# Lichen Books & Guides

## An Overview by Ian Adams

### Technical Guides to Lichens

Brodo, Irwin., Sharnoff, S.D., and Sharnoff, S. 2001. *Lichens of North America*. Yale University Press, New Haven, CT.

Brodo, Irwin., Sharnoff, S.D., and Sharnoff, S. 2016. *Keys to Lichens of North America – Revised and Expanded*. Yale University Press, New Haven, CT.

Flenniken, Don. 1999. *The Macrolichens in West Virginia*. Carlisle Printing, Sugarcreek, OH.

Hinds, James and Hinds, Patricia. 2007. *The Macrolichens of New England*. The New York Botanical Garden Press, Bronx, NY.

Showman, Ray and Flenniken, Don. 2004. *The Macrolichens of Ohio*. Ohio Biological Survey, Columbus, OH.

### Field Guides to Lichens

Franz, Mack W., Studler, Susan Moyle., and Rentch, James. 2018. *Lichens of West Virginia Field Guide: Ecological Indicators of Habitat Types* (PDF).

Pope, Ralph. 2005. *Lichens above Treeline: A Hiker's Guide to Alpine Zone Lichens of the Northeastern United States*. University Press of New England, Hanover, NH.

Purvis, William. 2010. *Lichens*. Natural History Museum, London.

Showman, Ray. 2015. *Common Lichens of Ohio Field Guide*. Ohio Division of Wildlife, Columbus, OH.

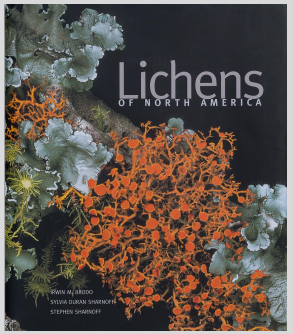
Walewski, Joe. 2007. *Lichens of the North Woods*. North Woods Naturalist Series. Kollath & Stensaas Publishing, Duluth, MN.

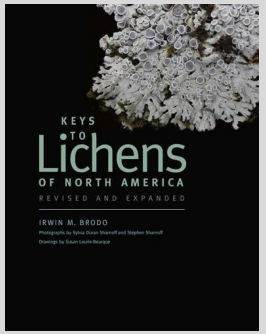
## Introduction

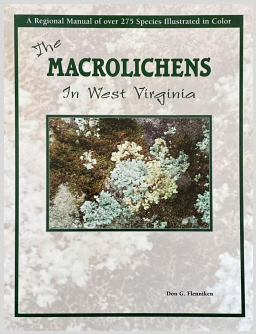
The purpose of this list is to acquaint you with the best books currently available on lichens, which are a fascinating group of life forms that cover about 8% of the world's land surface but are virtually unknown to most people. The books in this list will help you to find, identify, and learn about the lichens that inhabit eastern North America, including the Midwest and Great Lakes states.

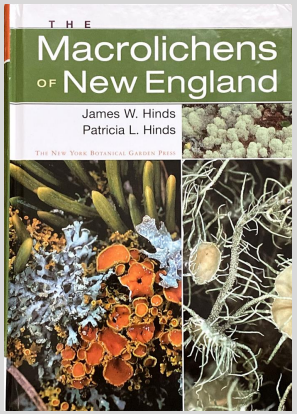
The 10 publications included in this list are grouped into two categories – Technical Guides and Field Guides. The five Technical Guides include keys and require a good understanding of botanical and other scientific terminology. They should be in your lichen library but not your backpack. *Lichens*, by William Purvis also belongs in your library. The other books listed under Field Guides are easy to understand by lay people and are very compact – they will easily fit in your backpack. *The Lichens of West Virginia Field Guide* is a PDF that you can download onto your smartphone.

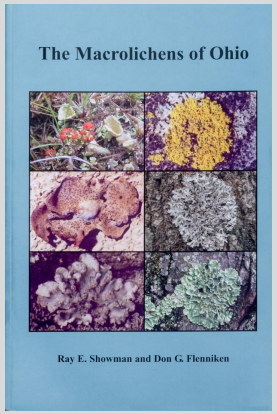
The only other essential items for studying lichens in the field are a 10X-20X magnifier for examining key features – many of which are tiny – of the lichens you find, and a notebook and pen. Don't leave home without these three items.

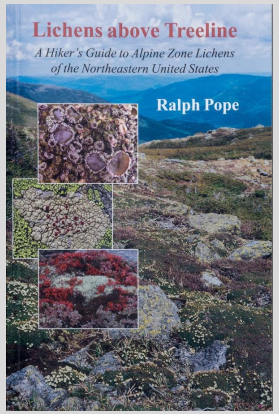


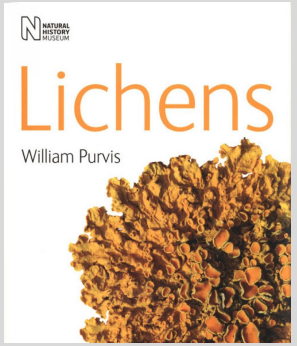



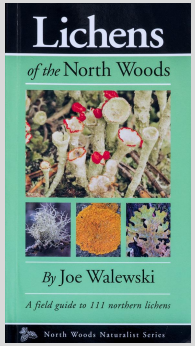



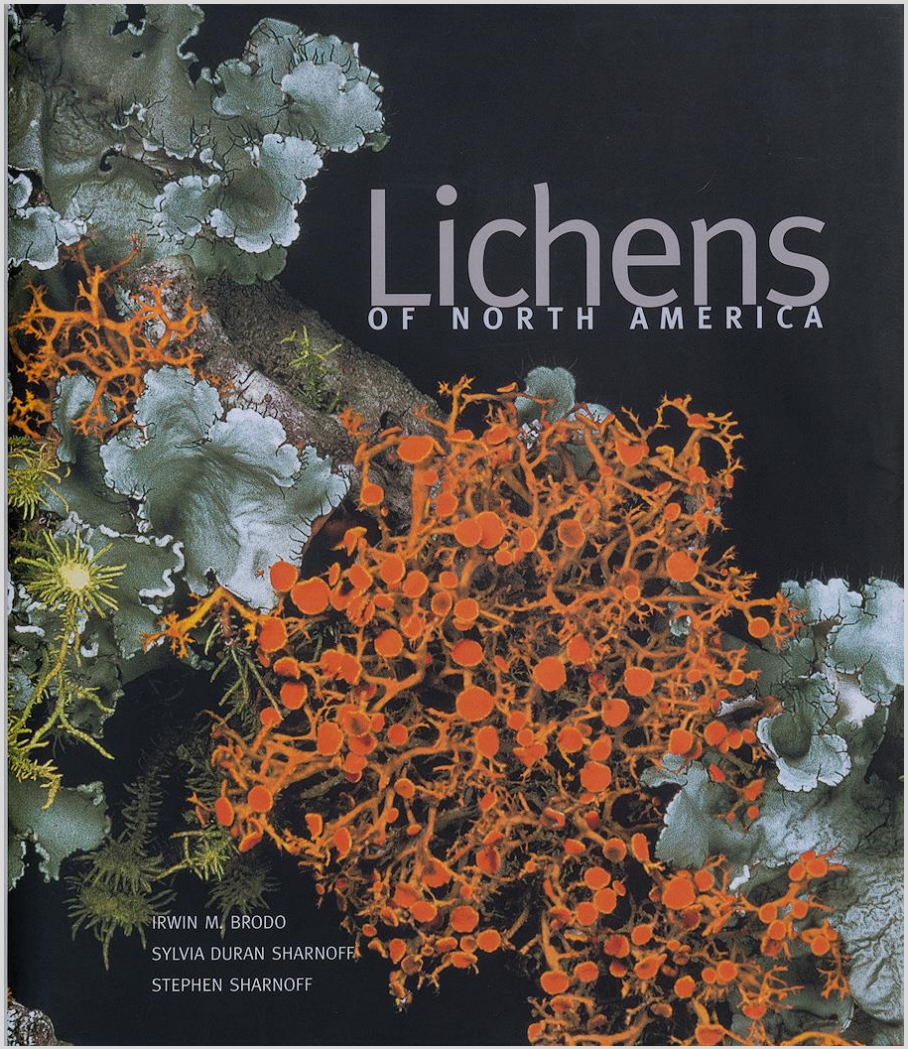




It is fitting that this monumental book should be first in any list of lichen books. Weighing in at 8.8 lbs, this 11x9.5x2-inch book is no field guide, but it will become  the bible for anyone with a serious interest in North America's lichens. More than 1,500 of the estimated 3,600 species of lichen in North America are covered in the book's 828 pages, which include 939 superb color photos taken by Stephen Sharnoff and the late Sylvia Duran Sharnoff. The text, written by the eminent lichenologist Dr. Irwin (Ernie) Brodo, provides a non-technical introduction to lichens that will appeal to a nature lover, hiker, photographer or botanist. The book includes detailed descriptions, keys, and range maps for 805 foliose, fruticose, and crustose lichens, with information on another 700 species.

Published by Yale University Press in 2001, *Lichens Of North America* is the first-ever definitive, color-illustrated guide to the lichens of North America. The book remains in print and new copies may be purchased online for about $130.

I recommend removing and storing separately the book's beautiful dust cover to keep it in pristine condition.



# Sample Pages from *Lichens of North America*





***Cladonia boryi***
*Fishnet cladonia*

DESCRIPTION: Primary thallus absent. Podetia pale yellowish green, puffed up, contorted, abundantly branched, up to 9 cm tall and 3–11 mm across, eroded here and there leaving irregular perforations, its inner lining (stereome) being reduced to a network of fibrous strands. CHEMISTRY: Thallus PD–, K–, KC+ yellow, C– (usnic acid), or rarely with podetia tips PD+ red-orange (protocetraric acid). HABITAT: On sandy soil and sand dunes, less frequently in open forest glades. COMMENTS: When fully developed, this lichen is unlike any other. Young, more erect specimens, however, look somewhat like *C. caroliniana*, a smaller species with less perforate podetia that grows most commonly over exposed granitic rock.

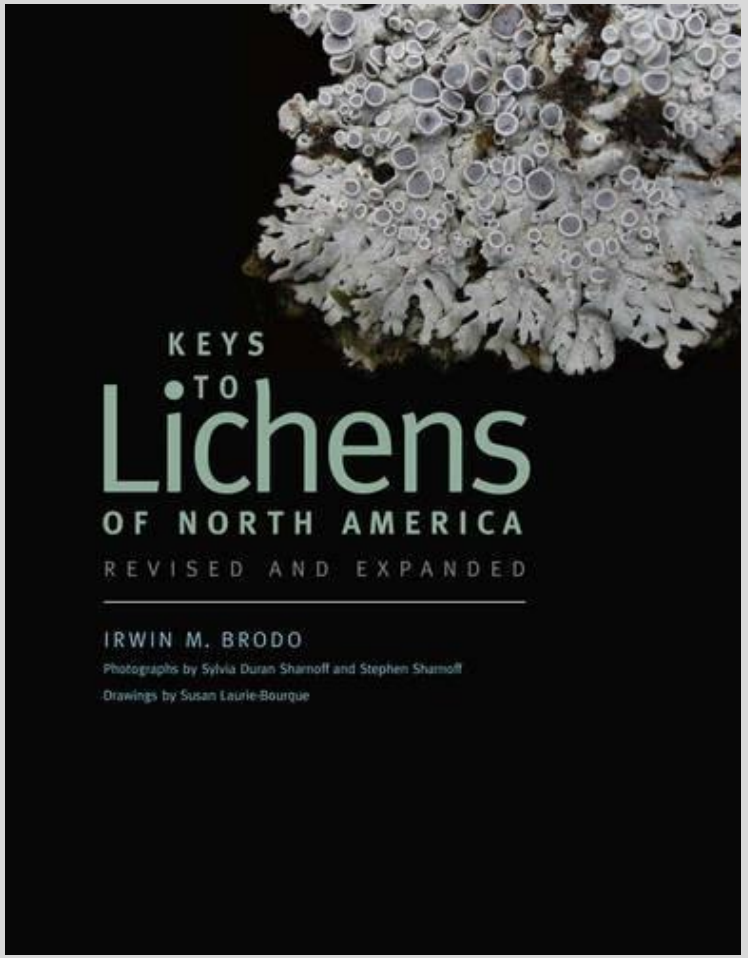


213. (facing page) *Cladonia bellidiflora* Cascades, Oregon ×5.9
214. (above) *Cladonia borealis* mountains, coastal Alaska ×2.4
215. (below) *Cladonia boryi* Cape Cod, Massachusetts ×2.7

*Lichens of North America* was published in 2001 – almost 20 years ago. During those two decades new lichen species have been discovered and other lichen species have been reclassified as a result of DNA and other types of scientific analysis. Many of these new lichen species and reclassifications are included in *Keys to Lichens of North America: Revised and Expanded*, by Irwin Brodo, published in 2016.

Created in response to requests from longtime users, this addition to the acclaimed reference to North American lichens compiles updated and expanded keys for the identification of these fascinating organisms. An ideal laboratory resource, it covers over 2,000 species of lichens indigenous to the continent. There is no comparable volume available for classroom, workshop, or private use. A glossary is illustrated with photographs by Sylvia Duran Sharnoff and Stephen Sharnoff and drawings by Susan Laurie-Bourque, all from the original book. The revised keys are an indispensable identification tool for botanists, students, scientists, and lichen enthusiasts alike.

Available online for about $29.

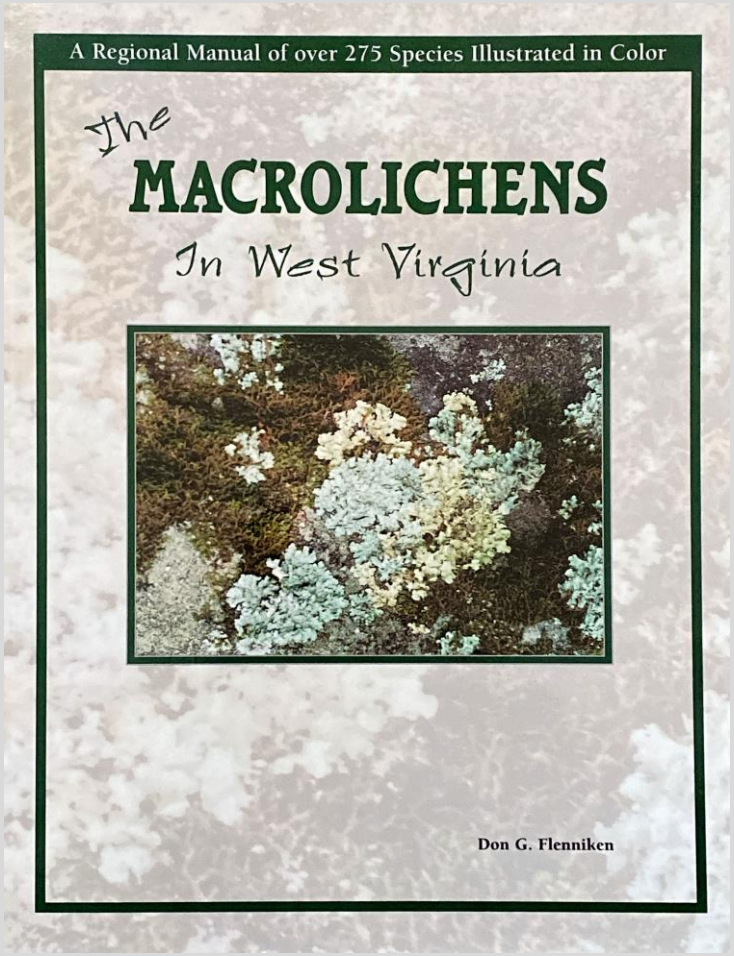


The late Don Flenniken was a founding member of the Ohio Moss and Lichen Association (OMLA), and an avid student of lichens. *The Macrolichens In West Virginia*, published privately in 1999, fulfilled the author's goal to combine his interest in eastern lichens with his love for the unspoiled state of West Virginia.

This soft cover book includes notes on the climate, physiography, and vegetation of West Virginia, collecting and identifying lichens, a key to the genera of West Virginia foliose and fruticose lichens (crustose lichens are not included), a glossary of terms, an extensive reference list, and a checklist of 275 lichen species that have been found in the Mountain State. This is followed by detailed descriptions and range maps for each lichen, an index, and 27 color plates with photographs, taken by Don Flenniken, of all the lichen species included in the book.

Sadly, the extensive information included on each lichen species is not matched by the quality of the color photographs, each of which measures only 2x2-inches, printed 12 per page on each of the color plates. Most of the lichen photos were not taken in the field, but are of posed specimens arranged on white, light green, or light blue backgrounds. Many of the photos exhibit inaccurate color, with a pronounced color cast, and highlight detail is overexposed in the majority of the images.

Free copies of this book are available from OMLA members Ray Showman or Bob Klips.

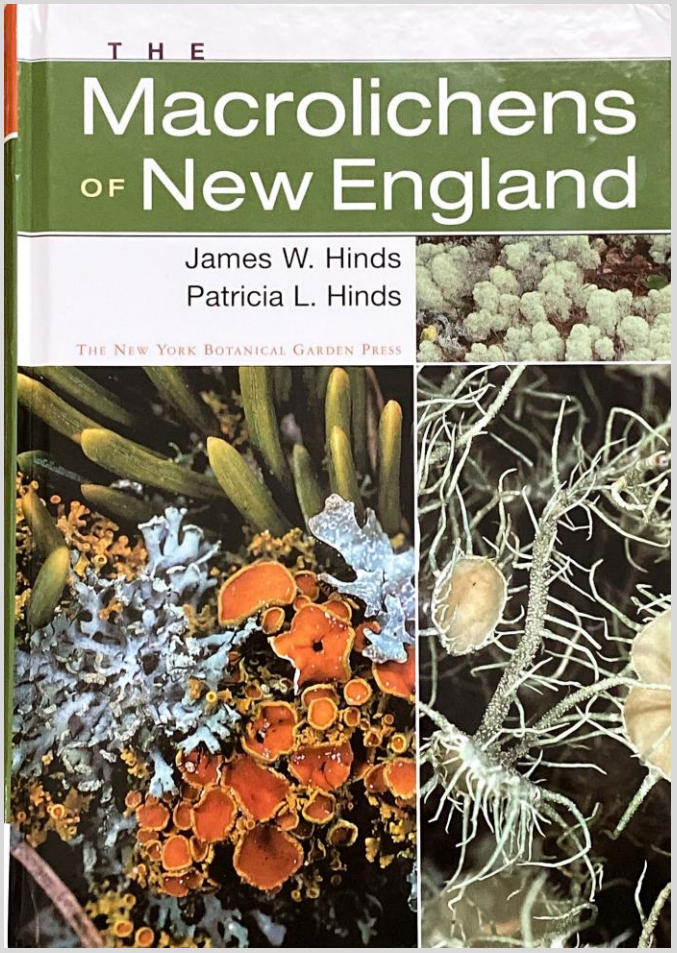


Second only to Brodo's *Lichens of North America* in a list of books about eastern lichens is *The Macrolichens of New England*, written by husband and wife James W. Hinds and Patricia L. Hinds. The book is the most comprehensive of its kind, based on fieldwork and research by the authors during the last 35 years.

Highlights of this comprehensive book, which focuses on foliose and fruticose lichens (crustose lichens are not covered) include:

- Descriptions of 98 genera and 461 species of foliose and fruticose lichens.
- Color photographs, taken by the authors, of 308 species.
- Introductory material on general lichen morphology and a glossary of terms for less experienced readers, along with advice on collecting lichens and performing chemical tests.
- A review of the ecological role of New England lichens, as well as the geography, geology, climate, conservation status, and major biogeographical zones for lichens in New England.
- Identification keys, both general and genus-specific, to 502 species of macrolichens, including the 461 New England species and 41 additional species known from adjacent states and provinces that could occur in this region. Crustose lichens are not covered in this book.
- Synonyms, misapplied names, common names, morphology, chemistry, worldwide range, usual substrate, distribution in New England, and comparisons with similar species.

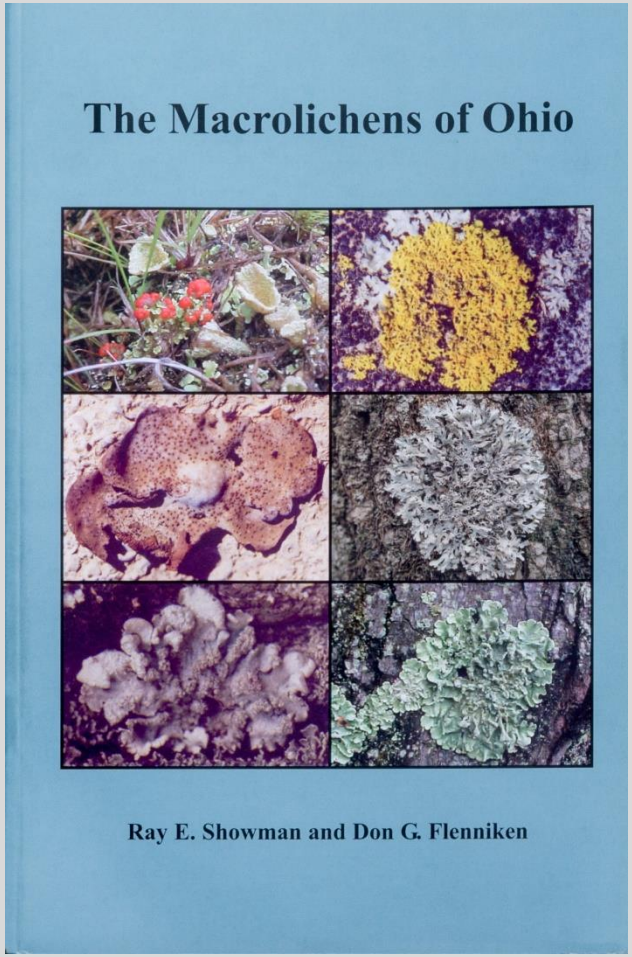
New copies of the book, which was published by the New York Botanical Gardens Press, are listed on the NYBG website for $65.



*The Macrolichens of Ohio,* co-authored by Ohio lichenologists Ray Showman and the late Don Flenniken, provides keys and concise descriptions of 223 species of foliose and fruticose lichens currently recognized from Ohio as of 2004. An Ohio map is provided for each species to show distribution and collection period. An introductory section discusses the history of lichen collecting and the ecology of lichen communities in Ohio. An extensive glossary and bibliography are included at the end of the book.

This book will be most useful to readers who have a working knowledge of lichen terminology and the use of identification keys. *The Macrolichens of Ohio* does not include photographs, but for each lichen species described there is a link to a photograph of the lichen in *Lichens of North America* (LNA) and/or *The Macrolichens of West Virginia* (MWV).

*The Macrolichens of Ohio* is available from the Ohio Biological Survey, for $35. It is listed under Volume XIV – New Series.

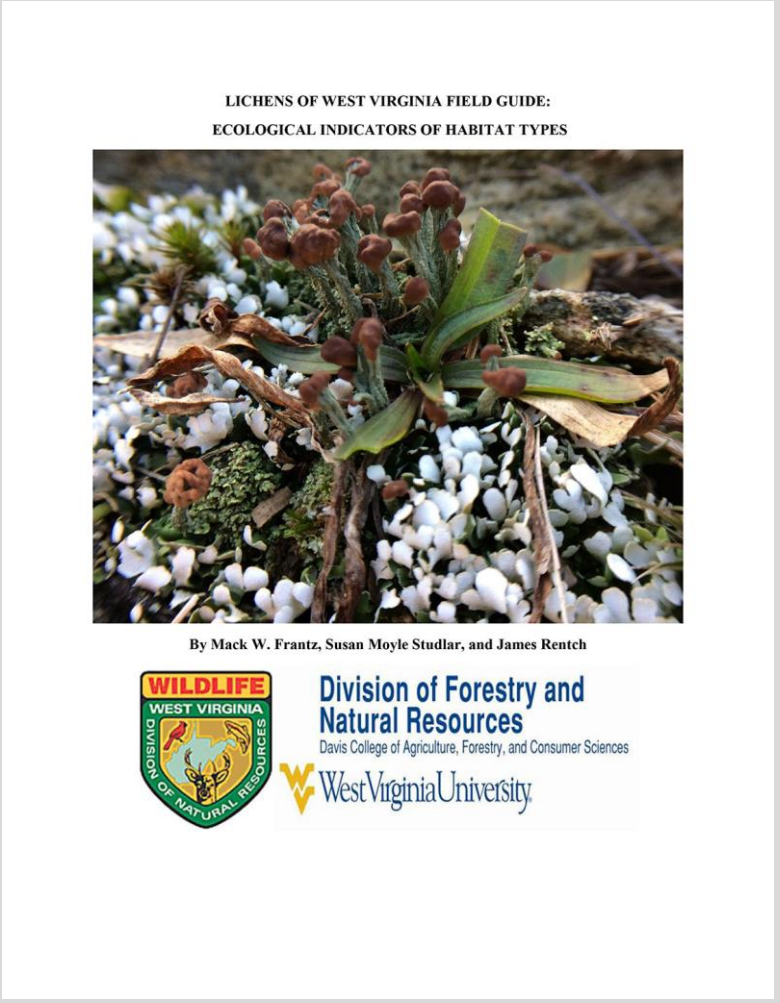


While researching lichen books online, I discovered this useful field guide to the lichens of West Virginia. This recent publication is more user-friendly than Flenniken's *The Macrolichens of West Virginia*, has much better color photographs, and also includes information on 18 crustose lichens that are often encountered in the Mountain State.

This guide provides an excellent introduction to lichen growth forms and reproductive structures, followed by information on West Virginia's lichen habitat types and detailed information on about 60 lichen species, each one illustrated by several color photographs.

This field guide may be obtained as a free PDF download from the West Virginia Division of Natural Resources website:

https://www.wvdnr.gov/Publications/Publications.shtm

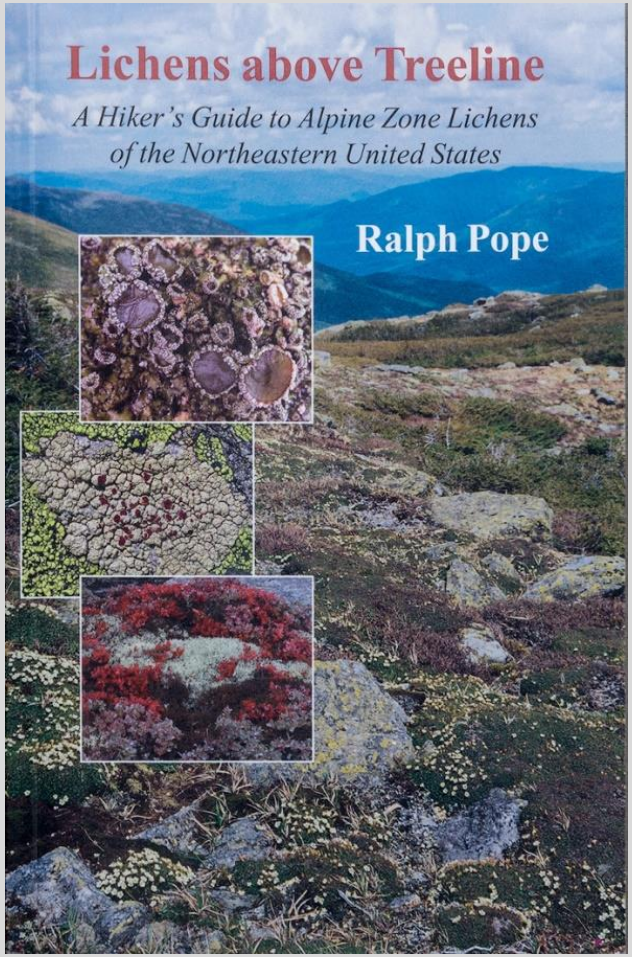


On the rugged, windswept mountain tops of New England and the Adirondacks of upstate New York the most abundant life forms are lichens. If you love lichens and plan to drive or hike to these Alpine Zones of the northeast this is the book for you.

Based on extensive fieldwork and research by the author, Ralph Pope, this 70-page book explains the fascinating biology of more than 50 species of lichens, including 16 crustose species, that thrive where most plants can't survive. Full-color photographs accompany detailed descriptions and notes on lichens in harsh environments, human and wildlife use of lichens, lichen substances, and pollution monitoring with lichens. The book is non-technical and will take up very little space in your backpack when hiking.

If you purchase a copy, check the binding carefully when the book arrives. The cover and pages are glued together, and after minimal use the cover has separated from the pages in my copy.

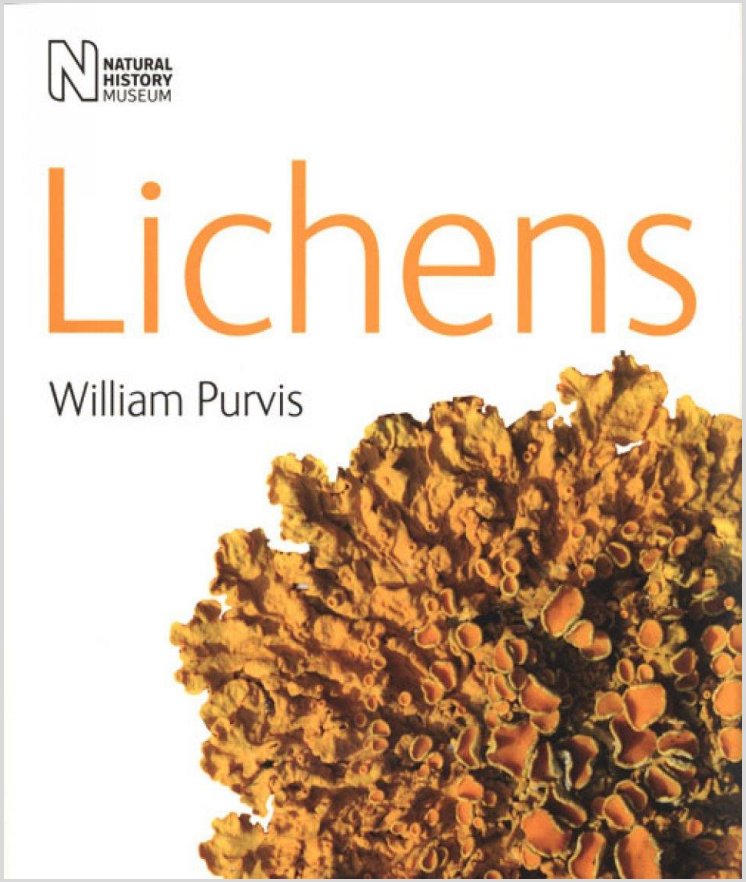
Used copies of the book may be found online for $12.95.



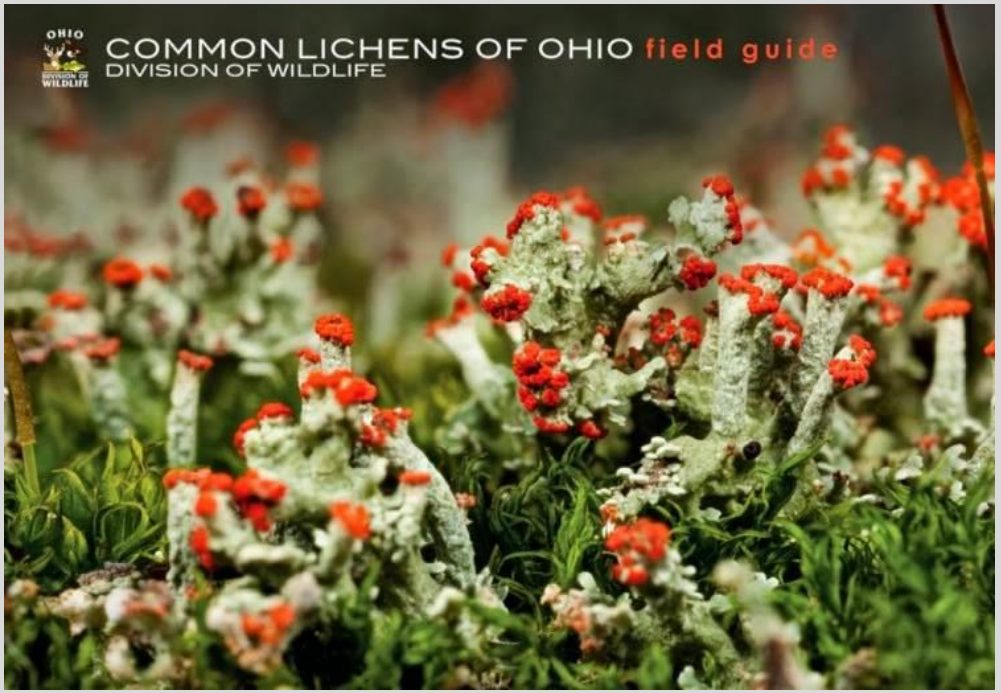
This book is not a field guide, but provides an excellent introduction to the fascinating world of lichens. The author, William Purvis, is a lichenologist at the Natural History Museum in London, United Kingdom.

This 112-page softcover book is full of information on the nature of lichens and how they grow, multiply, and disperse. Additional chapters cover lichen biodiversity, evolution and naming, lichens in forests, lichens in extreme environments, biomonitoring with lichens, economic uses of lichens, and practical projects with lichens. There is a glossary, an index, and an extensive list of lichen references.

The September, 2000 edition, with the cover shown opposite, is available online for about $45.00.



*Common Lichens of Ohio* is a field guide published by the Ohio Department of Natural Resources - Division of Wildlife. This superb, 79-page brochure is the publication that sparked my interest in Ohio's lichens and it should be the first reference that you acquire. It's FREE (!)




*Common Lichens of Ohio* was written by lichenologist Ray Showman, who is the Co-President of the Ohio Moss and Lichen Association (OMLA), and is illustrated with outstanding color photographs of lichens taken by Robert Klips, who is an Associate Professor Emeritus in the Department of Evolution, Ecology, and Organismal Biology at The Ohio State University.

This field guide provides an excellent overview of lichen distribution in Ohio, lichen structure and reproduction, lichens and animal interactions, lichens and air pollution, and detailed descriptions of 9 crustose lichens, 31 foliose lichens, and 16 fruticose lichens found in Ohio, including several rare species.

Each lichen description is accompanied by a color photograph and, in many cases, a close-up of a key feature of the lichen. Many tips on identifying lichens are included, as well as a glossary of lichen terms.

You can obtain a free copy of this field guide from the Ohio Division of Wildlife:

http://wildlife.ohiodnr.gov/stay-informed/publications

Last but not least is this diminutive and delightful book, *Lichens of the North Woods: A Field Guide to 111 Northern Lichens,* by Joe Walewski, part of the North Woods Naturalist Series, a set of 15 guides to the natural history of the northern Great Lakes region published by Kollath+Stensaas Publishing.

The northern Great Lakes region that borders the western and northern shoreline of Lake Superior is a lichen-rich area, with more than 700 species of lichens. Many of these lichens are also found in Ohio, making this book a useful and inexpensive addition to your lichen library.

Joe Walewski is the Director of Naturalist Training at Wolf Ridge Environmental Learning Center in Finland, Minnesota. This handy field guide has quick-flip color tabs that help you find your lichen quickly, and is well-organized by lichen substrate and type of lichen: crustose, foliose, and fruticose. The book is loaded with fascinating natural history notes on lichens, and includes 150-plus superb color photos as well as identifying chemical tests described for each species. The 111 lichen species covered in the book include 28 crustose lichens.

The author has a great sense of humor. As an example, here is a quote from Page 79, on Frosted Rock Tripe, which has served as survival food for many Arctic explorers, though some preferred to eat their boots before resorting to Rock Tripe:

"*Umbilicaria* are generally difficult for humans to digest, they have a high acid content, they cause diarrhea and they don't taste so good either. May you never be forced to choose between rock tripe and your hiking boots."

Available from online retailers for $18.95.

WARNING: Several of the 70+ reviewers of this book on Amazon.com have complained about the binding falling apart on this book, so please check your copy carefully when you receive it and return the book for replacement if the binding is defective.