

BOOK REVIEW 2003 – #4

Mohlenbrock, Robert H. *Ferns*. Second Edition. 1999. xvi + 240 pages; dichotomous keys; descriptions; illustrations; distribution maps; appendix, glossary; literature cited; index to Latin and common plant names. Southern Illinois University Press, Carbondale and Edwardsville, Illinois. ISBN: 0-8093-2255-2. Hard Cover. Price: \$US 45.00. Available from the Southern Illinois University Press, P.O. Box 3697, Carbondale, IL 62902-3697.

The ferns and their relatives, the fern-allies, are referred to collectively as the pteridophytes. They form a group of plants that have internal conducting tissues (xylem and phloem), produce spores, but lack seeds. These plants are of evolutionary interest and importance because they were the early vascular plants that flourished 400-200 million years ago. Also, pteridophytes are unique among vascular plants from an economic perspective. Extinct species are of immense economic importance because they were major contributors to the formation of fossil fuels. On the other hand, extant species are of little economic importance; however, some of them are used for ornamentals and some are used for nutritional or medicinal purposes. With respect to the known extant pteridophytes of Illinois, Mohlenbrock provides an excellent taxonomic treatment of them in five major sections of the manual.

The introductory section supplies the reader with practical information concerning nomenclature, frond morphology, ecology and a brief history of fern collecting in Illinois. In addition, the author provides a useful description on how to use the manual to identify specific ferns and fern-allies. The second and third sections are general dichotomous keys that enable the investigator to identify orders based in part on fertile (with sporangia) specimens and genera based entirely on sterile specimens. After the genus of a particular plant is determined, an investigator can go quickly to the species key because each genus in the Key to Genera is accompanied by its corresponding page number.

Descriptions and Illustrations comprising the fourth section is the most extensive portion of the manual and is organized by order, family, genus, and species. The fern-allies of Illinois are treated first with the families arranged as follows: Lycopodiaceae (Club-mosses); Selaginellaceae (Spikemosses); Isoetaceae (Quillworts); and Equisetaceae (Horsetails). Subsequently, the families of the ferns of Illinois are arranged as follows: Ophioglossaceae (Adder's-tongues); Hymenophyllaceae (Filmy Ferns); Osmundaceae (Royal Ferns); Polypodiaceae (True Ferns); Marsileaceae (Waterclovers); and Salviniaceae (Water Ferns).

Within the framework of section four are the effective dichotomous keys to the species. Furthermore, these keys are preceded by keys to families and genera when there are two or more families represented in an order and two or more genera represented in a family. Each Latin name is carefully documented by its author with a literature citation. Synonyms are listed with authors and literature citations as well. Each species has a well written description that is accompanied by its common name(s) and comments on its habitat, range and Illinois distribution. In addition, the known distribution of each species is shown on a map of Illinois counties that provides a convenient way to visualize its reported locations across the state. The illustration for each species, placed near its

description, shows diagnostic characteristics that will assist novice and experienced investigators with identifications.

An appendix, the fifth section, contains twenty-five additional species of the known pteridophytic flora of Illinois that were not in the original 1967 volume. These species are given the same detailed taxonomic treatment as discussed previously. Since the publication of the original volume, new information and a large number of nomenclature revisions have necessitated alterations in scientific names. The appendix also reflects these changes.

Together, the informative introduction, the excellent illustrations (by Miriam Meyer, Jon Howe and Mark W. Mohlenbrock) throughout the manual and the practical glossary provide basic information to help the novice identify fern and fern-allies accurately in the field. The illustrated dichotomous key to the genera in section three is a particularly noteworthy feature of the manual and will be most helpful for the beginning student. This book, written by an authority on the flora of Illinois, represents an update of the first volume (1967) on ferns and fern-allies in the Illustrated Flora of Illinois series. Hence, I recommend Mohlenbrock's second edition of Ferns for all high school, college and university libraries in Illinois and adjacent states. It should also be in the personal libraries of all persons interested in plant ecology, plant restoration or the identification of ferns and fern-allies in their natural habitats. I would especially recommend this manual for any plant enthusiasts who may be interested in becoming competent in the identifications of one complete group of plants.

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