

introduction and precedes an equally brief but adequate account of the differences between the ecological conditions of arctic and alpine regions and the main vegetational types in the latter. Comments on the genera, exclusive of those already presented in earlier parts of the series, completes the notes accompanying the descriptive part.

Jenssen & Gulden have been joined for this part by Senn-Irlet - an important move because the third author has spent much time studying the alpine agaric flora. All are to be congratulated.

This work is a companion to more than those who venture into the montane areas of Scotland and Wales, or indeed N America and tundra wastes. Recent collecting in the British Lake District indicates that these arctic-alpine agarics are more widespread in Britain and shows that the series is more widely useful than might at first be thought. Several of the species figured are also as common in more lowland sites.

This series will prove its worth in many an agaricologist's library.

Roy Watling

The European Garden Flora; a manual for the identification of plants cultivated in Europe, both out-of-doors and under glass. Volume III, Dicotyledones (Part I), edited by S.M. Walters and others. Cambridge University Press, Cambridge. 1989. xv + 474 pp., 42 illustrations, mostly line drawings. ISBN 0 512 36171 0. £65.

The book follows the same general arrangement as earlier volumes in the series (Vol. I, 1986, vol. II, 1984), and, as described in the introduction, the general aim of the series is to provide a scientifically accurate and up-to-date means for the identification of plants cultivated for amenity in Europe. This is the first of four volumes dealing with the Dicotyledones, and it includes 49 families from Casuarinaceae to Aristolochiaceae.

The largest families dealt with in this volume are the Cactaceae (about 100 pages), Aizoaceae (about 40 pages), and Ranunculaceae (35 pages). It also contains descriptions of many widely-grown trees in Salicaceae, Betulaceae, Fagaceae and Ulmaceae.

In selecting genera and species for inclusion, the editors have relied to a large extent on nursery and garden catalogues, and in general this does give a reasonable reflection of the plants grown in Europe. What it cannot do is to provide quantitative information on the relative abundance of particular species in cultivation, so that the species described may not be those most commonly encountered in collections. The anomaly shows itself in this particular volume, which contains many families of succulent plants grown by amateurs in specialist societies.

Thus in the Aizoaceae, probably the commonest *Aloinopsis* in amateur cultivation is *A. schoonesii*, which many hobbyists grow for its showy red-striped yellow petals, but it is not listed. Similarly, *Astridia dinteri*, the type species, is described, but not *A. hallii*, which has large, glossy white petals, and is probably grown more widely. Undescribed genera in Aizoaceae include some which are assuredly in the collections of many enthusiasts, such as *Carruanthus*, *Mestoklema*, and *Sceletium*; the persistent, papery, skeletonized leaves of the last being such a novelty as to ensure its popularity. It is accepted that such rare and difficult to cultivate genera as *Imitaria* and *Muiria*

are only grown by the super-specialists. Classification in this family is based largely on the structure of the fruits, with their characteristic hygroscopic capsules, but since fruits are not often found in cultivation, the keys to the genera presented here depend more on vegetative and floral characters. In general, they work very well, and, for those species described, will probably be sufficient for identification purposes. If not, the bibliography, which is admirably full for all families dealt with in this volume, is up-to-date and comprehensive.

In the past, classification in the Cactaceae has often resulted in the erection of large numbers of genera based on weakly defined and inconsistently applied characters. Modern treatments have tended to reduce the numbers of taxa to more manageable proportions. The scheme adopted in the present volume is based on the well-known classification devised by D. R. Hunt, which recognized 84 genera, 78 of which are described here. *Parodia* now includes *Notocactus*; *Lobivia* is included in *Echinopsis*; and *Weingartia* and *Sulcorebutia* are referred to *Rebutia*. A questionnaire in the leading British specialist journal a few years ago attempted to identify the less commonly grown genera, and so the exclusion from the present volume of *Austrocactus*, and *Tacinga*, is justified on the grounds that few collectors admitted to owning plants in these genera. The keys for this family are also based on vegetative characters, and they work extremely well.

Advice on the use of the keys is given where appropriate, particularly in difficult genera such as *Berberis*, and in some cases keys include more than one genus, so that *Lychnis* is keyed together with *Silene*, because the discriminating character is difficult to observe without the fruit.

Most of the descriptions contain references to illustrations. This is particularly appropriate, since the illustrations in this volume are few in number, and of variable quality. The line drawings of Betulaceae, Magnoliaceae, *Ficus*, *Quercus*, and others are clear and helpful, as are the silhouettes of Ulmaceae, but the silhouettes of *Salix* are in many cases so indistinct as to be of questionable value. A better selection of illustrations, or a different choice of illustrative style, would have been preferred.

Brief horticultural notes are given for most genera, sufficient to identify those special conditions required for successful cultivation or propagation in gardens or under glass. The repetition here of Hans Herre's advice to add 2% kitchen salt to the growing medium for *Dactyloopsis*, may be rather uncritical, as few growers will have dared to attempt it.

The book generally succeeds in achieving its stated aim, and it should be owned by every botanical library worthy of the name, but specialist growers of specialist plant groups may not find their favourite species treated here, and the compression of information needed for such a comprehensive work of this nature suggests that they may well wish to continue using standard monographs and more descriptive, better illustrated works for unequivocal identification.

Colin Will