

REVIEWS

Flora of the British Isles. A. R. CLAPHAM, T. G. TUTIN, and E. F. WARBURG. Pp. li + 1591, 79 line-blocks. Cambridge University Press, 1952; 50/-.

The publication of a competent and original descriptive Flora is an event of the utmost importance in the study of the field botany of a country. It provides an opportunity for codifying scattered information accumulated since the issue of the last account, and by making this generally available it facilitates the training of new recruits to the study. An equally important function is to stimulate research by indicating where further study is most needed. Adequate Floras of the British Isles which could be described as original have appeared only at long intervals, and their influence has been such that they have proved to be milestones on the road of the study of our plants. The new work by Clapham, Tutin and Warburg is likely to prove another milestone and it deserves more detailed consideration than is ordinarily given to books sent for review.

The need for such a book at the present time hardly requires emphasis. Young botanists have been using Bentham & Hooker's *Handbook of the British Flora* and graduating to J. D. Hooker's scholarly *Student's Flora of the British Islands* and Babington's *Manual of British Botany*. The last was revised by A. J. Wilmott in 1922, but circumstances prevented him from making more than limited alterations. The others had been tinkered with a little from time to time, but, in general, it is true to say that all our descriptive floras were more than half a century out of date. As a result our more advanced workers have been compelled to identify much of their material from foreign Floras and papers published in scientific journals. A library was required for the identification of ordinary British plants, and the condensation of the essential information within the covers of a single work had become the outstanding need of British botanists.

The difficulty of producing a new Flora increased with every year that passed. It increased at an even faster rate than before as renewed interest in taxonomy—and taxonomy of a different kind—became noticeable about twenty years ago. By about 1935 the task of compiling a full new Flora was generally recognised as beyond the capacity of any one individual, and an attempt was made to organise one to be written by a large team of collaborators. The war, and the difficulty of collecting the various accounts from so many people in a reasonable time, brought this scheme to an end. The preliminary work devoted to it, including the issue of specimen pages, was of value in indicating the form a new Flora should take. Clapham, Tutin and Warburg in their undertaking faced a task of herculean proportions and in its execution they have not been content to give the bare minimum of facts expected

in such books. The information is fuller and covers a wider field than anything we have had before. To scan through each page, as your reviewer has done just before writing this, is a substantial undertaking: to have written these pages and checked the proof is a literary achievement which deserves the greatest admiration. Such criticism of detail as appears later in this review is intended only to indicate ways of improving later editions and to warn the reader against the tendency to accept every statement. It is not intended to detract in any way from an acknowledgment of the great debt which a season's use of the Flora has already shown that we owe to the authors.

The body of the work covers dichotomous keys to, descriptions of, and notes on, the families, genera and species. These are arranged in a new sequence, with the doctrine of evolution in mind, so that the groups which appear to be the most primitive appear first. This arrangement no doubt has very considerable advantages for teaching purposes, and, since the flora is intended to serve this purpose as well as those of the field botanist, the authors were probably wise to adopt it. Nevertheless, it must be remembered that experience has shown that such supposed evolutionary systems are usually soon replaced by others believed to be improvements. For a systematic work their transitory nature increases the difficulty of reference, and of use in connection with herbaria, and comparison with works arranged on the system of Bentham and Hooker which has held sway in this country for so long. It is to be feared that the current fashion of inventing new evolutionary sequences makes it likely that we still have a long way to go before the advantages of a new system can be regarded as outweighing the practical disadvantages in a reference book of this kind.

The dichotomous keys are a valuable feature of the book and are calculated to save the user a great deal of time. They are intended to make it possible to trace an unknown plant through family and genus to species, and the use can be taken up at any level. Care has obviously been taken in their construction, but only use can show to what extent individual keys are susceptible to improvement. Some difficult genera—such as *Fumaria*—are by no means easy to identify from the clavis provided. In *Barbarea* the use of upper stem leaves for the primary division will soon lead the reader into trouble, and in *Lysimachia terrestris* the frequent absence of the bulbils in the axils of the leaves and the presence of flowers will cause difficulty with the third stage of the key. In *Myosotis* one species is called *M. laxa* in the key and *M. caespitosa* in the text. Details such as these, and in the numbering, can be corrected in later editions, when consideration might also be given to breaking down some of the longer ones into sections. The key to *Carex* has no less than 75 stages and is likely to discourage the beginner unnecessarily. A most commendable point is the provision of alternative keys in a few cases, such as the separate ones to male flowers, female flowers, and leaves in *Salix*. For the larger families a synopsis is provided as well as an artificial clavis.

The descriptions throughout are very full and on a uniform plan to facilitate comparison. The more important diagnostic characters are printed in italics, which is another valuable feature. In the case of families and genera, there is a statement of the approximate number of species known.

For each species the information includes the following:—scientific name, references to the most easily available illustrations, English name, and synonyms of the scientific name selected. Then follows the description, flowering and/or fruiting times, pollination mechanism and insect visitors, chromosome number, and life-form. Finally, there is a statement of status, distribution, habitat, and vice-comital frequency, and distribution abroad.

A large proportion of the scientific names given will be new to most British botanists. In some cases the changes are due to reasons of nomenclature, but perhaps even more are attributable to altered views on taxonomy. Into the latter class come the numerous instances where long accepted genera have been split. Thus *Scirpus* is given as now including only two British species, while the others included in the genus as recently as Clapham's *Check List* are distributed between *Eleocharis*, *Trichophorum*, *Eleogiton*, *Isolepis*, *Holoschoenus* and *Schoenoplectus*. Many other examples might be given. Such changes are very much a matter of personal opinion, which is likely to be influenced according to whether the individual is studying the group on a world-wide or local basis. Changes made for nomenclatural reasons follow closely those advocated by Scandinavian workers. The unfamiliar names chosen represent an advance on those previously in use in this country, and they approximate more closely to the lists employed in recent European works. But let no reader be deluded into thinking that there is yet any sign of finality in this vexatious matter. The new names will have to be learned, since the authority of the new *Flora* will stand so high, and its use will be so widespread, that those with different views will be unable to prevent the name in the *Flora* from passing into general currency. Unfortunately not all the changes now made are likely to persist.

The new taxa introduced in the account of *Sorbus* should have been properly published in advance with Latin diagnoses. The *Flora* also includes new combinations—especially in the grade of subspecies which the authors have employed somewhat widely. It is used to cover plants which differ cytologically, or in geographical or ecological preferences. To this grade they have reduced some of our former species, or raised plants which we have known as varieties. A reasonable compromise has been adopted in the controversial question of whether all specific epithets should be spelled with a small initial letter; in the cases where it has been customary to use capitals they have shown them thus in the synonymy.

The choice of English names to be employed falls below the standard set by the scientific work in the *Flora*. From the introduction it is clear

that the authors scorn their use—it would perhaps have been better if they had omitted all but the most obvious ones. Their practice of using quotation marks for those they regard as “invented” is often irritating, and many examples seem to ignore the general practice of regarding a word or phrase which has been in use long enough as part of the English language. Such names as Starry Saxifrage or Meadow Saxifrage (a translation of the scientific name in the first case but not in the second) have surely been in use so long that they have ceased to demand recognition as “invented”. As for “Brook Saxifrage” for *Saxifraga rivularis*, which occurs with us only in Scotland, it will surely demand reproach from those who call a burn a “burn”! Writers of more than a century ago managed to do a little better than that. Such names as Greater Stitchwort and Winter Cress, to give only two more examples, have been freely used for so many years that it seems unnecessary to regard them as “invented”. At the other extreme, names have been “invented” for rarities which seem to have lacked them in the past—such as “Lesser Shepherd’s Cress” for *Teesdalia coronopifolia*. A few genuine new ones have been added but “Welcome home husband, however drunk you be” for *Sempervivum tectorum* seems rather too long for practical use! It is to be hoped that those who must use common names will not adopt this list as a standard.

The descriptions of species are extremely good. Vague terms, such as have often been employed in the past, have been replaced by measurements. The diagnoses follow an orderly plan working from the root upwards, and ending with the flower, fruit and seed. The authors have not hesitated to employ unorthodox terms where they are likely to convey a clearer picture of the organ described—though not every reader will know the shape of a bicycle spanner (p. 619) in these days of motor-ing. Only in a few instances is there failure to stress or mention characters which one would have thought important. The characteristic clothing of the lower stem of *Sisymbrium Loeselii* is not referred to, the characters of *Vicia laevigata* seem quite inadequate, the account of *Littorella uniflora* does not stress sufficiently the great difference between submerged and littoral states, there is not enough emphasis on the marked contrast in duration between *Lactuca Serriola* and *L. virosa* and one would have thought that the anther size in the two species of *Parapholis* at least deserved italics. In some cases the reader’s attention might have been directed to characters of colour which assist in detection in the field. Thus there is no hint of the ease with which the three species of *Spartina* can be detected by the colour of their leaves when two of them are growing together, and insufficient attention is drawn to the colour differences of the petals in *Spergularia*. The extreme whiteness of the flowers of *Pimpinella major* by which it can often be picked out from other Umbelliferae even from a fast moving car is unnoticed. Sometimes a sentence has been added drawing attention to characters of exceptional importance—the Umbelliferae have good examples of these—and this is a feature which might well be expanded in later editions.

Chromosome numbers and Life Forms are introduced into a British Flora for the first time, and the authors have very helpfully marked counts of the former from British material with an asterisk. Raunkiaer's Life Forms are explained on pages 1509 and 1510 but the definitions are brief and it would have been easy to add a reference to a fuller illustrated account for the benefit of readers not already acquainted with this important classification.

The paragraph dealing with status, habitats, frequency and distribution is very much more detailed than we have had before. The assessments of status have evidently been the subject of much thought and deserve careful consideration. Habitats are given in detail, and generally include an excellent indication of the plant's ecological requirements. The entries, however, are very clearly limited in the main to the three authors' personal observations and a great many habitats might be added to those cited. Thus I have more often seen *Myosurus minimus* on sea-dykes or in ditches than in the places printed and *Iberis amara* is not uncommon in open woods. *Draba aizoides* occurs in quantity on maritime limestone cliffs along miles of the Gower coast and it is misleading to make mention of Pennard Castle in the terms given. The reader who finds *Cardamine impatiens* in Kent will be puzzled at finding it on river banks, and *Cardaminopsis petraea* is in various places on river shingle as well as alpine rocks. *Halimione pedunculata* grows in the drier, not the wetter, parts of salt-marshes. *Centaurium pulchellum* is often found in rides in clayey woods. *Mentha Pulegium* grows on peat in places as far apart as Norfolk and Glamorgan. *Platanthera bifolia* is more characteristic of heaths, though it also occurs on base-rich and calcareous soils as stated. One wonders where *Orchis purpurea* has been found on a limestone other than chalk. "Wet sandy places" may do for the Dorset locality for *Eleocharis parvula* but not for those in Wales. For *Carex montana* there is no mention of woodland rides and of all the many times I have seen *Puccinellia rupestris* in various types of habitat it has never been on a muddy seashore. *Agrostis setacea* seems a surprising plant to find on a chalk down. There is no mention of the frequent association of *Marrubium vulgare* with rabbit burrows, or of the effect of trampling on the distribution of *Plantago major* and its all too frequent occurrence in lawns. The habitats described for *Tordylium maximum* do not cover either of the two very different localities where I know it. *Euphorbia Peplis* grows on shingle rather than sandy shores. There is no observation of the greater frequency of *Viscum album* on calcareous soils, with interesting implications.

Similarly, there are a good many points which could be raised about the statements on distribution. The main criticism which must be made is that the authors often fail to indicate that a species is more frequent in some parts of the country than in others. For example, there is no hint that *Spergularia rupicola* and *Cerastium pumilum* occur in the quantity they do in the south-west, or that *Carum Carvi* and *Trifolium aureum* are more likely to be found in Scotland than in

England. Extinctions are recorded in some cases but not in others. Thus *Polygala austriaca*, *Holosteum umbellatum* and *Bupleurum falcatum* have gone from Surrey—none of them was known for long. *Corrigiola littoralis* has not been seen at Looe during this century, and where is it to be found in the Channel Isles? *Herniaria hirsuta* has not been seen at Christchurch for nearly 70 years. It is 99 years since *Cucubalus baccifer* was seen in the Isle of Dogs, which is in Middlesex and not Kent, and most people now look for it in Norfolk.

Mercurialis annua may be local in southern England, but it is certainly not uncommon on the coast or in many inland areas. In some cases statements are misleading on account of omissions—thus it is implied that *Ornithopus pinnatus* in Scilly is found only on Tresco but the chances of seeing it on Bryher, St. Agnes and St. Martin's are at least as good and it is recorded from St. Mary's. *Isatis tinctoria* is given for "cliffs of the Severn Valley and in cornfields in various localities in S. and C. England" but there is no mention of the Guildford station on chalky cliffs which dates back to 1683.

A large number of introduced plants have been included in the Flora "either because they are naturalised or because they are of frequent occurrence". Unfortunately these qualifications appear to have been sadly overlooked in the selection of species for inclusion. Whatever standard the authors attempted to adopt varied widely from family to family. We find, for example, that in Cruciferae aliens which even the most enthusiastic student of these plants is most unlikely to see are described in detail. In other families, like Papilionaceae and Gramineae, even common and sometimes thoroughly established aliens are omitted. The reader will get little help in naming the numerous species of *Medicago*, *Trifolium*, *Vicia*, *Amaranthus* and *Bidens* (to mention only a few obvious genera) which he finds, while much valuable space is taken up with full descriptions of species which he is most unlikely to see in this country. Some of the omissions which are well established like *Bidens frondosa*, *Ficus Carica*, and *Echinops sphaerocephalus* have been fully recorded and discussed. In the case of *Rumex* the explanation of the selection appears to be that the species included are those which the reviewer has written up. Hence *R. dentatus* and *R. obovatus* are not mentioned, while the much rarer *R. stenophyllus* is set in the type adopted as standard for the Flora. *Crepis setosa* and *C. niceaensis* are other examples of species which might have been set in smaller type.

The word "casual" is repeatedly used in a way which is misleading. On page 1516 it is defined as "An introduced plant which has not become established though it occurs in places where it is not cultivated". The authors do not say what they intend by "established", but some species described as casuals have been known regularly in the same localities for over half a century. Well known stations for aliens are sometimes omitted—to give an example from early in the book, there is no mention of Ireland in the distribution of *Selaginella Kraussiana*. It would have been useful to have given some indication of the periods during which such species as *Impatiens capensis*, *Cardaria Draba*, and

Matricaria matricarioides have been known in Britain. The accounts give quite a false impression of *Hirschfeldia incana* and *Centaurea Calcitrapa* as they occur in Sussex and Kent. The work on aliens should be carefully revised before a new edition is issued.

In their treatment of critical native plants the authors have taken the opportunity of cutting away much of the dead wood which in recent years has impeded the path of workers at British botany. The segregates of *Viola* subgenus *Melanium* and *Centaurea nigra* and *C. Jacea*, which have proved completely unsatisfactory for reasons explained by genetical research, have been dropped. Similarly the splits of *Armeria maritima* are dealt with on their merits, and those of *Thlaspi alpestre* are treated very fairly pending further research. It is clear throughout the *Flora* that the authors have not been afraid to break with tradition and the stimulus to new work should be invaluable. Of the larger critical groups, it may be doubted whether the shortened accounts given for *Rubus* and *Hieracium* are of much value in the present state of our knowledge. For the latter, the reviewer would very much have preferred a conspectus giving the characters of the sections with an annotated list of species. The treatment given has the effect of excluding hawkweeds which users of the *Flora* are likely to find, while it includes *H. lactucella* and *H. Spraguei* which seem to be extinct. The accounts of *Euphrasia* and *Alchemilla* are outstanding in their competent treatment.

Hybrids are described where they are common, and particularly where they increase vegetatively; otherwise they are mentioned "as far as possible". In this, treatment is far from uniform. Sometimes the hybrids are listed at the end of the description of the genus (e.g. *Polygonum*) or after the key (e.g. *Carex*), sometimes after one of the species involved (e.g. *Potamogeton*), and sometimes at the end of the account of all the species (e.g. *Centaureium*). It would facilitate reference if all genera could be treated in the same way in this respect. There is no mention of *Scirpus* × *arunensis*, which now occurs in much greater quantity than the much decreased *S.* × *carinatus*, of *Primula elatior* × *veris*, or of *Limonium humile* × *vulgare*.

"No attempt has been made to describe all the numerous named varieties of British plants", but many are mentioned in the descriptions or raised to the rank of subspecies. The first method has its dangers as many varieties were described on the characters of more than one organ: to cite them in brackets after an alternative character in a description may lead to other characters being overlooked. The omission of varieties generally is justified on the grounds that the grade is difficult to interpret as a taxonomic unit, and also that their inclusion would have enormously increased the authors' work. Leaving them out, however, sets other problems which must not be overlooked. Attention is no longer drawn to the wide range of variation in certain species which it has long been the function of described varieties to portray. Thus from the description given of *Molinia caerulea*, the reader will receive no indication of the wide variability of this plant as compared

with *Siegingia decumbens*, by which it is followed. Variation is indicated in the account of *Jasione montana* but it would have been much more evident if varieties had been given. Those who follow the nomenclature in the new *Flora* will have to do a considerable amount of research in large libraries before they can make use of varietal names published under specific epithets other than those given.

The work is illustrated with 79 figures selected to show characters which contrast in allied species. In the one showing fruits of *Valerianella*, that of *V. dentata* does not agree with the key. In those of *Sisymbrium* and *Ulmus* there appears to have been some confusion, but the figures generally add considerably to the value of the book.

References to important literature are included very sparingly and additions to these would be very helpful to students. In other cases a hint of the reasons which have prompted the authors to take views contrary to those expressed elsewhere would be welcome. One wonders, for instance, why the Mediterranean *Picris spinulosa* is included, having regard to the views expressed in *Rep. Bot. Soc. & E.C.*, 11, 178-9, and 404. Misprints are commendably few having regard to the size of the work. The most misleading are those in names of families (e.g. "*Artistolochiaceae*", p. xxv) or of botanists (e.g. "W. H. Pugsley", p. xvii, and "Davy", p. 911). But it is pleasing to imagine the authors living in a Utopia where *Anthemis nobilis* has "Heads 18-25 cm. diam." (p. 1074) and the Gooseberry has fruits "10-20 cm. (more in cultivated forms)"! There seems to be confusion in the spelling of the names of drugs, where alkaloids are sometimes not given a final "e" (e.g. "aconitin", p. 76), and *Solanaceae* drugs are not cited for species in which they are exceptionally important.

The production of the book conforms to the high standard which can be relied on in the publications of the Cambridge University Press. If so much information is to be given in a single volume, it would hardly be possible to improve on the format. Nevertheless it must be admitted that a book weighing 1 lb. 15 oz. is a heavy burden in a ruck-sack or suit-case, and experience during the summer has shown that even when it is taken about the country in a car, the thinness of the pages makes it a difficult book to use when examining plants in even a moderate wind. For a volume of about 822 leaves the pages lie reasonably flat, but even so they curve somewhat, and this proves aggravating when the book is in use in the herbarium and plant fragments drop into the binding where they are difficult to remove. Ideally, a shortened and slimmer volume is required for use in the field, and a separate work of two or more volumes for convenient handling indoors. The price places the book beyond the reach of some who would otherwise own it, and the technical detail is too advanced for many without University training in botany. The authors would be well advised to consider issuing an abridged version to meet the needs of this public and for use in the field.

The criticism offered in this review is directed mainly to the treatment of aliens and English names and to details in other aspects of the work. Lack of uniformity in secondary matters has already been in-

icated and this applies also to the length of the accounts of species (e.g. compare the descriptions given for the *Hypericaceae* with those of the *Orchidaceae*). These criticisms become of minor importance in comparison with the great achievement of producing an original descriptive *Flora* of such a high standard of general accuracy. Clapham, Tutin and Warburg's *Flora of the British Isles* is the most important publication in British botany for a generation. It should be bought—and used—by every botanist in the country.

J. E. LOUSLEY.

(Since the above was written, the publishers have issued an errata sheet covering the more important corrections which have been detected. Readers who have already obtained their copies of the *Flora* are advised to write to the Cambridge University Press, 200 Euston Road, London, N.W.1, for a copy of the errata sheet and to transfer the corrections to the text.—J. E. L.)

Drawings of British Plants. STELLA ROSS-CRAIG. Part VI: Portulacaceae-Aceraceae; 56 plates. 1952. London: G. Bell & Sons, Ltd.; 10/- net.

Part six of Miss Ross-Craig's *Drawings of British Plants* is devoted to thirteen families, most of which, with the exception of the *Hypericaceae* and *Geraniaceae*, have very few representatives in the British flora. The method and arrangement of the series has already been described by the reviewers of earlier parts of the work; and it remains only to mention that most of the drawings in this part maintain the same high standard as their predecessors. The drawings which are not quite so pleasing are few, but in plate 16, *Hypericum Elodes* L., the plant appears to be shown far too strict and robust, at least in comparison with the species as I know it in the south of England. Plate 40, *Geranium Robertianum* L., shows the flowers at almost twice their natural size, though possibly this is the result of an attempt to over-stress the difference in size between the flowers of this species and its close ally, *G. purpureum* Vill. (plate 41). The main drawing of *Ilex Aquifolium* L. (plate 51) appears unnaturally harsh, though the smaller illustration (figure B) appears more typical.

The problem of selecting the plants to be illustrated must necessarily be a difficult one, though the author has stated in the introduction to part 1 that it is proposed to illustrate all the clearly defined species native in the British Isles, and aliens, if they have become established, or are becoming established over a wide area. It seems a pity therefore that *Tamarix anglica* Webb, *T. gallica* L., *Lavatera cretica* L. and *Oxalis corniculata* L. are omitted, as the first two are well naturalised round the coasts of Britain, while the third is almost certainly native in West Cornwall and the Scillies, and the fourth well established, and a persistent garden weed, in many parts of England. The exclusion of the alien small-flowered mallows is also rather disappointing. It would I think have been helpful if naturalised alien species had been marked with an asterisk so as to distinguish them from native plants.

English names of plants have long been a subject of much controversy, and among those given in this part appear some peculiar anomalies. In the *Hypericaceae* only *Hypericum Androsaemum*, *H. perforatum* and *H. Elodes* are given full common names, while the rest of the species appear merely as St. John's Wort. In the *Geraniaceae* all the species of *Geranium* are treated fully except *G. pusillum*, which is referred to as Crane's-bill; surely the names Soft or Small-flowered Crane's-bill are applicable.

D. H. KENT.

Flowers of the Coast. IAN HEBURN. Pp. xiv + 236 with 17 colour photographs, 43 monochrome photographs and 14 line drawings and maps. New Naturalist series, Vol. 24. London: Collins; 25/-.

In this volume of the New Naturalist series we have one that will appeal to the general reader, more than to the expert. It is a description of the wild flowers of the various types of habitat found around the coast of Britain, and is written in a simple straightforward manner which will be understood and enjoyed by all who read it.

The seaside has a special attraction for many people who, while making no claim to the rank of botanist, have a real appreciation of wild flowers and who are anxious to find out more about them. This book will enable them to find new enjoyment in their visits to the coast and will add to their knowledge of its flora.

The author calls himself an amateur, but his approach to his subject hardly bears this out, and there is no suggestion of writing down or popularisation of facts. The charm of the book lies in its being easy to read and understand, as there is a commendable restraint in the use of technical terms, the ones used being clearly defined, and an adequate glossary being included.

The treatment of the subject is ecological. The first part of the book is devoted to a brief explanation of the main principles of plant ecology and its specialised terms, the form and habit of coastal plants and their adaptations to the extreme hazards of their environment, with a summary of the main types of habitat to be found near the coast.

The chapter on the physiographical background by Professor J. A. Steers will be appreciated by all who are interested in the scenery of the coast; here the instability of all the various habitats is stressed as is the particular suitability of ever-changing ground for the study of plant ecology.

Seven types of maritime habitat are recognised: Saltmarsh, Dunes, Foreshore and Strand, Shingle Bars and Beaches, Cliffs, Cliff Tops, and Brackish Water. Each has a chapter on its special features, plant succession and its characteristic plants, only those which are restricted to maritime habitats being discussed, but lists of the commoner inland plants of each are given. Dunes are given a lot of attention, but the dune slack because of the predominance of inland plants is dismissed quite briefly.

The chapter on Saltmarshes takes on a new interest, as much of the area described has suffered in the recent disastrous floods as indeed have many of the Dunes. The somewhat uninspiring plants of the foreshore are given a very fair deal and the account of Rocky Cliffs is interesting and instructive. The lists of plants for each habitat show the overlapping of species therein and the effects of open and closed habitats are well brought out. The descriptive guide to the principal species of coastal plants is an attractive and readable part of a well-written book, which, however, hardly fulfills the promise made on the dust cover, "that it will serve as a handbook for the identification of the plants themselves". The author himself, however, does not pretend that this is the case, and stresses the importance of having a good Flora for this purpose, his object being to indicate the relative importance of the plants described, and give a general idea of what they look like and the uses to which they have been put.

Experts may quibble over the limitation of the number of species. There is only one *Salicornia* and two species of *Atriplex*, and *Carex*, apart from *C. arenaria*, is scarcely noticed, but the general maritime flora is given, and non-experts will find much here of interest.

There are some fine illustrations both in colour and monochrome, the majority by John Markham; these show both the types of habitat and individual plants.

Though this is a book for the layman, there is much for the expert to enjoy, though little that is new. It is a book to take on a seaside holiday, and will stimulate the interest in well known places, and inspire budding ecologists to seek new ground.

C. M. ROB.

John Ray. A Bibliography. GEOFFREY KEYNES. 8vo., pp. xvi + 163, with 4 colotype illustrations and 16 reproductions of title pages. London: Faber & Faber, 1951; 50/-.

Any writer of the stature of John Ray can justifiably claim neglect until posterity has produced for him an adequate biography and an adequate bibliography. Canon Raven's *Life* was very much more than adequate, and Mr. Geoffrey Keynes has now discharged the other half of our debt to the greatest British naturalist with a Bibliography of equal merit. No bibliographer has shown wider interests than Mr. Keynes, the only unity in the diversity of such figures as John Donne, John Evelyn and William Hazlitt (to name only three of his previous subjects) being his own feeling for genius in any field that appeals to him.

John Ray's writings embraced such a wide range of subjects that a study of them could be worthily undertaken only by a bibliographer of Mr. Keynes's catholic tastes. All Ray's separate volumes, his communications to the Royal Society, and the full canon of his 'lives and letters' are enumerated with meticulous bibliographical descriptions, historical notes, and location of copies; there is an appendix on por-

traits, together with indexes of copies cited, and of printers, booksellers and publishers, and a general index. Three portraits are reproduced, and sixteen title pages.

Most field botanists will turn first to the eleven pages devoted to the 'Cambridge Catalogue' of 1660-85—one of the most important works on British botany ever published. The intriguing story of the two title-pages and of the rare London issue are fully discussed and elucidated, and Mr. Keynes rightly includes a note on John Martyn's *Methodus* (1727), which was based on Ray's *Catalogus*; one misses, however, a description of Martyn's own interleaved volume containing the two works in the Botany School, Cambridge.

One of the most important discoveries recorded in the Bibliography is the hitherto undescribed copy in the British Museum of the second edition of the *Catalogus Plantarum Angliae* (1677), with annotation in Ray's own hand. These comprise notes for a third edition which was never published, though they eventually saw the light in the *Fasciculus* of 1688.

In the sections on each of Ray's other works on British botany—the *Methodus* (1682), the *Synopsis* (1690) and the county lists in Gibson's *Camden* (1695)—there are points of interest, such as differing impressions of particular editions, which will be unknown to most readers and which will add new excitement to the examination of their own copies, if they are fortunate enough to possess any.

The rough grey paper on which the Publishers have seen fit to print the volume has pleased some and repelled others. I will content myself with quoting Mr. Pooter's entry for April 22 in *The Diary of a Nobody*: "I wish Mrs. James wouldn't come to the house. Whenever she does she always introduces some new-fangled rubbish into Carrie's head . . . I am sure it was Mrs. James who put Carrie up to writing on dark slate-coloured paper with white ink. Nonsense!". But the paper of a book is less important than its text, and Mr. Keynes has added yet another masterly bibliography to his list—and one that will be of intense interest to all students of the British flora.

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