

## Book review

### **Plantas Acuáticas Vasculares De Venezuela**

*Plantas Acuáticas Vasculares De Venezuela*, J. Velasquez, Universidad Central de Venezuela, Caracas, 1994, 993 pp., ISBN 980-00-0614-1, VEB 8,000 (approx. \$28 US) paperback.

I was delighted to learn of this publication, given that there have been few comprehensive floristic treatments of aquatic plants from South America. This book, in Spanish language, represents one of the finest efforts thus far to catalogue and describe Latin American water plants. Taxonomic coverage is provided for aquatic lycopods, sphenophytes, pteridophytes and angiosperms.

The book begins with a good introductory section that includes a description of the life-form classification followed, definitions of aquatic plant (with distinctions between hydrophytes and helophytes), the geographic scope of the flora, and descriptions of some of the major aquatic communities that occur in Venezuela. There is even a short section describing economic topics such as control methods, the mineral content of aquatic plants, and use of macrophytes for sewage treatment. A fairly comprehensive glossary, a listing of common names and a general list of references follow the taxonomic treatment. The alphabetical index includes scientific names of families, genera and species; recognized synonyms are indicated by bold, italic type (except in a few cases, e.g. *Eriocaulon flavescens*, *Genlisea esmeraldae* missing the bold typeset). At the end of the book are 89 full-color plates that illustrate a variety of habitat types and species habits. Most are of good quality and several emphasize close-ups of reproductive structures.

The majority of the book (850 pp.) is devoted to taxonomy and begins with a key to families that incorporates many good features. It is strictly dichotomous, couplet choices are parallel and contrasting, and page numbers are provided to quickly locate contrasting 'leads' that have become separated by intervening pages. There is also a page number provided for every family as it appears in the key. Velasquez acknowledges (p. 14) that his family key is based almost entirely on reproductive features because they are more

discriminating taxonomically than vegetative features. However, he has incorporated vegetative characters in his keys to genera and species to facilitate identifications. Although reproductive material is necessary to identify an entirely unknown taxon, this should come as no surprise to anyone familiar with the difficulties of identifying aquatics.

Each family includes a description and a summary of genera, species and its distribution. Dichotomous keys to multiple genera are provided. Each genus includes the author name, a description, and distribution. Notes offer additional comments on reproduction, variation, hybridization, etc. These notes are particularly useful and often provide specific biological information for genera that is pertinent to their occurrence in Venezuela. The author has done much research on the biology of Venezuelan aquatics and has also published an interesting book that deals exclusively with seeds and dispersal of aquatic vascular plants (Velasquez, 1990).

Dichotomous keys to species follow. Species names are also furnished with authors (another useful feature) and vernacular names are indicated for common species. Again, biological 'notes' are generously furnished for many of the species. Good quality line drawings (with scales indicated) are used to illustrate many species and are based on dissections of herbarium specimens deposited at (VEN). Dot maps (1:6 000 000 scale) show the distributions of all species treated in Venezuela. Usually, several species are combined on one map. A bibliography follows the end of each family treatment.

In general, the taxonomic coverage appeared to be reasonably up-to-date. Treatments of many genera (e.g. *Sagittaria*) are consistent taxonomically with current revisions (e.g. Haynes and Holm-Nielsen, 1994). However, in a few cases, recent taxonomic literature has not yet been incorporated. Ceratophyllaceae, for example, follows an older treatment by Lowden (1978) which erroneously attributed *C. submersum* L. to the New World (see Les, 1986). Lemnaceae also follows earlier treatments than the major monograph by Landolt (1986) which, for instance, did not maintain the genus *Wolffiopsis*. This is to be expected in a new edition, particularly one for a region where literature pertaining to the aquatic flora is scarce. I encourage taxonomists to contact the author with their suggestions for alternative taxonomic schemes, along with copies of the pertinent literature.

There are many genera included in this book that are new to the world census of aquatics by Cook (1990). Often these are helophytes (e.g. *Dracontium*, *Spathiphyllum*; Araceae), but others (e.g. *Borreria*, Rubiaceae; *Benjaminia*, *Conohea*, Scrophulariaceae) should clearly be recognized as aquatics. Such information should lead to a better clarification of the region's aquatic diversity.

I was impressed by the amount of information presented in this book. The wealth of data on the aquatics of Venezuela helps to fill a major void in literature dealing specifically with the aquatic plants of South America. Moreover, this is a comprehensive and careful treatise that obviously represents years of painstaking effort and attention to detail.

I highly recommend this book to anybody who works on aquatic plants. It is certainly indispensable to anyone who is conducting aquatic floristic work in Latin America. Although the text is written entirely in Spanish, it was fairly easy for me to read even with my rudimentary understanding of the language. It is always encouraging to see that

high quality aquatic floristic work such as *Plantas Acuaticas Vasculares De Venezuela* is still being produced.

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