

BOTANY

Flora of Virginia

By Alan S. Weakley, J. Christopher Ludwig, and John Townsend. 2012. Botanical Institute of Texas Press, 1700 University Drive, Fort Worth, TX, USA, 76107-3400. 1572 pages, 89.99 USD, Cloth.

If a Canadian botanist were looking for just one volume to provide a clear window into much the flora of the eastern United States, this would be it. This opinion offers no disrespect to the floristic treatments from some border states (e.g. Voss and Reznicek's remarkable 2012 *Field Manual of Michigan Flora*) but those must-have volumes are from the neighbourhood, as it were. The *Flora of Virginia* covers the more distant geographic heartland of the eastern United States. In doing so it treats some 3,200 (2,500 native) taxa and provides insight into the biodiversity of one of North America's floristic hot spots. Amongst the treatments of many familiar species, the Canadian botanist will find the discussions of seemingly exotic southern taxa to be both fascinating and helpful.

This flora is the product of careful and thorough scholarship by many of the state's top field botanists and builds upon some 300 years of previous investigations. Moments in the historical progression leading to this publication are colourfully described as constituting "fire, piracy, plague, penury [and] plagiarism" (page 21). Hopefully not for the current team! The end product is a superb marriage of field-based skills, herbarium investigations and the review of mountains of scientific analysis.

Flora of Virginia is really two books in one. The first 'book' is the 85 page introductory section that provides a comprehensive biophysical and historical foundation for the study, explaining the complex geological nature and landform history of Virginia. This introduc-

tory section is comprehensive, well illustrated and provides insights into the distributional and even taxonomic interpretation of particular species and species groups. The review of the history of botanical exploration in Virginia is presumably intended primarily for local readership. It is also of interest to Canadian readers, however, for its examination of the contributions of investigators who were active in parts of eastern Canada. Through his onsite work between 1933 and 1947, for example, the brilliant field investigator and taxonomist Merritt Fernald arguably did more than any other botanist to put the floristic richness of Virginia on the continental map. His rambling but remarkably informative and most entertaining reports on those botanical travelogues in *Rhodora* will be familiar to and appreciated by those who have also studied his similar, earlier explorations of Newfoundland and the Maritimes. Accordingly, the statement that “*unsurprisingly, Fernald didn’t endear himself to many Virginians*” (page 16) is surprising and strikes me as a bit harsh. Having had the pleasure of reading his at times over the top travelogues to help me retrace some of his forays through eastern Virginia, I have the sense that he enjoyed and respected both the region’s landscape and its people.

The second ‘book’, as it were, is composed of the taxonomic treatments. This forms the heart and soul of the flora. Its heart is the keys, its soul the technical descriptions. Both are based on insights developed from decades of first-hand field experience.

A flora lives or dies on the quality of its keys. The keys in *Flora of Virginia* provide an excellent balance between technical precision and practical application. Few couplets are so over-simplified as to be substantially indiscriminate or are so complex as to drown the user in words and numbers. Unnecessarily technical language slips in now and then, like ‘suffrutescent’ in a number of key couplets where simpler language (“somewhat shrubby”) would have been clearer and just as accurate. But these are exceptions to the dominant employment of clear and practical language.

The technical descriptions use measurements and morphological characteristics derived from the original examinations of large series of Virginia specimens. The concise descriptions of site ecology and distribution within and beyond the state work well too. Taxonomic interpretations throughout the flora seem to give great weight to the conclusions of genetic studies, resulting in the application of many names which will be new and/or unfamiliar to some readers. While they may find the proliferation of new names to be hasty or at least unsettling, thorough representation of the regional synonymy is also provided. Accordingly, more traditional and/or morphologically based taxonomic interpretations are also available.

The technical descriptions benefit from excellent black and white line drawings, leaving colour images to be applied to best effect for habitat illustrations and

selective maps. It is good to see *Flora of Virginia* resist the temptation to include a ‘pretty wildflowers’ section, which seems to be frequently considered a necessary marketing component in a technical flora. The botanical utility of such a section is questionable and is only achieved with additional production cost and thus a higher purchase price. I especially appreciated the presentation of comparative arrays of black and white line drawings for important identification characteristics such as the leaf shapes of *Carya* (page 652) and *Quercus* (pages 612-613), the perigynia of several tricky *Carex* Sections (*Laxiflorae*, page 1022 and *Ovales*, page 1025) and so on.

Fully 1,000 of the native species included in *Flora of Virginia* are characteristic of or endemic to the south-eastern United States. For Canadian botanists discussions of these provide new insights into genera and species groups that occur in Canada or are candidates to do so.

A few glitches and errors were noted, as is inevitable in a production of this scale and intricacy, but they are mostly minor. *Isoetes mattaponica* (page 67), for example, is not the only Virginia diploid of this genus (there are several diploid *Isoetes* in the state). A trivial typo is evident in the *Lycopus* key (“ta-pered” in the *L. uniflorus* couplet (page 667) is presumably meant to be ‘tapered’). In the first printing of the Flora there was a significant error (omitted text) in the treatment of *Vicia* (page 603), but this was corrected with an Erratum page for second printing copies. Also, Melanthiaceae (page 1162) is missed in the otherwise very helpful Family Index printed on the inside back cover. And I am getting really picky here, but I don’t see why the historical photograph on page 15 couldn’t have been straightened so the field botanists depicted don’t all seem to be leaning. Notwithstanding these small annoyances, this million word volume seems remarkably free of such problems.

The *Flora of Virginia* is well bound and has clear, readable type. The font size is perhaps somewhat small for readers with eyes as old as mine, but any larger font would expand the heft of this already mighty tome to an unmanageable degree. Though too unwieldy to be readily carried into the field, the book is certainly durable and portable enough to serve as a valuable vehicle-based reference tool.

The *Flora of Virginia* is an eye-opener and a delight. It belongs in the library of every eastern North American field botanist. While it would be a stretch to say it was worth the wait between the production of the first flora of this region and this tome (275 years!), it is a fine achievement and will become an instant classic. For decades to come it will be a valuable tool for field botany, conservation initiatives and a wide spectrum of academic applications in eastern North America.

DANIEL F. BRUNTON

216 Lincoln Heights Road, Ottawa, ON, Canada, K2B 8A8