



## Taxonomic novelties resulting from recent reclassification of the Lophoziaceae/Scapaniaceae clade

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### Abstract

A new family, Anastrophyllaceae, is segregated from Lophoziaceae, two new genera, *Neoorthocaulis* and *Oleolophozia* are described and the following new combinations are made: *Neoorthocaulis attenuatus*, *N. binsteadii*, *N. floerkei*, *N. hyperboreus*, *Barbilophozia* subgen. *Sudeticae*, *Barbilophozia sudetica* and *Oleolophozia perssonii*.

**Key words:** Anastrophyllaceae, liverworts, *Neoorthocaulis*, *Oleolophozia*, *Barbilophozia*

### Introduction

The Lophoziaceae has previously been either recognized as a separate family (e.g. Grolle & Long 2000) or placed in the synonymy of Jungermanniaceae (e.g. Damsholt 2002). Recent molecular work (De Roo *et al.* 2007) has shown that the two are not particularly closely related and that Lophoziaceae should be retained as a separate family. However, molecular data (Schill *et al.* 2004) also show that the family Scapaniaceae is nested within Lophoziaceae, a pattern confirmed by, *inter alia*, Yatsentyuk *et al.* (2004), Davis (2004) and De Roo *et al.* (2007). Those studies also exclude two elements frequently included in Lophoziaceae in the past—the family Jamesoniellaceae and the genus *Leiocolea* (Müller 1913: 711) Buch (1933: 288). However, some recent studies (De Roo *et al.* 2007 and unpublished results by R. De Roo, L. Söderström & T. Hedderson) have shown that even after removing those elements, the ‘Lophoziaceae clade’ still includes many other taxa, e.g. Cephaloziellaceae, and that the generic position of many taxa remains to be re-evaluated. More detailed morphological and molecular studies are needed to provide further insight in the taxonomy of the complex. However, some well supported relationships have emerged that warrant nomenclatural changes that are made here.

### Results and Discussion

Within the Lophoziaceae/Scapaniaceae/Cephaloziellaceae clade there is one strongly supported lineage (De Roo *et al.* 2007) that we consider should be recognized at family level. This clade includes most of the species of *Anastrophyllum* (Spruce 1876: 235) Stephani (1893: 139) and *Barbilophozia* Loeske (1907: 37) *s. lat.* together with various other elements. It is therefore described below as the new family Anastrophyllaceae.

Although this new family is strongly supported, the relationships within the clade remain largely unresolved. In particular the type genus *Anastrophyllum* may prove to be polyphyletic. However, it is clear