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Book Review

A World Monograph of Trifolium. Few monographs of large world-wide genera are published these days. Reasons for this are easy to find: potential compilers often have priority commitments to teaching, preparing Flora accounts, editing, curation or administration; or the job is just too big. All credit then to the authors of this work for their drive and determination in producing this impressive monograph* amidst their many other activities. Sadly one of them, the dynamic Prof. Michael Zohary, did not live to handle the final publication and it was left to his colleague and co-author at Jerusalem, David Heller, to see the work through to its completion.

Not surprisingly, bearing in mind the importance and frequency of clovers throughout the world, there is a substantial literature on *Trifolium*; both in research papers and in the recent Floras of America and SW Asia, where the genus is particularly well-developed. In *Flora of Turkey* there are almost 100 species; in *Flora Palaestina* 46; in *Flora of Cyprus* 31. *Trifolium* is also well-represented by good material in many of the world's herbaria, and the monographers, to their credit, studied specimens from no fewer than 74 institutes. The authors therefore had very sound foundations to build on, augmented by their wide field experience of the genus.

That said, however, it has to be remembered that there are numerous taxonomic problems in *Trifolium*; many species are difficult to recognise or distinguish from others and numerous taxa have been variously interpreted by different botanists. It is not an 'easy' genus.

The present authors recognize 238 species in 8 sections; some of the latter had previously been given subgeneric or even, by Bobrov, independent generic status. By far the largest sections are *Lotoidea* (America, Africa, Eurasia) with 99 species and *Trifolium* (Eurasia, Africa) with 71. The keys to the sections (which seem very clear-cut) and to the species within them both worked well on specimens tested. But in the keys to the two large sections, with 146 and 89 couplets, it was easy to go astray if the material at hand was less than adequate. Although on practical grounds it is useful, as is done here, to break the large sects *Lotoidea* and *Trifolium* into subsections, some of the latter taxa are clearly more of convenience than reality: e.g. the very distinctive Anatolian/Caucasian *T. polyphyllum* seems an odd bed-fellow for the other, mainly E and W American, species of subsect. *Lupinaster*.

The accounts of the individual species—with type citations, selective synonymy, descriptions, specimens seen, geography and discussions—are mercifully succinct, relevant and helpful. The authors have a conservative species-concept and, if at times there are more varieties recognized than might merit formal description, the overall impression is of an eminently practical and sensible classification. Comparison of relevant taxa in the monograph and in modern Floras revealed few discrepancies of status; though in a British context it is of note that *T. occidentale*, reputedly an endemic species of the Channel Islands, Scilly and SW England, is here regarded as a synonym of *T. repens* var *biasolettii*. Only two new species are described in the monograph.

The introductory section deals with an assessment of available characters, biology, cytology, palynology, breeding systems, phytogeography, seeds, fruit dispersal and some speculation on evolution and migration. It is of special interest to read that, although several different types of pollen grain and seed coats are readily identifiable, in neither case do they correlate with the proposed, and evidently logical, infra-generic classification of the genus; it is also interesting to note that inter-specific hybrids are rare. Although this section of the monograph gives much worthwhile fact and comment, it would have been a desirable addition to have had a section devoted to the several important fodder plants of the genus. Taxonomists and agricultural botanists would have welcomed such a synoptic account of the cosmopolitan situation.

Another of the many good features of the work is the abundance of line drawings of habit (presumably $\times 1$, though this is not indicated) and individual floral parts of the species. Four artists have contributed to the total of 231 full page plates and although there is but little discordance when comparing them, one could wish for more drawings of individual parts and, when the latter are present, that they were of larger scale and better detail.

* Zohary, M. and Heller, D. *The genus Trifolium*. 606 pp. 231 plates of line drawings, 13 figs of maps, tables and SEMs. The Israel Academy of Sciences and Humanities. Jerusalem. 1984. Price $40.

Some unimportant errors have slipped through in the proof reading stage and there are also several mis-spellings or eccentric spellings of localities among the 'specimens cited'. But this is a splendid practical monograph that is going to be the standard reference work on *Trifolium* taxonomy for many years to come. Would that there were more like it!

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