

New England Wild Flower Society's Flora Novae Angliae: A Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England

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BOOK REVIEW

New England Wild Flower Society's Flora Novae Angliae: A Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England by Arthur Haines. 2011. xxxiv + 973 pp. illus. 944 drawings. ISBN 978-0-300-17154-9 \$85.00 (cloth). Yale University Press, New Haven, CT and London, UK.

The new *Flora Novae-Angliae* is a hardcover identification manual covering all tracheophyte (i.e., higher vascular plant) species growing outside of cultivation in the six New England states (CT, MA, ME, NH, RI, VT). It covers about 3500 taxa. This book can be considered nothing less than essential by professional and amateur botanists throughout eastern North America. The publication represents more than ten years of scholarly research by Arthur Haines, and was supported by the New England Wild Flower Society.

Organization of the text includes a thoughtful introduction, an 18-page glossary with clear interpretations of obscure terms, a key to all families, and then an arrangement of the material by major phylogenetic groups: Lycophytes (clubmosses and allies), Monilophytes (ferns), Gymnosperms, Magnoliids, Monocots, and Tricolpates. Within each of these groups, the families are arranged alphabetically, not taxonomically, with keys to genera, and within each genus, keys to species and subspecies. Species are listed alphabetically after each key, with common name, synonymy, state distribution (not county, though that might be added to a later edition), origin, habitat, and for some, relative rarity (based on herbarium specimens), discussion of erroneous reports, identification challenges, and citations of relevant papers. A code for native and nonnative is with each taxon. For some groups, keys are offered for different seasonal stages (e.g., *Salix*, *Viola*). The alphabetical arrangement reduces need to refer to the index, though that is complete and includes both scientific and common names. I can quickly turn to any genus for which I already know the family.

When one is working on an unknown plant, the key to families at the beginning of the book will provide considerable help. Haines recommends (p. xvi) that the *Manual* should be used with access to a herbarium, that this manual is not intended as a stand-alone

resource by which one can resolve all identifications. Numerous other manuals and field guides will continue to be useful alongside Haines (2011), as this book does not offer descriptions. One can trace back through the synonymy offered with each taxon to find formerly recognized entities.

Regarding these synonymies, a primary feature is the thoroughly updated and researched nomenclature based on latest treatments from 49 specialists in various taxonomic groups. Citations abound in the discussion section for many taxa, with a Literature Cited section that is 25 pages long. Haines consulted with specialists and travelled throughout New England to examine thousands of specimens in institutional herbaria, annotating as he went, so that the collections he examined already reflect this new flora. Name changes are a challenge to the users, but for the sake of presenting the latest science, Haines has not held back. For example, a common plant of northern forests, bunchberry, is no longer known as *Cornus canadensis* but as *Chamaepericlymenum canadense*. Another common species, *Trientalis borealis*, is now *Lysimachia borealis*. Fortunately, such changes are not so numerous as to be off-putting.

The keys are another major feature, and have been field-tested by regional botanists so that the salient features are in place, clearly stated, with minimal verbiage. As an example, the key to *Agrostis* (a grass genus) has a major break in the key, in which the lemmas of *A. perennans* are awnless, but it allows that in some rare individuals the lemmas on at least a few florets will have short awns. This is meaningful to the botanist struggling with material that does not have all features expressed unequivocally.

In the genus *Carex*, and in other large genera, the key is first to group and then within groups. Some new names will be found for familiar sections (e.g., Section *Ovales* is now Section *Cyperoideae*). I have penciled into my copy a cross-reference between the overall genus key, the key to group, and the page on which the species is given. This will increase the utility of the book and save time during a busy field season.

The 944 illustrations are black and white line drawings evocative of, but larger and crisper than, those in Fernald (1950). They show cogent features from the keys rather than overall aspects. These are copious, well executed, and intended to bring to more immediate understanding some morphological features that might not be obvious. Not every taxon is illustrated, but in some cases there are

eight illustrations on two facing pages (*Juncus*). Salutations are due to the illustrators, Elizabeth Farnsworth and Gordon Morrison, whose dedication, skill, and attention to detail will be much appreciated by all users.

Common names have been addressed with the intention of clarifying relationships within groups, and most have not changed (much). This is usually not a problem for botanists as the scientific name, including the naming authority, is the most relevant datum in vegetation surveys. However, common names make botanical study and reporting more accessible to the community of amateurs from which future professionals may emerge, so the practical aspects of common names are of consequence to us all. The new common names can always be looked up and compared. Some will probably gain wide usage and others will remain more obscure because of their length or unwieldiness to all but the most avid leaders of nature walks.

Plant names—scientific and common—in Haines (2011) differ from all other single sources. I project that Haines (2011) will receive wide and immediate adoption in New England, and that other regions will adopt these names also. It bears discussion here that Haines (2011) conflicts with many names presented in the online Natural Resource Conservation Service (NRCS) database, (USDA, NRCS 2012). The NRCS database is part of the protocol for the US Forest Service Forest Inventory and Analysis Program to assess forest health and vegetation diversity. It is implicit in other federally funded programs and projects. Changes to the NRCS database are not easily effected so, although a nationwide system and standardization of plant names is useful, the lag in updating suggests that names of Haines (2011) will not soon appear in that database. From here on, reports and technical publications for the federal government, from New England and elsewhere, will be most practical if they reflect both the NRCS database and Haines (2011), for both scientific and common names.

This book will probably be of limited use to a rank beginner, but should be kept available to those just starting into plant identification. When people are using field guides and powerful online tools such as the *Go Botany* web application with its many photos, keys, and user-friendly interface, Haines (2011) will have to be consulted before a final plant list can be prepared. This book is well written and the few typographical errors are minimally distracting. The uncoated, sturdy paper lends itself to penciled notes.

Conservation status [perhaps as cross-reference with Brumback and Mehrhoff et al. (1996) and with Natural Heritage databases online] would be useful in another edition. Haines (2011) should be in every library and in all herbaria across North America. It may be a little too large and heavy to find its way into everyone's backpack, but it is likely to grace the desk of each botanist in our area because, now that it is finally available, it is indispensable. It continues to offer new delights with each turn of the page.

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