



Moss diversity: New look at old numbers

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Abstract

Moss names published since 1801 and subsequently adjusted by monographic, floristic and molecular work provide a benchmark to review and estimate moss diversity. Information about these names is stored in the TROPICOS data base an on-line, interactive community resource. Nomenclatural data along with associated Web based floristic, monographic and bibliographic projects, provide one view of moss diversity based on the history of moss nomenclature and associated natural history information linked to the names.

Key words: Bryophyta, diversity, mosses, species numbers

Introduction

Moss diversity is defined by numbers. How many mosses occur in a country, ecological biome, study site or tree – literally or figuratively. The relatively recent addition of phylogenetic and molecular techniques have altered the circumscription of some entities being counted but not the fundamental need to view diversity based on the numbers of names, species, concepts, or other defined units. The TROPICOS botanical information system (www.tropicos.org) at the Missouri Botanical Garden has been the primary source for this paper because it contains information on names, their current usage, distribution, and history. This system provides a unique resource, open to the public, for exploring biodiversity information although primarily reflecting the research efforts of a single institution. A brief overview of some of the system's functionality will be explored to show how the system is used and how it currently functions as part of the history of moss nomenclatural indexes. The numbers used, conclusions drawn and projections offered refer to mosses only and must be combined with similar numbers from hepatics and hornworts to determine the biodiversity of bryophytes, see paper by Von Konrat et al. in this issue. Of the 45,958 validly published moss species names no more than 13,000 are in current use and recent monographs and floras suggest that that number may still be inflated.

Discussion

Moss diversity can be defined in several ways depending on individual approaches to specific questions. Perceived diversity is altered by differences in interpretation of data, changes in concepts, and the quality or quantity of information available. Furthermore interpretative morphological concepts that have defined moss diversity are now being reinterpreted by molecular analysis as indeed are established naming convention. So what can be said of moss diversity, relating to the number of taxa in current use or recognized, from the perspective of taxonomy, floristics, and molecular studies?