BOOK REVIEWS

Flora of the British Isles. A. R. Clapham, T. G. Tutin and E. F. Warburg. *Illustrations, Part III, Boraginaceae—Compositae.* Drawings by Sybil J. Roles. Pp. 115, 8¼ × 11¼ in. Cambridge University Press, 1963. Price 32s. 6d.

Miss S. J. Roles's illustrations to 'CTW' are by now familiar to British botanists. This is the third of four parts, covering the remaining dicotyledonous families. The drawings, arranged four to a page, are designed as a companion to the descriptions in the *Flora.* ' . . . The intention is to provide a visual impression of the habit, and a selection of the chief features of the plants . . . ' Almost all have been made from fresh specimens.

These drawings are less detailed than either Miss Ross-Craig's much more ambitious series, or the illustrations to R. W. Butcher's *New Illustrated British Flora*; indeed, from their stated intention, they cannot fairly be compared with either. A fairer comparison is with Fitch & Smith's illustrations for Bentham & Hooker's flora. The policy of drawing from living specimens has resulted in a freshness and naturalness lacking from many of Fitch's drawings. It has its pitfalls: several of the plants look wilted (e.g. *Asperugo, Galium debile*) and in other cases the specimen chosen seems poor or even quite untypical (e.g. *Cymbalaria muralis, Linaria arenaria*). In trying to portray habit Miss Roles has attempted a difficult task. Some of the drawings are notably successful; the *Pinguicula* spp., *Origanum*, most of the *Lamium* spp., the *Plantago* spp., *Viburnum opulus, Sonchus asper, Chrysanthemum segetum* and many others are instantly recognizable. In some other cases the habit is not well caught (e.g. *Galium saxatile, Stachys sylvatica, Bartsia alpina, Dipsacus fullonum*), and sometimes the distinguishing characters of related species are not well brought out (e.g. *Leontodon hispidus* and *L. taraxacoides*, some *Euphrasia* spp.), perhaps most often through a combination of unselectiveness and understatement. To capture the character of a plant at this scale may demand an approach akin to caricature; one is often driven to admire the effectiveness and economy of Fitch's little sketches carried out in a much less flexible medium.

A set of illustrations like these is inevitably a compromise, in which clarity and detail (and to some extent accuracy) are set against portability and cost. Are the illustrations to be used to assist identification in the field, or are they to be studied at leisure at home or in the herbarium? It is possible to have the worst of both worlds, and one wonders if the right compromise has been chosen here. For anyone who simply wants help in identification there is much to be said for a book like Fitch's illustrations, or Thommen's useful *Taschenatlas der Schweizer Flora*, which crams over 3,000 thumb-nail sketches of Swiss plants into a single cheap pocketable volume.

Nevertheless, Miss Roles's drawings will be found an invaluable companion with a vasculum of plants at the end of the day, and they will give much pleasure besides. The drawings themselves are essentially accurate, and their delicate style is admirably set off by good paper, and excellent typography and layout. This is altogether an attractive volume.

M. C. F. PROCTOR

North Atlantic Biota and their History. Edited by Askell Löve and Doris Löve. Pp. xii + 430, with 13 plates and about 180 figs. and tables in the text. Pergamon Press, Oxford. 1963. Price £5 net.

This is the report of a symposium held at the University of Iceland, Reykjavik, under the auspices of the University of Iceland and the Museum of Natural History, in July 1962.

The book contains an introduction followed by 27 papers read at the symposium. More than half of these are devoted to studies of higher plants, and the contributors include such well-known workers as T. W. Böcher, E. Dahl, K. Faegri, E. Hulten, Askell and Doris Löve, J. A. Nannfeldt and R. Nordhagen. The papers cover a variety of topics but the main theme is the study of species, seemingly identical, which occur on both sides of the Atlantic Ocean. Considerable attention is paid, also, to the geological interpretations of the north Atlantic climates of the past.

Professor Hultén's contribution on phytogeographical connections of the north Atlantic is based on a study of distribution maps of all plants known to occur in Iceland, Greenland, Spitzbergen, Jan Mayen. Bear Island and the Faeroe Islands. These are arranged into 24 groups, e.g. Circumpolar, or near circumpolar species which do not occur in Greenland or central Europe; circumpolar plants occurring in Greenland but lacking in central Europe, etc. An analysis of this data leads to the conclusion that phytogeographical conditions around the north Atlantic give poor support to the hypothesis that a land-bridge could have existed in Quaternary or late Tertiary times.

In his paper, Professor Nannfeldt endeavours to illustrate the closer floristic connections of the Scandes with Iceland and Scotland than with the Alps. Dr E. Dahl discusses plant migrations across the north Atlantic Ocean including plants transported across the ocean by man. The western amphi-atlantic element in Europe and the eastern amphi-atlantic element in America, the long-distance dispersal hypothesis and the theory of a land connection between Europe and America are also reviewed.

Doris Löve contributes a fascinating paper on the dispersal and survival of plants. Very few species are really adapted for long-distance dispersal. Such mammals as polar bears and foxes subsist mainly on animal food and are thus excluded as possible plant dispersers. Birds travel freely between land masses and are active as transporters for both ingested and externally carried seeds and plant fragments—ducks, geese and swans in particular are mentioned. A table gives interesting data on the various species of birds and their food plants, together with geographical information on nesting and winter areas. It is concluded, however, that there is a relatively small chance for any large numbers of plants to have been dispersed by birds between North America and the British Isles, and the hypothesis that *Sisyrinchium* and *Eriocaulon* were introduced into Ireland from North America attached to the bodies of pink-footed geese is disputed on the grounds that the American and Irish plants are quite distinct species. Dispersal by wind, and by sea currents are also discussed. The author's conclusion is that the flora of the north Atlantic area is old, well established, and mostly relict from a time preceding the Pleistocene Ice Age.

O. Gjaerevoll in dealing with the survival of plants in nunataks in Norway during the Pleistocene glaciation refers to the strange distribution of *Artemisia norvegica*—the Urals, southern Norway and a single locality in Scotland. Other Arctic species selected for discussion include *Papaver radicatum* subsp. *subglobosum*, *Arenaria humifusa*, *Draba crassifolia*, *Saxifraga aizoon*, *Potentilla hypoarctica* and *Carex scirpoidea*. This unusual concentration of rare species in southern Norway is used to illustrate the argument that there must have been quite extensive ice-free areas in that part of the country.

E. Einarsson reviews the elements and the affinities of the Icelandic flora. Between 430 and 440 species of vascular plants are considered to be native to Iceland, about 97% of these are found in Scandinavia, and *c.* 85% are found also in the British Isles. It is concluded that more than half of the Icelandic species have a Boreal distribution, whereas Arctic-Alpine species comprise of *c.* 33% of the flora.

There are many other interesting papers dealing not only with higher plants, but with the maximum extent of the Pleistocene glaciation, palynology and geology.

The entire work is of a very high standard and is well printed on excellent paper. It is an essential work of reference to botanists interested in the phytogeography of the north Atlantic area.

D. H. KENT

Drawings of British Plants. Part XVIII, Compositae (4). Stella Ross-Craig. 76 plates. G. Bell & Sons Ltd., London, 28 March 1963. Price 10s. 6d.

Part eighteen of Stella Ross-Craig's series of drawings deals with the remaining ten genera of the family Compositae. Owing to their asexual means of reproduction the species of two of these genera, *Hieracium* and *Taraxacum*, are notoriously difficult taxonomically. In her introduction to *Hieracium* Miss Ross-Craig does not mention apomixis but writes: 'The variation within the species of *Hieracium* can sometimes be so great that I think many of the specific names which have been proposed for the variants could quite happily be forgotten.' It is unfortunate that the authoress did not seek advice from a specialist in the most difficult group. As it is, her selection of species, her identification of the species chosen, and her nomenclature and citation of authors all leave very much to be desired.

In the latest list of British Hieracia (Sell & West in Dandy, 1958), 234 species in 17 sections are listed. That list follows closely the Monograph by Pugsley (1948), the cited specimens in which Miss Ross-Craig has used for her illustrations. In the book under review, 20 species have been selected to illustrate the genus. The section *Alpina*, which is mainly confined to the mountains of Scotland, is represented by four species, the section *Vulgata* subsect. *Eu-Vulgata* and the section *Sabauda* by three species each, and nine other sections by one species each. The very large groups of the section *Vulgata*, namely subsections *Bifida*, *Glandulosa*, *Sagittata* and *Caesia*, in which are placed a very large percentage of the British *Hieracia*, are represented by only one species of the subsection *Glandulosa*. No species at all are given for the sections *Oreadea*, *Alpestria*, *Auriculina*, *Collinia* and *Praealtina*. The three latter groups contain only introduced species, but the widespread *H. brunneocroceum* could lay much greater claim to inclusion than the very rare introduced *H. amplexicaule* of the section *Amplexicaulia*. I can make nothing of the order in which the species are arranged, the oddest thing being the putting of *H. amplexicaule* between two species of the section *Vulgata*.

A close examination of the individual plates reveals several points of criticism, some general and some detailed. The relative sizes of the capitula seem to give the wrong impression, as anyone can clearly observe if

they compare those of *H. calenduliflorum*, *lachenalii* and *pellucidum* (? *exotericum*) with the actual plants. Colours are notoriously difficult to describe, but those given for the leaves and ligules rarely fit in with my idea of the living plant. In *H. holosericeum*, *lingulatum* and *anglicum* the tips of the ligules are usually ciliate. In *H. holosericeum* the parallel-sided involucral bracts are not emphasized. The illustration of *H. pellucidum* seems to be a better fit for one of the *exotericum* aggregate. That of *H. vulgatum* may be of that species but it is a very uncharacteristic example of a widespread and easily recognizable plant. The leaves are too deeply dissected and are certainly never glaucous. In the plate of *H. lachenalii*, Fig. F. seems to be an entirely different plant (? species) from the rest of the figures which are characteristic of the plant they are meant to represent. The example of *H. tridentatum* is what Dr C. West and I would call *H. calcaricola* (F. J. Hanb.) Roffey. *H. tridentatum* Fries sensu stricto does not occur in the British Isles. Pugsley distinguished *H. perpropinquum* and *H. bladonii* on whether the eglandular or glandular hairs were dominant on the involucral bracts. All intermediates are possible and both extremes can be found on the same plant, and for this reason these species were lumped by Dr C. West and myself in Dandy's Check List. These illustrations do not even show the two extremes and are clearly referable to the same taxon, the correct name for which is *H. perpropinquum* (Zahn) Druce.

The genus *Taraxacum* has not yet received a similar treatment to that of *Hieracium* in this country, and the four species here shown represent the four main groups of microspecies recognized by Continental botanists. *T. officinale* and *T. laevigatum* are excellent illustrations of microspecies within two of these groups. That of *T. palustre* is a composite one. The plant in the foreground probably belongs to the aggregate because of its broad involucral bracts, which are, however, only loosely appressed. The two leaves in the background are characteristic of *T. palustre* (Lyons) DC. sensu stricto. It would be interesting to know to which plant the dissected parts belong. *T. spectabile* seems from the involucral bracts to be correctly named, although the leaves appear to be those of a late-flowering, and therefore uncharacteristic, example.

The species of the other genera are excellently illustrated and show clearly how this group of plants, which prove especially difficult for the beginner, can be identified much more easily by a careful examination of the dissected parts. In these species, also, the relative sizes of the capitula are much better shown, for example in the three species of *Hypochaeris*.

The standard of these drawings is high and it is difficult to find fault with the artist; indeed, if the parts of the plants had not been so meticulously drawn the above comments could not have been made.

P. D. SELL