

## BOOK REVIEW 2007 - #1

Crum, Howard. *Mosses of the Great Lakes Forest*. Fourth Edition. 2004. viii + 592 pages; introduction; dichotomous keys; illustrations; taxonomic descriptions; black and white photographs; glossary; index to Latin names. University of Michigan Herbarium, Ann Arbor, Michigan. Hard Cover. ISBN: 0-9620733-6-3. Price: US \$40.00. Available from University of Michigan Herbarium, Publications, 3600 Varsity Drive, Ann Arbor, MI 48108-2287.

The highly respected bryologist, Howard Crum, died in April 2002 before he could complete the fourth edition of his important and useful set of manuals entitled *Mosses of the Great Lakes Forest* (1973, 1976, and 1983). But fortunately and thankfully, William C. Buck and Christiane Anderson took on the task of editing and seeing Crum's beautiful fourth edition to completion.

Although the title, *Mosses of the Great Lakes Forest*, indicates a regional moss flora, the manual has a much broader application and can serve as an effective introductory taxonomic manual for the identification of mosses in the northeastern United States. In this respect, it is a handy companion to the more comprehensive two volume taxonomic publication entitled *Mosses of Eastern North America* (Crum and Anderson, 1981).

A significant feature following the introduction of *Mosses of the Great Lakes Forest* is the dichotomous key to genera treated in the manual; a feature not found in *Mosses of Eastern North America*. Descriptive materials (including illustrations) follow, with 545 pages for moss species of two divisions; Sphagnophyta (Peat Mosses) and Bryophyta with two classes Andreaeopsida (Granite Mosses) and Bryopsida (True Mosses).

Following a description and noteworthy comments about the Sphagnophyta, and hence the only family Sphagnaceae, is a key to species of the single genus *Sphagnum* (pp. 26-70). Subsequent to the key, the species are described and illustrated under one of six sections of the genus covered in this manual. The author's more comprehensive treatment of *Sphagnum* includes a dichotomous key to ten sections of the genus (Crum, 1984).

Next, the class Andreaeopsida (pp. 71-73) and the family Andreaeaceae are discussed followed by descriptive comments and illustrations of two species.

Subsequently, the Bryopsida are described followed by the treatments of the species arranged according to their assigned families (pp. 74-568). Typically in this section of the book, the families are described followed by a dichotomous key to genera. Then in turn, the genera are described and accompanied by dichotomous keys to species.

Treatments of the species in both divisions include taxonomic descriptions, illustrations (for nearly all species), habitat notations, comments on global distributions, and county distributions in Michigan. In addition, the treatments of the species often end with interesting comments about some of their salient features that often include noteworthy distinctions from closely related species. Here too, one may find anecdotal comments about the species from the author's personal observations, from other bryologists, or from other sources; any of which provide enjoyable reading.

With respect to mosses of Illinois, this manual is very useful because it treats 80% of the 368 species of mosses (Sphagnophyta and Bryophyta) reported by McKnight (1987) [Note: The count of 368 species of mosses does not include numerous varieties in McKnight's checklist]. Of the 295 species reported in both publications, only 14 species have synonyms. (Table 1).

Of the remaining 73 species in the checklist of Illinois mosses, but not covered in the author's moss flora, 61 species are treated in Crum and Anderson's Mosses of Eastern North America; five additional species are mentioned in various discussions (*Brachythecium collinum*, *Dicranoweisia cirrata*, *Fabronia wrightii*, *Grimmia ovalis*, and *G. trichophylla*); and seven species are not reported (*Barbula vinealis*, *Bryohaplocladium microphyllum*, *B. virginianum*, *Fabronia gymnostoma*, *Grimmia calyptrata*, *Hypnum subimpnens*, and *Tortula subulata*).

A useful and needed glossary follows the descriptive materials (pp. 569-580). Although the book does not have a list of references, relevant literature citations are provided within its text. However, if one has a copy of an earlier edition of the manual, keep it handy because a useful bibliography follows its glossary.

We highly recommend this book to anyone interested in learning about mosses. For botanists, plant ecologists, environmentalists, and others needing to learn how to identify mosses for detailed vegetational studies in Illinois, Mosses of the Great Lakes Forest and Mosses of Eastern North America are essential.

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Table 1. List of synonyms – the primary list of Latin names for mosses are from McKnight's checklist (1981), whereas the generic names and/or specific epithets shown in parentheses are from Crum's manual (2004).

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<i>Amblystegium</i> (= <i>Hygroamblystegium</i> ) <i>fluviatile</i>	<i>Drepanocladus uncinatus</i> (= <i>Sanionia uncinata</i> )
<i>Amblystegium</i> (= <i>Leptodictyum</i> ) <i>humile</i>	<i>Fissidens cristatus</i> (= <i>F. dubius</i> )
<i>Brachythecium oxycladon</i> (= <i>B. laetum</i> )	<i>Grimmia affinis</i> (= <i>G. longirostris</i> )
<i>Brotherella</i> (= <i>Pylaisiadelpha</i> ) <i>tenuirostris</i>	<i>Mnium longirostrum</i> (= <i>M. rostratum</i> )
<i>Bryum creberrimum</i> (= <i>B. lisae</i> var. <i>cuspidatum</i> )	<i>Pylaisiella</i> (= <i>Pylaisia</i> ) <i>intricata</i>
<i>Cratoneuron commutatum</i> (= <i>Palustriella</i> <i>falcate</i> )	<i>Pylaisiella</i> (= <i>Pylaisia</i> ) <i>polyantha</i>
<i>Didymodon</i> (= <i>Barbula</i> ) <i>fallax</i>	<i>Pylaisiella</i> (= <i>Pylaisia</i> ) <i>selwynii</i>

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