

# HEDWIGIACEAE

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**Hedwigiaceae** Schimp., *Coroll. Bryol. Europ.* 52 (1856).

Type: *Hedwigia* P.Beauv.

Autoicous. Plants loosely tufted on rock. Stems irregularly to pinnately branched; stoloniferous stems present or absent. Leaves in 8 rows, ovate, ovate-lanceolate or oblong-lanceolate, concave, ecostate; apex  $\pm$ hyaline, acute to acuminate; margin recurved at least at the base, entire or denticulate above, unbordered. Laminal cells thick-walled, papillose, with simple or branched papillae; central basal cells elongate.

Perichaetia terminal on branches; perichaetial leaves larger than stem leaves, with or without ciliate margins. Calyptra small, fugacious, mitrate or cucullate. Seta very short or absent. Capsule immersed to slightly exserted, erect, symmetrical,  $\pm$ widest at the mouth; operculum flat with a small apiculus or rostrate. Peristome absent. Spores rather large.

A widespread family of c. five genera, two of which are known from Australia, each represented by a single species. The difference between *Hedwigia* and *Hedwigidium* are comparatively minor, and the two taxa are often accommodated within *Hedwigia*.

Leaf apex hyaline; papillae on mid-leaf laminal cells branched; perichaetial leaves with ciliate margins .....  
.....**Hedwigia ciliata**  
Leaf apex pigmented; papillae on mid-leaf laminal cells simple; perichaetial leaves with entire margins .....  
.....**Hedwigidium integrifolium**

## HEDWIGIA

*Hedwigia* P.Beauv., *Mag. Encycl.* 5: 304 (1804), *nom. cons.*; named in honour of the German botanist Johann Hedwig (1730–99).

Type: *H. ciliata* (Hedw.) P.Beauv.

### Reference

Hedenäs, L. (1994), The *Hedwigia ciliata* complex in Sweden with notes on the occurrence of the taxa in Fennoscandia, *J. Bryol.* 18: 139–157.

***Hedwigia ciliata*** (Hedw.) P.Beauv., *Prodr. Aethéogam.* 15 (1805)

*Anictangium ciliatum* Hedw., *Sp. Musc. Frond.* 43 (1801); *Schistidium ciliatum* (Hedw.) Brid., *Musc. Rec.*, Suppl. 4: 21 (1819). T: Swiss Alps; lecto: the uppermost, original plant on the sheet, in Herb. Hedwig-Schwägrichen (G) *n.v.*, *vide* L.Hendenäs, *J. Bryol.* 18: 149 (1994).

*Hedwigia ciliata* (Hedw.) P.Beauv. var. *viridis* Bruch, Schimp. & W.Gümbel, *Bryol. Eur.* 3: 153 (1846); *Hedwigia albicans* Lindb. var. *viridis* (Bruch, Schimp. & W.Gümbel) Limpr., *Laubm. Deutschl.* 1: 822 (1889); *Mém. Soc. Sci. Nat. Cherbourg* 26: 262 (1889). T: Europe, “locis humidis vel umbrosis”; holo: *n.v.*

*Pilotrichum microcyatheum* Müll.Hal., *Bot. Zeitung (Berlin)* 9: 564 (1851); *Cryphaea microcyatheum* (Müll.Hal.) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1874–75: 182 (1876); *Hedwigia microcyatheum* (Müll.Hal.) F.Muell., *Index Bryol.* 554 (1896). T: “infra Beck-river [Esk River] ad Launceston”, [Tas.], *S.Mossman* 830; holo: *n.v.*

*Hedwigia albicans* Lindb., *Öfvers Förh. Kongl. Svenska Vetensk.-Akad.* 21: 421 (1864), *nom. inval.* T: *n.v.*

*Hedwigia juratzkae* Müll.Hal., *Rev. Bryol.* 3: 3 (1876). T: *n.v.*

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*Hedwigia novae-valesiae* Müll.Hal., *Queensland Bot. Bull.* 5: 29 (1892), *nom. inval.* in synon. T: N.S.W.; *n.v.*

*Hedwigia occidentalis* Müll.Hal., *Hedwigia*, 61: 403 (1920). T: Süd-Australien, *coll. unknown*; *n.v.*

Illustrations: G.A.M.Scott & I.G.Stone, *The Mosses of Southern Australia* 353, pl. 67 (1976); D.G.Catcheside, *Mosses of South Australia* 294, fig. 177 (1980); J.Beever, K.W.Allison & J.Child, *Mosses of New Zealand*, 2nd edn 113, fig. 53 (1992); D.Meagher & B.Fuhrer, *A Field Guide to the Mosses and Allied Plants of Southern Australia* 61 (2003).

Plants brown below, olive-green to pale green above, often with an overall whitish tinge due to the hyaline leaf apices. Stems intertwined, richly branched, to c. 4 cm long; stoloniferous stems absent. Leaves imbricate, erecto-patent when dry, erect-spreading to spreading when moist, ovate to oblong-ovate, 1.42–1.87 mm long, 0.71–0.98 mm wide; apex acuminate, hyaline; margin slightly recurved below, entire to lightly denticulate at the apex. Mid-leaf laminal cells isodiametric, c. 10 µm wide, each with 1 or 2 branching papillae; central basal cells elongate, orange-yellow, porose, thick-walled, with a row of simple papillae.

Perichaetia terminal; petichaetial leaves oblong, larger than stem leaves; apex acuminate and hyaline; upper margin with filamentous cilia; upper laminal cells like those of the stem leaves; lower laminal cells elongate, porose, smooth, incrassate. Seta usually absent, otherwise very short. Capsule ovoid, with a wide mouth and a short cylindrical neck; mouth often splitting with age; operculum with a small apiculus. Spores ovoid, c. 26 µm long, finely papillose.

Occurs in W.A., Qld, N.S.W., A.C.T., Vic. and Tas. Also recorded from S.A., where it undoubtedly occurs, but I have not seen specimens. Commonly grows on rock, occasionally on soil. A cosmopolitan moss.

W.A.: “Winnywood”, 12 km from Bridgetown, *M.I.Blackwell* 3.92 (CANB). Qld: Gorge Falls, Upper Coomera R., McPherson Ra., May 1970, *M.Fagg* (CANB). N.S.W.: Parlour Ck, 15 km SSW of Oberon, *S.R.Gilmore* 58 (CANB). A.C.T.: Pine Is., Murrumbidgee R., *L.G.Adams* 1952 (CANB). Vic.: “Dead Cock Gorge”, Mitchell River Natl Park, 26 km NW of Bairnsdale, *H.Streimann* 50254 (CANB). Tas.: Mt Wellington, *A.V.Ratkowsky* H2 (CANB).

The length of the hyaline part of the leaf apex can vary greatly between specimens, and it is occasionally lacking.

## HEDWIGIDIUM

*Hedwigidium* Bruch & Schimp., in Bruch, Schimper & von Gumbel, *Bryol. Europ.* 3: 155 (1846); from the genus name *Hedwigia*, and the Greek diminutive suffix *-idium*.

Type: *H. imberbe* Bruch & Schimp. [= *H. integrifolium* (P.Beauv.) Dixon]

Distinguished from *Hedwigia* by the short seta, weakly plicate leaves, simple rather than branched papillae, and the stoloniferous stems.

***Hedwigidium integrifolium*** (P.Beauv.) Dixon, *Skand. Bladmossfl.* 369 (1939)

*Hedwigia integrifolia* P.Beauv., *Prodr. Aethéogam.* 60 (1805). T: Europe; *n.v.*

*Gymnostomum imberbe* Sm., *Engl. Bot.* 32: 227 (1811); *Hedwigidium imberbe* (Sm.) Bruch & Schimp., in Bruch, Schimper & von Gumbel, *Bryol. Europ.* 3: 157 (1846); *Hedwigia imberbis* (Sm.) Spruce, *Musc. Pyren.* 263 (1847). T: *n.v.*

*Schistidium drummondii* Taylor, *London J. Bot.* 5: 57 (1846); *Neckera drummondii* (Taylor) Müll.Hal., *Syn. Musc. Frond.* 2: 106 (1850); *Hedwigia imberbis* (Sm.) Spruce var. *drummondii* (Taylor) Wilson, in J.D.Hooker, *Fl. Tasman.* 2: 179 (1859); *Hedwigidium drummondii* (Taylor) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1874–75: 173 (1876); *Hedwigia drummondii* (Taylor) Kindb., *Enum. Bryin. Exot.* 15 (1888). T: Swan R., W.A., *J.Drummond*; holo; *n.v.*

*Schistidium australe* Wilson, *London J. Bot.* 5: 58 (1846), *nom. inval.* (in synon.)

*Neckera emersa* Müll.Hal. & Hampe, *Linnaea* 26: 502 (1853); *Hedwigidium emersum* (Müll.Hal. & Hampe) A.Jaeger, *Ber. Thätigk. St. Gallischen Naturwiss. Ges.* 1874–75: 173 (1876); *Hedwigia emersa* Müll.Hal. &

Hampe ex Kindb., *Enum. Bryin. Exot.* 15 (1888), *nom. nud.*; *Harrisonia emersa* Müll.Hal. & Hampe ex Paris, *Index Bryol.* 552 (1895), *nom. nud.* T: Nova-Hollandia [Australia], *coll. unknown*; *holo: n.v.*

Illustrations: G.O.K.Sainsbury, *Bull. Roy. Soc. New Zealand* 5: 332, pl. 5, fig. 2 (1955); G.A.M.Scott & I.G.Stone, *Mosses of Southern Australia* 357, pl. 68 (1976); D.G.Catcheside, *Mosses of South Australia* 296, fig. 178 (1980); D.Meagher & B.Fuhrer, *A Field Guide to the Mosses and Allied Plants of Southern Australia* 61 (2003).

Plants brown below, olive-green to pale yellow-green above. Stems intertwined and richly branched; stoloniferous stems present. Stem leaves erect to erecto-patent when dry, erect-spreading or spreading when moist, ovate-oblong to ovate-lanceolate, concave, 1.25–2.46 mm long, 0.57–1.04 mm wide; apex acute to acuminate, pigmented, rarely hyaline at the very tip; margin recurved, entire. Central basal laminal cells elongate, thick-walled, porose,  $\pm$ papillose; cells 10–20  $\times$  4–10  $\mu$ m, becoming short-rectangular to isodiametric towards the apex, with thick slightly sinuous walls and numerous small simple papillae per cell, usually over the cell walls. Leaves of stoloniferous stems ovate, gradually tapering to an acuminate filiform apex, concave, plicate near the margin.

Perichaetia terminal; perichaetial leaves oblong, similar to stem leaves but much more elongate, with a very large section of smooth elongate laminal cells in the lower part of the leaf, not ciliate. Seta c. 1 mm long. Capsule ovoid, widest below the mouth, slightly grooved when dry, abruptly tapered to the neck; operculum rostrate. Spores 22–28  $\mu$ m long, striolate.

Occurs in all States and Territories (except N.T.); usually grows on rock, rarely on wood or on the ground. A cosmopolitan moss.

W.A.: Mount Chudalup Nature Reserve, 17 km SSE of Northcliffe, *H.Streimann 54305* [*Musci Austral. Exs.* 339] (CANB). S.A.: Saunders Ck, 6 km E of Springton, *H.Streimann 54767* (CANB). Qld: Paling Yard Ck, 22 km ESE of Stanthorpe, *H.Streimann 52928A* (CANB). N.S.W.: Steeple Flat, 10 km SE of Nimmitabel, *H.Streimann 2046* (CANB). A.C.T.: Nursery Ck, 42 km SSW of Canberra, *H.Streimann 31412* (CANB). Vic.: Skeleton Hill, 4 km SE of Chiltern, *H.Streimann 59379* (CANB). Tas.: Mt Wellington, *A.V.Ratkowsky H6* (CANB).

Although *Hedwigidium integrifolium* is rather similar to *Hedwigia ciliata*, it invariably lacks the long, hyaline, leaf hairpoint, it has short setae, entire rather than ciliate perichaetial leaves, and simple rather than branched papillae on the laminal cells.