

and zoologists. *Flora Europaea*, which is in essence compilatory, does this very well, and by applying a beneficial taxonomic uniformity within its area will inevitably broaden the horizons of all those who use it. It should lead to a new phase in European botany, and will certainly provide a firm basis for further taxonomic research for many years to come.

One also hopes that a less tangible but no less real product of the *Flora Europaea* project will be the foundation of fuller and more meaningful European botanical cooperation in the future.

R. M. HARLEY

## HISTORY OF BRITISH VEGETATION

### The History of British Vegetation

By Winifred Pennington. (Modern Biology.) Pp. viii + 152 + 30 plates. (English Universities Press: London, February 1969.) 45s boards; 28s paper.

THE studies of vegetation and of its history are mutually dependent. An understanding of present-day vegetation is as necessary for the interpretation of historical processes as is a knowledge of the history of vegetation for the interpretation of its present structure. Since the publication of Professor Godwin's encyclopaedic work *The History of the British Flora* in 1956 there has been an obvious need for an introductory textbook suitable for university undergraduates, and Winifred Pennington's book has been designed with this objective.

Dr Pennington traces the history of British vegetation from the close of the Tertiary period through the alternation of glacial and interglacial episodes of the Quaternary ice age to the subsequent Late- and Post-glacial periods. Obviously, to cover such a long and complicated period the book must be very selective if it is to avoid the common fault of so many "paperbacks", which provide only a superficial account of a subject unsupported by any presentation or assessment of factual evidence.

Throughout the book particular sites and actual pollen diagrams are presented so that loose generalizations and simplified schemes are avoided. As a result, problems are examined in a way that should make undergraduates recognize the remarkably detailed nature of the evidence and sense something of the enthusiasm in attempting its interpretation. The success of this technique of presentation is particularly well illustrated in chapters seven and eight where possible causes for the Post-glacial decline of elm and lime are discussed and the complicated interplay of climatic changes and the effects of prehistoric human clearance are described.

In spite of the use of detailed evidence, the book remains very readable and space is found to include those small fragments of information that bring the subject to life: Allerød is not just a place in Denmark, it is the clay pit of a tile-works, and one can feel a vicarious excitement at finding the fossilized leaves of *Dryas octopetala* in such an improbable place.

Obviously a book of this type contains statements which are open to criticism but this is in the nature of the subject. Is the absence of *Cirsium oleraceum* from Britain really because it failed to cross the channel? After all, *Eryngium campestre* is abundant on road verges and pastures in the Pas de Calais but this species is long established in southern England and yet remains very rare even in Kent. There are some inaccuracies of fact which suggest parts of the book were written some time ago. For example, there is now clear evidence that *Tilia cordata* was not the only lime in Britain during Zone VII (page 56) and *T. platyphyllos* was also present at least in East Anglia and the Midlands.

The book is illustrated by a set of excellent photographs and the final chapter includes several maps of the distribution of various species. In both photographs and maps there is a clear predilection for Arctic-Alpine species

and perhaps the illustrations would be more valuable had species of contrasting geographical affinities been selected.

C. D. PIGOTT

## NORTHERN FLORA

### Flora of the Queen Charlotte Islands

Part 1: Systematics of the Vascular Plants. By James A. Calder and Roy L. Taylor. Pp. xiii + 659. \$12.50. Part 2: Cytological Aspects of the Vascular Plants. By Roy L. Taylor and Gerald A. Mulligan. Pp. ix + 148. \$7.50. (Canada Department of Agriculture Monograph, No. 4, Parts 1 and 2.) (Queen's Printer: Ottawa, 1968.)

THE Queen Charlotte Islands lie off the north coast of British Columbia and comprise about 150 islands making up a triangular-shaped archipelago. Because there was evidence from earlier studies, both botanical and zoological, that the islands represented an important ice-age refugium, a full-scale survey was organized by the Plant Research Institute of the Canada Department of Agriculture starting in 1957. The results of two summers' work, together with several minor visits, form the basis of this flora, two volumes of which are reviewed here; a third, covering the non-vascular plants, is to follow later.

The first volume consists of a botanical history of the region, and sections on the physiography, geology, climate, economic botany, plant communities and phytogeography, well illustrated by nearly 100 figures and plates, some of the latter in colour. The greater part of the book is made up of a systematic treatment of the 594 vascular plant taxa found in the islands.

Keys to the families, genera and species are provided, but no descriptions. Instead, the authors have concentrated on the study of the relationships and variation of the species represented in the flora.

The taxonomic treatment is meticulous and detailed; places of publication, synonyms and specimen citations are given. The detailed discussions on the species are somewhat discursive and cover taxonomic, distributional and ecological features; they contain much useful information and are usually up to date, although there are some curious lapses.

The second volume can best be described as a glorified chromosome list. It repeats the enumeration of all the taxa that appear in the first volume whether or not chromosome counts are reported. Although this will "facilitate the annotations of other counts when they become available" it seems an unnecessary luxury.

Voucher specimens are cited together with chromosome numbers which have been determined from somatic and gametic tissues. The symbol  $n$  indicates a gametic count while  $2n$  may refer to a count obtained either from meiosis or mitosis; the former is distinguished by a subscript (for example,  $2n-10_{II}$ ). The citations are followed by discussion on the significance and relevance of the Queen Charlotte counts in relation to counts known from elsewhere. Because these discussions extend to taxonomic and even nomenclatural considerations, it is necessary to refer constantly from one volume to the other to correlate the information given under particular species in each of them. Full details of materials and methods are given and there is an illustration of a cytological collecting vest and a carton used for shipping cytological specimens.

The separation of the flora into these two parts is my major criticism of the work, even allowing that the authorship is different, although with Taylor a joint author of each part. I cannot see how a divorce between the floristic-taxonomic and the cytological aspects can be justified and, indeed, the overlapping discussions show how difficult it has proved to maintain the distinction. The information given in part two could have been included in the first part by adding about 70 pages.

The presentation of the volumes requires some comment.