

BOOK REVIEW

Macrolichens of the Pacific Northwest. 2009. 2nd edition. Bruce McCune and Linda Geiser. Oregon State University Press, Corvallis, Oregon. \$30.00, ISBN-13: 978-0870715655. 448 pages.

My interest in identifying lichens began in the early 1990s while I was conducting habitat assessments for various conservation groups and government agencies. Though lichens are often overlooked in such efforts, it seemed absurd to me to omit such a diverse and conspicuous group from species inventories. At the time, however, few resources existed to help give name to any but the most prominent lichens included in general natural history texts. To the region's small but dedicated group of lichen enthusiasts, McCune and Geiser's first volume, *Macrolichens of the Pacific Northwest* (1997), represented a boon and a great step forward. That work has now been significantly expanded and improved in a revised second edition.

Increased interest in lichens, use of lichens as indicator species, and recent clarifications in lichen taxonomy make this updated volume both warranted and welcome. As the authors note in their forward, "Our understanding of the macrolichens of the Pacific Northwest has advanced tremendously in the ten years since the first edition of this book." The new edition includes 116 additional species and 176 new illustrations, and comes in at a full 20% longer than the first.

The authors bring a combination of academic and professional experience to the topic. McCune has been a professor of botany and plant pathology at Oregon State University for more than 20 years, while Geiser is an ecologist and air quality specialist for the USDA Forest Service. Both have contributed to other regional lichen field guides and inventories, including *Lichens of Southeastern Alaska* (Geiser et al. 1994) and *Macrolichens of the Northern Rocky Mountains* (McCune and Goward 1995).

The book begins with introductory material, including notes on lichen biology, collection

techniques, and tips for using the guide. Though written in clear and accessible prose, much of this material seems cursory, with the exception of a long section on the use of lichens for air quality monitoring. Though air quality monitoring represents one of the authors' major research areas, such a strong emphasis seems unwarranted for a field guide, and the map reproductions are too small to be very useful. The space might have been better devoted to more discussion of lichen natural history and ecological relationships. This is really only a minor quibble, however. Other sources can provide thorough treatments of lichen biology (e.g., Brodo et al. 2001), and the real meat of this book lies in its region-specific keys and species descriptions.

A key to the genera follows the introduction, and then come individual generic keys and species descriptions arranged in alphabetical order. Each species receives a generous treatment, including a detailed description of the thallus and fruiting structures and notes on habitat, substrate, and occurrences within the region. Chemical notes are also included, describing expected results of various spot tests and exposure to UV light. Good quality color photographs illustrate the majority of species, and there are many additional line drawings and sidebars depicting specific features useful in identification. Tables or illustrations comparing characters from related species are also included for several difficult groups.

The real test for a book of this nature lies in the practicality and accuracy of its keys. To gauge this, I collected fresh specimens of 2 familiar lichens and used the book to identify them. The first, *Peltigera canina*, keyed to species in 6 couplets based entirely on physical features. A series of color photographs contrasting its veins and distinctive tufted rhizines to those of other *Peltigera* was particularly helpful and represents the kind of thoughtful addition that makes this guide even better than its predecessor. For the second test I used a species of bone lichen, *Hypogymnia tubulosa*, that keyed quickly with morphological traits to

a couplet where only chemical spot tests differentiated it reliably from a closely related species. In my case, the distinction could be made based on range information given in the species descriptions, but the chemical test would be necessary where the species overlap.

Chemical testing is an essential tool of advanced lichen identification but involves at least one suspected carcinogen (*p*-phenylenediamine) and requires a dedicated space for mixing and storing the necessary solutions. The focus on identification through morphological characters makes this guide immediately useful to amateur and intermediate lichen enthusiasts, and the chemical notes will be of interest to experts. My own identification needs have rarely required chemical tests, so to assess that aspect of the keys I sought out someone who uses such tests regularly. Dr. Fred Rhoades of Western Washington University is a distinguished regional lichenologist of long standing. He informed me that McCune and Geiser's treatments appear to agree with other pertinent lichen references (e.g., Goward et al. 1994, Brodo et al. 2001). He uses the chemical portions of the McCune and Geiser keys often, trusts the results, and feels they are on a par with the high quality of the rest of the book.

After the keys and species descriptions, the book concludes with a useful summary of nomenclature and common names, a list of references, a glossary, and an index. Frequent illustrations make the glossary particularly helpful, and the references provide a comprehensive list of citations relevant to Pacific Northwestern lichens.

In summary, *Macrolichens of the Pacific Northwest: Second Edition* marks a significant improvement on an already excellent field guide. McCune and Geiser provide practical keys and excellent species accounts that will aid both amateur and advanced lichenologists in identifying regional lichens. Those with the older edition should seriously consider upgrading to this expanded volume, a book that deserves a place in any natural history library for the region.

LITERATURE CITED

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