

13. DISCELIACEAE Schimper

Wilfred B. Schofield

Plants annual, minute, arising from a perennial persistent protonema. Stems erect, to 0.2 mm, completely enveloped in leaves. Leaves with costa weak or absent, brownish or with little chlorophyll, exterior leaves 0.2–0.4 mm, interior to 1 mm, acuminate, ovate to oblong-lanceolate, margins entire to crenulate by bulging cells; laminal cells elongate-hexagonal to rectangular, thin-walled, 85–100 × 12–16 μm, smooth. Specialized asexual reproduction by 2-celled starch-filled rhizoidal gemmae. Sexual condition functionally dioicous; perigonium of 3–6 leaves surrounding a few short antheridia and yellow, club-shaped paraphyses; perichaetium with few brownish, weakly chlorophyllose leaves, these representing the plant. Seta erect, twisted to right when dry, 4–30 mm or more. Capsule wide-mouthed, 0.4–0.7 mm, pale to dark brown when mature, stomata absent; annulus in 1–2 cell rows, deciduous; peristome of 16 reddish brown to orange-yellow lanceolate exostomial teeth, to 0.3 mm, with vertical striations on exterior face, often with longitudinal perforations, endostome delicate, as a sometimes discontinuous membrane adhering to exostomial teeth; operculum conic. Calyptra smooth, sometimes persistent on seta proximal to capsule. Spores 20–30 μm.

Genus 1, species 1: North America, Europe, Asia.

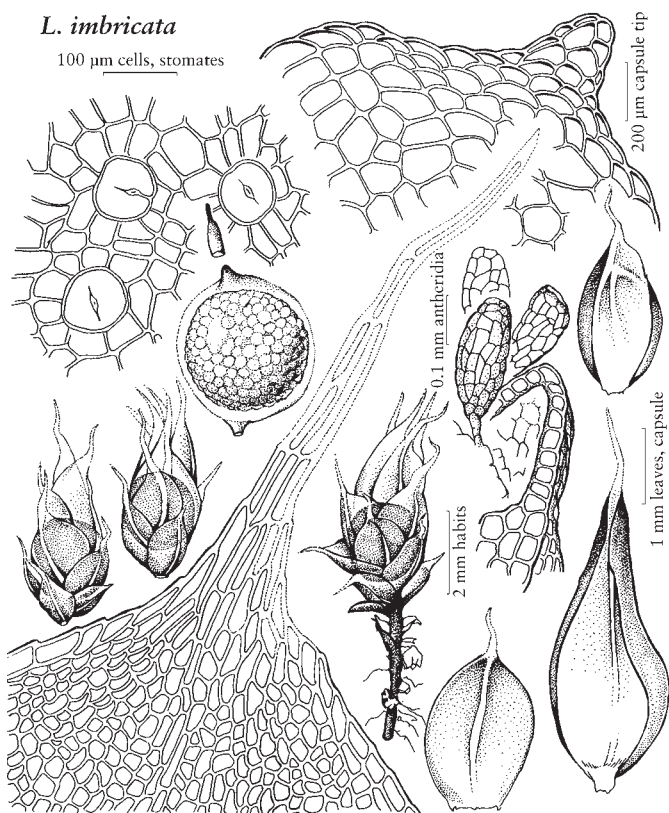
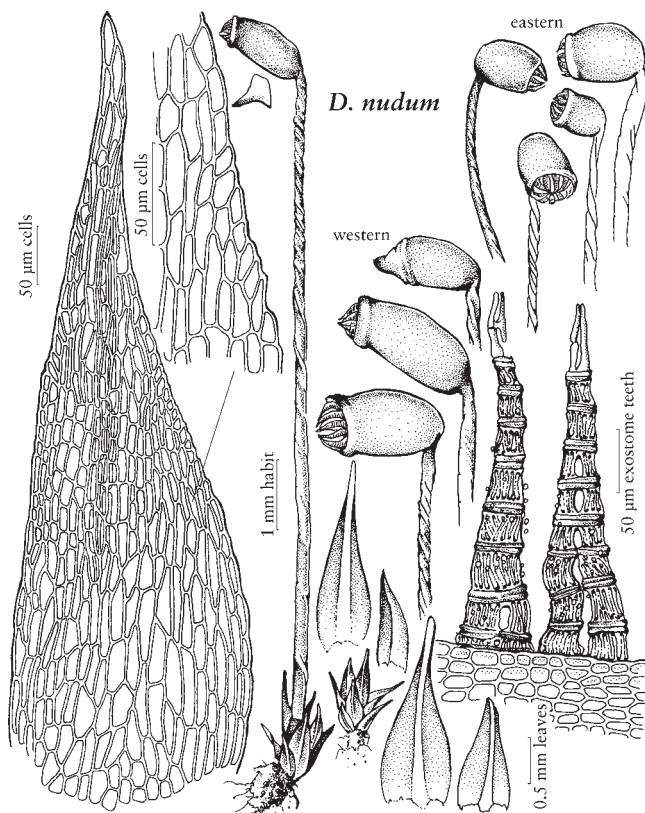
Disceliaceae is widely distributed in the Northern Hemisphere but always rare. It is predominantly temperate, but also boreal at lower elevations.

SELECTED REFERENCES Duckett, J. G. and S. Pressl. 2003. Studies of protonemal morphogenesis in mosses. IX. *Discelium nudum*: Exquisite pioneer of unstable clay banks. *J. Bryol.* 25: 241–245. Shaw, A. J. and B. H. Allen. 1985. Anatomy and morphology of the peristome in *Discelium nudum* (Musci: Disceliaceae). *Bryologist* 88: 263–267.

1. DISCELIUM Bridel, *Bryol. Univ.* 1: 365. 1826 • [Greek *di-*, two, and *skielos*, legs, alluding to peristome teeth perforated proximally]

Protonema green, bearing minute perichaetia and perigonia. Seta red-brown, smooth. Capsule inclined to horizontal, subglobose to short-cylindric.

Species 1: North America, Europe, Asia.



DISCELIUM • LORENTZIELLA

1. *Discelium nudum* (Dickson) Bridel, Bryol. Univ. 1: 366. 1826 [F]



Bryum nudum Dickson, Fasc. Pl. Crypt. Brit. 4: 7, plate 10, fig. 15. 1801

Plants gregarious to widely spaced, obvious only when sporophytes present on persistent protonema.

Capsules mature spring. Moist silty to fine sandy banks of somewhat shaded sites; low to

moderate elevations (5–1500 m); Alta., B.C., N.W.T., N.S., Que.; Calif., Ill., Mass., N.J., N.Y., Ohio, Pa., Wash.; Europe; Asia.

Discelium nudum is a very distinctive species: red-brown peristome on subspherical to elongate horizontal capsule arise on twisted seta from reduced brownish gametophyte and persistent green protonema making it unlike any other North American moss. On the Pacific coast in southwestern British Columbia and adjacent Washington, the sporophyte is often 4–5 times the size noted in the rest of its world range. The capsules are often elongate rather than subspheric and setae can exceed 3 cm, compared to less than 1 cm elsewhere in its range.