came across some errors in the Flora of Turkey. The most serious one is in the explanation of fig. 7 (page 282). To give reliable identifications of the illustration of the perianth segments it would be necessary to check the whole specimens including leaves from which these were taken; no. 8 is *Rumex ponticus* (not *R. cristatus*), nos. 9, 10, 13, 14, 15 are definitely not what they are supposed to be. *Polygonum icaricum* is not an endemic of Ikaria but occurs also on the island of Samothrake (see Flora Aegaea). In the key of *Polygonum* some of the reference numbers are not superimposed correctly, e.g. numbers 13, 20, 23; *Polygonum arenarium*, "leaves elliptic, 15 × 4 mm", is certainly not identical with the true Hungarian plant, which has narrow linear leaves. The length of the perigonium of *Polygonum bellardii* is 3–4 millimetres (not centimetres).

Besides providing easy means for naming Turkish plants, the new Flora of Turkey will, when completed, furnish a solid base for far reaching plant-geographical considerations. For the present it is stimulating to compare the representation of certain genera in Flora of Turkey and in Flora Iranica, as *Hypericum* (69 against 21 species), *Calligonum* (1 against 18), *Rheum* (1 against 8), *Haplophyllum* (14 against 26).

It is remarkable that it was possible to publish volume II so shortly after volume I. We are looking forward to the appearance of the following volumes at equally regular intervals.

K. H. RECHINGER

FLORA IRANICA**

The most recent issue of K. H. Rechinger's Flora Iranica to reach our hands is H. Riedl's account of Boraginaceae. As this is also by far the most substantial family published to date it provides a good point at which to review the work as a whole and the latest parts in particular.

This is a Flora not of political Iran but of the whole of the central highlands of western Asia from Iraqi Kurdistan in the west eastwards to Baluchistan, the Khyber and Swat in western Pakistan. It is a huge and brave undertaking and the forecast of ten years work suggests a level of industry well above that being applied to most similar projects. Those who know Professor Rechinger's immense energy will not underestimate the progress that can still be made within the ten year period; but, with half of it already gone and only some 400 out an estimated 2,500 pages in print, completion is scarcely possible. Let there not be any desperate effort to maintain the timetable at the expense of accuracy. If this work is to stand sound for many years, a little longer in the waiting is a small price.

A Flora is primarily a means of identification, and lay-out is of paramount importance. How does Flora Iranica stand up to scrutiny in this respect? Scattered through the account of Boraginaceae are little headings and diagnoses indicating subfamilies, tribes and subtribes. These are in no way part of the apparatus of identification and are quite useless as they stand. For example if you get into the genus *Cynoglossum* (Boraginaceae, p. 142)

** Flora Iranica. Edited by K. H. Rechinger. No. 48, Boraginaceae by H. Riedl. Graz, Akademische Druck-u-Verlagsanstalt. 1967. 281 pp. 48 plates (some col.).

and wish to know its position in the family as a whole, you have to leaf your way back to p. 97, where you find Tribus *Cynoglosseae*. This must be right because the names match, but these headings are not distinguished by heavier type and are very easily missed. Indeed I got back to subtribe *Rocheliinae* (p. 89), but realized something was wrong. If a synopsis of the classification of a family is felt necessary it should be given altogether and at the beginning. The same applies in the subdivisions of genera. Very often these synopses are not really needed and much space can be saved.

A change that would clean up the appearance of the keys is the omission of authorities. They are in the main text; they are needed nowhere else.

Another essential of a good Flora is a quick and easy index. Those given in Flora Iranica are slow and muddling. The name, not merely the initial letter, should be given in full at the head of every column and personally I would prefer to see a "—" rather than the constant repetition of the initial. If it is desired to indicate synonyms (an index does not *need* to do this) a difference of type is much to be preferred to brackets, as used here. These merely succeed in breaking up the vertical alignment of the initial letters and make everything twice as difficult to read.

One item of nomenclature must not pass uncriticized: that is the failure to distinguish between later homonyms and misidentifications. The Code has long been hammering at this point and it is therefore disappointing to find (Boraginaceae, p. 18) "*Heliotropium persicum* Boiss. (1879), non Lam. (1789)" - - - a misidentification cited as an independent homonym.

A general review of a work of this size and of such obvious value is no place to quibble about species recognition in particular, but a reviewer inevitably tries out the Flora here and there. I assembled a duplicate of quoted material of three species of *Vitex* (Verbenaceae, p. 5–7) from West Pakistan, *V. negundo*, *V. pseudo-negundo* and *V. trifolia*. I am sure these all represent the same species! The specimen called *V. trifolia* is probably trifoliate *V. negundo* misdetermined and *V. pseudo-negundo* is not distinguishable on these specimens. *Vitex* is one of the commonest shrubs in the usually-dry water-courses of West Pakistan: the suggestion that there are three species present is, to say the least, surprising.

Dr. Riedl's account of Boraginaceae is a considerable achievement, dealing with nearly 370 species in some 46 genera; with it are associated a series of explanatory papers which have been published elsewhere. Western Asia is a major centre of development of this difficult family and there is still a lot of careful field-work needed. It is difficult to test detail immediately but I suspect that Dr. Riedl's concepts are throughout on what I should call the narrow side. For instance *Heliotropium ramosissimum* is placed in a separate section from *H. bacciferum*, yet, to me, both belong to that complex series that runs from the Canary Islands to the Sind with a pattern of local differentiation which nearly always shows a parallel series of 2-nutletted and 4-nutletted forms. Then, does the new *H. remotiflorum* really require a separate new section in this vast and protean genus? A feeling that the initial division of *Heliotropium*, into annuals and perennials, will not prove very satisfactory, gains strength from confusion in this character elsewhere. In *Lepechiniella* (p. 81) at least three specimens cited as *L. inconspicua*, which is keyed out and described as an annual, are certainly perennial. In *Lappula* too, some specimens quoted under the erect annual or biennial *L. microcarpa* (p. 74)

come from a higher altitude than usual, have spreading branches and are clearly perennial.

One is very conscious in studying this account that it is really based on relatively little material. The very large Lace collections from Baluchistan, Aitchison and Griffith's plants from Afghanistan at Kew and all the rich collections from the border mountain regions in the herbaria at Rawalpindi, Dehra Dun and Calcutta have scarcely been touched. When the Flora has been tested out on these we shall know better how well it works; yet, whatever the result, it is nothing less than tragic that, at least in this account, so much fine material has been left unconsulted.

The writing of Floras proceeds, yet there is curiously little evidence that the results, produced with much devoted labour, are in fact used by the people for whom they are intended. If they are used there is then the risk that their very existence discourages further enquiry: they become the recognized authority. This is all the more likely when a project is a vast one like Flora Iranica, for the authors themselves must for ever be pressing ahead with new work: there is little time to discuss possible errors or possible improvements with the botanists on the spot and other users. It should be a definite policy of any large Flora project to indicate in the text the taxonomic difficulties encountered but incompletely solved; and it should be part of any such project to have an organization to encourage and collate comments and corrections from users of all kinds.

B. L. BURTT

FLORA OF PALESTINE***

This Flora covers Israel, Jordan and the Gaza strip and when completed will consist of four volumes each two-partite, one of text, the other of illustrations. With a well-known, much investigated and relatively small flora, the production of a standard Flora poses no great problems especially when edited and most of it written by the two leading taxonomists in Israel, Profs. M. Zohary and N. Feinbrun. The first volume by Zohary deals with the families Equisetaceae to Moringaceae in the sequence of the 1964 edition of the Pflanzenfamilien Syllabus. It covers such important families as Fagaceae, Caryophyllaceae, Chenopodiaceae, Ranunculaceae and Cruciferae. The format is conventional with family, generic and species keys, short descriptions and summarised distributions. References to the original descriptions of species are cited as are basionyms and synonyms but type information and herbarium specimens are not. Despite the fact that the better known a country's flora is, the greater the tendency of Flora writers to leave out basic taxonomic information—for instance, the standard British Flora cites neither original descriptions nor type material nor specimens—surely the omission of type information is undesirable with our present state of knowledge in south-west Asia. After the descriptions of the genera and

*** Flora Palaestina. Volume 1 (text and plates). Edited by M. Zohary. Jerusalem. The Israel Academy of Sciences and Humanities. 1966. xxviii, 364 pp. 2 maps; 495 plates. xxxvi pp. Price: £12.5.0.