

BOOK REVIEW

WELBY R. SMITH, PHOTOGRAPHY BY RICHARD HAUG. 2018. **Sedges and Rushes of Minnesota: The Complete Guide to Species Identification.** (ISBN-13: 978-1-5179-0275-9, pbk). University of Minnesota Press, 111 Third Avenue South, Suite 290, Minneapolis, Minnesota 55401-2520, U.S.A. (**Orders:** www.upress.umn.edu) \$39.95 US, 696 pp. 1100 color plates, 6" × 9".

While this book was reviewed in 2018 by Editor Barney Lipscomb (2018), it is so well done that it is worth another look. This book follows the excellence in two earlier publications by the same senior author: *Native Orchids of Minnesota* and *Trees and Shrubs of Minnesota*. For those of us who are died in the wool sedgeheads, this is the kind of book you drool over! Despite the fact that many species in the book may not be native to areas outside of Minnesota, the overlap for species occurring in the Midwest, East and Southern US is so extensive that it is well worth the investment. It will be particularly helpful for situations where one of the species illustrated may be discovered at a new locality. For those of us who enjoy such quests, information is provided on soil type, associates, ecology and vegetation types where a particular species may be found. The individual accounts are thorough, accurate and include good field characters that are useful in separating the species covered with others it could be confused with.

Anyone who has spent time studying sedges and rushes can fully appreciate the immense amount of time that was dedicated to the development of this field guide! Having examined and verified over 25,000 specimens, it is obvious the authors did their homework. Treatments are compatible with the taxonomy and organization of volumes 22 and 23 of the *Flora of North America* (FNA) project. The introduction includes excellent coverage of substrate types and vegetation zones in Minnesota, as well as an important discussions on the anthropogenic influences of man on the landscape.

This field guide is unique in that photographs include habitat, plant habit, inflorescence, and unequaled close-ups of perigynia, achenes, and characters that are often lacking in other books (e.g., papillose leaf sheaths of *Carex tenera*—p. 275; mottling on leaf sheaths of *C. sparganioides*—p. 335; raised lip at summit of leaf sheath of *Carex laevivaginata*—p. 415; the detailed achene texture and condition of perianth bristles of achenes of *Schoenoplectiella purshiana* var. *purshiana*, *S. purshiana* var. *williamsii*, *S. smithii* var. *smithii*, and *S. smithii* var. *setosa* on page 596). Even the minute seeds of *Juncus* spp. are clearly depicted in photographs. Anyone who has spent a lot of time with sedges and rushes know how incredibly difficult it is to observe species at the perfect maturity so the effort required to obtain the incredible photographs is well acknowledged. In rare cases where the authors were not able to encounter a species in the field, there is a clear photograph of a good representative specimen from Minnesota herbaria. Now and then there are a few bonus photos. The best examples are the incredible size comparison photos of leaf sheath comparisons of *C. atherodes*, *C. laeviconica*, and *C. trichocarpa* on page 66; perigynia in *Carex* section *Ovales* on page 234 and spikelets of *Cyperus* on page 422. There are numerous other examples.

One aspect of the book that I like is the use of layman's terms to describe plant height. It is much easier to relate to ankle or knee high than the commonly given measurement in centimeters (i.e., ~20 cm for ankle height and ~50 cm for knee height).

With a field guide that is so well written and researched, and with such stunning photographs, it is hard to find anything to quibble about. The horizontally alignment of the *Carex* key on pages 17–27 is a little awkward and takes a little getting used to, but with 146 species documented for Minnesota, I can understand the arrangement. There are a couple of notable field marks for some species that were overlooked (e.g., the conspicuous glaucous, blue-green color of the leaf sheaths of *Carex crus-corvi* and culms of *Eleocharis wolfii*; the diagnostic copper edges of the perigynia of *Carex bicknellii*) but these are miniscule compared to overall excellent quality of the book. Without question the *Sedges and Rushes of Minnesota* should be on the book shelf of every sedge and rush enthusiast from Minnesota to Maine and south to Texas and Florida!—Paul M. McKenzie, USFWS Volunteer, 101 Park DeVille Dr., Suite A, Columbia, Missouri 65203, U.S.A.

LITERATURE CITED

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