PROTOPARMELIA

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[From *Flora of Australia* volume 57 (2009)]

Protoparmelia M.Choisy, *Bull. Soc. Bot. France* 76: 523 (1929); from the Greek *protos* (the first), "representing the prototype of the *Parmelia olivacea* group" (now the genus *Melanohalea*).

Type: *P. badia* (Hoffm.) Hafellner

Thallus crustose, warted or cracked and areolate, usually corticate, rarely ecorticate; hypothallus a thin black marginal line, or absent. Isidia present or absent; soredia and lobules absent. Upper surface pale grey-brown to chestnut-brown or dark brown; upper cortex 10–50 µm thick, composed of branched short-celled anticlinal hyphae often with brown-pigmented apices, usually overlain by a well-defined colourless epicortex. Photobiont a unicellular green alga; cells 8–12 µm diam., forming a continuous layer 80–100 µm thick, sometimes dividing to form autospores. Medulla well defined, white, non-amyloid, frequently containing lichen substances. Ascomata apothecia, lecanorine, arising from within areolae or warts, immersed to sessile, ±round, glossy; disc brown, concave to ±plane or weakly convex, usually darker than the margin, epruinose; thalline exciple ±concolorous with the thallus, 12–30 µm thick, with a medulla filled with algal cells and, usually, a well-defined cortex similar to that of the thallus. Proper exciple biatorine, colourless, often cup-shaped, ±inconspicuous, poorly delimited. Epihymenium 10–20 µm thick, brown to yellow-brown or olive-brown, without granules. Hymenium 35–80 µm thick, colourless to pale brownish, amyloid. Hypothecium 50–100 µm thick, colourless to pale yellow. Paraphyses branched near the tips, rarely anastomosing, coherent, septate, 2–4 µm wide below; apical cells swollen or not, ±surrounded by a dark brown cap. Asci clavate, ±*Lecanora*-type, 8-spored, with or without an ocular chamber, always with a distinct non-amyloid apical cushion. Ascospores simple (rarely 1-septate when old), ellipsoidal, fusiform-ellipsoidal, oblong-ellipsoidal or oblong, colourless, without a distinct perispore, 7–17 × 2–7 µm. Conidiomata pycnidial, immersed, globose to ovoid; wall colourless but with brown pigmentation around the ostiole; conidiogenous cells arising on branched conidiophores or in chains, ±cylindrical, enteroblastic, acrogenous or pleurogenous. Conidia simple, colourless, bacilliform or short-acicular, or curved and thread-like.

Protoparmelia is a cosmopolitan genus of c. 13 species, four of which occur in Australia. These lichens are found in temperate to tropical regions where they grow on bark, wood and rock.

G.Rambold, A monograph of the saxicolous lecideoid lichens of Australia (excl. Tasmania), *Biblioth. Lichenol.* 34: 1–345 (1989); B.J.Coppins, *Protoparmelia* M.Choisy (1929), *in* O.W.Purvis, B.J.Coppins, D.L.Hawksworth, P.W.James & D.M.Moore (eds), *The Lichen Flora of Great Britain and Ireland* 501–503 (1992); A.Aptroot, P.Diederich, E.Sérusiaux & H.J.M.Sipman, Lichens and lichenicolous fungi from New Guinea, *Biblioth. Lichenol.* 64: 1–220 (1995); G.Kantvilas, J.A.Elix & S.J.Jarman, *Tasmanian Lichens: Identification, Distribution and Conservation Status I. Parmeliaceae* 141–142 (2002); B.D.Ryan, T.H.Nash, III & J.Hafellner, *Protoparmelia*, *Lichen Fl. Greater Sonoran Desert Region* 2: 425–430 (2004); J.A.Elix, Four new lichens (lichenized *Ascomycota*) from tropical and subtropical Australia, *Australas. Lichenol.* 62: 35–39 (2008).

1	Thallus growing on rock	2
1:	Thallus growing on bark or wood	3
2	Upper surface dark brown; apothecia crowded; lobaric acid present *(1)*	**1. P. badia**
2:	Upper surface pale to medium brown; apothecia dispersed; alectoronic acid present	**4. P. rogersii**
3	Thallus isidiate *(1:)*	**2. P. isidiosa**
3:	Thallus not isidiate	**3. P. pulchra**