

**A PRELIMINARY STUDY OF MICROCLIMATIC CONDITIONS ON
OCCURRENCE OF BRYOPHYTES**

U.M.S.Y. Bandara, N.C.S. Ruklani and S.C.K. Rubasinghe*

Department of Botany, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
**srubasinghe@pdn.ac.lk*

Sri Lanka is a small island nation in the Indian Ocean. It is part of one of the major biodiversity hotspots in the world. The vast topographic and climatic heterogeneity in the country has contributed to a high diversity of bryophytes in different ecosystems. According to recent literature, Sri Lankan bryophytes comprise of 575 mosses, 330 liverworts and 7 hornworts. Bryophytes are known as primary indicators of changes in climatic conditions in many parts of the world. Bryophytes show species-specific preferences for habitats with varying microclimatic conditions. Therefore, the present study was carried out to investigate the microclimatic conditions preferred by bryophytes in some geographical localities including Kaudulla National Park (Polonnaruwa), Around Bathalegoda lake (Kurunegala), Elkaduwa (Matale), Loolecondera Conservation Forest (Kandy) and Madolsima (Badulla). Microclimatic data including light availability (lux), relative humidity (RH) and air temperature in each habitat considered were recorded during the collection of bryophytes. Soil samples of the substrates were analyzed for soil moisture content and soil pH. Taxa encountered under each microclimatic condition were identified up to generic/specific level using morphological and anatomical characteristics. Identified species included 46 mosses, 14 liverworts and one hornwort. *Tortella tortuosa* (Hedw.) Limpr. was recorded as a species new to Sri Lanka. Majority of taxa encountered during the study preferred < 40,000 lux light intensity, (22 - 27 °C) temperatures, (70 - 80%) RH, (50 - 60%) soil moisture content and 86% of the taxa studied were found in acidic soil (pH 4.0 - 6.0). The study will be continued in different geographical localities throughout the country during different time periods to explore the effect of microclimatic conditions on bryophyte diversity. The results of the present study will contribute in implementing conservation measures for Sri Lankan bryophytes.

Keywords: Biodiversity, Bryophytes, Conservation, Microclimate