

Book Reviews

Book Review Editor's Note: *The Canadian Field-Naturalist* is a peer-reviewed scientific journal publishing papers on ecology, behaviour, taxonomy, conservation, and other topics relevant to Canadian natural history. In line with this mandate, we review books with a Canadian connection, including those on any species (native or non-native) that inhabits Canada, as well as books covering topics of global relevance, including climate change, biodiversity, species extinction, habitat loss, evolution, and field research experiences.

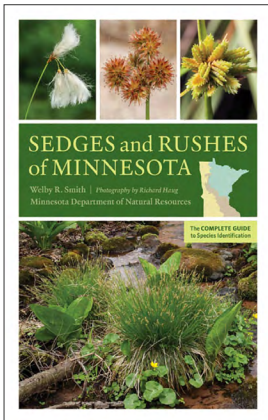
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BOTANY

Sedges and Rushes of Minnesota: The Complete Guide to Species Identification

By Welby R. Smith. Photography by Richard Haug. 2018. University of Minnesota Press. 696 pages, 1100 colour plates, and 248 maps, 39.95 USD, Paper.

Over the past decade or so, several states or regions in North America (e.g., Maine, New England, Pacific Northwest, Wisconsin) have had guides published on the identification of the sedges (Cyperaceae) found within their boundaries. This guide to the sedges and rushes (Juncaceae) of Minnesota is one of the most recent additions to this list, and reflects the increasing interest among field botanists in understanding and being able to identify members of this large, diverse, and ecologically important group of graminoids. The inclusion of the rush family in the Minnesota guide is a welcome addition that the other guides mentioned above do not cover.



The book begins with basic information on sedges and rushes, and explains that the main purpose of the book is to provide a tool for field botanists who want or need to identify these plants within their study areas. Thus, the book is aimed at anyone who might be conducting biological inventories, whether professional or amateur. The author has made a concerted effort to use non-technical terms whenever possible and, when not possible, has provided simple explanations of the technical terms. The introductory sections of the book also include acknowledgements of those who assisted with production, including the primary photographer, Richard Haug, who has done a great job of representing the important features of each species with his images. These sections also contain some basic information, including maps, on the ecology of the state as it relates to

plant distributions (major substrate types, historical vegetation types, and vegetation zones).

The main contents of this book are the sedge and rush identification aids, including keys, photographs, descriptions, and range maps. The first key enables identification of the genera of sedges and rushes in Minnesota. From there, all of the genera are arranged alphabetically, and within genera (and within sections in the large genus *Carex*) species are also arranged alphabetically. This can mean that similar-looking species within related sections in the genus *Carex* may not be situated close to each other within the book, but that should not be a major impediment for most users. The species concepts used in the book reflect the most current thinking regarding the taxonomy of these plants, in a few cases being even more current than that found in *The Flora of North America* treatments for these families (Brooks and Clemants 2000; Ball *et al.* 2002).

The treatment of each genus begins with a description based on the species found in Minnesota, along with basic information on the diversity of the genus worldwide, in North America, and in the state. Accompanying photographs focus on the most important and characteristic features of the genus that will aid in identification. Next comes a key to the species in the state, followed by species accounts. Each species has two pages dedicated to it: the first is a full page of descriptions, notes on how to differentiate the species from similar ones, and habitat notes, along with a distribution map; the facing page contains images of important identification features and characteristic habitat. The descriptions, notes, and images are all well done, focusing on the important features required for identification of the species.

In the case of the genus *Carex*, however, which is by far the largest genus covered in the book, additional text is devoted to describing the unique features and architecture of the inflorescence, again accompanied by excellent annotated photographs. This is followed by

a key to the sections within the genus, and then each section is covered alphabetically in the same way that genera are treated elsewhere in the book. Each section contains a key to the species, along with representative photographs, and then the species are treated in alphabetical order within the section.

This is an excellent guide to the sedges and rushes of Minnesota, and will be applicable to much of the Midwest and adjacent portions of Manitoba and western Ontario. The keys are workable, the descriptions are good and easily understood because of the plain language explanations that are provided where the author deemed that they were needed, and the photographs are excellent. If one considers that the book is written with Minnesota in mind, rather than the globe, then the content is accurate and thorough. (However, if one were to look at the Cyperaceae with a global view, then there are other genera with perigynia, not just *Carex*; p. 14.) In a few cases, additional characters could have been included to make recognition of a species even easier (e.g., the glaucous nature of the foliage in *Carex canescens*, the gynecandrous terminal spike of *C. gracillima* relative to the staminate terminal spike of *C. arctata*, glossy appearance of the perigynia in *C. pallescens*), but the keys, descriptions, and photographs should virtually always lead the user to the correct identity. I do have a few minor quibbles, such as slight discrepancies in colour descriptions, particularly of the achenes, where the photographs sometimes illustrate colours not reflected in the descriptions (due to degree of maturation of the achenes); however, these will rarely if ever affect the usefulness of the book.

There are very few typographical or grammatical errors, and my sense is that the book has been produced with a great amount of care and attention to detail.

There is only one aspect of the organization of the book that bothers me: the lack of separation between the two families in the main body of the text. There are only two genera of Juncaceae in the flora (*Juncus*, *Luzula*), and the flower structure of the family is so different from that of Cyperaceae. Therefore, it would have been a simple matter to separate, rather than intersperse, the two families, without losing anything in the process. Rather, in my opinion, something would have been gained, in terms of the user's understanding of the differences between the two families.

Overall, this book provides an excellent, user-friendly guide to the sedges and rushes of Minnesota. I recommend it highly to all field biologists involved in botanical inventories in the central part of the continent, and to students of these two families in general.

Literature Cited

- Ball, P.W., A.A. Reznicek, and D.F. Murray.** 2002. Cyperaceae. Pages 3–608 in *Flora of North America North of Mexico, Volume 23*. Edited by Flora of North America Editorial Committee. Oxford University Press, New York, New York, USA.
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