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Book review

Aquatic and riparian weeds of the west

J.M. DiTomaso, E.A. Healy (Eds.), University of California, Oakland, CA, 2003, ISBN 1-879906-59-7, vi+442 pp., US\$ 40.00 (+ US\$ 3.50 S&H) (paper)

Ordinarily, a book that includes both the words “aquatic” and “weeds” in the title will start me ranting about the commonplace but unwarranted depiction of all aquatic plants as undesirable floristic elements. However, the designation used in this publication sponsored by the California Weed Science Society is quite appropriate given that the content focuses intentionally and specifically on those objectionable plant species widely recognized as “weedy” in aquatic habitats throughout the western United States. One result is that the coverage of this book is not as species rich as its 442 page length might imply. There are only 58 main plant “entries” included, covering a total of 89 species in 36 families. An additional 96 plants are mentioned in context of similar species. Yet, this extent of coverage treats more than adequately the most significant weedy aquatic species within the region of interest, which is defined as “west of the Rocky Mountains”.

The entries (arranged according to life-forms) include the common name, scientific name (with authors!), synonyms, and an extensive summary of life-history information such as descriptions of vegetative and reproductive structures, habitat, distribution, propagation and similar species. A five-letter “Bayer code” is included for each species with reference to the forthcoming “*Composite List of Weeds*” (scheduled for publication in 2003) which will adopt this standardized computer code for identifying species. Surely this will be an improvement over the many “four-letter words” used currently by most people to describe weedy aquatic plants. Some, but not all entries include a short section titled “Management Favoring or Discouraging Survival” which summarizes known control measures that are effective or futile in the control of the species.

The text is illustrated throughout with superb color photographs that variously feature habits, reproductive structures, foliar characters, etc. and are presented in a highly logical and useful organization. Just when you really need to see a close-up picture of the fruit or leaf margin, there is one! Identification is facilitated by “shortcut identification tables” that work quite well to distinguish groups of species that share suites of conspicuous features (e.g., spiny dicots, monocots with triangular stems, etc.). More standard dichotomous keys also are included within each life-form group and uniformly contain nicely contrasting states for most couplets and are biased heavily toward vegetative characters, making them extremely workable for this group of plants. A nice and novel feature is the use of color (or shaded) circles that code each lead of a couplet, making it easier to track down the leads as you work through the key. Tables that compare various features are used for some of the more complex groups (e.g., pondweeds, bulrushes, *Echinochloa* spp.) where identification among

highly similar species is more difficult. Photos and drawings abound and provide additional resources for identification. Overall, the production quality of the volume is top-notch.

An appropriate appendix is included which identifies those species listed as noxious weeds by the US Federal Government. The bibliography contains a section on general references, and then a series of "References to specific genera" which follows alphabetically by genus. A good representation of relatively recent and pertinent literature citations is provided.

The book includes a helpful, 16-page illustrated glossary of terms. I often find many problems with glossaries, but this one is very good and uniformly accurate. There were a few definitions that could be improved, such as for "axil" which refers to the angle formed by a leaf and stem, not their junction (as stated) which would better describe the node. The definition given for "caryopsis" is actually that for an achene because a caryopsis also has the pericarp fused with the seed coat. The definition for cyanobacterium ("photosynthetic bacterium that lives in water") is misleading because there are photosynthetic bacteria belonging to several other groups and also terrestrial cyanobacteria as well. The endocarp is the inner fruit rather than ovary wall. In the definition of fertilization, "pollen cell" should be replaced by "sperm" and "ovule" by "egg." However, these are just a few picky examples and most definitions are fine.

Also, I noticed only a few typos (e.g., after-ripening misspelled as "after-ripping" in the glossary; A.E. Orchard's name spelled as "Orchar" in the bibliography) in an otherwise well-edited text.

The verdict? This is an excellent compilation and I highly recommend it as a valuable reference on aquatic plants generally and on aquatic weeds more specifically. Even if you do not live anywhere near the western United States, you will find the wealth of life-history information in this book to be useful in researching many aspects of aquatic plant biology. The excellent color photographs alone are worth the modest price, but this is far from just a pretty picture book. The scholarly text adds a bonus not often found in well-illustrated works that often lack scientific depth.

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