DICRANACEAE

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Dicranaceae Schimp., *Coroll. Bryol. Eur.* 11 (1856).

Type: *Dicranum* Hedw.

Dioicous or pseudoautoicous. Small to robust plants, forming turfs or cushions, rarely rough mats or pendants. Stems erect to ascending or with a creeping lower part, simple to richly branched; central strand present or absent; asexual propagules occasionally present as rhizoidal gemmae or flagelliform caducous branches. Leaves often falcate-secund, occasionally crispate or spirally contorted when dry, ovate-lanceolate to subulate; alar patches generally well developed, single- or multi-layered; border differentiated or not; costa single, occasionally lacking.

Peristome haplolepideous, consisting of a single ring of 16 narrowly triangular teeth, typically asymmetrically bifid, but occasionally entire to irregularly split or fenestrate.

The Dicranaceae is a cosmopolitan family of 10–12 genera and perhaps 300 species. In Australia the family is represented by seven genera and 21 species.

This treatment follows the modified circumscription of the family by La Farge *et al*. (2002). Phylogenetic analyses of chloroplast sequence data (La Farge *et al.*, 2000, 2002) have shown that many genera traditionally aligned with the Dicranaceae are in fact more closely related with genera in other families or even orders. On the other hand, the Dicnemonaceae were found to be nested in Dicranaceae and, therefore, *Dicnemon* and *Eucamptodon* have been included in the family.

References

La Farge, C., Mishler, B.D., Wheeler, J.A., Wall, D.P., Johannis, K., Schaffer, S. & Shaw, A.J. (2000), Phylogenetic relationships within the haplolepideous mosses, *Bryologist* 103: 257–276.

La Farge, C., Shaw, A.J. & Vitt, D.H. (2002), The circumscription of the Dicranaceae (Bryopsida) based on the chloroplast regions *trn*L-*trn*F and *rps*4, *Syst. Bot.* 27: 435–452.

Key to Genera

1 Upper laminal cells papillose 2
1: Upper laminal cells smooth 3
2 Isodiametric upper laminal cells descending along the costa ..... **LEUCOLOMA**
2: Isodiametric upper laminal cells descending along the leaf margin ..... **SCLERODONTIUM**
3 Costa lacking ..... **EUCAMPTODON**
3: Costa subpercurrent 4
4 Rhizoid-producing nematogens present in the leaf lamina; peristome teeth dimorphic; teeth on one side of the orifice conspicuously longer than those on the other side; spores multicellular ..... **DICNEMON**
4: Nematogens absent from the leaf lamina; peristome teeth uniform; spores unicellular 5
5 Leaf tips curled up when dry ..... **HOLOMITRIUM**
5: Leaves not much altered when dry 6

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http://www.anbg.gov.au/abrs/Mosses_online/Dicranaceae.pdf (2012)

6 Leaf border not differentiated; alar patches at least partly 2-layered ..... **DICRANUM**

6: Leaves with a border of linear hyaline cells with very narrow lumina 7

7 Capsules cylindrical, straight to curved; peristome teeth asymmetrically bifid, vertically to obliquely striate in the basal part, mostly with cross connections between striae on the outer side ..... **DICRANOLOMA**

7: Capsules ovoid, straight; peristome teeth very fragile, entire or irregularly fenestrate or split, mostly with pieces broken off, papillose outside ..... **HOLOMITRIUM**

Doubtful Record

Mesotus celatus Mitt., *in* J.D.Hooker, *Handb. New Zealand Fl.* 2: 462 (1867)

Mesotus acutus Mitt., *Trans. & Proc. Roy. Soc. Victoria* 19: 52 (1882). T: "ex Australia, inter *Sphaerophoron*", Hb. Borrer; holo: NY, *fide* B.H.Allen, *J. Bryol.* 14: 445 (1987).

The label on the type of *M. acutus* indicates that the specimen originated in Australia, but no further locality information was provided. *Mesotus celatus* is otherwise not known from Australia, and is considered to be a New Zealand endemic.