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## 100 years of tropical bryophyte and lichen ecology: a bibliographic guide to the literature from 1901 - 2000

Mark C. Merwin<sup>1</sup> and Nalini M. Nadkarni<sup>2</sup>

The Evergreen State College, Lab II, Olympia, Washington 98505 U.S.A.

**ABSTRACT.** We have compiled a list of 401 citations pertaining to the ecology of tropical bryophytes and lichens. This bibliography includes publications addressing their biology, ecology, natural history, and physiology, but does not include papers that deal exclusively with taxonomy and floristics. The citations are also categorized into general taxonomic and function groups. Trends in subject matter are discussed.

### INTRODUCTION

In the earlier part of the 1900's, few reports on the ecology of tropical bryophytes and lichens had been published. However, bryological and lichenological research in the tropics has been rapidly increasing since the 1970's. In the past three decades, the number of publications has nearly doubled every ten years (Fig. 1). This indicates a burgeoning of scientific interest in the

subject in many countries and carried out by a cadre of biologists in different subdisciplines. For example, conservation biologists have begun to recognize that tropical bryophytes and lichens make excellent indicator organisms for environmental changes. Theoretical ecologists have initiated experiments with tropical lichens and mosses, as they grow rapidly and are amenable to manipulation.

However, the ecological literature is scattered throughout a variety of journals. We compiled this bibliography to bring together the literature so that ecologists and conservationists interested in tropical bryophytes and lichens will have a starting point for their investigations. The list includes papers, theses, dissertations, and

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<sup>1</sup> Present address: Columbia University,  
Biosphere 2 Center, Oracle, Arizona 85623  
U.S.A.

<sup>2</sup> Author for correspondence:  
nadkarnn@evergreen.edu

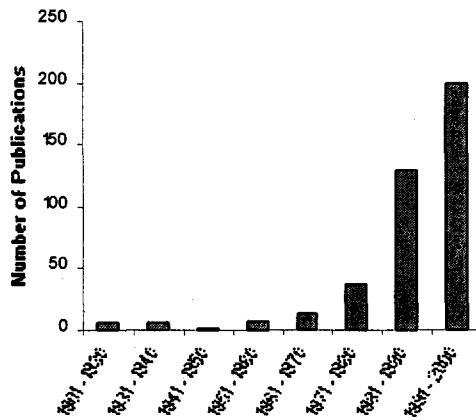


FIG. 1. The number of tropical bryophyte and lichen ecological publications in the 20<sup>th</sup> century.

abstracts addressing the biology, ecology, natural history, and physiology of bryophytes and lichens. Purely taxonomic and floristic papers have been excluded, except where they provide information that is of direct interest to the researcher and conservationist concerned with the functioning of bryophytes and lichens in ecosystem-level processes and their response to environmental conditions. Investigations conducted in one of the 172 countries or island groups whose land mass occurs between the Tropics of Cancer and Capricorn are included, which excludes work that has been conducted in subtropical countries (e.g. Japan and New Zealand).

All citations were verified with hard copies of reprints, communication with the primary author, or a citation database (e.g. AGRICOLA, BIOSIS), except those marked with an asterisk (\*). An appendix that groups citations by category is provided. The corresponding author welcomes any corrections or additions to the list.

The list suggests lichens are ecologically poorly studied compared to bryophytes. For both groups, the Neotropics has received a great deal of attention relative to other tropical regions. Investigations of community ecology and diversity are the most common, and research on the reproductive biology, animal interactions, and conservation of tropical bryophytes and lichens

has been less so. In terms of substrate affinity, epiphytes are well studied compared to lithophytes and epixylic communities. Overall, every aspect of tropical bryophyte and lichen ecology is very poorly known and a great deal of future research is needed.

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