

Book Reviews

Plant form. An illustrated guide to flowering plant morphology. A. D. Bell. Pp. xiii+341, with numerous colour photographs and line drawings. Oxford University Press, Oxford. 1991. Price £50 hardback (ISBN 0–19–854279–8); £25 paperback (ISBN 0–19–854219–4).

This book is a mine of information on morphological terms, many of them not well known, at a time when morphology is seldom taught in detail. There is a good index and an excellent cross-referencing system, which, however, makes the book harder to read right through.

The author states that he has tried to make the book attractive, “the better to woo the budding botanist and the curious amateur plantsman”. He has certainly succeeded in his primary aim. The book is laid out in such a way that a topic is dealt with in one or more double page spreads. Usually on the left there is a colour photograph and descriptive paragraphs: on the right-hand page are excellent line drawings by Alan Bryan, relating to the same topic. This results in a strangely shaped book, wider than it is long. For the most part the colour photographs are excellent, although in my copy, at least, a few were over-exposed (Figs 62b, 74, 170 and especially 134). In many cases they could have been made more useful, especially to the novice, by the use of arrows or labels. How will the “budding botanist” know, for example, that *Epiphyllum* in Fig. 294 is the narrow green plant growing up the tree trunk, and not the much more obvious tree itself? In my opinion, it would also be helpful to have rather more detailed legends to the line drawings, so that they can be understood without frequent reference to the text (consider, for example, Fig. 73). Teaching opportunities have been lost in these ways. A good feature of the book is the provision of examples from all over the world, often unusual or little known plants.

The second part of the book deals with “Constructional organization”, especially the architecture of tropical trees. Although this section is also interesting, I am not entirely convinced that the two parts of the book successfully complement one another.

The author emphasizes throughout that, in order to understand the adult morphology, it may be necessary to study development; but it is on developmental topics that the book is weakest. It is unfortunate, also, that the dynamic aspects of phyllotaxis receive little emphasis, and that the fractional method of description has been perpetuated.

Although there are a few curious placings – *Cyclamen* sits oddly with root tubers, for example, and haustoria under root morphology – there seem to be few errors. There are also few typographical errors, although the legend to Fig. 205 includes a substantial part of the legend to Fig. 239. The term membraneous is used instead of membranous, and principle instead of principal.

This is a beautifully produced book containing a wealth of information on plant morphology which it is important should not be lost. It is not entirely clear, however, who its principal readers will be. Few students of plant science to-day, however regrettably, will be able to spend the time required to master the whole book (or have the funds to buy their own copy). On the other hand, if the book is to be used as an illustrated dictionary, as the author suggests, it fulfils its purpose very well. Anyone who has consulted Willis (*A Dictionary of the flowering plants and ferns*, 1966) or its more modern counterparts will find this book extremely useful, as will those who need to describe plants.

E. G. CUTTER

A colour guide to rare wild flowers. J. Fisher. Pp. 364. Constable, London. 1991. Price £12.95 hardback (ISBN 0–09–470780–4); £11.95 paperback (ISBN 0–09–469190–8).

British and Irish botanists are well served, too well served, with illustrated field guides. Having recently reviewed our popular field botanical literature (*British Wildlife* 2: 214–218, 1991), and

concluded that a substantial body of it is superfluous, my first reaction to another guide was predictably jaundiced. Nevertheless, the publishers appear to have found a small niche in the market, and have produced a neat and cheap volume. Some 150 species are featured, grouped by seven regions, e.g. Home Counties, Isles of Scilly, that are rich in rarer species. Each text entry consists of an informal description of the appearance and habitat of the plant opposite a full-page photograph. A miniature map of the region included under each species is of no use at all, other than a reminder that one is perhaps searching in the Home Counties for *Melittis melissophyllum*, which might anyway be better sought in Cornwall – possibly the publishers were unaware of the *Atlas of the British Flora*? The photographs vary in quality and many do not come up to the standard of those in recent field guides. The text has a freshness of style, however, which conveys that the author is an enthusiast, is familiar with the literature and recent research, and knows his plants in the field.

Nevertheless, the contents tested even my robust attitude (pro-picking flowers, hunting, shooting, etc.) to conservation. The title says it all: the book tells the naturalist, reputable or not, where to find some of our rarest wild flowers. There will be those who feel that the book thus provides a service, but this argument has the same suspect basis as that preached by those who market illustrations of the unclothed human form. I fear that this guide will indeed fall 'into the wrong hands'; nor is seeking rarities as an end in itself a healthy intellectual exercise for the botanist.

Several text entries give detailed instructions as to how to reach localities for very rare plants, including precise road directions and, more disturbingly, six-figure grid references. Fortunately the concept of rarity employed here seems to be based on unfamiliarity (the book having a distinctly south-eastern bias), and a good many of the species included are not particularly threatened. *Leucojum aestivum*, for instance, flourishes in the suburbs of Reading, and most of the species included in the section on Scilly are merely locally common weeds. One could include within this category the native Scillonian rarity, *Ornithopus pinnatus*, a denizen of the celebrated Tresco Abbey Gardens' rockery. Nor will anybody who has seen *Oxalis pes-caprae* colouring Cretan olive groves a sickly yellow in spring worry unduly about its possible fate at the remotest extremity of its range. However, the locations of other species should never have been included, although mercifully the author is circumspect about some of the choicer rarities.

The information divulged is of a sort best kept within notebooks and amongst friends (see Obituary of John Codrington, p. 53). The book ends with a list of addresses and telephone numbers of Wildlife Trusts, and a note on the dust cover suggests that they be approached for permission and information, including the state of the season. I suspect that these bodies, with often limited administrative resources, will be less than pleased to receive a deluge of enquiries from rarity hunters armed with what ought to be confidential data! From my own experiences on excursions, I know only too well that a minority of botanists *do* lack self-control and *will* dig up plants for their gardens. Furthermore, the rising popularity and fashionability of horticulture, not least its current fashion for 'wild flowers', means that rich pickings are to be had from selling rare plants – and, as with antiques, some sources of supply are more dubious than others.

J. R. AKEROYD

The families and genera of flowering plants. Edited by K. Kubitzki. Vol. 1. *The ferns and gymnosperms*. Edited by K. U. Kramer & P. S. Green. Pp. 430 with 216 figures. Springer Verlag, Berlin. 1990. Price DM298 (ISBN 3-540-51794-4).

This well produced volume is the first in a proposed series covering the vascular plants. This ambitious project is competently started, well produced, and written and edited by a selected group of international experts in the different fields. The first volume of the series covers the ferns and fern allies (edited by K. U. Kramer) and the gymnosperms (edited by P. S. Green).

The ferns are ably written by a recognized group of experts in the different families. As with all such projects there is an unfortunate limitation in discussions caused presumably by restrictions in length. Most of the articles provide an excellent review of the families and genera although, at least at the Royal Botanic Gardens, Kew, not all the family and generic delimitations will be followed. The detailed studies of Holtum on the Thelypteridaceae, which resulted in the recognition of many

clearly defined genera are not followed, the species being placed in a restricted number of genera rather than the more numerous genera of Holttum which indicate the relationships within the family.

Classification of the ferns at the level of the family is still in dispute. At Kew we will be following the families as listed by Brummitt. Thus the Pteridaceae will be treated in several families: Parkeriaceae, Adiantaceae and Pteridaceae. In addition the genus *Nephrolepis* will continue to be treated within the family Oleandraceae rather than in the monotypic family Nephrolepidaceae. Generic limits outlined for the Polypodiaceae are not accepted and rather than the very broad concepts of *Aglaomorpha* we will continue to accept its related genera, *Thysanosoria*, *Merinthosorus*, etc. which were studied by Roos. Indeed at both generic and family levels little stability in the application of names can be expected. The limits used in this book are not necessarily widely accepted.

Probably one of the most difficult aspects of the book is the decision to arrange the families alphabetically. It is unfortunate that the families were not arranged according to their relationships, particularly as family limits are still uncertain. This approach will cause major problems within the dicotyledons.

The detailed treatment of the recognized genera with the references specific to each family will, despite differences in generic delimitation, provide an indispensable reference book to the student of the pteridophytes. It is difficult to understand why some chapters, such as Conservation, were included in the section on ferns particularly with the limitations in space. The author of this section is a recognized expert in conservation of pteridophytes and the chapter in no way reflects either his knowledge or the available information.

The gymnosperms were the work of a single author, C. N. Page from Edinburgh. The treatment provides an up-to-date review of the families and genera of the gymnosperms and the subdivision of the Podocarpaceae is widely, if not universally, accepted. The high standards of the pteridophyte section are equalled in the section on gymnosperms.

The series on vascular plants starting with this first volume will provide an indispensable reference which must find its place in every reference library. It is hoped that the treatments at family level will be organized according to the relationships between the families as this will greatly increase the use of the volumes to the student of botany. The cost of these volumes will unfortunately restrict their availability in the libraries of the developing world where they could be extensively used as a reference for teaching University courses. This volume sets a high standard for the remainder of the series and will undoubtedly be a classic of this decade. A low priced edition for the developing world would be a great service to taxonomy.

R. J. JOHNS

Flora of eastern Saudi Arabia. J. P. Mandaville. Pp. x+482; 268 colour plates. Kegan Paul International, London. 1990. Price £95 (ISBN 0-7103-0371-8).

This exemplary regional Flora fills a notable gap in the Arabian floristic literature. The author, an American employed in the oil industry, has spent the past 25 years exploring the Eastern Province of Saudi Arabia and has also made a major contribution to our knowledge of the flora of Oman. Although the area covered is not rich in species, nor for that matter in families (73 are recognized in the *Flora*), there were many thorny taxonomic problems to be confronted in preparing this first critical treatment of an area where the Saharo-Arabian element of the flora intermingles with Mediterranean and subtropical elements.

The book starts with a short history of botanical investigations of the Province; several notable travel writers are among those mentioned, including Harold St John Philby, Bertram Thomas and Wilfred Thesiger. The geography and climate of the area are described, and a significant extension of subtropical (Sudanian) vegetation into central Arabia is highlighted in the chapter on phytogeography. The region's palaeo-environments are also described, and the introduction ends with a short section on vegetation.

The Flora proper is set out in the order of Stebbins' sequence of 1974, which is close to that of

Cronquist. Families, genera and species are keyed and described, and detailed distribution summaries are augmented by citations of the author's and other specimens. Vernacular names, collected by the author in the field, are cited when available. His scholarly approach to etymology is coupled with terse observations on economic uses; under *Deverra triradiata*, for instance, he notes that "Many Bedouin herdsmen note the camel's particular fondness for this aromatic shrub."

Selected species, such as three of the four *Stipagrostis*, are provided with dot distribution maps, and there are 268 colour photographs, most of very high quality, which should broaden the sales appeal of the book. A glossary of botanical terms, a gazetteer of geographic names cited in the text, an eight-page bibliography, and two indexes of vernacular names (one in Arabic order, the other in transliteration) precede the general index. The choice of a close-up of *Aegilops kotschy* to illustrate the dust jacket is a bold one, yet it epitomises a 'desert plant' and also represents the area's largest family, the Gramineae.

The author's notes provide some original insights into the many taxonomic problems of the flora. They are invariably helpful and perceptive, displaying a profound field knowledge of the Arabian flora as well as setting out pointers to the need for further work. His extremely tactful phraseology when referring to Migahid & Hammouda's *Flora of Saudi Arabia* (2nd ed., 1978) as being "designed to be Kingdom-wide in scope . . . although the basis for its attribution of taxa to the Eastern Province was somewhat unsure" will hardly offend anyone. But in practice Mandaville's *Flora* will be of far greater value to users outside the Eastern Province, as I have found when working on collections from the United Arab Emirates, and it will be of great relevance throughout the peninsula. The hopes expressed in the Preface that the book may "assist to some extent in the development and conservation of natural resources in these lands which have been my home for 40 years" deserve to be fulfilled. Saudi Arabia now has a Flora, as well as a flora, of which to be proud.

J. R. EDMONDSON

The Cornish flora supplement 1981-1990. L. J. Margetts & K. L. Spurgin. Pp. vi+119, with frontispiece line drawing and endpaper map. The Trendrine Press, Zennor, St Ives, Cornwall. 1991. Price £14 (ISBN 0-9512562-2-X).

In Margetts & David's *A review of the Cornish flora 1980*, one of the authors forecast that "further investigations would proceed vigorously" but he would not have foreseen that enough records would accumulate within the next ten years to justify the publication of a *Supplement*. Knowledge of the Cornish flora has been greatly increased by individual recorders and various surveys. These include the Lizard project directed by Dr L. C. Frost of Bristol University, the monitoring scheme and meetings of the Botanical Society of the British Isles, and mapping on a 1-km square basis in S. E. Cornwall by the Caradon Field and Natural History Club. Not only have many areas been studied in greater detail since the *Review* but more attention has been given to introduced species ranging from aliens to garden outcasts.

The arrangement of families, genera and of the species (with a few exceptions) is the same as in the *Review*, apart from the garden escapes and casuals which were listed at the end. In the *Supplement* these are included in the main list. As in the *Review*, localities for the less common species are listed under the number of the appropriate 10-km square but species that are common or frequent and widespread were not treated in detail there and are not referred to in the *Supplement*. In general the nomenclature, English names and distribution follow the *Review* closely, making it a pleasure to use the two volumes side by side.

The *Supplement* is strongly bound, well laid out and clearly printed with the minimum of typographical errors. Improvements over the *Review* include the greater distinction between the generic name and its authority, and the placing of the Dandy (or other) number after rather than before the specific name. The use of bold type-face for the word 'introduced' in place of a sign, and for the vice-county 'West' and 'East' and for 'Scilly' make the text much easier to use. These three words are succeeded rather than preceded by the star used to indicate a new vice-county or Scilly record.

The authors have kept up with contemporary studies of various genera and mapping of critical

species, for example in *Rosa*, *Taraxacum* and *Rubus*. The last-named genus includes the appropriately named *R. metallorum* L. J. Margetts, which is frequent in the old metalliferous mining areas in W. Cornwall. A description and Latin diagnosis of this new species is given in the appendix.

The large amount of information in this *Supplement* includes the up-dating of some records, reports of over 180 new vice-county records (including introductions) and of a number of exciting discoveries. No one who has a copy of the *Review* can afford to be without this excellent *Supplement*. It should also enhance sales of the *Review*, which is still available (see *Watsonia* 14: 293–294, 1983).

J. A. PATON

Flora of the Outer Hebrides. R. J. Pankhurst & J. M. Mullin. Pp. 171, with 6 maps, 3 transect outlines and 4 half-tones. Natural History Museum, London. Price £19.95 (ISBN 0-565-01121-9).

This is a provocative Flora, being something less and something more than it pretends to be. In appearance and content it is much of what we have come to expect in a modern county Flora. The cover is immediately appealing. There are introductory chapters by specialists on geography, geology, geomorphology and soils, climate and vegetation, floristic and vegetational history, vegetation, botanical history and plant lore of the Outer Hebrides. In addition there is an index of place names with six-figure grid references, the bibliography is cross referenced with particular islands, and there are lists of S.S.S.I.s and N.N.R.s and of collectors.

The flora list is arranged in two column format which makes it compact and easy to scan though the absence of an index of genera may be a continuing aggravation to users for whom plant classification is not a daily routine. There are excellent keys to *Euphrasia*, *Rubus*, *Hieracium* and *Taraxacum* which should tempt field botanists to plunge deeper into these troubled but well charted waters and promote more intelligent collecting. The use of English and Gaelic names recognizes a cultural dimension to local botany and the importance of vernacular names in education and conservation. Ancient links with Ireland are seen in our mutual celebration of Cu Chulainn, Patrick and Colm Cille in the Gaelic names. Compilers of the standard list of Irish plant names used in the *Census Catalogue of the flora of Ireland* looked at times to Dwelly and Cameron for inspiration and the compilers of the present list of Gaelic names have found inspiration in Irish examples, though the comprehensive list in the second edition of the *Census Catalogue* was apparently not available in time. While both compilations might have benefitted from closer co-operation, the Gaelic names selected by Clark and MacDonald will go a long way towards the production of a standard list of Gaelic names for plants. The Gaelic Books Council assisted with the expenses of the *Flora*. Molaim an saothar agus an taca. [I praise the labour and the support – Ed.]

There are few typographical or editorial errors though reference to a *Salicornia perennis* community on p. 39 may cause some confusion.

The authors had to deal with an unusually high number of unsatisfactory records including unsubstantiated literature records, field records not refound, student hoaxes and specimens of doubtful provenance or identification. In this matter they have adopted the role of reporters rather than commentators allowing themselves only expressions of mild scepticism or faint hope that improbable records might be confirmed. Outright dismissal is delivered at times in the words of third parties, as A. J. Wilmott's, "I don't believe it", on hearing a report of *Cerastium arcticum*. Users of the *Flora* will need to read the chapter on the history of recording and the introduction to *Potamogeton* to get a flavour of the rivalries and indiscretions which hampered progress with the Outer Hebrides flora for decades.

It would have been difficult to select from among the unconfirmed records all those which ought to be disregarded and consigned to an appendix of errors; the baby might have been thrown out with the bath water. As it is, the flora list is unsatisfactory. Further work on the confirmation or otherwise of the doubtful records is needed. A conservative view ought to be taken of what is probable or even possible in the islands.

The authors have acknowledged the considerable work done by their predecessors, notably

Professor J. W. Heslop-Harrison, Miss M. S. Campbell and A. J. Wilmott. It is their wish that the book should form a basis for a future, more detailed and comprehensive Flora. Meanwhile we are indebted to the authors and their team of workers and writers and to the Natural History Museum for an important and long overdue Flora of these fascinating islands.

D. SYNNOTT

Crucifers of Great Britain and Ireland. B.S.B.I. Handbook No. 6. T. C. G. Rich. Pp. 336. Botanical Society of the British Isles, London. 1991. Price £10 (ISBN 0-901158-20-8).

This latest of the B.S.B.I.s monographic handbooks is a worthy addition to an indispensable and acclaimed series. *Crucifers*, i.e. the family Cruciferae or Brassicaceae, covers "the 138 species most likely to be found in the field" in Britain and Ireland, and sets a high standard for future titles and revisions of earlier handbooks. Written with a blend of diligence and enthusiasm, which just occasionally merges into whimsy, it is a more substantial volume than the others, but retains a neat, compact feel in the hand. Although Tim Rich is now among our Society's more familiar figures, the B.S.B.I. was brave to commission one of its then younger members to write a handbook to this large taxonomic group. Nevertheless, the risk paid off handsomely, and nobody doubts the wisdom of the Publications Committee's decision. *Crucifers* is a most useful contribution to the literature on this family, and will be of value to all European as well as to British and Irish botanists.

The descriptions are thorough and based for the most part on living material, and under each species there are substantial observations on taxonomy, variation, ecology and, where data are available, biosystematics. A 10-page bibliography at the end reflects the author's broad study of the family. Introductory sections on taxonomy and identification are for the most part excellent. The keys to genera and species are clear and should not be too hard to follow. The very first key directs the reader to sections A-H of the main key, thus avoiding a lengthy crawl through the whole key. The main key is embellished with small line drawings of morphological features, something that I would not normally favour, but here they do not clutter and help to explain terminology to an unfamiliar reader. It is a feature that will be popular with the Field Studies Council and others who teach groups of students. Generic keys follow and there is an informal synoptic key to provide a short cut and aide-memoire. I should have liked to see more in the introductory section on the economic aspects of this important family that provides such a significant proportion of the vegetable crops, salads and arable weeds of Europe.

The coverage is thorough, with the inclusion of all native and established adventive species, together with several persistent casuals. This adds greatly to the value of the book, as it is likely that certain species will become more widespread, not least as a result of the consequences to trade of a post-1992 E.C. free market and increased contact with eastern Europe. Recent years have seen a considerable expansion of the range of *Hirschfeldia incana*, for example, in both Britain and Ireland, especially in London and Dublin where it is now rather common. Indeed, Tim Rich was the first to report its occurrence in Dublin (*Ir. Nat. J.* 22: 531-2, 1988), where too many of us had dismissed it as *Brassica nigra*. Had this present work been available, we might have been encouraged to note the seeds in the beak of the fruit! Conversely, *Camelina sativa* has decreased markedly in Britain and Ireland during this century with the decline of the flax fields which were its characteristic habitat. However, the revival of flax, or rather linseed, cultivation in Norfolk and elsewhere, together with other new crops, may perhaps lead to an increase in the frequency of this and other crucifers.

For two critical genera, the author has called on the services of other specialists. A highlight of the book is the account of *Rorippa*, including hybrids, written jointly with B. Jonsell. More controversial is the account of *Cochlearia*, by K. H. Dalby, which takes a distinctly narrow view of specific limits, albeit one closer to the view of some continental workers. Two other departures from convention, at least from *Flora Europaea* (including the as yet unpublished revision of Volume 1), are the inclusion of *Cardaria* in *Lepidium*, with the treatment of the two European subspecies of *L. draba* at specific rank, and the inclusion of *Cardaminopsis petraea* within *Arabis*. These small

matters should not upset too many botanists; synonymy is nothing new in Cruciferae, a family of economic importance that has thus been over-classified and now has too many genera!

The general appearance of the book, alas, falls down somewhat. The overall standard of the copious line drawings suffers from their being the work of a number of artists, as they vary in quality as well as style. The use of a single artist would have ensured a more consistent, professional-looking product. This ought to be borne in mind for future handbooks, since they are a flagship publication of our Society. Although the fact that the artists have provided their services free is to be applauded and the great majority of the drawings are of a high standard, the end-product may support accusations from some quarters that the B.S.B.I. is too often amateurish in its approach. The author has obviously bravely coordinated the efforts of the various artists, making sure for example that floral parts were consistently illustrated. The use of 10-km dot distribution maps has greatly enhanced the value of the later handbooks, although in this case there are rather too many maps – they are surely not necessary for rarer species – and sometimes too many symbols have been used for clarity. The numbering of the maps, based on that used for species in the text, is confusing. In many cases, I should have preferred a more detailed geographical description in the text itself.

Crucifers of Great Britain and Ireland is an essential book for the field botanist and should encourage more of us to tackle them, especially the despised 'yellow crucifers'. It would be good if this handbook were to reach a wider public, both as a standard reference and as publicity for the B.S.B.I., but the Society does maintain a rather cryptic publication policy.

J. R. AKEROYD

British Plant Communities. Vol. 1: Woodlands and scrub. Edited by J. S. Rodwell. Pp. x+395, with 25 line drawings and 25 floristic tables with accompanying distribution maps. Cambridge University Press, Cambridge. 1991. Price £70 (ISBN 0-521-23558-8).

With this book the editor presents us the first volume of a planned 5-volume series. For the authors it is the most difficult volume, since here the principles and methods must be laid out. Moreover, it also encompasses the most difficult of the plant communities, the woodlands. Already at a first brief look, it is apparent that it is scientifically a complete success, and that it is also an important work for plant sociology. That it is being reviewed by a Continental European plant sociologist indicates that it also has great value extending well beyond the British Isles. Indeed, it fills a painfully felt gap for us. Descriptive vegetation science depends in the long run on regional comparison, and until now such comparisons were difficult, if not impossible. To be sure, for Ireland and Scotland there were several individual surveys available (viz. White & Doyle, McVean & Ratcliffe, Birse), but for England and Wales, despite a wealth of synecologically and syndynamically valuable studies, a comprehensive systematic review of vegetation types was lacking. In addition, the organization of such a magnum opus is of interest, since *only* 15 years have passed since the beginning of the actual field work – a short time for an enterprise based in an inductive way on circa 35,000 vegetation relevés!

This undertaking received its initial impulse from the urgent need of nature conservation for a systematic overview of the objects to be protected, valid on a large scale and based on uniform standardized methods. Hence there was first of all a need for exactly described plant communities (vegetation types), which at the same time form the biotopes for animals. Thus it is understandable that the old discussions of methods far removed from actual practice did not break out again, rather one proceeded pragmatically – the success of the result shows that this was good. Although four universities took part, it was possible quickly to agree upon a procedure and that despite different evaluation methods, a self-consistent picture emerged. Dr J. S. Rodwell was primarily responsible for this course of events. (Here I would have liked to have learned more about the methods and techniques of the individual research groups involved.) In any case, one strived more for ecologically valid statements than for difficult mathematical algorithms – much as on the Continent. The British *modus operandi* (can one say: the modern British school?) has many features in common with this Continental school, the Braun-Blanquet concept, which today has gained worldwide acceptance. Indeed, certain passages could be incorporated in a Continental European

textbook: common principles are for example taking into account *all* species, according to their frequency of occurrence, the strict uniformity of relevé plots and last, but not least, the crucial criterion for ordering called 'frequency and abundance', which evidently corresponds quite well to the term 'Treue' of the Braun-Blanquet school. Even though no formal hierarchy was aimed for, as it turns out three categories have been introduced and proved useful: community, sub-community and variant. The parallel to associations is of course obvious. The authors then also draw parallels between groups of communities and the Continental 'Verbände'. One could now wish further to have a general survey of woodlands in the form of a table of 'Stetigkeit' or degree of presence (as we say instead of frequency).

All together, 25 communities have been described, which in turn are placed into six principal groups, the largest one being the Mixed deciduous and Oak-Birch woodlands. The greatest part of the book is dedicated to the presentation of the communities and their subunits. This is done in a consistent way throughout, in the sequence: Synonyms – Constant species (i.e. those of high degree of presence) – Rare species – Physiognomy – Sub-communities – Habitat – Zonation and succession – Distribution (inside Britain) with dot-distribution map – Affinities (also with the Continent) – Floristic table (with degree of presence and abundance). A list of literature references of around 400 items closes this work, an effort which lays out the basic aspects of the vegetation in a most exemplary way, while offering a wealth of detailed information as well.

We congratulate our British colleagues, students, nature conservationists and floristically interested active amateurs on this foundation for the plant sociology of the British Isles!

O. WILMANN

The Orchids of Suffolk: an Atlas and History. M. Sandford. Pp. 123. Suffolk Naturalists Society, Ipswich. 1991. Price £15 (ISBN 0-9508154-3-8).

Like its companion *The Butterflies of Suffolk* this is a well-produced, readable, well-illustrated and informative book. Its 123 pages cover the 32 species that have been recorded from the county, only twelve of which are now present in anything like reasonable numbers. The book also covers eight hybrids. But the book is much more than just species accounts, for there are also interesting chapters on ecology, variation, habitats, soil regions, conservation, the Suffolk Orchid Survey, and a fascinating contributed chapter by Francis Simpson on "Suffolk orchids – half a century of change" which gives us one man's historical perspective and brings out the joys of botanizing.

But it is the catalogue of species that most readers will use most and which occupied more than half the book. The accounts have detailed information on the discovery and subsequent fortunes of each species, along with ecological information, taxonomic problems, variations, as well as anecdotal snippets from older publications. The conservation status is discussed but, here and in the general chapter, the reader is faced more by a catalogue of woes rather than with ideas for the future. Even allowing for some of the more intractable problems, more could have been done to lay out the practical steps that could be taken to ensure that yet more local extinctions do not occur. Related to this, it would have served the local and wider botanical community well if a list of needed research had been included, perhaps with some idea of priority. How many more populations will disappear because we failed to understand what simple management actions were required to save them?

The reference list is complete, but the list of useful addresses is remarkable for its omission of the Nature Conservancy Council (now English Nature) and its regional offices.

It is certain that this book will encourage increased local interest in and concern for this fascinating group, and it is hoped that this will in future be reflected in improvements in their status.

A. J. WHITTEN & L. FARRELL

Recovery; a proposed programme for Britain's protected species. A. J. Whitten. Nature Conservancy Council, C.S.D. Report, No. 1098. Peterborough. 1990.

The bulk of this work is a compilation of proposals for active conservation to ensure the continued survival in the wild in Britain of each of our endangered species, and it is a mine of information about these species. For each of the 217 or so species treated, information is given on their distribution, ecology, reasons for rarity and suggested management which could increase their frequency to such an extent that the species would no longer be endangered. Each account ends with costings for the parts of each proposal; site management, translocations, enforcement, research and the monitoring which will be required over the next 15 years. The total budget required to carry out all these proposals is around £800,000 over the 15 years, at 1991 prices.

In addition to the individual species accounts, the introductory 27 pages and a series of appendices (72 pages) discuss the rationale behind the proposals and arrange the species of each category (plants, bats, Lepidoptera, etc.) in order of degree of threat, recovery potential and the budget required. English, Welsh and Scottish plants are considered separately and separate lists are also given for each habitat.

It is interesting to see how little is known about most of our native rare plants (and the majority of our common ones as well), so I strongly support Dr Whitten's appeal for more autecological studies. For most species we don't even know whether they are usually self-compatible or self-incompatible and only rarely are the conditions required for seedling establishment known. Many species appear to require disturbance and therefore active management to provide the open habitats required for seedling establishment (e.g. *Stachys alpina*, *S. germanica*, *Teucrium botrys*, *Damasonium alisma*, etc.), such disturbances naturally having been provided by large mammals, perhaps especially wild boar, a species eliminated from Britain by Man.

Gardeners may not be as surprised as Dr Whitten that some species which grow poorly in the wild grow vigorously in cultivation when they are adequately watered and competition is removed (see comment under *Carex depauperata*). Relieved from competition, many species of poor competitive ability (e.g. *Equisetum arvense*, *Poa annua*) can thrive and grow all too well.

Through pointing out the gaps in our knowledge this book should stimulate many research projects in addition to the conservation work proposed. How many of the proposals will be implemented is rather uncertain in the present political and financial climate, but it is reassuring to note that, though species-centred, the significance of habitat conservation is stressed, 'honeypots' with many rarities and great species diversity being mentioned as of particular importance.

The positive approach proposed in this work may not appeal to those who prefer 'laissez-faire' conservation, but Man has already done so much damage that many habitats and populations will never recover without active intervention. We may think the situation bad in overcrowded Britain, but it is much worse elsewhere, especially in relic communities and islands (e.g. New Zealand, see *New Scientist*, 20th April 1991). While conserving Britain's habitats, fauna and flora we must never forget our responsibility as a rich country to the rest of the world and remember that if Britain were to be wiped off the face of the Earth very few clearly distinct species would become extinct and it would make very little difference to the biodiversity of the Earth. This book is a model for similar projects throughout the world and it clearly demonstrates the value in Britain of the specialist societies and County naturalists' trusts.

With many people having been involved in the compilation, errors are bound to have crept in. On page 280 the Natterjack Toad is referred to as a "lizard". *Arabis alpina* is described as annual, though all Floras and experience show it to be perennial, and there is no mention of the fact that *Cotoneaster integerrimus* is apomictic, a major consideration when deciding how it should be propagated as it grows in the presence of other *Cotoneaster* species and is difficult to root from cuttings. These, however, are very minor criticisms. It is perhaps a pity that bryophytes are not covered as some primarily western oceanic and montane species and habitats are probably of greater world significance than any of the British populations of vascular plant or animal species dealt with here. A follow-up work on bryophytes and lichens would be welcome, though recovery would depend almost wholly on habitat management, as we have not yet developed the knowledge and skills to cultivate them.

H. A. McALLISTER