BRYOPHYTES of Australia

Entosthodon SchwÃ¤gr.

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Entosthodon SchwÃ¤gr.

Allan J. Fife & Rodney D. Seppelt

Autoicous, rarely paroicous or polygamous (non-Australian species). Plants medium-sized, gregarious, yellowish, brownish or bright green. Stems reddish brown, rarely pale, usually branched once by subperigonial innovation, rarely branched by forking or repeated innovation, more than 2 mm long; in cross-section with a central strand, a parencyhmatous medulla, a cortex of 1–3 layers of thick-walled cells, and a ±well developed hyalodermis, beset with smooth rhizoids. Leaves larger and more crowded near stem apices, erect-spreading, rarely erect and imbricate, concave or plane, oblong-obovate, spathulate or ovate-lanceolate; apex acuminate, acute or obtuse, often cuspidate; costa variable; margin serrate by projecting cells or entire. Upper laminal cells thin-walled, oblong-hexagonal or oblong, longer and laxer below; a few cells often somewhat inflated at the alar angles; marginal cells differentiated or not, often projecting. Axillary filaments present.
Perigonia usually single, terminating a shoot from which the perichaetial shoot arises by innovation. Calyptra cucullate, rostrate or mitrate. Seta straight, weakly hygroscopic, smooth in Australian species. Capsules erect or inclined, usually symmetrical, obovoid, broadly pyriform to narrowly cylindrical-pyriform, rarely ovoid, reddish brown at maturity, usually wrinkled at the neck and constricted below the mouth when dry, with a neck c. 1/4–1/2 the length of the capsule; mouth 2/3 to ±equal the diam. of the capsule, rarely smaller, transverse or oblique; exothecial cells usually oblong to elongate, 2–8:1, with thick cuneate or rarely non-cuneate walls, not forming vertical bands, c. 6–12 rows oblate at the mouth; operculum plano-convex or conical; annulus absent or rudimentary; stomata immersed or rarely superficial. Peristome double, single or absent, persistent or fugacious; exostome teeth variably developed, straight or sigmoid, free at apices, not or weakly appendiculate, papillose-striolate to strongly striate; endostome segments variably developed, papillose, coherent at the base. Spores subreniform, variably ornamented.

Distribution: This is a cosmopolitan genus of c. 60–70 species.

Etymology: From the Greek *entos* (within) and *odon* (a tooth), in reference to the position of the peristome teeth within the capsule.

Nomenclature And Typification: ***Entosthodon*** Schwägr., *Sp. Musc. Frond.* Suppl. 2(1): 44 (1823). T: *E. templetonii* (Sm.) Schwägr.

Taxonomic Notes: The generic concept presented here includes subgenus *Plagiodus* which, according to Brotherus (1924), formed part of *Funaria*. Those species referred to subg. *Plagiodus* lack the lattice disc joining their peristome teeth apices, a revoluble annulus, and the distinctive ranks of thick- and thin-walled exothecial cells which are features of *Funaria sens. str*. In global terms, the boundary between subg. *Plagiodus* and *Entosthodon sens. str.* is obscure, but it poses few problems in an Australian context. Detailed cladistic analysis may necessitate the recognition of subg. *Plagiodus* at the generic level.

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Images

Fig. 1: '*Entosthodon subnudus var. gracilis*' by Fagg, M. (© Fagg, M.)

Fig. 2: '*Entosthodon subnudus var. gracilis*' by Fagg, M. (© Fagg, M.)

Flora of Australia: Mosses Entosthodon key

From: **Fife, A.J. & Seppelt, R.D.** (2012).

1	Marginal leaf cells longer than adjacent laminal cells, sometimes visible only in (upper) part of leaf; leaves toothed at least in upper 1/3; capsules markedly asymmetrical, inclined to horizontal; peristome teeth sigmoid in outline; spores coarsely baculate-insulate (subg. Plagiodus)	2

1	Marginal leaf cells not differentiated from adjacent laminal cells; leaves entire or toothed; capsules symmetrical or weakly asymmetrical , erect or nearly so; peristome teeth straight or weakly curved in outline, or absent; spores variously ornamented but not baculate-insulate (subg. Entosthodon)	3
2	Leaf apices acute and apiculate; apical cells of upper leaves 30–90 µm long; capsules obovoid, 1.5–2.0 (–2.3) mm long, with a weakly defined neck less than 1/3 the capsule length; common	Entosthodon radians
2	Leaf apices acuminate; apical cells of upper leaves 125–180 µm long; capsules oblong-obovoid, (2.3–) 2.5–3.2 mm long, with a well-defined neck nearly half the capsule length; rare	Entosthodon muehlenbergii
3	Leaves widest in the lower 1/3, ovate-lanceolate, erect and appressed to the stem when dry or moist; setae twisted to the left throughout; capsules less than 1.5 mm long, gymnostomous	Entosthodon productus
3	Leaves widest at or above the middle, ±oblong-obovate, erect-spreading at least when moist; setae twisted to the right, at least in the upper part; capsules more than 1.5 mm long (except in small forms of E. subnudus var. gracilis), peristomate or gymnostomous	4
4	Rhizoids cerise; exothecial cells in cross-section with anticlinal walls not or very weakly cuneate; leaves lingulate, entire, ±plane or weakly concave, with broadly acute or obtuse apices; capsules peristomate	Entosthodon laxus
4	Rhizoids reddish brown; exothecial cells in cross-section with anticlinal walls distinctly cuneate (usually apparent without sectioning); leaves ±obovate and acuminate (except some forms of E. subnudus var. gracilis), serrate or entire; capsules gymnostomous or peristomate	5
5	Leaf margins bluntly serrate	6
5	Leaf margins entire (rarely ±crenulate)	7
6	Capsules obovoid-cylindrical; exostome well developed; endostome rudimentary to greater than half the height of the exostome; exothecial cells obscure in surface view (due to strongly cuneate cell walls); cells of the upper lamina 60–75 µm long; costa less than 45 µm wide in lower 1/3 of leaf; widespread throughout Australia	Entosthodon subnudus
6	Capsules broadly pyriform, gymnostomous; exothecial cells with distinct lumina, cells of the upper lamina 30–50 µm wide; costa c. 60–65 µm wide in lower 1/3 of the leaf; NE N.S.W. and SE Qld	Entosthodon smithurstii
7	Capsules (2.0–) 3.0–4.5 mm long, oblong-cylindrical; neck gradually tapered, c. half the capsule length; gymnostomous; spores usually finely verrucate and with a trilete scar	Entosthodon apophysatus
7	Capsules 1.8–2.5 mm long, obovate or rarely oblong-cylindrical; neck markedly less than half the capsule length; peristomate; spores lacking a trilete scar	Entosthodon subnudus

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