

## HYPNUM

*Hisatsugu Ando*†

*Hypnum* Hedw., *Spec. Musc.* 236 (1801); from the Greek *hypnos* (sleep or the god of sleep). The plants of this genus are suitable for stuffing pillows and thus inducing sleep; moreover, the creeping habit of the moss suggests a sleeping posture. The name was also applied in ancient times to some epiphytic mosses or lichens used as a sleep-inducing medication.

Type: *H. cupressiforme* Hedw.

Dioicous (or autoicous outside Australia), slender to robust, forming dense mats or turfs. Stems creeping or ascending, rarely erect, regularly or irregularly pinnate-branched; branches complanate to julaceous; central strand weakly differentiated or lacking. Pseudoparaphyllia subfilamentous or foliose. Stem and branch leaves  $\pm$ differentiated, usually falcate-secund, occasionally straight, ovate- or oblong-lanceolate, short- to long-acuminate; margins plane, sometimes recurved below, subentire, serrulate or serrate above; costa double, short or indistinct. Median laminal cells linear-flexuose, smooth; basal cells thicker-walled and pitted; alar cells subquadrate to rectangular, enlarged downwards, occasionally hyaline at the extreme angles.

Perichaetial leaves oblong-lanceolate, long-acuminate, smooth, serrulate to serrate above. Seta long, smooth. Capsules suberect to horizontal, oblong-cylindrical,  $\pm$ curved, almost smooth when dry (in Australia). Operculum conical-mammillate to rostrate. Annulus 1–3-seriate or lacking. Peristome: exostome teeth subulate-acuminate, cross-striolate below, hyaline and papillose above, bordered, trabeculate; endostome hyaline, finely papillose, consisting of a high basal membrane, segments split along the median line; cilia 1–3. Spores finely papillose.  $n = 10$  (*H. cupressiforme*), *fide* H.P.Ramsay, *Austral. J. Bot.* 22: 293–348 (1974).

*Hypnum* is characterised by having pinnate branching,  $\pm$ differentiated stem and branch leaves that are usually falcate-secund, well defined alar cells, and suberect to horizontal, asymmetrical, oblong-cylindrical capsules with perfect peristomes.

Only one of the nine sections of the genus, sect. *Hypnum*, occurs in Australia. This has smooth perichaetial leaves (plicate in the other sections); the seta is twisted to the right throughout its whole length when dry (to the right below and to the left above in the others); and the spores mature in autumn to winter (May to August). Section *Hypnum* is further divided into two subsections: subsect. *Hypnum* (including *H. cupressiforme* in Australia) and subsect. *Circinalia* (*H. chrysogaster* and *H. subchrysogaster*).

A genus of c. 60 species, most of which are morphologically variable, the most extreme example being *H. cupressiforme* in which nine varieties are known (four in Australia; Ando, 1993). Species are widely distributed in both hemispheres, ranging from temperate to Arctic, Antarctic and alpine regions. Represented in Australia by three species: one endemic, one southern-temperate in Australasia and South America, and the cosmopolitan (in temperate and colder regions) *H. cupressiforme*, with four varieties.

[Inventories of Australian mosses by Streimann & Curnow (1989), Streimann & Klazenga (2001) and *AusMoss* (2012) include two other accepted species of *Hypnum* not mentioned in Dr Ando's MS.

*Hypnum alternans* Brid. (*Muscol. Recent.* 2(2): 186, 1801) is supposedly endemic to Australia (more precise type locality not known). However, according to Ramsay (2006), the earliest collections of Australian mosses were made by J.-J.H. de Labillardière in 1791–1794, the records were not published until 1807 and, in any case, they did not include *Hypnum*.

Cite as: H.Ando, *Australian Mosses Online*. 58. Hypnaceae: *Hypnum*.

[http://www.anbg.gov.au/abrs/Mosses\\_Online/Hypnaceae\\_Hypnum.pdf](http://www.anbg.gov.au/abrs/Mosses_Online/Hypnaceae_Hypnum.pdf) (2012)

The second species, *H. nelsonii* (Broth.) Paris (*Index Bryol.* 660, 1896; *Stereodon nelsonii* Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 37: 172, 1895), is endemic to Tasmania. — Ed.]

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- 1 Stems with a weakly developed central strand; leaves only indistinctly cordate at the base (subsect. *Hypnum*).....2. **H. cupressiforme**
- 1: Stems lacking a central strand; leaves more markedly cordate at the base (subsect. *Circinalia*).....2
- 2 Plants larger; stem leaves 1.4–2.0 mm long and 0.5–0.7 mm wide; leaves longer-acuminate, falcate to circinate; margins subentire to serrulate; subquadrate alar cells fewer, 2–4 along the margin ..... 1. **H. chrysogaster**
- 2: Plants smaller; stem leaves 1.0–1.4 mm long and 0.35–0.5 mm wide; leaves shorter-acuminate, scarcely falcate; margins serrulate to serrate; subquadrate alar cells more numerous, 4–8 (–10) along the margin ..... 3. **H. subchrysogaster**

### 1. *Hypnum chrysogaster* Müll.Hal., *Syn. Musc. Frond.* 2: 295 (1851)

T: Auckland Islands, Antarctic Exped. 1839–1843, no. 80 (as *H. cupressiforme*), *J.D.Hooker*; lecto: BM, *vide* H.Ando (1977: 35).

Illustrations: H.Ando, *op. cit.* 37, fig. 33; 38, fig. 34; 39, fig. 35; 40, fig. 36 (1977).

Plants medium-sized to large, pale green to yellowish green, occasionally brownish. Stems prostrate, to 15 cm long, lacking a central strand, regularly pinnately branched; branches complanate. Pseudoparaphyllia lanceolate to deltoid. Leaves falcate-secund, ovate- or oblong-lanceolate, cordate at the base, gradually narrowed to a slender acumen; margins subentire to serrulate above, plane. Median laminal cells 60–90 (–100) × 3 µm [lumina]; basal cells yellowish to brownish; subquadrate alar cells 2–4 along the margin. Stem leaves 1.4–2.0 mm long, 0.5–0.7 mm wide; branch leaves narrower.

Inner perichaetial leaves ovate-lanceolate, with a long serrulate acumen. Seta 20–50 mm long. Capsule oblong-cylindrical, reddish brown, inclined to horizontal, 1.8–2.5 mm long, 0.7–1.0 mm wide, curved; operculum conical-mammillate. Peristome: cilia of endostome 2–3. Spores 15–20 µm diam.

Occurs in Vic. and Tas.; also in Lord Howe Island and Macquarie Island. Grows on tree trunks and decaying wood in forest, rarely on the ground; from lowlands up to c. 1000 m. Also in southern South America (Chile), Tristan da Cunha (South Atlantic Ocean) and New Zealand.

Vic.: *sine loc.*, *F.Campbell* (H-BR). Tas.: Middlesex Plains, *A.Moscal* 13470 (AD); 10 km W. of Maydena, *A.Brown* 308 (AD); Gould's Country, Aug. 1886, *A.W.Robinson* (NSW).

*Hypnum chrysogaster* is sometimes reduced in size, while on rare occasions an exceedingly large form is seen with stem leaves up to 2.5 mm long and 0.9 mm wide. It also exhibits variation in the mode of branching and foliation. Thus, in some specimens, branching is dense, associated with frequent bipinnation, while in others branching as well as foliation is loose, and the branches tend to become more elongate.

## 2. *Hypnum cupressiforme* Hedw., *Spec. Musc.* 291 (1801)

T: Europe, *s. loc.*; lecto: G, *vide* H.Ando (1989: 270), three plants mounted on a sheet, on which an illustration published in *Stirp. Crypt.* 4: 59, fig. 23 (1797) was based.

Plants extremely variable in size and habit, slender to robust, pale green to yellowish green, yellowish brown or reddish brown. Stems prostrate, rarely erect, with a weakly differentiated central strand, regularly or irregularly pinnate-branched; branches complanate to julaceous. Pseudoparaphyllia subfilamentous to narrowly lanceolate. Leaves  $\pm$ straight to falcate-secund, ovate- or oblong-lanceolate; margins subentire to serrulate above, occasionally recurved below; alar cells well-differentiated, subquadrate to rectangular, larger toward the base.

Inner perichaetial leaves lanceolate, gradually narrowed to a slender subentire to serrulate acumen. Capsules oblong-cylindrical, suberect to inclined, reddish brown, with a rather long beak. Annulus 1–3-seriate. Peristome with cilia of endostome 1–2 (–3). Spores 15–25  $\mu$ m diam.

Occurs in W.A., S.A., N.S.W., A.C.T., Vic. and Tas.; also in Lord Howe Island, Norfolk Island and Macquarie Island. Grows on various substrata in open and forested habitats. Cosmopolitan (in temperate and colder regions).

Four of the nine varieties are known from Australia. These are not always distinct, frequently being linked by subtle intermediates.

- |    |  |                               |
|----|--|-------------------------------|
| 1  | Plants slender; stem leaves to 1.2–1.6 mm long, 0.4–0.5 mm wide .....  | 2                             |
| 1: | Plants medium-sized to robust .....  | 3                             |
| 2  | Leaves straight or only weakly falcate; subquadrate alar cells (8–) 10–15 along the margin in stem leaves .....                            | 2c. var. <b>filiforme</b>     |
| 2: | Leaves usually falcate-secund, occasionally straight; subquadrate alar cells 5–8 (–10) along the margin in stem leaves .....               | 2d. var. <b>mossmanianum</b>  |
| 3  | Plants medium-sized; stem leaves 1.5–2.0 mm long, 0.6–0.7 mm wide; subquadrate alar cells 5–10 (–13) along the margin in stem leaves ..... | 2d. var. <b>mossmanianum</b>  |
| 3: | Plants medium-sized to robust; subquadrate alar cells 10–15 (–18) along the margin in stem leaves .....                                    | 4                             |
| 4  | Plants medium-sized; stem leaves 1.5–2.0 mm long, 0.5–0.8 mm wide .....  | 2a. var. <b>cupressiforme</b> |
| 4: | Plants robust; stem leaves 1.8–2.5 mm long, 0.6–0.9 mm wide .....  | 5                             |
| 5  | Plants rather complanate; leaves $\pm$ falcate, gradually narrowed to a longer acumen .....  | 2a. var. <b>cupressiforme</b> |
| 5: | Plants thickly complanate to julaceous; leaves almost straight to weakly falcate, abruptly narrowed to a shorter acumen .....              | 2b. var. <b>lacunosum</b>     |

### 2a. *Hypnum cupressiforme* Hedw. var. **cupressiforme**

Illustrations: G.A.M.Scott & I.G.Stone, *Mosses Southern Australia* 451 (the shoot on the left middle) (1976); D.G.Catcheside, *Mosses South Australia* 334, fig. 207 (1980); H.Ando, *Hikobia* 10: 272, fig. 52A–O; 274, fig. 53; 276, fig. 54; 277, fig. 55; 279 fig. 56H–P (1989).

Plants medium-sized to large; stems to at least 10 cm long; branches complanate to subjulaceous. Leaves usually falcate, ovate- or oblong-lanceolate, gradually narrowed to a slender acumen. Median laminal cells (50–) 60–80  $\times$  4  $\mu$ m [lumina]. Stem leaves usually 1.5–2.0 mm long and 0.5–0.8 mm wide, exceptionally reaching 2.5 mm long; subquadrate alar cells 10–15 (–18) along the margin. Branch leaves smaller and narrower; subquadrate alar cells (6–) 8–15 along the margin. Seta 15–25 mm long. Capsules 1.8–2.5 mm long (excluding operculum), c. 0.7 mm wide. Spores 15–20  $\mu$ m diam.

Occurs in south-western W.A., south-eastern N.S.W., A.C.T., Vic. and Tas.; also in Lord Howe Island, Norfolk Island and Macquarie Island. Usually on rock, occasionally on the ground, tree trunks and logs, in dry or wet-sclerophyll forest and grassland, from lowlands to c. 2000 m.

W.A.: Porongurup Natl Park, *R.Wyatt & A.Stoneburner 4346* (PERTH). N.S.W.: Tallangatta, *G.A.M.Scott 2392* (MUCV). A.C.T.: Naas R., *H.Streimann 7961* (CANB). Vic.: Ballantyne Hills, *A.E.Orchard 2499* (AD). Tas.: Chimney Pott Hill, *A.V.Ratkowsky H710* (AD). [According to *AusMoss*, also in S.A. and Qld.]

In addition to the typical form of var. *cupressiforme* described above, the following variants are also known from Australia.

*Terete form*: Plants cylindrically foliate, with mostly straight leaves; laminal cells shorter and somewhat wider, 40–60 × 4–5 µm.

*Complanate form*. Plants growing in a thin mat; stems bipinnately branched; leaves complanately arranged, straight or only slightly falcate; laminal cells generally thinner-walled; subquadrate alar cells tending to become larger and hyaline near the base.

*“Aduncooides” form*. A large form represented by *H. cupressiforme* var. *aduncooides* Brid. Leaves ±falcate, oblong-lanceolate; laminal cells longer, 70–100 (–110) × 4 µm [lumina]; subquadrate alar cells somewhat fewer, 8–13 (–15) along the margin in stem leaves.

## **2b. *Hypnum cupressiforme* var. *lacunosum* Brid., *Muscol. Recent.* 2(2): 136 (1801)**

T: Franconia [Germany]; lecto: B, *fide* H.Ando (1989: 282).

Illustrations: G.A.M.Scott & I.G.Stone, *Mosses Southern Australia* 451 (shoot on the upper right) (1976), as “near var. *tectorum*”; D.G.Catcheside, *Mosses South Australia* 335, fig. 208 (1980); H.Ando, *Hikobia* 10: 272, fig. 52P–T; 284, fig. 57; 285, fig. 58; 288, fig. 59A–I (1989).

Plants large; stems to 10 cm long; branches tumid, subjulaceous to julaceous. Leaves straight or only weakly falcate, broadly ovate- or oblong-lanceolate, abruptly narrowed to a rather short acumen, concave. Median cells (50–) 60–80 (–90) × 3–4 µm [lumina]. Stem leaves 1.8–2.5 (–2.8) mm long, 0.7–0.9 (–1.2) mm wide; subquadrate alar cells 10–15 (–18) along the margin. Branch leaves smaller, more narrowly ovate- or oblong-lanceolate; subquadrate alar cells 8–13 (–15) along the margin. Seta 14–20 mm long. Capsules 1.5–2.0 mm long, 0.7–0.9 mm wide. Spores 15–20 (–23) µm diam.

Occurs in south-western W.A., south-eastern S.A., south-eastern N.S.W., A.C.T., Vic. and Tas. Grows on the ground, especially sandy or gravelly soils, rocks including limestone, rarely on trunk bases and logs, in dry-sclerophyll forest and grassland. More frequent than the var. *cupressiforme* in Australia, especially abundant in S.A. and southern Vic. and at altitudes up to c. 1600 m. Also in Europe, South America, Africa and western Asia; very rare in North America, where the plants are not typically robust as in Europe and other regions.

W.A.: Porongurup Natl Park, *R.Wyatt & A.Stoneburner 4345* (PERTH). S.A.: Mt Bold, *M.Fagg 150* (AD). N.S.W.: Bungonia Gorge, *L.G.Adams 1622* (NSW). A.C.T.: Nursery Creek, *H.Streimann 35731* (CANB). Vic.: Hamilton, *G.A.M.Scott 2331* (MUCV). Tas.: Mt Michael, *A.Moscal 13211* (AD).

Plants vary considerably in size. Thus, in large individuals stem leaves are up to 2.0–2.8 mm long, 0.8–1.2 mm wide, while small plants have stem leaves (1.4–) 1.6–2.0 mm long and 0.6–0.8 mm wide. The small form resembles the terete form of var. *cupressiforme*, but it can be distinguished from the latter by the broader, ±falcate leaves (in var. *cupressiforme*, terete form leaves are usually straight).

Another rare, but remarkable form has plants that are complanately loose-foliate, remaining green even in old herbarium specimens, and the leaves are more shortly ovate-lanceolate. Leaf areolation in these forms is very similar to that of the typical form, except that in the small form laminal cells show a tendency to become shorter and broader [(40–) 50–70 × 4–5 µm].

Plants of var. *lacunosum* in Australia, as well as those from New Zealand, South America and southern Africa, differ from the typical *lacunosum* of Europe in having laminal cells that are generally longer and narrower (only 40–70 × 5 µm in European plants), and subquadrate alar cells that are less differentiated (15–25 along the margin in the latter). If we treat the Australian var. *lacunosum* as a distinct variety, its name should be *H. cupressiforme* var.

*latifolium* (Herzog) [based on *H. latifolium* Herzog, *Biblioth. Bot.* 87: 150 (1916), *nom. illeg.* (later homonym). T: Bolivia].

**2c. *Hypnum cupressiforme* var. *filiforme* Brid., *Muscol. Recent.* 2(2): 138 (1801)**

T: Thuringia sylvia (Germany), ad pinos; lecto: B, *fide* H.Ando (1992: 111).

Illustration: H.Ando, *Hikobia* 11:112, fig. 64; 113 fig. 65 (1992).

Plants slender, Stems to 7 cm long; branches subjulaceous. Leaves straight or only weakly falcate, oblong-lanceolate, gradually narrowed to a slender acumen. Median laminal cells 50–70 (–80) × 4 µm [lumina]. Stem leaves 1.2–1.6 mm long, 0.4–0.5 mm wide; subquadrate alar cells (8–) 10–15 along the margin. Branch leaves smaller; subquadrate alar cells 7–10 along the margin. Sporophyte not seen in Australian specimens.

Occurs in south-western W.A., southern N.S.W., A.C.T., Vic. and Tas. Usually on rock, also on tree trunks, rarely on the ground; found in sclerophyll forest and at elevations up to 1700 m. Almost cosmopolitan, but quite rare in western North America.

W.A.: Porongurup Natl Park, R.Wyatt & A.Stoneburner 4347 (PERTH). N.S.W.: Tinderry Pic, H.Streimann 5220 (CANB). A.C.T.: Mt Clear, H.Streimann 10621 (CANB). Vic.: Mt Kooroocheang, 26 Jan. 1956, J.H.Willis (MEL). Tas.: Kingston, 19 Feb. 1980, A.V.Ratkowsky (HO). [According to *AusMoss*, also in Qld.]

Var. *filiforme* is characterised by slender filiform plants and almost straight leaves. The following variants are distinguished by their general appearance and leaf shape.

*Short filiform form.* Plants suberect and growing in short turfs; stems to 1 cm long, irregularly branched; leaves smaller; median laminal cells shorter, 40–60 (–70) × 4 µm [lumina], thin-walled.

*Pinnate form.* Stems regularly pinnately branched; branches short, 0.3–0.5 (–1.0) cm long; leaves julaceous, broadly ovate-lanceolate; stem leaves 1.2–1.5 mm long, 0.5–0.7 mm wide; median laminal cells shorter and broader, (30–) 40–60 × 4–5 µm [lumina].

This variety often intergrades into var. *cupressiforme*, which occasionally becomes somewhat slender and subfiliform or has branches that are partly filiform. *Hypnum cupressiforme* var. *filiforme* is quite similar to the flagellate form of var. *mossmanianum*, and the two have often been confused. Their differences are discussed below.

**2d. *Hypnum cupressiforme* var. *mossmanianum* (Müll.Hal.) Ando, in H.Ando & C.M.Matteri, *Lindbergia* 8: 62 (1982)**

*Hypnum mossmanianum* Müll.Hal., *Bot. Zeitung (Berlin)* 9: 565 (1851). T: Kaipara Forest, New Zealand, S.Mossman 711; lecto: NY, *fide* H.Ando (1992: 117).

*Drepanohypnum walterianum* Hampe, *Linnaea* 40: 322 (1876); *Stereodon walterianus* (Hampe) Mitt., *Trans. Roy. Soc. Victoria* 19: 86 (1882). T: Mount Macedon, Vic., C.Walter; holo: BM.

Illustrations: G.A.M.Scott & I.G.Stone, *Mosses Southern Australia* 451 (the shoot on the lower right, as “near var. *filiforme*”) (1976); D.G.Catcheside, *Mosses South Australia* fig. 209 (1980), as *H. cupressiforme* var. *filiforme*; H.Ando, *Hikobia* 11: 118, fig. 66; 119, fig. 67; 120, fig. 68 (1992).

Plants small to rather large, often slender and filiform. Stems to 8 cm long; branches usually complanate. Leaves falcate-secund, rarely almost straight in flagellate branches, ovate- or oblong-lanceolate, gradually narrowed to a slender acumen; margins often recurved below; alar parts excavated, occasionally yellowish brown. Median laminal cells (50–) 60–80 × 4 µm [lumina]. Typical form with stem leaves (1.3–) 1.5–2.0 mm long, 0.6–0.7 mm wide; subquadrate alar cells 5–10 (–13) along the margin; branch leaves smaller and narrower, 1.0–1.5 mm long, 0.3–0.4 mm wide; subquadrate alar cells 5–8 (–10) along the margin.

Seta 10–20 mm long. Capsules 1.3–2.0 mm long, 0.5–0.6 (–0.7) mm wide; operculum rostellate. Spores (17–) 20–25 (–28) µm diam.

Occurs in south-western W.A., south-eastern S.A., south-eastern N.S.W., A.C.T., Vic. and Tas. Grows on tree trunks, decaying logs and rocks, rarely on the ground in dry- or wet-sclerophyll forest at elevations up to c. 1850 m. Specimens with sporophytes are much more abundant in Australia than in New Zealand. Also in southern South America (Chile, Argentina), central and southern Africa and New Zealand.

W.A.: Porongurup Natl Park, *H.Streimann 54417* (CANB). S.A.: Aldgate Valley, *L.D.Williams 4821* (AD). N.S.W.: Gloucester Tops, *H.Streimann 6433* (CANB). A.C.T.: Black Mtn, *I.G.Stone 2214* (MELU). Vic.: Result Ck, upper Delegate R., *R.Melville & N.A.Wakefield 2984A* (NSW). Tas.: Mt Dromedary, *R.H.Bastow 630* (NSW).

Variants include the following:

*Typical form.* Small to medium-sized; branches normal throughout or flagelliform distally.

*Flagellate form.* Slender; branches mostly flagelliform; occasionally all branches and most parts of stems markedly thread-like.

*Erect form.* Small to medium-sized, erect to oblique and growing in dense turfs; leaves  $\pm$ straight and more broadly ovate-lanceolate, with shorter and broader laminal cells.

*Large form.* Rather large; stem leaves to 2.4 mm long and 1.1 mm wide; branches scarcely flagelliform.

*Loose greenish form.* Medium-sized and greenish, even in old herbarium specimens, rather loosely foliate, erect or prostrate in loose mats; stems simple to sparingly or, rarely, somewhat densely branched; branches tending to become filiform distally; subquadrate alar cells thin-walled, hyaline, not or only weakly yellowish.

Var. *mossmanianum* is comparatively well defined in terms of its morphology and distribution (circum-Antarctic). Plants are more complanately foliate than in var. *cupressiforme*, the subquadrate alar cells are less numerous (in stem leaves only 5–13 along the margin), the operculum has a shorter rostrum and the spores are larger. While these differences suggest that this moss might be regarded as a distinct species (as it was first described), it is here treated as a variety of *H. cupressiforme* following Ando (1992). The flagellate form of var. *mossmanianum* is separated from var. *filiforme* by: the more complanately arranged, usually falcate leaves whose margins are more frequently recurved below and the more strikingly excavated, often brownish alar parts consisting of fewer subquadrate cells (in stem leaves 5–10 along the margin vs. 8–15 in var. *filiforme*). These distinctions, however, are occasionally obscured by enigmatic intermediate forms.

### 3. *Hypnum subchrysogaster* (Broth.) Paris, *Index. Bryol.*, Suppl. 213 (1900)

*Stereodon subchrysogaster* Broth., *Öfvers. Förh. Finska Vetensk.-Soc.* 42: 131 (1900). T: Blackall Range, Qld, *F.Whitteron*; holotype: H-BR; isotype: BM.

Illustration: H.Ando, *J. Sci. Hiroshima Univ.*, Ser. B. Div. 2, 16: 43, fig. 37 (1977).

Plants small, pale yellowish green. Stems prostrate, to 4 cm long, lacking a central strand, regularly pinnately branched; branches complanate to subjulaceous, occasionally flagelliform. Pseudoparaphyllia lanceolate. Leaves ovate- or oblong-lanceolate, cordate at the base, weakly falcate, gradually narrowed to a short or long acumen; margins plane, serrulate to serrate. Median laminal cells (50–) 60–90  $\times$  3–4  $\mu$ m [lumina]; basal cells yellowish brown; subquadrate alar cells well-defined, 4–8 (–10) along the margin. Stem leaves 1.0–1.4 mm long, 0.35–0.50 mm wide; branch leaves narrower.

Inner perichaetial leaves oblong-lanceolate, with long serrate acumen. Seta to 30 mm long. Capsules yellowish brown, inclined, 1.0–1.6 mm long, 0.6–0.7 mm wide; operculum rostellate. Peristome: cilia of endostome 1 or 2. Spores 15–20  $\mu$ m diam.

This endemic moss occurs in eastern Qld and in coastal areas of eastern N.S.W.; grows on tree trunks and decaying wood.

Qld: Binna Burra, *I.G.Stone 12738* (MELU); Enumundi, *M.Fleischer B2702* (AD). N.S.W.: Pine Creek S.F., *D.E.Symon PC2* (AD); Wingham district, *J.L.Boorman 1588* (NSW); Somersby Falls, *J.E.Braggins* (AUK 63511).

*Hypnum subchrysogaster* differs from *H. chrysogaster* in its smaller stature, markedly serrulate to serrate leaves and more distinctly differentiated alar cells. The New Caledonian variety *H. subchrysogaster* var. *serrifolium* (Broth. & Paris) Ando has more markedly cordate and serrate to ciliate-dentate leaves (Ando, 1977).