SCHISTIDIUM

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Schistidium Bruch & Schimp., Bryol. Europ. 3: 93 (1845), nom. cons.; diminutive of the Greek schistos (divided), perhaps in reference to the calyptra being divided at the base.

Type: S. maritimum (Turner) Bruch & Schimp., typ. cons.

Autoicous, acrocarpous. Plants small to medium-sized, growing in cushions or turfs. Stems frequently subapically branched, densely foliose; central strand present or absent. Leaves ±appressed when dry, erecto-patent when wet, ovate-lanceolate to broadly ovate-lanceolate, with or without a hyaline point; margin mostly recurved on one or both sides; costa strong, subpercurrent to excurrent. Laminal cells with straight to sinuose walls.

Perichaetial leaves similar in shape to vegetative leaves, but variously enlarged. Calyptra mitrate to cucullate, not quite covering the operculum. Sporogones solitary. Capsules sessile, ellipsoidal to broadly cylindrical or obovoid, systylous; stomata present at the base, phaneropore; annulus differentiated, revoluble. Peristome teeth triangular, entire to variously perforate, papillose; operculum rostrate from a hemispherical base. Spores spherical to ellipsoidal, smooth or papillose.

A bipolar to almost cosmopolitan genus of c. 60 species, Schistidium is most diverse at higher latitudes and latitudes. Its principal distinguishing character, subsessile and systylous capsules, means that after dehiscence the operculum remains attached to the top of the columella. No vegetative characters can consistently and reliably distinguish species of Schistidium from those of Grimmia. Two species are known from south-eastern Australia.

Following Blom’s (1996) research on the S. apocarpum complex in Scandinavia, in which c. 30 species were recognised, the taxonomy of Schistidium has been in a state of flux. Although limited in their geographical scope, Blom’s results have been widely applied in the Northern Hemisphere. Moreover, the genus has also been shown to be more diverse in the Southern Hemisphere than previously assumed (Ochyra, 1998). While this has not been the case in Australia and New Zealand, the taxonomic results of Fife’s (2000) treatment of the genus for New Zealand are adopted here.

References


Bremer, B. (1980), A taxonomic revision of Schistidium (Grimmiaceae, Bryophyta) 1, Lindbergia 6: 1–16.

Fife, A.J. (2000), A synopsis of the New Zealand species of Schistidium (Grimmiaceae; Musci), with observations on a little known species of Racotritium, New Zealand J. Bot. 38: 191–204.


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Leaf apices with a weak to strong hyaline point, rarely all leaves lacking hyaline points; upper part of leaves unistratose with bistratose margins; capsules oblong-ellipsoidal, c. twice as long as wide; plants growing in dry habitats ................................................................. 1. **S. apocarpum**

Leaf apices lacking a hyaline point; upper part of leaves largely bistratose; capsules broadly cylindrical to obovoid, c. 1.5 times as long as wide; plants subject to periodic immersion .................. 2. **S. flexifolium**

1. **Schistidium apocarpum** (Hedw.) Besch., Bryol. Europ. 3: 99 (1845)


Plants 0.5–5.0 cm tall, dark green or reddish brown, yellowish brown or dark brown, forming loose mats on dry rocks. Stems with lower leaves usually intact. Leaves erect-appressed to somewhat curved when dry, erecto-patent when wet, ovate-lanceolate, 1.8–3.2 mm long, 0.5–0.8 mm wide, V-shaped, keeled, smooth, ending in a weak to long denticulate hyaline point, this rarely lacking in all leaves; margin recurved in the proximal two-thirds, plane above, double-layered in the upper half, entire throughout or with some small teeth at the apex; costa subpercurrent to excurrent. Upper lamina unistratose; laminar cells isodiometric to oblong, 9–20 × 8–12 μm, with sinuose walls, distally shorter, rounded and not or weakly sinuose, smooth or weakly papillose abaxially.


Known from south-eastern Qld, N.S.W., Vic. and Tas.; usually on dry rocks at altitudes up to 1700 m. Also in New Zealand and Macquarie Island.


The most reliable means of distinguishing *S. apocarpum* from *S. flexifolium* is its hyaline leaf tips, and while many Australian specimens lack these on most of their leaves, entirely muticous plants are rare, and a short hyaline tip can always be observed under the compound microscope.

The oldest available name for the Australasian material appears to be *S. australis* (basionym: *Grimmia mutica*). However, I have not yet seen the type of *G. mutica*, and I am unable to confirm its true identity. Consequently, *S. apocarpum* is retained for the moment in the Australian bryoflora, while admitting that Australian “*S. apocarpum*” is not conspecific with *S. apocarpum* in the Northern Hemisphere, which includes the type. The type of *S. truncatoapocarpum*, the second-oldest available name is conspecific with *S. australis*.


Plants 1.5–3.0 (−5.0) cm tall, olive-green to almost black, forming loose mats on wet rocks. Stems with the lower leaves usually eroded. Leaves erect-appressed to somewhat curved when dry, erecto-patent when wet, ovate-lanceolate, (2.0–) 2.6–3.3 mm long, (0.6–) 0.7–1.0 mm wide, U-shaped below, V-shaped above, keeled, smooth, muticous; margin broadly revolute in the basal 40–60%, plane above, double-layered in the upper half, entire; costa subpercurrent to percurrent. Upper lamina largely bistratose; laminal cells isodiametric to short-oblong, 7–20 (−35) × 5–11 μm, with sinuose walls, more distal cells shorter, rounded, not or weakly sinuose, smooth to bulging abaxially.

Capsules broadly cylindrical to ellipsoidal or ±hemispherical. Peristome teeth pointing outward when dry, ±perforate above. Spores spherical to ellipsoidal, (12–) 15–20 (−25) μm diam./long, smooth.

Occurs in south-eastern S.A., south-eastern Qld, N.S.W., Vic. and Tas.; grows on rocks subject to frequent flooding, in creek beds, under waterfalls and in subalpine and alpine areas. Also in New Zealand.


Schistidium flexifolium is readily recognised by its aquatic, saxicolous habitat.

Excluded Name

Schistidium rivulare (Brid.) Podp., Beih. Bot. Centralbl. 28: 207 (1911)


Status Uncertain
