Book Reviews

A history of naturalists in North East England. Edited by A. G. Lunn. Pp. 112, with 4 pages of portraits as black & white photographs. Department of Adult Education, University of Newcastle-upon-Tyne. 1983. Price £2·00 + postage 33p (ISBN 0–9508982–0–1).

To mark the 150th anniversary of the founding of what is now the Natural History Society of Northumbria, the Department of Adult Education of the University of Newcastle arranged a series of lectures on naturalists associated with the North East over this period, most of whom had close connections with the Society. This admirable idea has now had an even more admirable outcome: revised versions of the lectures made available to a larger audience in the form of this modestly but neatly produced, commendably inexpensive booklet.

It is appropriate that it should be the North East that has set the rest of the British Isles such an example. Always outstanding for its intense regional patriotism, this has long been the home as well of much more than its fair share of able naturalists. Though marine biology has been, relatively speaking, the richest beneficiary, the late W. A. Clark has had no problem in filling 14 pages with accounts of noteworthy botanists. These include N. J. Winch, John Storey, Baker and Tate, the little-known John L. Luckley and, coming down to recent years, R. B. Cooke and George Temperley. More botanists, as well as more details of some of those whom Clark mentions, can be found in the sections on other branches of natural history. George Johnston and Robert Embleton, for example, feature mainly or solely as marine biologists; Thomas Belt is tucked away among the geologists; J. W. Heslop-Harrison receives good coverage as an entomologist as well.

The only wonder is that many publications of this kind have not been produced already, especially by local museums. It is an abiding mystery, indeed, that so many curators are content to spend their years studying and looking after collections while taking little or no interest in those responsible for forming them in the first place. As a result, opportunity after opportunity is lost of blending natural history with local history and thereby bringing together two areas of study which otherwise tend to exist in quite separate compartments. Let us hope that Newcastle has now set a trend.

D. E. ALLEN

Flora of the London area. Rodney M. Burton. Pp. xxii+225, with drawings by Graham Easy. London Natural History Society, London. 1983. Price £16.50 (ISBN 0–901009–02–4).

This is a local Flora produced in the modern format to which we have become accustomed from such works as *Sussex Plant Atlas* by P. C. Hall (1980) and *Atlas of the Kent flora* by E. G. Philp (1982), that is to say the page size is approximately 30 cm × 20 cm, and there is an illustrated cover; in this case the picture is a photograph of the Tower of London taken from a low angle through summer herbage. There are entries for 2055 numbered species, and in addition there are passing references to many more of lesser importance that have not been allocated a number. The distributions of the species are recorded on a 2-km-square basis, and dot maps are given for the majority of them.

A prime consideration for any local Flora is for it to be clear about the extent of the region with which it is concerned. In this book the area covered is precisely delimited as a 68-cornered polygon, the sides of which are boundaries of 2 km squares of the National Grid. The question immediately arises, in what sense can this area of nearly 3,500 square km, easy to delimit on an ordnance survey map but more difficult to locate on the ground since it ignores all local landmarks, be regarded as "London"? Admittedly, previous authors from William Curtis onwards have been vague about the meaning they assigned to the word. Curtis's *Flora Londinensis* (1746–1799) and Robert Sweet's *Hortus suburbanus Londinensis* (1818) both include many plants that grow wild in and around London, but neither gives precise localities. Mariano Lagasca's *Hortus siccus Londinensis* (1826–1827) is more precise and is stated to be concerned with an area of 20 miles radius, but Alexander

Irvine's *The London Flora* (1838) includes all the home counties and extends to the English Channel. Daniel Cooper in *Flora Metropolitana* (1836) and Eyre de Crespigny in *A New London Flora* (1877) are content with a radius of 30 miles. Then E. B. Bishop, R. W. Robbins and H. Spooner in *Botanical records of the London area* (1929–1936) and D. H. Kent and J. E. Lousley in *A handlist of plants of the London area* (1951–1957) worked strictly within an area of radius 20 miles from St Paul's Cathedral in the City of London. The polygon used here *approximates* to this circle, which had been adopted by the London Natural History Society as its area of study in 1914, soon after its formation in the previous year by the amalgamation of the North London Natural History Society and the City of London Entomological and Natural History Society. It extends well beyond even the inflated limits of the administrative area of Greater London. The above details and references are given here because they are not to be found in the *Flora*, where only the Kent & Lousley *Handlist* is mentioned. This is in keeping with the modern trend in local Floras (for instance, the *Atlas of the Kent flora* mentioned above), which tend, partly perhaps because of the present-day high costs of printing, to omit that kind of information about previous writers that used to be included often under the heading *Botanologia*, and keep references to previous publications to a minimum. It is a pity though that no map is given similar to that in the *Handlist* showing place-names, so as to assist the reader in orientating localities at least approximately without having on every occasion to resort to ordnance maps. The *Handlist* was also meticulous in giving the vice-county for every record, but sadly there is no mention of them in the *Flora*. But the main disadvantage of the study area is that including records for such a heterogeneous region, and thus mixing up the urban areas of the Cities of London and Westminster and the London Boroughs with rural areas in the surrounding counties, blurs the picture of the plant life of a great city. The insights shown by the author in a recent essay entitled *Wildflowers in the Capital* (*Country Life*, **174**: 1351–1355, 1983) are submerged in the *Flora* by his admittedly useful and interesting comments on plants in other types of environment. That he is conscious of this is shown in a paper on the function of a local Natural History Society in *The London Naturalist*, **62** (1983), in which he argues for computer-based storage of plant records for Greater London. In the *Flora*, however, he was committed to the study area of the London Natural History Society, since it is based on records collected by members of the Society during the period 1965–1976.

Another consideration of prime importance is the taxonomic system employed. The author has chosen to follow *Flora of the British Isles* by A. R. Clapham, T. G. Tutin & E. F. Warburg (2nd ed., 1962), when surely the revised pocket edition of this work (*Excursion Flora of the British Isles*, 3rd ed., 1981) or *Flora Europaea* (T. G. Tutin *et al.*, 1964–1980) would have been preferable. In any case many plants, mostly aliens, are recorded that are not mentioned in the *Flora of the British Isles*, and for them up-to-date names are used. A further criticism that has to be made is that the author has inappropriately made two new combinations in the genus *Amoria* (for segregates from *Trifolium*) in a note on the last page of the book, although they are not used in the text.

Many amateurs may find the author's decision to use the Clapham, Tutin & Warburg (1962) nomenclature acceptable because it is familiar to them, but whether they will like the way in which he has written the entire text as a continuous narrative is another matter. This unconventional approach has advantages, because it has made possible the inclusion of miscellaneous remarks about the identification and biology of the species listed based on wide experience and even wider reading without the restrictions imposed by a pre-determined more or less rigid format, and these are often very interesting. Useful hints on distinguishing related species are freely given, sometimes to the extent of setting out diagnostic features in tabular form (*Epilobium*) or as a dichotomous key (*Cotoneaster*). Many of the points made are further clarified by excellent drawings from the pen of Graham Easy, illustrating the leaves (e.g. *Chenopodium*), flowers (e.g. *Cerastium*), fruits (e.g. *Sisymbrium*) and whole plants (e.g. *Oxalis*) of in all 131 species. The reviewer rather likes this departure from formality, and suspects that there will be many other readers who will enjoy dipping into this book from time to time or even reading and re-reading it as if it were a novel, quite apart from looking up individual species to find particular information. Some of the formalities that have been discarded are not useless lumber, however. Authorities for names are not given in the text. Synonyms are not regularly given either, and families receive only casual occasional mention. The names of the latter do appear in running heads to the pages; but this is not very helpful, as confusions could occur. Thus, to quote but one example from many, *Dipsacus fullonum* might be thought to be a member of the Valerianaceae, as Dipsacaceae does not appear until one turns the page. Also,

families with few representatives only appear by the chances of the pagination; Azollaceae is given at the head of a page on which most of the species mentioned are conifers that are not assigned to families. The index does include families, authorities and some synonyms, but this is not a satisfactory substitute for their presence in the text.

This Flora has had a long gestation period: from 1965, when eleven years of recording began, and when that was completed another seven years until the publication of the book. Some of the reasons for delays are to be found in a lengthy account of the history and organisation of the London Natural History Society's plant mapping scheme given at the beginning. This is intended to be of assistance to future recorders and Flora writers but it is in fact advice on how to proceed in the 1960s, and the next *London Flora* is more likely to employ the data-bank techniques outlined in the author's paper on *The function of a local Natural History Society* mentioned above. Another reason for delay is the very great amount of dedicated voluntary effort that has gone into the work. The author's claim that, in spite of the publishing delay (for which he apologises) the end result is still a fair description of the present state of the flora, seems justified. Like other books of its kind it has its faults, but it stands up to comparison with them and it has its own particular virtues too. It is a worthy and worth-while account of the plant life to be found within a 20-mile radius of the City of London.

F. H. BRIGHTMAN

Collins guide to the ferns, mosses and lichens of Britain and Northern and Central Europe. Hans Martin Jahns. English edition translated and revised by E. Launert, A. Eddy and J. R. & R. J. Laundon. Pp. 272, with 655 colour photographs and 24 line drawings. Collins, London. 1983. Price £8.95 (ISBN 0–00–219254–3).

This compact book, well illustrated with excellent photographs, provides a good introduction to pteridophytes. The life cycle and variations in structure are outlined. Only two species native to Britain are not included, and hybrids (with one exception) have wisely been excluded.

Unfortunately, there are some proof errors, and the common name for *Phegopteris connectilis* (Beech Fern) is omitted. Some points are not clearly expressed, especially the distinction and relationship between 'true' ferns and allied plants (Clubmosses, Horsetails and Quillworts).

The sections on bryophytes and lichens are also very good, with the same high standard of illustrations.

J. M. CAMUS

Flowers of the wild – Ontario and the Great Lakes Region. Z. Zichmanis & J. Hodgins. 272 pp and 254 colour photos and line drawings. Oxford University Press, Toronto. 1983. Price £25·00 (ISBN 0–19–540390–8).

This is one of those very attractive books, with every evidence of the devoted concern of all those involved, which leave the reviewer asking the question "What is it for?" In these days, the term 'coffee table' has a strongly pejorative flavour, but, in many ways, this is a fair and informative description of this book, and is used here without any depreciatory intention. The main body of the book consists of two-page spreads, each devoted to a single species and including very good and well-reproduced colour photos with much less satisfactory line drawings. The latter give a reasonable impression of the general appearance of the plants but, all too often, reflect their origin from herbarium specimens rather than from life. Since most of the species depicted are common and widespread, it is far from clear why this should have been necessary. The drawings generally fail to supplement the photos in the ways that good botanical illustrations should, e.g. through enlarged details of flowers and fruit, although this function is implied in the Preface to be a feature of the book. The text by Mr Hodgins is very concise, but generally interesting and informative. Useful information is provided on the conditions needed for successful growth in cultivation, coupled with a strong conservation message that should deter thoughtless transplantation from the wild. References are given to papers where further information can be found, although some of these are

distinctly esoteric in the setting of the general level of the text. In some cases the world distribution is given under 'range', while in others the statement is confined to occurrence in North America. Thus British botanists will be surprised to find under *Cypripedium calceolus* only "Northern half of North America; throughout Ontario", while for *Potamogeton natans* mention is also made of Eurasia. Beginners, who will presumably be prominent among the users of the book, may be confused by the *Eriocaulon* inflorescences that appear in the photo of the latter, and the inclusion of an explanatory note at this point would have been a good idea. British botanists will enjoy seeing the photos of many European species that are widely naturalized in Canada, and, likewise, of species known to us as introductions growing in their native habitats. The pictures of the interesting and attractive species that have not crossed the Atlantic will encourage contemplation on the possibilities of a Canadian holiday.

In conclusion, we must return to the author's objectives in producing the book. These certainly cannot have included the publication of a practical manual for the identification of flowering plants from Ontario and the Great Lakes, since from the publisher's 'blurb' on the dust cover we learn that only 127 out of Ontario's total of nearly 2000 species are included. The best explanation comes from the preface by the Director of the Royal Ontario Museum where we find, "Believing that everyone ought to be something of an environmentalist, Zichmanis and Hodgins decided that a new book was needed to foster the appreciation that can help us make rational decisions about our natural environment". Rather an ambitious aim, but the book certainly reflects the author's own deep enjoyment and appreciation of both the aesthetic and scientific features of the plants depicted. If this comes across to readers as yet unmoved by the need to preserve the world's natural heritage, their efforts will not have been wasted. However, with the purchase price of £25, one fears that only a minute proportion of those who could benefit from this message will be reached.

J. F. M. CANNON

Flora of Connemara and the Burren. D. A. Webb & Mary J. P. Scannell. Pp. xlv+322, including 4 pages of colour plates and 25 black & white illustrations. Royal Dublin Society and Cambridge University Press, Cambridge, etc. 1983. Price £35·00 (ISBN 0–521–23395–X).

This long-awaited Flora covers what are arguably two of the most botanically popular and contrasting parts of Ireland. To the north of Galway Bay lie the rain-soaked quartzitic mountains of Connemara with its featureless glaciated coastal fringe and with the idyllic loughs of Mask and Corrib separating it from the central Irish plain to the east. South of the Bay rises the Burren, step upon step of bleak, dry limestone pavements, the best examples in north-western Europe. To the south-east the Burren hills fall away to a lowland limestone plain studded with lakes and turloughs; to the south-west the geology changes abruptly to shales and sandstones, terminating in the fine 160 m high sea-cliffs of the Cliffs of Moher.

The vascular flora of this area is very rich, comprising 82% of the native Irish species. Its interest lies in the many species which in Ireland are restricted to this area or have their headquarters there. These include such geographically disparate bed-fellows as *Hydrilla verticillata, Daboecia cantabrica, Dryas octopetala, Adiantum capillus-veneris* and *Hypericum canadense*. Also in this category are *Asplenium septentrionale* and *Arenaria norvegica*, both discovered relatively recently and new to Ireland; unfortunately the latter has never been refound. Ecological contrasts and paradoxes abound: *Eleocharis multicaulis* and *Lythrum portula* on the limestone, *Teucrium scorodonia* on shattered limestone pavement (as in north-western England), *Juncus subnodulosus* on blanket bog, *Phragmites australis* on wall-tops, and even *Glyceria declinata* on a football pitch.

This is not a comital Flora although it does happen to cover all of West Galway (v.c. H16). Otherwise it includes a substantial part of Clare (v.c. H9) and very small parts of South-east and North-east Galway (v.cs H15 & 17). The authors have divided the area into eight districts of which two transgress vice-comital boundaries, and there are no doubt instances where it is not possible to allocate species for these two districts to individual vice-counties. The first published record from the area is cited for each species irrespective of vice-county.

Professor Webb commenced recording in 1962 and was assisted over the years by many botanists, particularly visitors from Britain. The actual starting date for records in the Flora is 1959; species

unrecorded since then are relegated to small type. To gain an objective picture of the frequency of the commoner species, species lists were compiled within a radius of 400 m at four or five selected sites in each 10 km square.

The Flora has the usual brief introductory essay on the area, its geology, soil and climate, the character of the flora, the habitats, the post-glacial vegetational history (by Professor W. A. Watts) and the history of botanical investigations. The arrangement of the systematic part will be familiar to Irish readers through *An Irish Flora* (Webb 1977) but since this is essentially a Bentham & Hooker sequence it may well puzzle the younger generation of British botanists. The Flora concludes with further brief essays on various cryptogamic groups of which those on mosses and liverworts (Dr M. E. Perry) and lichens (Dr A. R. Mitchell) will be particularly useful.

Although the authors make numerous helpful taxonomic comments I should like to have seen more. The lack of help with microspecies is a failing of almost all local Floras. To present a list of 10 or 20 *Hieracia* or *Rubi* leaves the interested reader with the unpalatable alternatives of either trying to extract the necessary information from the relevant monographs or abandoning the attempt. Surprisingly, no infraspecific taxa are mentioned under *Agrostis canina* nor are hybrids or intermediates in *Betula* and *Quercus*; hybrids between *Geum urbanum* and *G. rivale* are relegated to the latter—are back-crosses to the latter commoner in Ireland? Curiously there is no mention of *Hedera hibernica* although another recent western Flora, of Cornwall (Margetts & David 1981), gives this as the only ivy. Some 'old' names are retained, intentionally (*Epilobium nerterioides*) and no doubt unintentionally (*Rubus selmeri* for *R. nemoralis*). There are interesting comments on the status of *Salix repens* subsp. *argentea*; but in discussing the problems posed by *Potamogeton pusillus* and *P. berchtoldii* there is no mention of the usually conspicuous nodal glands in the latter, nor, in the comment under *Isoetes setacea*, is the useful note by Stokoe (1978) mentioned.

The authors have taken the opportunity of correcting various errors in the *Atlas* (Perring & Walters 1962) and *Atlas of ferns* (Jermy *et al.* 1978) but appear to have overlooked the single records in the *Critical Atlas* (Perring & Sell 1968) for *Arenaria leptoclados* and *Stellaria neglecta*. *Callitriche hermaphroditica* was actually collected by Charles Bailey at Cong (v.c. H16/17) in 1885, nearly 70 years before the record cited in the Flora.

The policy towards aliens is a restrictive one, only those which appear to be effectively naturalized being admitted. The more intermittent casuals are therefore excluded, and localities are given only for the usually planted hedgerow trees and shrubs where, as in the case of *Spiraea salicifolia*, they are spreading into adjacent habitats.

The format of the Flora is very pleasing–clear and with extremely few typographical errors. The plates, however, are disappointing. Those in black & white are half-tone and consequently rather dull and lifeless, and the same is true of several of the colour plates, especially that of The Twelve Pins. I dislike the striking but garish and stylised dust-jacket but even more the exorbitant price. Here we have an excellent, attractive, informative and well-written Flora, precisely intended for visitors to these two delightful parts of Ireland and yet denied to most by the high-price and surely short-sighted policy of the Cambridge University Press. By comparison the recently published *Simpson's Flora of Suffolk* (Simpson 1982) offers nearly twice the number of pages and 20 times as many pages of colour illustrations at half the price.

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G. HALLIDAY

The Flora of Iceland. Askell Löve. Pp. 403 with numerous line drawings and 9 watercolours. Almenna Bókafélagid, Reykjavik. 1983. Price not stated.

A copy of this book was given to me shortly before setting out on a botanical holiday in Iceland, so I was extremely pleased to turn to it instead of the 1970 edition in Icelandic I had struggled with up to then. But my delight soon turned to dismay when I noticed the changed nomenclature. Where was *Veronica chamaedrys*?–under *Veronicella*. *Veronica serpyllifolium* appears as *Veronicastrum serpyllifolium* and *Veronica fruticans* as *Petrodora fruticans*; worse still, *Veronica persica* and *V. agrestis* have been placed in *Pocilla*.

These are no isolated examples as it seems the author has split any genus that could be split. Thus there is *Acetosella vulgaris* for *Rumex acetosella* (with the new combination *A. multifida* published here!), *Acetosa pratensis* for *Rumex acetosa*, *Bistorta vivipara* for *Polygonum viviparum*, *Alsine media* for *Stellaria media* (in Alsinaceae, not Caryophyllaceae), *Spergella* is split from *Sagina*, *Oberna behen* subsp. *maritima* for *Silene vulgaris* subsp. *maritima* and so on.

Nomenclatural changes are inevitable, as every taxonomist regrets; but to ignore current publications such as *Flora Europaea* and to follow one's own ideas, presumably to boost the status of the small Icelandic flora, is confusing for the students for whom it is intended. Here the author has not only changed genera but recognised as many subspecies or varieties as possible. Of course the keys and descriptions are useful, but it is a pity there are no extra-Iceland distributions. There is also an illustration of every species, although enlargements of the diagnostic features would have been helpful. All in all, therefore, if you can wait for the forthcoming publication of the revised edition of Stefánsson's Flora, I think it will be a better buy.

F. N. HEPPER

Plant collecting and herbarium development: a manual. J. S. Womersley. Pp. 137. Food and Agriculture Organisation of the United Nations, Rome. 1981. (FAO Plant Production and Protection Paper 33). Price not stated (ISBN 92–5–101144–3).

This excellent manual, written by a former Director of the Botanic Garden and Herbarium (Department of Forestry, Division of Botany), Lae, Papua New Guinea, is designed for those setting up or administering a herbarium in developing countries but contains much of interest to all in the U.K. who visit such countries as part of university or other expeditions.

The first chapter, on field collecting, outlines the basic techniques and emphasised the kinds of information that should be written on the label. We are reminded that the minimum number of specimens of any gathering is two–one of them being left behind in the host country. Chapter II describes the preservation of specimens from drying or by chemical means. A number of chapters that follow are on: the function and organization of a herbarium; processing herbarium collections (distribution, fumigation, mounting, etc); herbarium curation (storage, filing systems, scientific work in herbaria), and ancillary services (photography, artists, library and culture). Appendices give instructions (written by specialist taxonomists with experience in field collecting) on particular groups (*Pandanus*, bananas, palms, bamboos, aroids and aquatic plants).

It is difficult to fault this book. It is written by one whose experience, though wide, is mainly based on working in the tropics, and wet tropics at that. It is also written for other tropical herbaria or government research institutes. It will, and does, therefore lack hints on Mediterranean collecting or tips on arctic tundra. However, it should be on the shelves of all universities and read by those whose research involves collecting and herbaria.

A. C. JERMY

Man's impact on vegetation. Geobotany 5. Edited by W. Holzner, M. J. A. Werger & I. Ikusima. Pp. xii+370, with frontispiece of Makoto Numata (in whose honour the volume is edited) and

numerous text figures and black & white plates. Dr. W. Junk Publishers, The Hague, Boston & London. 1983. Price Dfl 225·00 (ISBN 90–6193–685–3).

As the fifth in a series of compilation volumes, dealing with the broad aspect of geobotany, *Man's impact on vegetation* contains a stimulating collection of papers and essays, concentrating on the relevance of the human factor in ecological studies. The 27 papers are broadly divided into two sections; part one covers the more general aspects of man's impact on vegetation, while the majority of the work in part two, is devoted to his effect on the various vegetational zones. Examples are taken from a wide range of countries, but have a slight bias towards Europe and Japan. The similarities in man's treatment and the subsequent effect on vegetation, between these two countries, may surprise the reader who has previously concentrated on the British and European ecological literature. In the final chapter (pp. 341–357), Holzner compares the anthropogenic effect in Japan and Central Europe of denudation of primeval forest, afforestation by (often non-native) conifers, and coppiced forests, and the relationship between hunting and the increase in grassland and heathland (cf. Hara in Japan). He concludes that human impact generally keeps vegetation in the early stages of succession.

Not only do the papers summarize the history of dramatic vegetational change on a global scale, they also discuss the future effect of man on species diversity, as, for example, the one by Peet *et al.* (pp. 41–54). Sadly, the most seriously affected vegetation zone – the "humid tropical forest" – is discussed in detail in only one out of the 27 papers (Boerboom & Wiersum, pp. 83–106). It seems that although man has inhabited the forests since prehistoric times without affecting them greatly, the present rate of his impact, in terms of forest conversion, is estimated at between 120,000 and 245,000 km^2 per year.

Although it is not possible to do justice to all the excellent papers contained in this volume, I commend it to all who are interested in ecology, at whatever level.

S. G. KNEES

Elm. R. H. Richens. Pp. xii+347, with black & white frontispiece and 152 text-figures. Cambridge University Press, Cambridge. 1983. Price £35·00 (ISBN 0–521–24916–3).

The first impression of this book created by the noble English Elms on the dust jacket is favourable, so that one turns eagerly to see what is presented inside. A short introduction introduces the reader to some of the principal kinds of elm found in England, with figures of their habits. Then follows a chapter on botany, in which the author explains his biometrical research on elms. Seven measurements of the sub-apical leaves of the short shoots were used: the length, the length/breadth ratio, a ratio to define the degree of asymmetry of the leaf, the length and breadth of the principal teeth, the leaf stalk/leaf length ratio and the total number of major and minor teeth around the leaf margin. None of these criteria is critical for the determination of species. No measurements were made of the critical curvatures of the basal lobes of the leaf or of the curvature of the shoulder and leaf apex. The use of the computer appears to give an air of scientific finality to the analysis, but when no critical data are fed in, no critical conclusions can come out. The result is that the author can recognise only two species, one genuine (*Ulmus glabra* Huds.) and the Field Elm (*U. minor* sensu Richens), which is a conglomeration. In discussing botanical classification, after the two elms of Theophrastus (both regarded by Richens as Field Elm) and the two of Columella (perhaps distinct), little progress was made until Johnson's edition of Gerard's Herball (1633), and then again little until the reviewer began his study of elms in 1935. References to the elms referred to the Field Elm are given in an appendix. So Richens emerges as a super-lumper, turning full circle back to Columella. His computer segregates consist of species surrounded by a variable halo of hybrid forms, which obscure the true limits of the species and make a mockery of taxonomy.

A discussion of the pre-history of the elms leads to the assumption that the Wych Elm is the only one that reached England by natural migration in post-glacial times. The deduction follows that all the 'Field Elms' have been introduced by man; and this leads on to a study of the vernacular names of elms and an attempt to link them with the meagre evidence on the human settlement of Britain. This approach lies behind the detailed, county by county, discussion of elm distribution which occupies a

quarter of the book. One is left with a mental picture of Bronze Age warriors carrying little rooted elm suckers into an elm-infested Britain in an operation equivalent to 'carrying coals to Newcastle'. The misconceived biometrical technique has led to the collection of much historical information that was not readily available; and there are chapters on the utilization of elm products and on the elm in literature and art.

R. MELVILLE

A Checklist of the Flora of Cambridgeshire. G. Crompton & H. L. K. Whitehouse in collaboration wth G. M. S. Easy & A. C. Leslie. Pp. 95, with 16 maps and 7 lines drawings. Cambridge University, Cambridge. 1983. Price £5·50.

To be asked to review the successor to a Flora one helped to produce 20 years ago is an uncomfortable reminder of advancing years; this *Checklist* is also a reminder of the rate of change of our flora and the rate of accumulation of knowledge these days.

Several thousand new 10 km square records have been added to those included in the 1964 *Flora of Cambridgeshire*, whilst the list of species has been considerably enlarged, particularly with aliens, which are the forte of Graham Easy. In addition, using an objective assessment and Mrs Crompton's wide knowledge of eastern England, any species rare in Country or County has been indicated, providing both a stimulus for search (amongst critical taxa) and a warning of the number of species which are now threatened, including a group of cornfield weeds (such as *Fumaria densiflora*, *F. vaillantii* and *Galium tricornutum*) which were still quite widespread when 10 km mapping was at its height in the 1950s.

The *Checklist*, as did the 1964 Flora, embraces the bryophytes, and the obviously ageless Harold Whitehouse is again the editor responsible. He reports some remarkable 'natural' changes – notably the colonization of Wicken Fen by calcifuge species. The first records were made in 1963 just in time to be added to the *Flora* in proof, but since then Alan Leslie and others have added over 40 species, some more than 100 miles from their nearest locality.

But this *Checklist* is more than just an update of the *Flora*: it includes a completely new feature – a definitive description (with maps) of the vice-county boundaries of this much-altered county – invaluable not only to v.c. 29 addicts but to mappers and recorders in the eight adjacent vice-counties. It also includes a few distinct illustrations by Graham Easy, apparently chosen to fill spaces but with useful diagnoses covering particularly *Muscari*, *Solanum* and *Symphytum* (when can we have an Easy Guide to Unusual Wildflowers?).

The only criticism I have of this compact and handy list is the decision to present species in alphabetical order using the nomenclature of *Flora Europaea* and the *Excursion Flora, 3rd ed.* The *Checklist* is in effect a super-supplement to the 1964 Flora, and as such it woud be easier for the reader to study the two together had the order in the *Checklist* been identical with that of its predecessor – and how will it relate to the new *Flora*, for which the authors too modestly describe it as a working document for use by recorders? This *Checklist* should certainly not be as ephemeral as that description implies and deserves to stand in line with the six *Floras* of the County which have preceded it since 1660, together providing probably the most complete account of changes in plant distribution in any area of the world.

F. H. PERRING

Outline of plant classification. Sandra Holmes Pp. viii+181, with 7 diagrams. Longman, London, New York. 1983. Price £8·50 (ISBN 0–582–44648–1).

At a time when ideas about the classification of the major groups of plants seem to be undergoing almost continuous change, it may seem unwise, if not pointless, to publish a conspectus of that classification. On the other hand, precisely because of these changes it is difficult to obtain an overall view of the subject that would enable one to decide (for example) which classification(s) to use in classwork. Sandra Holmes has provided a most useful conspectus of the plant kingdom (including

the bacteria, blue-green algae and fungi), using the correct suffixes (*-phyta*=division or kingdom, *-opsida*=class, etc.) systematically throughout. For each plant group she has had to choose one scheme of classification from several possible ones, but she always shows at least some alternative views. For each taxon (class, order, etc.) she gives a concise summary of its characters and cites one or more of its members.

Whilst I would recommend this book to anyone who requires a clear 'standard' classification with alternatives, I must mention some caveats. The author admits that the system adopted is not necessarily the most natural one (which has still to be discovered), but claims that the groups are familiar and easy to handle. This seems to be so in the lower plants; but when she comes to the Angiosperms (Spermatophyta), she has adopted a system "based on Cronquist and Takhtajan", comparing it with those of Bentham & Hooker and Engler & Prantl. There is no mention (even indirectly) of the currently competing systems of Thorne and Dahlgren; the Dilleniales (for example) stand next to the Paeoniales as if the natural proximity of these obviously very disparate orders had been established once and for all. As regards the Dilleniales themselves, Miss Holmes has not adopted the latest version of Cronquist's classification; she includes the Crossosomataceae in that order, whereas Cronquist now follows Thorne in placing the family in the Rosales (with reservations). The potential reader should also be warned that this book cannot be used as a key because the short descriptions (particularly those of flowering plant orders) are not diagnostic.

Despite these reservations, however, this is a book that should be present on the shelves of many botanists, both professional and amateur.

N. K. B. ROBSON

Palaeobotany and the evolution of plants. Wilson N. Stewart. Pp. 405, with 320 text figures and 9 charts. Cambridge University Press, Cambridge. 1983. Price £17·50 (ISBN 0–521–23315–1).

Although the main topics of this book are not strictly relevant to the interests of the B.S.B.I., it is well worth drawing to the attention of members who are interested in plant evolution in general and angiosperm evolution in particular. The author gives a full review of the fossil evidence for plant evolution and the theories related to it. In particular, there is a very good penultimate chapter on 'The origin and early evolution of angiosperms', bringing the subject right up to date with a discussion of the evidence from the Glossopteridales.

N. K. B. ROBSON

Provisional atlas and catalogue of British Museum (Natural History) specimens of the Characeae. Compiled by J. A. Moore & D. M. Greene. Pp. 121, with 48 distribution maps. Biological Records Centre, Monks Wood Experimental Station, Huntingdon. 1983. Price £6·35 (ISBN 0904282732).

In a year which saw the beginnings of a campaign to improve the conservation of 'The Water's Edge' it is most fitting that we should be given an up-to-date and authoritative statement of the distribution of the British charophytes. The charophytes, that taxon of algae adopted many years ago by field botanists, comprises a fascinating range of species found in a range of aquatic habitats, many of which are threatened by drainage and other interferences by man.

After a brief introduction to the history of charophyte collections and an explanation as to the compilation of the data, the maps and catalogue are presented. 4,307 records have been amassed of which 2,711 are based on British Museum specimens; they are represented on the maps in their respective 10 km squares and allocated to 30-year periods beginning with a pre-1899 period. The catalogue of British Museum (Natural History) specimens provides a computer print-out of a range of data including date of collection, locality and, where known, habitat. Both atlas and catalogue are easy to use.

This publication will be a valuable aid to anyone who takes it upon himself to explore some of the many gaps which the maps reveal exist in our knowledge of this oft-neglected plant group.

P. M. WADE

The conservation and development programme for the UK. A response to the World Conservation Strategy. An overview – Resourceful Britain. B. Johnson. Pp. 104. Kogan Page Ltd., London. 1983. Price £7·95 (ISBN 0–85038–768–X).
The conservation and development programme for the UK. A response to the World Conservation Strategy. Pp. 496. Price £14·95 (ISBN 0–85038–746–9).

In 1980 the International Union for Conservation of Nature and Natural Resources (I.U.C.N.) invited six sponsors to organize a U.K. response to the World Conservation Strategy (I.U.C.N., 1980). The second of these two volumes is that response, probably the most extensive programme ever undertaken in the U.K. on environmental and conservation issues. The first volume is an attempt by Brian Johnson to produce an overview of the response.

The sponsors, World Wildlife Fund UK, the Nature Conservancy Council, the Countryside Commission, the Countryside Commission for Scotland, the Council for Environmental Conservation and the Royal Society of Arts commissioned seven reports on the industrial, urban, rural, marine and coastal, international, ethical and educational aspects of the response. An author advised by a review group of professionals and practising experts produced a report, each report appearing as a 'part' in the main volume. Before final publication 8,000 copies of the reports were circulated for consultation and debate. The breadth of experience which has gone into the preparation of the response is impressive. Part 3, 'Putting trust in the countryside', written by Professor T. O'Riordan, covers the sustainable utilization of rural resources, discussing why this is not occurring at the present time and making recommendations to ensure that future rural development is ecologically sustainable. The report contains a lot of interesting and pertinent information which is carefully used to provide an understanding of the conflicts and imbalances existing in our countryside, leading to the synthesis of solutions for the future. Other reports are not as impressively thorough: part 7, 'Education for commitment', for example, was not tackled in similar depth, and the recommendations, although on the face of it apparently sound, are not based on such a substantial foundation.

The differing approaches and styles of writing help to make the book more readable, but in most parts it is heavy going: part 2, 'The livable city' took over four hours to read and comprehend. The absence of any overall editing makes for much repetition. More infuriating still, the book is very difficult to use. There is no index, no lists of tables, figures or references.

The overview in contrast is a much more readable and stimulating text, but it is presented rather as Brian Johnson's overview than as an integrated summary. As such a vital aspect of the programme – it is in this book that the overall recommendations are made – it lacks the weight of its companion volume.

My main disappointment with these books is that all the hard work and time could so easily be wasted. The overview provides a good starting point for discussion on the integration and restructuring which the whole programme will need, a fact recognized in the individual reports: how will this be achieved? The programme has also to be put into action, an emphasis of the World Conservation Strategy. Although the seven 'parts' make in excess of 160 recommendations, no grand action plan is included and the programme fails to kindle the fire which will be vital to its success.

These two volumes provide an extensive and in most parts authoritative and interesting conservation and development programme for the U.K. As books to use, they will, I fear not become signposts to further programmes and to action, but rather milestones on the bookshelves of university and polytechnic libraries.

REFERENCE

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES (1980). *World Conservation Strategy*. I.U.C.N., Switzerland.

P. M. WADE

Double flowers, a scientific study. Joan Reynolds & John Tampion. Pp. 183, with line-drawings and photographs. Polytechnic of Central London Press, Pembridge Press. 1983. £9·75 (ISBN 0–86206–004–4).

"There are many areas of study where elucidation of the abnormal aids the understanding of the normal" (say the authors of this book on p. 23). This is the basis of much experimental biology, in which the abnormality is induced. Sometimes the abnormal occurs spontaneously, as with doubleness in flowers, and its study can be equally valuable.

This book reveals the morphological and developmental details of double flowers in the genera *Aquilegia, Petunia* and, less fully, *Narcissus*, and of double capitula in *Calendula*. These are studies carried out by the first author for a Ph.D. thesis.

Introductory chapters deal with history, double flowers in the wild (English names of British plants known to have produced 'doubles'), commercial growing, genetical aspects and physiology, as well as a classification of double flowers which looks useful (though I cannot see the difference between classes Id and IIId). An appendix lists all known species and hybrid groups in which double flowers are known, giving the type of doubleness according to the authors' classification.

The authors acknowledge that this book is only "a signpost to others", but I feel that in the space available they could have presented the problems more clearly and discussed them more rigorously. Interesting topics loom up and melt away; no synthesis of the subject is achieved. There is much repetition, and the book occasionally lurches away from its elementary vocabulary to a highly specialized one. Misprints and mis-spellings are frequent. The book will be useful in its signpost function and for the 'map of the territory' embodied in the references, but I found it a disappointment on the whole.

The publishers have not allowed full-stops for abbreviations except initial letters of generic names and, sporadically, authorities for names of plants (look at the effect in the references!). I regret that an academic publisher can be so enslaved by fashion.

P. F. YEO