Flora Europaea. That the appearance of the second volume of Flora Europaea* represents a major contribution to floristic knowledge goes without saying. It includes the large families Rosaceae (in part), Leguminosae and Umbelliferae together with many smaller families within the sequence of the eleventh edition of the Syllabus of the Pflanzenfamilien. Fifty-one contributors from twelve countries are represented. This in itself is evidence of the massive amount of work needed to edit the accounts and give them a reasonable degree of overall uniformity. The total number of man-hours spent on the production of the four hundred and fifty pages must have been enormous. Before considering how its standard measures up to the work put into it, it is worthwhile considering some of the basic difficulties facing workers on this project.

In a Flora which essentially synthesizes data of previously published work, the labour involved in preparing an account of a particular group depends largely on how well or badly the previous work has been done and on how well-known is the taxon throughout its European range. Some countries such as Britain and those of Scandinavia already have excellent Floras as a basis, others such as Spain or Albania do not. And although this is an age of computerization and lunar space-craft, it is quite obvious glancing through this Flora that even at a fairly low level of taxonomic knowledge there is still a great deal to be found out about European plants. This was highlighted by the discovery recently of the remarkable new genus *Neufraga* in the Umbelliferae in, of all places, Mallorca. Although this is an extreme example, it does illustrate that the well of new taxa in Europe—botanically the best known area in the world—is not yet dry. But quite apart from new taxa, much more information is needed, even in common, widespread species, about variation ranges, distribution, general biology and cytology, to mention a few aspects, before a really definitive European Flora can be written. This, of course, means that almost any Flora is obsolescent as soon as it is published because of additional information coming to light. However, more of an immediate current problem for a Flora Europaea worker is the difficulty he is bound to experience in assessing the status of previously described taxa. Frequently for one reason or another, it is often very difficult to come to any kind of satisfactory conclusion about their status. Often the taxonomist will not have studied anything like the total amount of herbarium material available and will not have seen all the relevant type specimens; similarly the literature is so vast and scattered that it is easy to be unaware of important references.

Because of these and other difficulties not outlined above, many accounts in this as in the previous volume, include not a few species names left in limbo. For example, in the Rosaceae, particularly the apomictic genera, there are often as many if not more species merely listed under the heading "related species include:" as there are described species. These "related species" are not keyed out, not numbered and not described. Examples in *Sorbus* among the British species include *S. fennica*, *S. arranensis*, *S. pseudofennica* and *S. hibernica*. Satisfactory classifications of apomictic groups such as *Sorbus*, *Alchemilla* and *Rubus* have yet to be worked out—if it is possible—but in Europe it is unlikely that a botanist will use Flora Europaea as his guide to naming them but rather will he stick to a local Flora, if it exists. In *Alchemilla* it seems unfortunate that the majority of Juzepczuk's ill-defined taxa are still left in limbo; this would have been a good opportunity to dispose into straight synonymy a considerable number of this arch-splitter's taxa.

As was the case in the first volume, the subspecies looms large and in some species a large number are recognised: *Anthyllis vulneraria* boasts no fewer than twenty-four. Sometimes the keys to these taxa are rather unconvincing and working with average herbarium material even Solomon with a battery of computers at his disposal would be in difficulties. It is hard not to believe, when the subspecies is the lowest taxon generally used in Flora Europaea, that there is a tendency to overwork it. In several instances it appeared to be used more as a taxon of unproved status rather than as a subspecies as currently defined. Sometimes too there is inconsistency in its usage: *Pimpinella tragium* is split into five subspecies whereas *P. saxifraga* with a comparable variation range is left undivided.

As occurs in any Flora with many contributors, some accounts read considerably more convincingly than others. This is not necessarily related to the complexities or otherwise of the group. Contributors who know their genus on a wide or world basis obviously have the edge over those who know it only from Europe or have been detailed to write up a genus they previously knew little about. Many problems of species status require a good deal wider consideration than mere study of European material. In several of the genera

* Flora Europaea. Volume 2. Edited by Tutin et al. Cambridge University Press, London. 1968. 11 in. xxvii + 455 pp, 5 appendices, 5 maps. Price: £7.7.0d.

of Leguminosae, for example, what happens in north Africa or the east Mediterranean is very important but more often than not time, money and a tight schedule preclude such a study.

Who actually uses Floras once they are published may sometimes be at least a passing thought of those who prepare them. One small group of people who are certainly likely to use Flora Europaea are herbarium workers. In arranging and working through herbarium material one soon becomes aware of some of its good and bad points. In the former class, the sturdy binding, typography and presentation of information are excellent and leave little to be desired; one small change from the first volume which makes for easier reference is the addition of generic names at the tops of pages. Among the bad points, the absence of a more complete list of synonyms is often irritating. While a full synonomy going back to 1753 is out of the question, there is no reason why all synonyms after a particular date should not be included; this could be an arbitrary date such as 1900 or else the final publication date of Nyman's Conspectus. With the present system of minimal synonomy, a herbarium specimen often turns up with a valid name that is not covered in Flora Europaea and one either spends a lot of time chasing it up in a library or it ends up in a cover at the end of the genus labelled "names not dealt with in Flora Europaea". A further point with regard to herbaria is that whereas with most other major Floras one is aware where correctly annotated material can be found, such as Flora Malesiana in Leiden and Flora Iranica in Vienna, where does one go to study author-determined Flora Europaea material?

The keys to species usually read and work quite well but occasionally they are unnecessarily terse: a dichotomy between annual and perennial or one based only on flower colour is probably in order if one has perfect material but usually one does not and in these cases additional distinguishing features should have been added.

A considerable number of cultivated and naturalised genera are dealt with in this volume: eleven species of *Eucalyptus* and six of *Opuntia* to mention only two. This is often a shaky part of any Flora but although it is easy to quibble about what is included or excluded and from where, it is better to have some attempt at covering cultivated species than to ignore them. This is particularly true of a Flora covering south Europe where cultivated or naturalised species form such an important part of the landscape.

Citation of books and periodicals is very clearly done as a result of citing them fully in the excellent appendices. Even the complexities of Soviet literature are dealt with. Complete agreement on, or satisfactory treatment of, problems of transliteration seems to be impossible to achieve and no doubt many people will find something wrong. For example, one small point of inconsistency was noticed: if Taschkent and Schirjaev are spelt as Taškent and Širjaev why is Schischkin so spelt and not as Šiškin.

The absence of Soviet contributors to both volumes 1 and 2 can only be a matter of regret. In terms of area, the territory of the USSR covered in Flora Europaea is well over a third of the total area of the Flora. There are plenty Soviet botanists with a wide knowledge of their native plants and one can but hope that subsequent volumes will include some of their accounts.

The original timetable for this Flora was to complete it in four volumes by 1971. It is clearly impossible to meet this deadline now but one sincerely hopes that the editors and organizing committee will maintain the momentum and drive needed to see this mammoth and worth-while project through to a successful conclusion. Volume 2 appeared four years after its predecessor (with a three guinea rise in price!); one wishes the editors well in producing subsequent volumes with, if possible, a smaller time lag.

I. C. HEDGE