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Universiteit Leiden



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Title: Phylogeny and species delimitation within the moss genus *Dicranum* Hedw.

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Stellingen

Behorend bij het proefschrift

« Phylogenetics and species delimitation within the moss genus *Dicranum* Hedw. »

van Annick S. Lang

1. *Dicranum* is a large monophyletic genus that has been divided into seven sections. These sections have, however, no support as inferred from molecular phylogenetic analyses (this thesis).
2. Despite low genetic variability, the molecular circumscription of *Dicranum* species is generally well defined and is generally congruent with morphological species concepts (this thesis).
3. The relationship among the *Dicranum* species is still in need of resolution (this thesis).
4. The high morphological plasticity found in some *Dicranum* species is not related to higher genetic variability (this thesis).
5. The benefit of being able to accurately identify closely related species with multiple molecular loci is worth extra effort in sequencing although it might compromise the intentions of barcoding methods (this thesis; Clement & Donoghue 2012).
6. Bryophytes are dated back to the Paleozoic (Shaw & Renzaglia 2004; Newton *et al.* 2007). However, it does not imply that bryophytes did not evolve and that all bryophytes are that old (Yu *et al.* 2010).
7. Having clear and reliable baseline data is essential for assessing present and future distribution of bryophytes, in a context of climate change (Slack & Stark 2011).
8. It is essential to take an integrative approach when conducting taxonomical, systematic and biodiversity investigations, i.e. combining morphological characters, DNA data and other types of data to delimit and identify meaningful taxa at all levels (Will *et al.* 2005; Schlick-Steiner *et al.* 2010).
9. the small size and simple morphology of bryophytes do not make them any less complex living organisms than other land plants.
10. A rolling stone gathers no moss (popular saying).