PHYLOGENY OF SCORPIDIACEAE (BRYOPHYTA)

Paulo Eduardo Aguiar Saraiva Câmara1, Michael Stech2, William R. Buck3 & Micheline Carvalho-Silva1

1Departamento de Botânica, Universidade de Brasília, UnB. Brasília, DF. Brasil pcamara@unb.br. 2Naturalis Biodiversity Center, Leiden. The Netherlands. 3New York Botanical Garden, Bronx, NY. USA.

Phylogenetic relationships within the monophyletic order Hypnales are still largely uncovered due to rapid diversification early in its evolutionary history. The resulting short branches and lack of resolution between many clades in molecular phylogenetic reconstructions have hampered a better understanding of this most species-rich order of mosses. The family Scorpidiaceae was segregated from Amblystegiaceae, a large family that turned out to be polyphyletic, by Ignatov & Ignatova in 2004. Scorpidiaceae originally comprised five genera, Scorpidium (Schimp.) Limpr., Hygrohypnella Ignatov & Ignatova, Hamatocaulis Hedenäs, Limprichtia Loeske and Sanionia Loeske. However, so far the circumscription of Scorpidiaceae and the monophyly of its genera have not yet been tested based on molecular phylogenetic evidence. For the present study, fifteen species including all genera of Scorpidiaceae were selected for molecular phylogenetic reconstructions under Maximum Parsimony, Maximum Likelihood and Bayesian Inference, using DNA sequences of the nuclear marker ITS and the chloroplast marker trnL-F. The software PAUP, RAXML and MrBayes was used respectively; gaps were coded as informative by a simple indel coding strategy. Trees obtained by individual and combined markers did not differ under any method. Results show that Scorpidiaceae is monophyletic with high support and comprises four monophyletic genera (Hamatocaulis, Hygrohypnella, Sanionia and Scorpidium). The relationship of Scorpidiaceae with Amblystegiaceae s.str. and Calliergonaceae, another segregate of Amblystegiaceae, is not clear, but they do present significant molecular differences. A key to the genera within Scorpidiaceae is here presented. (PROANTAR and CNPq).

Keywords: Amblystegiaceae, Calliergonaceae, Sanionia, Hamatocaulis, Scorpidium, Hygrohypnella