REVIEW


It has been 19 years since the Jepson Herbarium at UC Berkeley produced the last flora of California, The Jepson Manual, Higher Plants of California (Hickman 1993). During that time, the way that taxonomists work has changed substantially, with phylogenetic analysis and the use of molecular sequence data becoming standard procedure. It was time to bring the Jepson Manual up to current taxonomic standards, and the Jepson Herbarium (led by convening editor Bruce Baldwin) stepped up to the plate once again, publishing the second edition of The Jepson Manual in January, 2012. The book, available from the University of California press, is also available in electronic form, for those who want to use it on a Kindle or iPad. Three hundred and thirty two authors or editors are listed as contributing to the 1568-page, revised edition, which treats more than 6500 species, subspecies, and varieties. Some taxonomic treatments are unchanged from the 1993 edition, but many have been totally overhauled or at least changed enough to accommodate the approximately 310 additions to the California flora recognized in the manual.

The book design is handsome, with a hardback glossy cover, a handy ruler, and extra pages in the back for taking notes, web addresses and a geographic map inside the front cover, and a revamped list of conventions, including a useful section called “Things to Remember When Using this Book.” Rare plants are now designated with a star, invasives with a diamond, flowering times have been added (hurrah!), and horticultural information deleted (but is available online at the Jepson Herbarium website). The section on past climates and vegetation of California is completely rewritten by Constance Millar, and the geographic subdivisions section has been revised with a finessed map.

If you open the back cover, you are greeted with a recent classification of the vascular plant families in the manual, including a phylogenetic tree. The plant families are divided into eight major groups: Lycophytes, Ferns, Gymnosperms, Nymphaeales, Magnoliids, Ceratophyllales, Eudicots, and Monocots. Within the body of the book, families, genera, and species are arranged alphabetically within these major groups, which differ greatly in size (from Ceratophyllales with 1 species to Eudicots with 4723). Part of the philosophy of the manual is to recognize monophyletic taxa as much as possible, which is why the 1993 separation of flowering plants into Dicotyledons and Monocotyledons had to be changed. The paraphyletic nature of the Dicots (at least in studies based on chloroplast DNA sequences) has resulted in their break-up into Nymphaeales, Magnoliids, Ceratophyllales, and Eudicots. Although the plant families and their page numbers are shown at the tips of the branches of the phylogenetic tree on the endpaper, the listing is not alphabetical. A shortcut index, like that inside the cover of A California Flora and Supplement (Munz 1973), would be a useful feature for locating family treatments dispersed among the major groups.

This more fine-grained monophyletic taxonomy is echoed throughout the manual; evidence has accumulated that some prominent genera from earlier treatments are paraphyletic or polyphyletic. Many of these have been divided into smaller monophyletic genera. Lotus, for example, has been split into three genera with the name Lotus now restricted to Old World species; native species are assigned to Acmispon and Hosackia, names resurrected from the 19th century. Camissonia has been divided into nine genera, Rhamnus into two, Gilia into five, Polygonum into five, and Potentilla into four. Linanthus has been split into Leptosiphon and Linanthus, but Leptodactylon is merged into Linanthus. The genus Aster has been broken up into seven genera, none of which is called Aster, while Gnaphalium has been broken up into four genera, Hemizonia into three, and Madia into six. There are a lot of new taxonomic concepts and names to learn.

One of the curious problems with this monophyletic taxonomy in an alphabetically arranged book is that it is hard to figure out where a species has gone, since its new genus is not situated near its old genus and other close relatives. However, there is always the index. Unlike the 1993 manual, which had a “name change” section in the back of the book, the index serves that purpose in the new edition. Like the 1993 edition, not every species name is in the index (because the book is arranged alphabetically), but you will find 1993 species names that have changed and the pages where they are listed in synonymy. As a space-saving measure, names already synonymized in the first edition are not included in the second, but the website for the