

SPIRIDENS

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Spiridens Nees, *Nov. Actorum Acad. Caes. Leop.-Carol. German. Nat. Cur.* 9: 143 (1822); from the Greek *speiros* (coiled) and *dens* (tooth), in reference to the spirally involute exostome teeth when dry.

T: *S. reinwardtii* Nees.

Dioicous.

Large and robust rigid glossy plants forming loose tufts. Stems round or oval in T.S., with a central strand, a hyaline inner cortex, and a multilayered outer cortex of very thick-walled cells. Primary stem short, rhizomatous, with brown rhizoids; secondary stems moderately long to very long, horizontal or pendent from tree trunks, densely leafy all around, sparingly branched. Paraphyllia lacking. Leaves lanceolate-subulate from a sheathing or semi-sheathing base, terminating in a short to very long arista; costa thick, extending to the arista or excurrent, in T.S. with median guide cells, abaxial stereid groups and scarcely differentiated epidermal cells; lamina with a border 2 to several cells thick throughout.

Perichaetia terminal on very short branches; perichaetial leaves much smaller than vegetative leaves. Calyptra cucullate. Seta short. Capsules erect or weakly bent, thick-walled, with a short apophysis with superficial stomata; operculum rostrate. Peristome double; exostome and endostome \pm equally tall; exostome teeth spirally inrolled when dry, with longitudinal striations externally and dense lamellae internally; basal membrane of endostome \pm developed; processes narrow, keeled, not appendiculate. Spores small.

A genus of ten species in Malesia, the Philippines, Melanesia, Polynesia and Lord Howe Island. In all species except *S. muelleri* the costa does not extend to the leaf base (Meagher and Bayly 2014). The genus is known in Australia only from Lord Howe Island. A specimen of *S. flagellosus* in MEL was supposedly collected on Norfolk Island by Ferdinand von Mueller. However, there has been no other collection of this species from the island, and as far as is known von Mueller never went there nor sent collectors there. The status of this specimen is therefore doubtful.

Following the research of Bell *et al.* (2007), Spiridentaceae Kindb. was transferred to the synonymy of the Hypnodendraceae.

References

- Bell, N.E., Quandt, D., O'Brien, T.J. & Newton, A.E. (2007), Taxonomy and phylogeny in the earliest diverging pleurocarps: square holes and bifurcating pegs, *Bryologist* 110: 533–560.
- Koponen, T., Norris, D.H. & Shevock, J.R. (2010), Bryophyte flora of the Huon Peninsula, Papua New Guinea. LXXII. Spiridentaceae (Musci), *Acta Bryolichenol. Asiatica* 3: 157–159.
- Meagher, D.A. & Bayly, M.J. (2014), Morphological and molecular data support the reinstatement of *Spiridens muelleri* Hampe (Bryophyta: Hypnodendraceae), a Lord Howe Island endemic, *Australian Systematic Botany* 27: 95–103.
- Miller, H.A., Whittier, H.O. & Whittier, B.A. (1978), Prodrum florae muscorum Polynesiae, with a key to genera, *Bryophytorum Biblioth.* 16: 1–334.
- Pursell, R.A. & Reese, W.D. (1982), The mosses reported from New Caledonia, *J. Hattori Bot. Lab.* 53: 449–482.
- Sherrin, W.R. (1938), Revision of the genus *Spiridens*, in H.N. Dixon, On a small collection of mosses from New Guinea, *Ann. Bryol.* 10: 16–19.
- Withey, A. (1996a), *Systematic Studies of the Spiridentaceae (Musci)*. Ph.D. thesis, Duke University.
- Withey, A. (1996b), Phylogenetic studies of the Spiridentaceae (Musci): observations of three morphological characters associated with pleurocarpy, *Anales Inst. Biol. Univ. Nac. Aut6n M6xico*, Ser. Bot. 67: 5–14 (1996).

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Spiridens muelleri Hampe, *Linnaea* 38: 668 (1874).

T: Mt Gower, Lord Howe Island, 1872, *J.P.Fullagar*; holo: BM; iso: MEL-31915.

Illustration: Meagher & Bayly (2014), Figs 1, 2A, 3B.

Plants yellow-green to green, in dense mats or clumps 10–40 cm tall, sparingly branched above. Leaves densely arranged all around the stem, spreading, 8–16 mm long, including an arista 2–9 mm long; leaf margin with small teeth 9–16 μm long, or teeth very sparse or absent; cells of the leaf sheath hyaline, \pm linear, slightly flexuose, not or very indistinctly pitted. Laminal cells elongate-rhomboid, bistratose except in the extreme leaf base; border 10–12 cells wide and 2–4 cells thick. Costa strong from the base of the leaf to the apex.

Seta 1–3 mm long. Capsules almost sessile, glossy, curved, c. 5 mm long and 1.5 mm wide; operculum rostrate, c. 2 mm long.

Spiridens muelleri is endemic to Lord Howe Island. It grows as an epiphyte on trees and tree-ferns, and occasionally on rotting stumps, in montane cloud forest on or immediately below the summits of Mt Gower and Mt Lidgbird.

Lord Howe Island: Mt Lidgbird, 1869, *C.Moore* (MEL); *s. loc.*, *T.Whitelegge* (MEL); summit of Mt Gower, 28 Nov. 1959, *R. Le Rossignol* (MEL); *loc. id.*, June 1966, *J.W.Evans* (NSW); *loc. id.*, 23 May 1971, *J.Pickard* (MEL, NSW); *loc. id.*, *H.Streimann 15185* (NSW); *loc. id.*, *D.H.Vitt 28480* & *H.P.Ramsay* (NSW); ESE side of Mt Lidgbird, *A.C.Beauglehole 73533* (MEL, NSW).

Spiridens muelleri is genetically and morphologically distinct from *S. vieillardii* of New Caledonia, with which it had been synonymised. Its closest relative appears to be *Spiridens camusii* Thér. (Meagher & Bayly *op. cit.*).