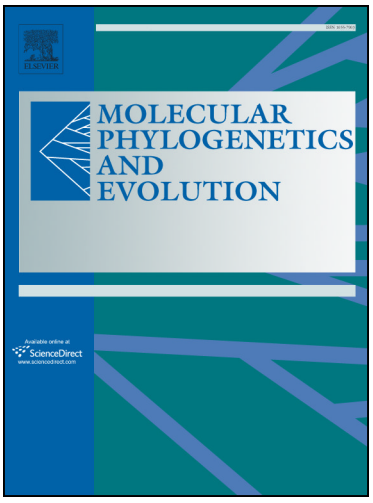

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Molecular phylogeny of the genus *Fissidens* (Fissidentaceae, Bryophyta) and a refinement of the infrageneric classification

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Abstract
The genus *Fissidens* (ca. 440 spp.) is one of the phylogenetically poorly studied groups of mosses (Bryophyta). While various classifications of this genus have been proposed, no attempt at a classification of the genus based on combined molecular and morphological evidence has been made. Here, we present for the first time a comprehensive phylogenetic tree consisting of 50 representatives of *Fissidens*, reconstructed using sequence data from chloroplast *rbcL* and *rps4* genes. Ancestral state reconstructions provide three clear apomorphies within *Fissidens*: peristome teeth, limbidium and chromosome number. Based on the phylogeny and morphological reassessment, we recognize three subgenera, *Pachyfissidens*, *Neoamblyothallia*, and *Fissidens*. Subgenus *Neoamblyothallia* consists of two sections: *Neoamblyothallia* and *Crispidium*. Subgenus *Fissidens* consists of five sections: *Fissidens*, *Polypodiopsis*, *Aloma*, *Areofissidens*, and *Semilimbidium*. High diversity of the most derived sect. *Semilimbidium* in the tropics suggests that the evolutionary history of the genus is through adaptation and diversification in tropical regions.

Keywords:
Fissidentaceae, Fissidens classification, phylogenetics, peristome structure, limbidium, chromosome number

1. Introduction

The acrocarpous family Fissidentaceae (Bryophyta) consists of haplolepideous