale, A revision of the lichen genus *Hypotrachyna* (Parmeliaceae) in Tropical America, *Smithsonian Contr. Bot.* 25: 1–73 (1975); H.Krog & T.D.V.Swinscow, *Parmelia* subgenus *Hypotrachyna* in East Africa, *Norweg. J. Bot.* 26: 11–43 (1979); S.Kurokawa, Chemical variation in the *Parmelia physcioides* group (Lichenes), *J. Jap. Bot.* 61: 257–269 (1986); H.Krog & T.D.V.Swinscow, New species and new combinations in some parmelioid lichen genera, with special emphasis on east African taxa, *Lichenologist* 19: 419–431 (1987); J.A.Elix, New species in the lichen family Parmeliaceae (Ascomycotina) from Australia, *Mycotaxon* 47: 101–129 (1993).

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| 1 | Upper surface yellow-green; usnic acid (K-, KC+ yellow) in upper cortex..... | 2 |
| 1: | Upper surface grey; atranorin (K+ yellow) or lichexanthone (UV+ yellow) in upper cortex..... | 3 |
| 2 | Thallus sorediate (1)..... | H. sinuosa |
| 2: | Thallus esorediate..... | H. reducens |
| 3 | Upper cortex UV+ yellow; lichexanthone present (1:)..... | 4 |
| 3: | Upper cortex UV-; atranorin present..... | 5 |
| 4 | Thallus pustulate-sorediate (3)..... | H. osseoalba |
| 4: | Thallus lacking pustules and soredia..... | H. novella |
| 5 | Thallus isidiate (3:)..... | 6 |
| 5: | Thallus lacking isidia..... | 7 |
| 6 | Medulla KC+ yellow-orange; barbatic acid present (5)..... | H. imbricatula |
| 6: | Medulla KC-; fatty acids present..... | H. costaricensis |
| 7 | Thallus lacking pustules and soredia (5:)..... | 8 |
| 7: | Thallus pustulate and/or sorediate..... | 9 |
| 8 | Lower medulla orange-brown (skyrin); protocetraric acid present (7)..... | H. heterochroa |
| 8: | Medulla white throughout; gyrophoric acid present..... | H. proserpinensis |

9	Thallus pustulate and becoming sorediate (7:)	10
9:	Thallus sorediate, lacking pustules	11
10	Lobes narrow (0.5–1 mm wide); medulla KC+ rose; colensoic acid present (9)	H. subpustulifera
10:	Lobes broader (1–3 mm wide); medulla KC+ orange; barbatic acid present	H. exsecta
11	Soredia borne on revolute, marginal laciniae; fumarprotocetraric acid present (9:)	H. banguioensis
11:	Soredia not on marginal laciniae; fumarprotocetraric acid absent	12
12	Medulla K+ yellow then dark red; salazinic acid present (11:)	H. brevihiza
12:	Medulla K- or K+ pale reddish; salazinic acid absent	13
13	Lobes narrow (0.5–0.8 mm wide); medulla UV+ blue-white; alectoronic acid present (12:)	H. booralensis
13:	Lobes broader (1–6 mm wide); medulla UV-; alectoronic acid absent	14
14	Medulla C+ red; gyrophoric or olivetoric acid present (13:)	15
14:	Medulla C-; gyrophoric and olivetoric acids absent	16
15	Lobes flat; soralia orbicular, capitate; olivetoric acid present (14)	H. lividescens
15:	Lobes subascending; soralia coarse to pustular, with sorediate lobes becoming revolute; gyrophoric acid present	H. revoluta
16	Medulla KC+ orange; medulla white throughout; barbatic acid present (14:)	H. laevigata
16:	Medulla C+ red; medulla orange-brown below soralia; lividic acid complex present	H. immaculata