

REVIEW

C. GHORA & G. PANIGRAHI: **The family Rosaceae in India, Vol. 2 (revisionary studies of six genera)**. Publisher: Bishen Singh Mehendra Pal Singh, Dehra Dun, India, 1995. 481 pp.

A. KUMAR & G. PANIGRAHI: **The family Rosaceae in India, Vol. 3 (revisionary studies on Cotoneaster)**. Publisher as above, 1995. 292 pp.

The first volume of this series was published in 1991, and reviewed in *Blumea* 38, p. 216. The treatments of volumes 2 and 3 are each based on a doctor's thesis by the first author, elaborated under supervision of Dr. Panigrahi.

Volume 2 contains regional revisions of six genera: *Prunus*, *Prinsepia*, *Maddenia*, *Rosa*, *Malus*, and *Pyrus*. *Prunus* is taken in the inclusive sense and has 38 species in India, including a number of non-indigenous but cultivated and sometimes naturalized species. *Prinsepia* and *Maddenia* have one species each in the region covered. *Rosa* is a well represented genus in India and 37 species are recognized, including several non-native garden roses. Of the Maloideae only *Malus* (4 species) and *Pyrus* (4 species) are treated.

As indicated, in *Prunus* and *Rosa* there are several species that are cultivated for some purpose, either as an ornamental or as food. This enhances the usefulness of this contribution outside the strict limits of the region.

Like in the first volume, the chapters contain much more than a concise catalogue of species with keys to identify them. General paragraphs contain many generalities on morphology and anatomy, chromosomes, nomenclature, taxonomy and cover preceding literature quite well. A special chapter covers pollen morphology. Information contents is, consequently, quite high but, as in many floras, ecological information is scarce, the revisions being based mainly on herbarium specimens. As is well known, collectors almost never forget to mention the date of collection on their labels but are consistently reluctant in giving useful information on the habitat.

Volume 3 continues with Maloideae, in casu the genus *Cotoneaster*. Because of facultative apomixis and extensive hybridization this is taxonomically one of the most difficult genera of the family.

In *Cotoneaster* 59 species are recognized in India and several of them fall into the category of 'microspecies'. As in other apomictic genera in and outside Rosaceae, the wisdom of giving binomials to taxa are clearly not of the same kind as sexual species can be doubted but the problem is that all other procedures are also unsatisfactory. The taxonomical community should come up with a legalized way of treating the 'microspecies' taxonomically and nomenclaturally. The very extensive treatment at hand explains the situation clearly and reveals that in the eyes of the authors a species is not allowed to contain diploid as well as tetraploid plants. Recognition of polyploid complexes on the species level is in my opinion a better choice. Special chapters are devoted to petiole anatomy, pollen morphology, and nutlet surface, all of very limited value on the species level.

Keys are an important element in any flora. *Both volumes* contain keys, to genera and infrageneric taxa and to species and where needed infraspecific taxa. The quality cannot easily be tested by an occasional reviewer; my impression is that where the species are easy, the keys work very well and that where species are difficult to distinguish, the keys are difficult to work with. A most logical situation. Illustration is with original line-drawings, most of them done very well. Photographs of (mostly type-) specimens are also given and are of very different quality, those of anatomical characters are usually of minimal quality. Lists of literature are added, and much quantitative material is collected in tables.

As I said in my previous review on volume 1: this flora sets an example for regional revisionary studies. It is not too provincial in its scope but gives lots of useful information for the floristically working botanist.

C. KALKMAN