



## Notes on Early Land Plants Today. 40. Notes on Cephaloziellaceae (Marchantiophyta)

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### Abstract

The family Cephaloziellaceae is here defined in a very broad sense based mainly on molecular studies and includes morphologically diverse elements. Necessary new combinations are made in addition to some transfers and new synonyms in *Cylindrocolea* and *Cephaloziella*.

### Delimitation of Cephaloziellaceae

A number of genera traditionally included in Scapaniaceae Migula (1904: 479), Lophoziaceae Cavers (1910: 293), or recently Anastrophyllaceae Söderström *et al.* (2010: 48), are shown not to be related to those families, but rather to an unresolved region including Cephaloziellaceae. Molecular studies are few and in most cases the taxa shown to belong here have been used as parts of more general studies, as outgroups or believed to be members of the family of interest. The only molecular study dedicated to this group including a fair number of taxa is Feldberg *et al.* (2013), but as it is a study of divergence time and does not include confidence values, it is difficult to draw too many conclusions from it.

Davis (2004) placed *Herzogobryum* far outside Gymnomitriaceae Klinggräff (1858: 16) in an unresolved relation within Cephaloziineae Schljakov (1972: 503). He-Nygrén *et al.* (2004) and He & Glenný (2010) indicated that *Chaetophyllopsis* may belong here. De Roo *et al.* (2007) demonstrated that *Gymnocoleopsis* is closely related to *Cephaloziella* and placed *Oleolophozia*, *Obtusifolium*, *Lophonardia* and *Gottscheia* on long branches basal to Cephaloziellaceae, but not within Lophoziaceae or Anastrophyllaceae. Vilnet *et al.* (2010) placed *Obtusifolium* and *Protolophozia elongata* (Stephani 1902: 41) Schljakov (1979: 204) here although their position was not stable across their trees. Recent investigation of abundant material of *Anastrophyllopsis involutifolia* (Gottsche *et al.* 1844: 81) Váňa & L.Söderstr. in Váňa *et al.* (2013: 15) by one of us (JV) shows that it is morphologically very similar to *Gottscheia*. That genus should thus also be referred to the “Cephaloziellaceae” region.

As circumscribed here, Cephaloziellaceae is morphologically heterogeneous and is probably best treated as a ‘superfamily’. Morphologically it is difficult to defend such a diverse family and it should probably be separated into further families. However, this requires more molecular and morphological study. Genera preceded by a \* in the following list do not belong to the core Cephaloziellaceae.

**Cephaloziellaceae Douin**, *Rév. Gén. Bot.* 26: 179, 1914 (Douin 1914a). Type:—*Cephaloziella* (Spruce) Schiffn.

\**Allisoniella* E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand, Bot.* 3: 80, 1965 (Hodgson 1965).

*Amphicephalozia* R.M.Schust., *Nova Hedwigia* 22: 131, 1971 [1972] (Schuster 1972). \**Anastrophyllopsis*