

## BOOK REVIEW 2003 - #1

Brodo, Irwin M., Sylvia Duran Sharnoff, and Stephen Sharnoff. *Lichens of North America*. 2001. xxiii + 795 pages; maps; colored photographs; figures; suggested reading list. Yale University Press, New Haven, CT. ISBN: 0-300-08249-5. Hard Cover. Price: \$69.95. Available from Yale University Press, P. O. Box 209040, New Haven, CT 06520-9040

Lichens are unique living entities. Each lichen species consists of a fungal taxon and a green algal taxon or a cyanobacterial taxon (or both) living together in a symbiotic relationship. They are so successful that there are about 3,600 species of lichens known for North America alone. Lichens are ubiquitous, except for large cities where they are essentially absent because of their sensitivities to pollution. Some are inconspicuous while others are brilliant patches of yellow, orange or blue-green on soils, rocks, bark of trees and other substrata. Still others form long strands draped over tree branches. In certain ecosystems lichens have major roles in food webs and in addition, they provide nesting materials for birds and mammals.

Considering the importance of lichens, it is surprising that only a few, mostly regional, manuals for North America have been published. However, *Lichens of North America* superbly fills the need for a comprehensive yet easily accessible guide to the most noteworthy lichens for North America from the Mexican border to the arctic. The senior author, Irwin M. Brodo, is a world authority on lichens and their biology. And most of the photographs were taken by the renowned nature photographers Stephen Sharnoff and the late Sylvia Duran Sharnoff.

The book covers over 1500 common, conspicuous or otherwise important lichens and presents information on another 700 species in the keys and notes, with special attention given to species endemic to North America. There are 804 photographs of lichens which were taken in natural habitats. In addition, there is a glossary which explains technical terms.

The volume is divided into two major parts: "About The Lichens" and "Guide To The Lichens," respectively. Although part one is only 113 pages long, chapters one through eight contain a wealth of information about such topics as ecology, structure, reproduction, growth and chemistry of lichens. Chapter nine describes eighteen geographic regions in North America in which the lichens are found and includes maps and photographs. Chapters ten and eleven cover economic uses of lichens, the adverse effects of some human activities on lichen communities, and the use of lichens to monitor air quality. Also in part one, chapters twelve, thirteen and fourteen provide useful information on lichen nomenclature, helpful advice on how to collect and study lichens and important suggestions on how to identify lichens using the keys and descriptions in part two.

Part two is used to identify unknown lichens, the dichotomous "Key to Keys" first takes the user to one of eleven lichen Groups (A through K) based on morphological features. For example, Group Keys C through F are dichotomous keys to genera (and some species) of four different morphological groups of crustose lichens; namely, sterile

crustose lichens (Key C), crustose perithecial lichens and lichens with ascomata (ascocarps) resembling perithecia (Key D), crustose script lichens (Key E), and crustose disk lichens (Key F). Subsequently, the user goes to the "Description, Illustrations, Keys To Species, and Maps" section (pages 145-749) following the Group Keys where the genera and species are arranged alphabetically. For fully treated species in the text, the investigator will find a very fine photograph, a common name, a distribution map, a description, habitat information, lichen substances and results of chemical identification tests. The authors warn the user that it is imperative to use the keys because not all lichens are photographed and therefore just matching specimens with photographs may lead to misidentifications.

I did find one problem in using the book. It weighs almost ten pounds and thus will be difficult to carry into the field. It may be necessary to collect specimens in the field and identify them later. But, in this regard the authors caution the investigator not to collect lichen specimens unless serious about studying them, take only small quantities if needed and obtain permission to collect. In any case, I would highly recommend *Lichens of North America* for the library of anyone who is interested in lichens, from a specialist to an amateur, for its wealth of information and striking illustrations.

Reviewer: Judith B. Rastorfer, 547 Lakewood Boulevard, Park Forest, Illinois 60466

Note: For matters concerning book reviews please contact James R. Rastorfer, Book Review Editor, Department of Biological Sciences, Chicago State University, 9501 South King Drive, Chicago, IL 60628; 773-995-2426; j-rastorfer@csu.edu