REVIEWS

THOMAS H. NASH III, BRUCE D. RYAN, CORINNA GRIES, AND FRANK BUNGARTZ (EDITORS), Lichen Flora of the Greater Sonoran Desert Region—Volume 1. viii + 532 pages. Lichens Unlimited, Department of Plant Biology, Arizona State University, Box 871601, Tempe, AZ 85287-1601, U.S.A. 2002. [ISBN 0-9716759-0-2.] Price: US$ 29.95 (hard cover); add $3.50 for US postage, $9 for Canada, $12 for Europe, and $13 for Asia; e-mail: tom.nash@asu.edu

One of the recent shining ideas in lichenology has been Tom Nash’s grand project for the flora of the Sonoran Desert. As one of the most luxuriant deserts in the world, the Sonoran is a North American botanical treasure. Given that no individual or even possible small team had the experience to deal with its largely unknown lichen flora as a whole, Nash raised the money for expeditions in 1988–1989 by a large international contingent of lichenologists, specialists in many taxonomic groups and consequently also the most critical collectors. The goal was a two-volume flora to which all would contribute and to be produced promptly. And presto!—the first volume is here.

Strictly speaking, the Sonoran Desert is a lowland of sand dunes and flats that surrounds the Gulf of California. In Mexico it includes the peninsula of Baja California and the State of Sonora, and in the United States it includes adjacent southwestern Arizona and the southeastern corner of California. For the purposes of this flora, however, this region has been extended to cover all of Arizona, the eight southernmost counties of California, and, in Mexico, the northern half of the State of Sinaloa and the Sierra Madre Occidental region of Chihuahua. The editors estimate that the forested regions of higher elevation thus added to the study region more than double the number of lichen species covered. The Sonoran Desert sensu stricto is characterized by a rich vegetation of succulents, including columnar and other large cacti, small arborescent and shrubby plants, and a spectacular flora of spring annuals. This region had previously received little serious lichenological study, although in its expanded definition (its “greater” definition of the book’s title), southern California was the subject of H. E. Hasse’s early flora of 1913.

The first volume of the Sonoran lichen flora covers the pyrenolichens and most of the squamulose and macrolichens. After a short description of the region, it begins with a good introduction to lichen structure and chemistry, dealing with all the necessary concepts and terminology. Then 32 pages give 10 keys by various authors to the genera treated. These keys, like all in this book, are in the undented style, which increases both the ease of computer composition and the user-unfriendliness while saving negligible space. The keys, however, are clear and well written, and when you lose your place you may be saved in some of the longer ones by an occasional directional sign in boldface type.

In writing this review, I looked for the abstract with the numbers of taxa treated. Surprisingly, none exists, only a list at the end of the 30 nomenclatural novelties in the flora as a whole. So I set about compiling the inventory myself: A (considerable) bit of counting showed that this book includes treatments of 132 genera and 573 species. These statistics are too significant to trust the reader to unearth independently and a candle not to be hidden under a bushel from the granting agency, the National Science Foundation, that paid many of the bills. Additionally, an impressive list of 33 persons contributed to the taxonomic treatments, Bruce Ryan winning first prize with the authorship for 24 genera. In the rank of the most prolific, he is followed by T. H. Nash (19), A. Aptroot (14), M. Schultz (12), O. Breuss and A. Tehler (9 each), and T. L. Esslinger and P. M. Jørgensen (6 each).

It will not be possible to characterize the whole Sonoran flora accurately until the second volume of primarily microlichens species is published. In the present volume of mostly macrolichens, however, the 132 genera treated include, at the low end, 52 (39%) that are represented in the region by a single species each and, at the high end, 15 (11%) that are represented by 10 or more. The largest genera are Cladonia (43 species, by Ahti and Hammer); Physcia (29, Moberg); Pertusaria (28, Lumbsch, Nash); Hypotrachyna (27, Nash, Sipman, Elix); Parmotrema (24, Nash, Elix); Tonia (19, Timdal); Psora (18, Timdal); Heteroderma (18, Moberg, Nash); Peltopora (16, Büdel, Nash); Melanelia (14, Esslinger); Placidium (14, Breuss); Hypogymnia (12, McCune); Physcosia (11, Esslinger); Endocarpon, (10 Breuss); and Fuscopannaria (10, Jørgensen). The species treatments average about half a page in length and are easy to read with key words in boldface type. The citations include the basionym, other significant synonyms, and references to illustrations in the literature, a valuable addition because this book includes few photographs and drawings. For each species the substrate and ecology, world distribution, and Sonoran range are summarized, and for most a study-region dot map is also given.

Among their many other skills, Nash’s group knows how to extract the best work from a computer. With what was surely a great in-house effort unmentioned in the book itself, they have created and had manufactured this big, handsome, cloth-bound document of more than 500 pages that they now distribute for a mere $30 a copy. I hope that they recoup their costs; this is a real generosity for science libraries financially strapped by the cynical fleecing they routinely get from commercial publishers.

Many people contributed to the success of this book, but Tom Nash merits special praise. He conceived the idea and found the money and was instrumental in organizing the trips, prodding the authors, being a major author himself, and finally in actually generating the book. When this project is finished, the editors tell us, the Greater Sonoran Region will be the only part of North America south of the Arctic with a complete lichen flora. We await that reality and in the meantime salute Volume I for the signal achievement that it is.—WILLIAM LOUIS CULBERSON, Department of Biology, Box 90338, Duke University, Durham, NC 27708-0338, U.S.A.