

Taxonomy and Biogeography of Mosses in Some Selected Localities in Sri Lanka

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Sri Lanka is a tropical island with a high level of topographic and climate heterogeneity, supporting a luxuriant growth of bryophytes. Mosses (Phylum Bryophyta) are the most speciose of the three groups of bryophytes (liverworts, mosses, hornworts). According to checklists, Sri Lanka harbors 60 families, 174 genera and 569 species of mosses. However, the available checklists are outdated and the scarcity of literature sources and other information on taxonomy, phenology, ecology and the localities hamper research in the field of bryology. Therefore, the present study was carried out to explore the diversity, taxonomy and biogeographic affinities of the moss flora of four selected underexplored localities including Horton Plains National Park, Loolkandura Conservation Forest, Kanneliya Forest Reserve and Badagamuwa Conservation Forest. The four localities represent montane, sub-montane, tropical wet evergreen and tropical moist semi-evergreen forests respectively. Fresh samples of mosses were collected from the above localities covering wet and dry periods. The specimens were thoroughly observed for morphological and anatomical characters. Based on their unique characters, the specimens were identified up to generic/specific level using latest taxonomic keys and monographs. Taxonomic description and illustrations were prepared for all the species identified. Distribution maps were prepared using Arcmap. Based on the distribution patterns biogeographic affinities were traced for all the species identified. A total of 23 families, 46 genera and 63 species of mosses were identified during the study. The study identified three new species records to Sri Lanka including *Brachymerium capitulatum* (Mitt.) Kindb., *Ctenidium pinnatum* (Brth. & Paris) Broth. and *Fissidens crassinervis* var. *laxus* (Sull. & Lesq.) A. Eddy. More than 75% of species identified during the survey showed close affinities with India and Malesia. The study also highlights the considerable diversity of mosses and the necessity of conserving the microhabitats of the bryophyte flora of Sri Lanka.

Key words: Bryophytes, Mosses, Taxonomy, Diversity, Biogeography