Book Reviews

Biological survey need & network. Report of a Working Party set up by the Linnean Society of London. Chairman R. J. Berry. Pp. 48. PNL Press. 1988. Price £2 (ISBN 1–85377–006–X).

This report discusses the problems facing biological recording in the British Isles, particularly the lack of co-ordination amongst the various bodies: local and national, statutary and voluntary who undertake biological surveys. In brief chapters it covers the nature and aims of biological surveys; their history, including an international perspective; the users of biological records; technical problems; the current situation; conclusions and recommendations.

Members of the B.S.B.I. currently contributing to the update of the *Atlas* may be most interested in the historical review. The past successes, most notably the original B.S.B.I. *Atlas of the British flora* and Supplement, and the British Trust for Ornithology atlases, stem from clear goals (the publications) and a dedicated and dynamic group of individuals driving towards those goals. By contrast, the failures seem characterized by conferences, seminars and reports making important sounding resolutions, mostly requiring large inputs of money, which are rarely carried through. Unfortunately, this report appears to fall within this latter class, although events in the next few years should be the real judge.

The central weakness of the report seems, to me, to be the failure to clearly spell out exactly how (and why) the proposed multi-tiered, fully co-ordinated system of records centres will address the central issue, that is, how to give an effective service to users (especially Local Authorities). Until this is done I fear any calls for cash will fall on deaf ears.

A. S. Gunn

Poisonous plants and fungi: an illustrated guide. M. R. Cooper & A. W. Johnson. Pp. 134 with 101 colour plates. H.M.S.O., London. 1988. Price £8.95 (ISBN 0–11–242718–9).

Over the years the Ministry of Agriculture and Fisheries (and now including Food) have published a number of books and Bulletins dealing with plants that have caused symptoms of poisoning – and often death – in animals. The present reviewer recalls reviewing *British Poisonous Plants*, (Bulletin No. 161 of the M. A. F.) in 1955. The present book also includes fungi. All the publications have referred not only to the effects of toxic plants on animals but also their possible effect on people and this book is no exception.

In a sense all plants are poisonous to all animals and to all people; it depends upon the quantity consumed. It should not be assumed that whenever side-effects appear to any person that the particular plant responsible should be described as a poisonous one. This is only mentioned because the common onion *Allium cepa* is listed among the more important poisonous plants. There is no doubt that feeding large quantities of onion waste to farm animals can cause poisoning, although different animals respond in different ways to similar quantities of any plant.

People generally consider plants or plant parts as poisonous when the consumption of only a very small amount can prove deleterious and the book names these (but includes the onion) in a different list from those which are considered to be less poisonous. Thus there are the well-known poisonous plants such as Black Bryony, Deadly Nightshade, Dog's Mercury, Hemlock Water Dropwort, Mezereon, Ragwort and Yew to mention only a few in the main list. Altogether the authors list 100, describe the plants, and discuss the symptoms to which they give rise as well as indicating the best way of treating the animal or person involved.

Then there is an annotated list of 166 plants which are considered to be less poisonous. The book also contains descriptions of 22 fungi which can produce symptoms of poisoning; like some of the higher plants these can easily lead to death if large quantities are consumed, although with certain plants and fungi the amount can be quite small. There is an annotated list of another 15 fungi which can be harmful.

The book includes a number of good colour photographs of the plants and fungi most likely to be

mistaken for others and it is only possible to criticize one of them – that of Hemlock, because it cannot be distinguished from any other Umbellifer. A closeup showing the purple patches on the stems would have been a better guide for purposes of identification.

It is a very useful book for all those likely to encounter problems of poisoning by plants and fungi to have at their finger tips.

E. J. SHELLARD

The Irish Red Data Book: 1. Vascular plants. T. G. F. Curtis & H. N. McGough. Pp. 168 with 4 colour plates. Published by Stationery Office, Dublin, for Wildlife Service, Ireland. 1988. Price IR£7 (ISBN 0–7076–0032–4).

In recent years Red Data Books have become a familiar weapon in the armoury of conservationists. The inclusion in a Red Data Book of the rarest and most vulnerable species confers upon them a cachet which can usefully be invoked when the species themselves, or the sites where they grow, are threatened. The vascular plants of Great Britain were treated in the Red Data Book compiled by F. H. Perring and L. Farrell (1977, 1983); this volume is a complementary publication covering Ireland.

Native and naturalized species are placed on the Irish 'Red List' if they have been recorded since 1970 in ten or fewer 10-km squares in Ireland or if they are considered by the Council of Europe (1983) as threatened in Europe as a whole. Species which have disappeared from 66% or more of their known 10-km squares are also said to have been considered for inclusion, but none of the plants listed qualifies on this criterion alone. The authors appear to have been thorough in their research into known records, although *Parapholis incurva* and *Trifolium occidentale*, recently added to the Irish flora, are unaccountably omitted. However they have clearly been handicapped by the absence of recent records of montane plants, and of species such as *Erigeron acer* and *Hypericum hirsutum* which grow in relatively uninteresting localities. There is still plenty of scope for fieldwork to establish the current distribution of such species.

The individual species are listed in habitat groups. Species accounts are closely modelled on those in the *British Red Data Book*, usually containing a descriptive phrase and a brief summary of habitat and past and present distribution. In addition to the Red List species, species which are or were formerly legally protected in Northern Ireland or the Republic are included. Where the reasons for the apparent decline of a species are mysterious the authors have wisely confessed their ignorance. Distribution maps of 28 selected species are presented at the back of the book. These show old records as white crosses on a black background, a symbol which is both amusing and effective, but are marred by a horribly fuzzy coastline. The appearance of the *Irish Red Data Book* is more attractive than that of its British counterpart and it certainly benefits from the inclusion of four colour plates.

Curtis and McGough conclude that conservation of the Irish flora is still in its infancy, handicapped by a lack of environmental awareness, little interest in the conservation of rare and threatened species and little available funding – remarkably outspoken sentiments for a government publication! They could, however, have pointed to some encouraging public attitudes upon which conservationists might be able to build. Almost everyone in Ireland seems to know about the Burren, and one hopes that the current campaign to save the remaining Irish bogs might bring about a similar appreciation of their importance. The popularity of angling has led to a concern about water quality which must be as great in Ireland as anywhere in Europe. Education is needed to expand these areas of public concern, and pressure must be exerted to persuade politicians to translate existing concern into effective action. The *Irish Red Data Book* should play an important role in bringing home to legislators their responsibility for plant conservation.

C. D. PRESTON

The evolution and classification of flowering plants. A. Cronquist. Second edition. Pp. x + 556. New York Botanical Garden, New York. 1988. Price $46.80 (ISBN 0–89327–332–5).

A second edition of Cronquist's book is a major event in botanical publication as it updates the 1968 edition incorporating the scheme of his monumental *An integrated system of classification of flowering plants* (1981) and deals with modern schools of taxonomic thought in the context of all angiosperms ('flowering plants'). Compared with the first edition the text is 150 pages longer and is more closely printed; the first chapter on taxonomic principles is replaced by three – 'nature of taxonomy', 'species and infraspecific taxa' and 'speciation', tripling the number of pages devoted to this part, while the chapters on the origin of the angiosperms and the evolution of characters are doubled in size.

"The book presents taxonomy as seen by Cronquist" (p. vii), "I make no pretense of equal time for opposing views. For other points of view, read other authors". The book, then, is inevitably very American, with Bessey as the prophet and a number of 'principles' attributed to Americans: Ownbey's Principle (the presence of a structure of substance is more likely to be important than its absence) and McVaugh's Principle ("any segregate genus should be sharply delimited; that is, any species which is intermediate in one or more respects toward a more inclusive genus should be relegated to the latter . . ."). The American bias in the book must be invoked to explain the failure to cite S. M. Walters' masterly 'The shaping of angiosperm taxonomy' (*New Phytologist* **60**: 74–84, 1961) when discussing folk taxonomies, or Clayton & Renvoize, *Genera graminum* (1986), when so many recent works are listed. More seriously, perhaps, European botanists will be dismayed by the revival of the variety as *the* infraspecific taxon in the way that zoologists use it. Some British botanists may be disappointed by the scorn poured on work on microspecies "in such genera as *Taraxacum* and *Hieracium*, producing utter taxonomic confusion. Such treatments are simply not useful in understanding and communicating the pattern of diversity in nature, and not many of us take them seriously any more". Generally commonsensical and nearly always pragmatic, the author sometimes slips into garrulousness and slang: "the idea needs to be batted around a bit more" (p. 134), "My gut reaction? Gondwanaland" (p. 154), "We should realize that the game [the recognition of character polarity] is crooked, but also that it is the only game in town" (p. 163).

As to be expected from the author's writings on the subject, here is a vigorous attack on cladists, largely based on his paper in *Botanical Review* **53**: 1–52 (1987), arguing the case for an all-purpose classification rather than one based on hoped-for strictly monophyletic units. The arguments set out in the responses to his paper (*Botanical Review* **54**: 2 (1988) especially that in Humphries and Chappil, p. 139), are not really addressed. One is reminded of the resistance to the Natural System of classification put up by Sir James Edward Smith at the beginning of the last century. It is the stability of names and the recognition of variability in species, genera and, at a pinch, families which are important to the ordinary botanist and impinge on general biology.

Although Cronquist denies absolute monophylesis for the angiosperms, he finds it useful to talk of a hypothetical primitive angiosperm in determining the polarity of character-states. 'Possible ancestors' are examined as in 1968; the recent favourite 'sister-group', the Gnetopsida, is considered as a parallel development arising from some cycad-like ancestry; and Caytoniales emerge as clear favourites. Unlike Stebbins (1974) – see *New Phytologist* **77**: 527 (1977) – who completely misinterpreted it, Cronquist gives credit to that most ecological of theories, the Durian theory of Corner. Just as in 1968, he rather wistfully notes of that theory "the taxonomic consequences have not yet been fully evaluated". And so we find (p. 174) that "palms very probably have a herbaceous ancestry", clinging to the concept that they are different from 'typical trees', and atypical trees such as *Phytolacca dioica*, a familiar shade-tree in the Mediterranean, are derived from herbs. From the concept of the 'typical' tree (what were *its* ancestors like?) it is inevitable that woody Compositae are secondary and monocotyledons have an aquatic ancestry so that it becomes necessary to deal with fossil evidence as follows (p. 451): "The first modern family of monocots to be clearly represented in the fossil record is the Arecaceae (subclass Arecidae) . . . but palms are surely not primitive monocots". In beginning to 'fully evaluate' the Durian Theory readers should see Corner's 'The palm' (pp. 116–122 in T. T. P. Gunawardana *et al.* (1980), *P. E. P. Deraniyagala Commemoration Volume*).

The bulk of the volume outlines Cronquist's classification as in the first edition modified by recent work, particularly his 1981 text, though compared with that, Nothofagaceae are segregated from Fagaceae; following Takhatajan, Cronquist now recognizes Physenaceae (formerly in Capparidaceae) and suggests the family belongs with Hamamelidae; *Tepuianthus* (Tepuianthaceae), described in 1981, is put in Celastrales and not Sapindales suggested by its describers; recent work in

Myrtales is followed, in that Rhynchocalycaceae and Alzateaceae are recognized; though Cronquist submerges Nyssaceae in a broadly defined Cornaceae and a broad concept of Liliaceae is maintained, a broad view of Loganiaceae (including Buddlejaceae, Retziaceae) is not followed; Acoraceae are segregated from Araceae but Ptaeroxylaceae and Morinaceae recognized by recent monographers are not upheld. Cronquist still keeps Barclayaceae out of Nymphaeaceae, Cuscutaceae out of Convolvulaceae and Hippocrateaceae out of Celastraceae. The volume, well-printed and bound and remarkably free of printing errors, closes with a glossary, brief appendix, good index and geological time-scale. The book is a remarkable synthesis and, despite its self-admitted partiality and idiosyncrasies, will become a standard text.

D. J. MABBERLEY

Kew Index for 1987. Compiled by R. A. Davies & K. M. Lloyd. Pp. vi + 168. Clarendon Press, Oxford. 1988. Price £17.50 (ISBN 0–19–854245–3).

The decision to publish an annual supplement to *Index Kewensis* took effect in 1986, and this is the second such compilation. It includes names published at all taxonomic ranks at and below the level of family; names ranking higher than genus are arranged separately on the first two pages of this volume. An appendix on Pteridophyta occupies pages 161–168. In this section no family names are given against the genera, unlike the treatment in the main section, reflecting the slight difference in format between *Index Filicum* and *Index Kewensis*.

The production of annual supplements will further reduce the risk of publishing a name which has already been taken up, as well as helping to make revisions more up-to-date and comprehensive. There remains a need for a cumulative *Index Kewensis*, however, if only because the task of searching through the ever-increasing number of supplements becomes ever more tedious. Perhaps the advent of affordable micro-computers with large capacity hard disk storage will prompt the Kew Trustees to make it possible for every taxonomist's desk-top computer to have access to such a database.

J. R. EDMONDSON

Brambles of the British Isles. E. S. Edees & A. Newton. Edited by D. H. Kent. Pp. viii + 377 + 98 black & white plates, with 249 distribution maps. The Ray Society, London. 1988. Price £50 (ISBN 0–903874–20–2).

Following on from the works on British brambles by W. M. Rogers (1900) and W. C. R. Watson (1958), this book is by far the most important milestone in research into this difficult genus. It was originally planned as an account to be included in a new British Flora, but it is now being published as a separate work due to the support of the Ray Society. In comparison with Watson who produced an inadequate piece of work much influenced by H. Sudre's *Rubi Europae* (1908–13), this book takes an important step forwards. Only about half of the species and names which Watson presented could be kept. The rest proved to be mostly an incorrect identification of British brambles with continental species – a practice from which British batology has suffered from the very beginning. However, batology in Britain has now achieved an enviable level as a result of Edees and Newton's book which is the outcome of decades of investigation. Unlike earlier treatments, this book concentrates on the study of type specimens and thus puts the taxonomy and nomenclature on a secure basis for the first time.

After some introductory chapters on British batology, the geography and ecology of brambles, the individual species are treated partly systematically and partly – within each series – in alphabetical order. The type is given for almost every species with numerous taxa being lectotypified for the first time (mainly by A. Newton) although, unfortunately, some lectotypifications which have already been published are not considered at this point. Each species is described, mainly by E. S. Edees, in an exemplary fashion with a statistical elaboration of the distinctive features ("prickles 5–12 per 5 cm" instead of the indications which were previously often used like "prickles rather few") and, in addition, contrasted with similar species via diagnostic characters. 98 species are represented in photographs of well chosen herbarium specimens with additional close-up

photographs; the reader is directed to illustrations in other works for the remaining species. In addition to information as to habitat and ecology, distribution is shown by numerous dot maps (as in Perring & Sell's *Atlas*). The editor D. H. Kent has added a useful glossary. The keys give a guide which passes from the sections and series on to the individual species. This is a little unfortunate as those infrageneric taxa are not precisely contrasted with one another and can only be differentiated by impractical characteristics which are sometimes not evident at the time of collection (e.g. "stems rooting at tips in autumn").

All the taxa which have been validly published as species in Britain are treated even if they are only known from the type locality. Such biotypes can, however, hardly be considered as species within an apomictic complex. There must be thousands of those individual morphotypes in Britain which have developed from facultative hybridization and segregation – on the continent they run into millions. A taxonomic treatment of all these individual or local biotypes would serve to take batology *ad absurdum*.

Altogether, more than 300 species are treated, of which approximately 70% are endemic to Britain. If plants with a local distribution as yet undescribed were to be included, then the number would be above 500, as the authors reveal. Yet, for very good reasons, the taxonomic validation of these plants was not attempted.

The systematic arrangement and differentiation into "local", "regional" and "widespread" species adheres to the usual practice on the continent. Although an almost perfect consensus between British and continental batology has now been achieved, there are still a few exceptions. Thus the plant described as "*Rubus scissus*" with bluntly angled glabrous stems and dark prickles would really be *R. scissoides* according to continental opinion. However, the true *R. scissus* with sharply angled, (often densely) hairy stems and yellowish prickles occurs in England too. The British "*R. rhombifolius*" is markedly different in its nearly glabrous stems, leaves glabrous above and hairy anthers from the true *R. rhombifolius* which has a regional distribution in Germany. Furthermore, the synonymy of *R. procerus* (correct name *R. praecox* Bertoloni) and *R. armeniacus* (only this occurs in Britain) is not accepted in continental batology. However, these and some others are minor criticisms which scarcely carry any weight.

The layout and print-quality of the book are excellent. Research into the genus *Rubus* has now been brought to a temporary conclusion in Britain due to this absolutely thorough treatment. In contrast to all the earlier extensive portrayals of the *Rubus* flora of Britain, Edees and Newton have the honour of having produced a work which, for the first time, mirrors reality so that it provides a sound basis now and for further research into this interesting group of plants.

H. E. Weber

Vegetation ecology of central Europe. H. Ellenberg. 4th edition. Pp. xxii + 731, with 499 text figures and 130 tables. Cambridge University Press, Cambridge. 1988. Price £75 (ISBN 0–521–2342–8).

This first English translation of Ellenberg's classic work *Vegetation Mitteleuropas mit dem Alpen* is long overdue and greatly to be welcomed. One of the most important books on vegetation ever written, this translation is of the fourth edition, dated 1986, so is well up-to-date. Ellenberg defines "Central Europe" as Germany (East and West), Poland, Czechoslovakia, Austria, Switzerland, Luxembourg and Denmark, plus adjacent areas of Europe as appropriate. After an introduction to the vegetation of central Europe in general, encompassing climatic effects, vegetational history and the life forms and structural types, Ellenberg considers the influence of man in the moulding of vegetation as we see it, taking into account grazing and forest clearance, management of woodlands, effects of agricultural practice and finally an up-to-date summary of the effects of pollution.

Ellenberg then describes the vegetation of central Europe in a broadly phytosociological way, dealing first with the more natural types, woodland and scrub, mires, dunes, mountain vegetation, before moving on to vegetation largely owing its existence to man's activities, such as grassland, dwarf shrub heaths, forestry plantations, weed communities and vegetation of abandoned land. To suggest that the book merely gives a phytosociological account of the vegetation would be to commit a grave injustice, for the book is much more than that. It is an integration of almost all that is known about the vegetation, covering geographic range and variability in species composition, relationships to controlling ecological factors such as climate, geology and soils, the dynamics of the species

relationship within the vegetation, the eco-physiology of the component species, the impact of man and other animals and even the effects of fungal attack. The wealth of detail in the book, illustrated by diagrams, tables of data, photographs and line drawings, gives one the chance to really understand what is happening in the vegetation and why it is the way it is. The book concludes with an extensive list of references and a good index to species.

What does this book have for the readers of *Watsonia*? Even though Britain is not within its remit, this mine of information on species and vegetation is of inestimable value for those wishing to explore the responses of species to their environment and dynamics within vegetation. Much of this information is directly relevant to the British flora and all of it is thought-provoking. C.U.P. is to be congratulated for publishing such an important book in English, even though the diagrams and pictures have suffered in reproduction and a magnifying glass is required to read the references. It is a pity the book is so expensive, but I recommend readers to start saving like mad!

A. J. C. MALLOCH

Lilacs: the genus Syringa. J. L. Fiala. Pp. 266, with 100 colour plates, 101 black and white figures and diagrams, and 1 map. Christopher Helm, London. 1988. Price £35 (ISBN 0–7470–1010–2).

Although the common lilac, *Syringa vulgaris*, is naturalized here and there in Britain, this book is really one for gardeners rather than naturalists. Yet, so popular is the lilac as a garden flower that a brief consideration of this work may still be of interest to readers of *Watsonia*.

From the horticultural point of view John Fiala's *Lilacs* is very comprehensive. Chapters deal with cultivation, landscaping (including suitable companion plants), methods of propagation and hybridization, and diseases and pests (although all from the American point of view); there is even an appendix on lilacs in floral arrangements and how to treat them as cut plants. Some 700 or so cultivars of *Syringa vulgaris* are mentioned (out of a possible 2000 which have been named), usually in lists of those recommended on grounds of colour (i.e. pink, purple, magenta, white, single, double, etc.). Many of the best, about 170, are illustrated by colour photographs, some of them very beautiful, as well as over 100 depicting the botanical species and other hybrids.

However, the text is not just an account of lilacs themselves but includes potted biographies and anecdotes of people who have been involved in expeditions in China and the collection of species from the wild, together with those of prominent breeders. But the major criticism (apart from numerous silly errors like "Chipping Campers" for Chipping Campden on p. 34) must be levelled at the idiosyncratic nomenclature. There can be no quarrel with the majority of the names used but the invalid publication of others should never have taken place.

As a taxonomist I have been put off by these mistakes and unorthodoxies, and in addition I must admit, by the somewhat precious and intimate style of writing. For me they detract from a book which otherwise, and for the general gardener and lilac grower, will no doubt prove a fund of information. Enthusiasm oozes from every page and anyone keen on lilacs will want to possess a copy.

P. S. GREEN

Collins' New Generation Guide to wild flowers of Britain and northern Europe. A. H. Fitter. Pp. 320. Collins, London. 1987. Price £10.95 hardback (ISBN 0–00–219773–1); £7.95 paperback (ISBN 0–00–219777–4).

The 'Field Guide' has been around now since the mid-1950s and has become an indispensable part of British natural history. Some, such as Barrett and Yonge's *Collins' Pocket Guide to the Sea Shore* and Peterson, Mountfort and Hollom's *A Field Guide to the Birds of Britain and Europe* have become minor classics of the natural history literature. The limitations of field guides are well-known and accepted as the price of compactness. Even so the view has been frequently expressed that the field guide tends to encourage the attitude that identification is an end in itself and that the aims of natural history are simply to put a name to any organism that one encounters. This problem is particularly acute with the larger taxonomic groups where space does not allow more than a cursory note on habitat and distribution in addition to the description.

Collins' New Generation Guides have been conceived with the admirable objective of combining accurate identification with an account of the natural history of the group for "those who want to take their investigations further and to understand why what they find is the way that it is, and how it relates to the other organisms around it".

The book is divided into two more or less equal parts, the 'Directory of Species' and the 'Natural History of Wild Flowers' prefaced by a ten-page piece on the 'Plant Kingdom'. The latter sketches out the evolution of flowering plants, the characteristics of the Angiosperms and the appearance of insect pollination. Unfortunately the section is too brief to allow the author to do justice to the subject. Brevity has forced such misleading comments as, "it is clear that the pollen grain is the spore . . .", when comparing the life-cycle of a flowering plant with that of a fern.

The 'Directory of Species' aims to enable all British non-woody flowering plants and all but the rarest and most inconspicuous plants of north-west Europe to be identified – a tall order in less than 140 pages. The arrangement is in three parts: a main section comprising illustrated descriptions of the common species, an introductory 'Keys to Families' and an Appendix of scarce British species not included in the main part. Sadly, I don't think that this section of the book will always enable the average inexperienced user confidently to arrive at an accurate identification of an unfamiliar plant. The initial 'keys' are not really keys but tables setting out the characteristics of the main families, so that, for example, within the Monocotyledons, anyone puzzling over *Arum*, *Tamus*, *Triglochin* or *Lemna* would not know where to begin as their families do not appear in the 'keys'. Many of the illustrations are actually very good given the constraints of space, but to encourage expectations of accurate identification of, for example, grasses, sedges, pondweeds and umbellifers using this format is unrealistic. The habitat and distribution information is given in the form of a rather complex system of symbols, which, however, once grasped do give a reasonably comprehensive picture of the ecology of the plant. The existence of closely related rare species treated in the Appendix is indicated by appropriate cross-referencing but it is doubtful if the descriptions given in the Appendix would often lead to accurate naming.

By way of contrast the second part of the book achieves precisely what it sets out to do. It is an accurate, informative and fascinating introduction to every aspect of the natural history of wildflowers. There are essays on everything from seed dormancy to apomixis, from incompatibility mechanisms to insectivorous plants all written in a style admirably suited to non-specialists seeking to extend their knowledge. The one obvious omission is anything on community ecology, one of the aspects of plant natural history most likely to interest the average reader. The reason, presumably, is that space would not allow an adequate account of the full range of British habitats. For my money I would have preferred a format where the 'flora' part of the book was replaced by habitat accounts which included lists of characteristic species together with means to their identification. This would have obviated the need for taxonomic comprehensiveness and given us the benefit of more of the author's pen. He could safely leave the business of identification to other titles in the Collins' library with which he has been involved.

D. STREETER

Wildflowers of Canada. T. Fitzharris. Pp. iv + 156 with 140 colour photographs. Oxford University Press, Toronto. 1986. Price £24 (ISBN 0–19–540566–8).

This is a collection of photographs of 116 Canadian wildflowers. It takes the form of plant portraits, often enlarged and with associated feeding or resting insects. Brief species descriptions are provided by Audrey Fraggalosch and line drawings by Diana Thompson. The photographs are arranged into four broad habitat groupings each preceded by an introduction to that habitat in Canada.

Several plants familiar to British botanists are illustrated, however some such as *Daucus carota*, *Achillea millefolium* and *Iris pseudacorus* are introductions into Canada. Transatlantic exchanges are less commonly illustrated apart from some garden escapes such as *Ribes sanguineum* and *Rubus spectabilis*. The photograph of Pacific Dogwood (*Cornus nuttallii*) does not do justice to this handsome spring-flowering shrub, curiously rare in British gardens. Similarly the photograph of Skunk Cabbage (*Lysichiton americanus*) does not prepare one for the majesty of this plant in our water gardens, or in its native British Columbian marshes and ditches.

Perhaps of main interest to the plant photographer, particularly as there is a section on

photographic techniques, this book could also serve as an introduction to the variety of Canadian wildflowers.

B. D. GREENWOOD

A bicentenary history of the Linnean Society of London. A. T. Gage & W. T. Stearn Academic Press Ltd, London. 1988. Pp. ix + 242, with 20 plates. Price £25 (ISBN 0–12–273150–6).

Few people among the crowds going to see an exhibition at the Royal Academy realize that they are passing the portals of the august Linnean Society as they throng into the forecourt of Burlington House off Piccadilly. If they did, they might well stop and ring for admittance – to see the portraits of distinguished botanists and zoologists who have been its fellows (many of them very good paintings) and to admire the charming library upstairs, a repository of many rare and wonderful works as well as of the society's numerous publications and records.

Just as the atmosphere of the Linnean Society is highly civilized and deliciously old fashioned, so is this book. It represents the research and thinking of four men over forty years: Benjamin Daydon Jackson in the 1920s, Andrew Thomas Gage and Spencer Savage in the 1930s and finally William T. Stearn in the 1980s. It is, of course, a chronological history and, as one might expect of a scholarly institution, crammed with meticulous detail.

The book explains how two doctors, a clergyman, an Exchequer official, a Swedish botanical librarian, a Scottish nurseryman, and a customs official brought the Society into being, charts the turbulent years from foundation (1788) to incorporation (1802) and chronicles the long drawn out purchase of the great Linnaean collections which was complete by 1858.

After Charles Darwin and Alfred Russel Wallace expounded their theory of evolution at one of the Society's meetings in 1858, there are few outstanding events. But the authors do identify some amusing highspots, such as the Centenary celebrations in 1888 and the battle of nerves which took place over the admission of women. The account of this struggle, which was finally won in 1905, is absolutely riveting and written with such a fine sense of wit and irony that it deserves to become a classic of women's history.

For anyone interested in the history of science there is much information about the Society's members, its botanical and zoological collections and library. What is missing is any clear or dispassionate assessment of the Society's value and importance during the first 200 years of its existence. One senses that this was never part of the authors' brief and it may well represent a danger signal about its future.

C. DAVIDSON

River plants of western Europe. S. M. Haslam. Pp xiv + 512, with many line drawings and maps. Cambridge University Press, Cambridge. 1987. Price £75.00 (ISBN 0–521–26427–8).

It is difficult to think of anyone currently writing in English with a wider knowledge and experience of the vegetation of watercourses than Sylvia Haslam. This book is a testimony to that accomplishment and develops many of the themes earlier outlined for Britain and North America (Haslam (1978) *River plants*) in a western European context. With the collaboration of Pat Wolseley, she has combined a large number of published sources with her own research funded by the E.E.C. to examine the distribution and ecology of river plants within the Community excluding Greece, Spain and Portugal but including a small area of south Norway.

The development of rivers from prehistory into the era of human impacts is outlined, and various ways of classifying rivers are described. Dr Haslam's preferred system uses water force, rock type, stream size and landscape to arrive at site types, which may subsequently be assessed in terms of their 'Cover-Diversity number' (a combination of the number of macrophyte species with their percentage cover). Chapters on climate and river discharge are followed by a very detailed discussion of species distribution in relation to physical factors, where a somewhat confusing format follows the introduction of a χ^2 analysis. Chapter 7 introduces Dr Haslam's idea of 'Colour banding' as a means of describing the trophic status of watercourses. This technique ranks species and their nutrient status in an empirical way, making use of 'Cation Number' and 'Hardness Ratio' to classify

streams and the plant groups occurring within them. Dr Haslam develops this scheme over the next two chapters prior to examining the changes that have occurred in the European rivers over the past century (due to navigation, power generation, regulation of flow, drainage and land-use factors) and in particular the last ten years where she has been able to monitor the changes in a series of sites. Her use of river maps in the next chapter to reflect the variation in a river from source to mouth is useful and informative.

The special contribution of this book, however, is the nation-by-nation description of plant communities which is derived from her own study of nearly 28 000 sites distributed through western Europe. The communities are shown in chapter 25 to have rather more to do with 'site-types' (in the sense of Finnish mire classification for example) than a more typical phytosociological approach. The book's value to anyone with an interest in conservation lies especially in the concluding five chapters, where management and pollution of watercourses are discussed. She looks at problems associated with canals, boating, herbicides and groundwater pollution and examines management options as diverse as shading, dredging and herbivorous fish. There are suggestions on the amelioration of pollution, and her proposals for a consistent assessment of 'Damage Rating' are reiterated (Haslam & Wolseley (1981) *River vegetation: its identification, assessment and management*).

One cannot but be impressed by the detail and breadth of information here but a number of matters leave one uneasy. Her reliance on the χ^2 test as the only means of analysis means that the data have gone through a preliminary sort without further more rigorous testing. This requires the reader to make a 'leap of faith' and take some of Dr Haslam's assertions on trust when the tabulated data still leave one confused. Some of the terminology is at least ambiguous (what is meant by 'more nearly eutrophic'? – Tables 1.2), and the use of words or phrases like 'nutrient rich species' is clearly a shorthand which taken at face value makes no sense. It possibly reflects a cautious mind on my part, but I would have liked the links between her very detailed knowledge of European rivers and the generalizations made about them to be worked out in greater detail. One is left believing that someone with her experience is probably correct on most points, but there remains the question: "How can she be certain?". The labelling of the tables and diagrams is often very confusing indeed and requires the reader to check through a lot of text to ensure the correct interpretation. The index has many omissions of species and river names, such that a student or amateur naturalist interested in their local stream and some of its special plants may have to read a great deal to answer a small question (I very nearly missed an informative description of the River Idle in Nottinghamshire). This problem, linked to Dr Haslam's very individual approach, can mean that it is less useful as a reference work to dip into than one would hope. Readers intent on really understanding the subject will have no alternative but to work carefully through the text and in doing so will find a lot of fascinating material.

This is an important book and an attractive one thanks to Pat Wolseley's illustrations of individual streams, but one despairs of C.U.P.'s pricing policy, which will surely dissuade many people from giving it the time and effort it needs.

J. O. MOUNTFORD

100 families of flowering plants. M. Hickey & C. King. 2nd edition. Pp. xvi + 619, with numerous line illustrations, 7 tables and a foreword by S. M. Walters. Cambridge University Press, Cambridge. 1988. Price £25 (paperback; ISBN 0–521–33700–3); also available in hard covers (ISBN 0–521–33049–1).

This splendidly produced second edition comes in a larger format with a new layout of text and improved illustrations. Drawings of whole plants are now included, second representatives have been added to certain families, Ulmaceae has been omitted and Grossulariaceae incorporated in Saxifragaceae, with Balsaminaceae and Elaeagnaceae substituted. The introduction has been revised and new comparative tables added. As Walter's foreword indicates, this new edition is, moreover, "considerably improved in the light of experience", the authors having considered and responded to many valuable comments by users of the first edition. The general scheme and principles for the choice of the 100 families out of a world total of between 300 and 400, the basis of the classification used, the two-part treatment – with a family outline followed by specific

'representative' examples – have been clearly set out in the review of the first edition (*Watsonia* **14**: 93, 1982).

This attractive book clearly meets a need, for it brings together in succinct form much information on the range of features found within each family, notes on economic and ornamental members and on distributions, a pollination summary, an outline classification, and, where appropriate, special full-page illustrations of the range of fruit types found (Cruciferae, Leguminosae, but not Umbelliferae). The emphasis is on floral structures, with little indication of vegetative characters, however diagnostic. The treatment of seed or fruit is curiously inconsistent: *Verbascum* seed is drawn but not *Papaver* despite text comment on economic use; an excellent Mallow fruit but an immature Buttercup achene and obscure *Lamium* nutlets.

The so-called 'typical' representatives of each family have been chosen to be readily available either as members of the native flora or as commonly cultivated garden or greenhouse plants. Much of the material used for the illustrations came from the University Botanic Garden, Cambridge. Thus 'typical' is not used in a taxonomic sense, but as 'familiar' and available to those living in lowland England. I suspect that users from the more extreme western and northern parts of the British Isles may need to resort to the alternatives suggested (for *Lamium album*?). A very high proportion of the examples are of horticultural provenance. This points to the book being aimed at the less specialized botany students, especially those of horticulture, and the keen knowledgeable amateur gardener from the British Isles (rather than North America). It is a handbook to accompany classroom instruction. This book cannot be used as a reference in the way that Rendle's *The Classification of Flowering Plants* (1938) and Heywood's *Flowering Plants of the World* (1978) can with their complete coverage. Moreover I doubt that relationships between families (as is suggested) can be gleaned here, for only in the Contents are the families placed under Orders. But the comparative tables of family characters are an excellent feature. This book will be much admired and consulted.

A. P. Conolly

The archaeology and the flora of the British Isles. Edited by M. Jones. Pp. 122, with 44 line drawings and black and white photographs. Oxford University Committee for Archaeology Monograph Number 14/Botanical Society of the British Isles Conference Report Number 19. Oxford University Committee for Archaeology, Oxford. 1988. Price £15 (ISBN 0–947816–14–3).

This volume arises out of a joint meeting of the Botanical Society of the British Isles and of the Association for Environmental Archaeology. The postglacial history of the British flora is now recognized to be inextricably bound up with human use, and abuse, of the landscape – and so with environmental archaeology. The contributions vary greatly in geographical scope, from a brief but stimulating comparison between North American and British woodlands to a report on two important coleopteran fossils from Hampstead. Each, however, addresses one of the big issues in the history of human impact on the vegetation: the nature of early postglacial 'wildwood', the evidence for pre-neolithic clearance episodes, the nature and causes of the elm decline, the formation of lowland grasslands and upland moors, the usage of coastal vegetation and development of urban ruderal and arable weed communities.

The wildwoods of Britain differ from their North American counterparts in having fewer combustible species (Rackham). Nonetheless there is now an impressive array of evidence for pre-elm decline clearance episodes, many associated with traces of fire and some with artefactual indications of human activity. Clearance significantly enriched floristic diversity and also increased the abundance of edible plants and, indirectly, of game (Innes & Simmons).

A welcome advance is palaeoecological analysis at smaller temporal and spatial scales more relevant to human activity. The elm decline is both widespread and long-lasting, but close palynological sampling reveals that in some places the major 'landnam' episode is preceded by initial thinning of the woodland canopy, which Scaife attributes to pastoral activity. It should be noted, however, that this need not indicate "a predominantly woodland-based pastoral economy" (Scaife p. 28, also R. Jones p. 102): animal husbandry is more extensive than arable farming and so may well be better represented palynologically without being more important. Girling's discovery of *Scolytus scolytus*, the bark beetle carrier of the Dutch Elm Disease fungus (*Ceratocystis ulmi*), in a

pre-elm decline context reinforces suggestions of a prehistoric outbreak of this disease, which would have been greatly facilitated by human assaults on the wildwood.

Whatever the mechanisms of woodland clearance, one of the most important developments – both floristically and economically – in postglacial Britain has been the shift in emphasis in stock rearing from woodland browse and leafy hay to open pasture and, eventually, grassy hay. The contributions charting the development of lowland grassland (Greig; Lambrick & Robinson; McDonald) admirably integrate palynological, plant macrofossil, faunal (insect and molluscan) and documentary evidence. Plant *communities* are strongly emphasized in these contributions, both as entities of intrinsic historical interest and as an aid to ecological interpretation of plant fossils. Greig is surely wrong, however, to suggest that the Zürich-Montpellier system of phytosociological classification has been so little used in Britain through ignorance or inability to master its complex nomenclature. The system has serious drawbacks – such as its reliance on unique character species and inability to cope with floristic gradients – and it would be unwise to assume that present-day associations also existed in the past. In fairness, what Greig practices is far sounder than what he preaches, though his loose use of terminology is confusing: e.g. are 'typical plants' those commonly found in an association, phytosociological 'character species' or 'character species' plus 'companions'?

Uniformitarian assumptions about communities are avoided by M. Jones in documenting increasing diversity through time in the weed flora, a process related both to the colonization of new arable habitats and to the introduction of new agricultural methods. The concurrent broadening of the range of crops, and the occasional arbitrariness of the crop/weed distinction, are further points of interest. Hall uses the uninspiring ruderal flora from urban excavations to expose the sordid nature of life in our early towns. The final section of the volume stresses the great importance for past economies and present vegetation of human exploitation of coastal (R. Jones) and upland areas (Chambers; Moore), now marginal to modern land use.

The issues tackled in these papers are complex and debate will doubtless continue on the nature and significance of human impact on vegetation change. Archaeologists may be disappointed that greater emphasis is not placed on the reconstruction of human behaviour as the ultimate goal of these contributions. But this chapter in the history of the British flora underlines the dynamic interaction between man and nature in the prehistoric and historic past and in so doing exemplifies the active contribution now being made by environmental archaeology to its parent biological disciplines.

G. Jones & P. Halstead

Atlas Florae Europaeae. Edited by J. Jalas and J. Suominen. Vol. 7: Caryophyllaceae (Silenoideae). Published by the Committee for Mapping the Flora of Europe and Societas Biologica Fennica Vanomo, Helsinki. 1986. Price £55 (ISBN 951–9108–06–8).

Fytokartograficke synteszy ČSR (A summary of plant distributions in the Czech Socialist Republic). B. Slavik (compiler, and sole or joint author of most of the maps). Pruhonice, 1986. In Czech, with a $2\frac{1}{2}$ page English summary. Price not stated.

The latest part of the 'Atlas', subtitled "distribution of vascular plants in Europe", contains 296 maps, and the accompanying text gives for each taxon its synonymy, references to nomenclature, chromosome number(s), and distribution by *Flora Europaea* territories. The treatment differs in one important respect from the previous parts: the data on chromosome numbers are now accompanied by lists of countries for which each number has been recorded. *Silene* is by far the largest genus treated, followed by *Dianthus*. In both genera there are species with extremely clear-cut distribution patterns: map 1167 (*Silene acaulis*) is an excellent example of an arctic-alpine, while map 1115 (*Silene uniflora*, formerly known as *S. maritima*) shows a typically coastal Atlantic species. There are also some puzzling patterns: map 1485 (*Silene giganteiformis* subsp. *pontederae*) shows a plant practically endemic to Hungary, while on map 1074 *Silene viscosa* hugs the western and northern coasts of the Baltic sea while spurning its southern and eastern shores. As in previous volumes, there are concise summaries of the "deviations from *Flora Europaea*" as well as a nicely laid out index. The work is far more than just an Atlas; it serves also as a commentary on, and bibliography of, the European flora as well as a concordance of the often contradictory European

chorological literature. The team which contributes to this very worthwhile project consists of a committee with more than 40 members and a similar number of advisers. The results of their efforts are very instructive, not only for understanding plant distribution *per se*, but also for testing the taxonomy of the European flora.

The Atlas of the Czech flora has been planned to accompany the 8-volume *Flora of the Č.S.R.* and to complement its distributional data. It employs the Central European grid system which is based on units of ten minutes of longitude and eight of latitude; these units are approximately one third larger than the area of a 10 × 10 km grid square, and allow the compilers of the Central European mapping scheme to use the data directly. The maps were compiled manually, but computerization of future volumes is envisaged. The thoroughness of the survey can be gauged by the fact that the commonest species are unrecorded from only a handful of squares. By contrast, the number of species confined to the area around Breclav is also striking. According to the summary, literature sources have provided the bulk of the data, except for rare and declining species for which herbaria have also been scanned. As the title indicates, only the Czech Republic (the western part of Czechoslovakia) is mapped. The compilers express the hope that although the number of voluntary contributors to this volume was small, by international standards, "a more active collaboration is planned". The mapping of the Slovakian flora is also in progress, and together these atlases will provide a worthwhile eastern extension to the detailed mapping of the flora of Central Europe.

J. R. EDMONDSON

Collins photoguide to wild flowers of Britain and northern Europe. O. Polunin, edited for publication by J. R. Akeroyd. Pp. 508, with 128 colour plates and numerous text line drawings. Collins, London. 1988. Price £9.95 (ISBN 0–00–219709–X).

This is the latest in the line of Collins' guides to wild flowers and the last to be written by the great field botanist Oleg Polunin. His unfinished manuscript has been enhanced with extra information, and prepared for publication by John Akeroyd (aptly one of Oleg's former pupils). As a pocket guide to the British and northern European flora this book stands alongside those previously written by Fitter *et al.* (1974), *Wild Flowers of Britain and N. Europe*, and others, and one may question the need for yet another guide. The area covered is roughly the same as that of Fitter *et al.*, and similarly Polunin has left out the grasses, sedges, rushes (and related species) and all trees and shrubs over 1 m tall. However, unlike these previous publications this book seeks to provide a comprehensive coverage of the flora with many rare and critical plants nestled in amongst the more familiar common flowers. As such it stands alone on the shelves of 'popular flower guides', and is a worthy addition. The book contains just over 700 colour photographs, of varying quality, taken by Oleg Polunin. These are arranged in order of their flower colour, generally with six photographs to a page, and occasional full page plates (e.g. Alpine Sawwort, Bastard Balm, Hemlock, etc.) pleasantly breaking up the blocks of photographs. Most other guides use colour paintings as illustrations, and thus this book would appeal to those who prefer photographs. The lack of any keys can make identifications from scratch somewhat tricky, but unknown plants can be matched to the photographs, and perusal of the main text around similar species should result in an accurate identification. In these respects I think it is fair to say that this book is not aimed at the complete novice, but rather towards the more experienced field botanist who requires the extensive coverage of a full flora condensed into a manageable pocket guide.

The text is arranged according to the systematic order used in *Flora Europaea*, and the 1780 species included are numbered through the book. The photographs are labelled with the vernacular name and species reference number. Within the main text each species is given a short description containing the salient characters of the plant, its ecology and distribution. Many high quality line drawings by Rosemary Wise complement the descriptions.

The book is well written and presented. It is bound in a waterproof, plastic flexicover which should stand up to field usage. Like Fitter *et al.*, the index is split into English and Latin names. I find this inconvenient as I frequently find myself looking in the wrong part, and I much prefer a combined index. In a similar vein I feel that Latin names would be helpful, with the English names, under the photographs. Unfortunately a few mistakes have crept in, like the transposition of photographs of *Vincetoxicum* and Wild Madder (p. 200), and should the Scarlet Pimpernal really be

found amongst the yellow flowered plants (p. 229)? Overall for the quantity and technical quality of the information it stores, this book is excellent value and will soon become invaluable to any B.S.B.I. member when botanizing at home and in northern Europe.

M. F. WATSON

Flora of Leicestershire. Edited by A. L. Primavesi & P. A. Evans. Pp. 486, with 34 colour plates, 34 text figures and 1080 distribution maps. Leicestershire Museums, Art Galleries and Records Service, Leicester. 1988. Price £30 (ISBN 0–85022–230–3).

This fourth Flora of Leicestershire (excluding Rutland) is very much in the style of such recent county Floras as those of Shropshire and Durham, providing not only tetrad maps but an apparatus of historical and ecological information almost as long as the systematic part of the book. The maps, gathered together at the end, cover all species except casuals (the Flora deals only with vascular plants), and mostly have just a single date class, being based on records gathered between 1968 and 1981, together with any significant additions up to 1987. While changes in the flora are thus not shown on the maps, they are neatly indicated in the text by means of a resumé of the status of each species from the last, extremely detailed Flora of the county by A. R. Horwood & C. W. F. Noel (3rd Earl of Gainsborough), *The Flora of Leciestershire and Rutland* (1933). These changes are discussed habitat by habitat in a valuable chapter that includes a striking table of losses from the flora since 1720. It is interesting that most of the extinctions took place in the period between 1900 and 1930, although the greatest habitat changes have taken place since then. This prompts pertinent comments on the redistribution of species among the changing habitats, and on the reliability and completeness of recording at different periods and in different habitats. A most readable chapter on 'Man and the Leicestershire flora' provides the historical context for these changes.

The section on local botany and botanists, concentrating on work done since 1900, and on botanists deceased since 1933, contains a great deal of original material, and there is a thorough bibliography. The excellent chapters on the physical background suffer slightly from the fact that the maps showing geology, altitude and other features lack a tetrad grid and are at a much larger scale than the species maps, making correlation difficult. The chapter on habitat studies includes species lists from 107 sites, the species being grouped under the conventional frequency headings from 'abundant' to 'rare' (curiously, although dominants are sometimes mentioned in the site descriptions, there is no separate heading for them). The 30 colour photos are the best and most informative I have seen in a county Flora. Another exceptional feature is the annotated gazetteer which doubles as a botanists', and indeed as a local historians', guide to the county and is cross-referenced to the habitat studies.

The systematic part of the Flora is admirably concise and informative and includes for each species general statements on ecology and distribution, coded lists of habitats, first records, and lists of herbaria that contain specimens. Detailed records are given for those species with 15 or fewer records. The larger critical groups are all well covered, with unusually thorough accounts of *Taraxacum*, *Rosa* and *Ulmus*. Infraspecific taxa are, however, rather poorly covered in general, there being no mention, for example, of which subspecies occur in such species as *Ranunculus ficaria* and *Carex muricata*. In *Montia fontana* only subsp. *chondrosperma* is given, although Horwood & Gainsborough and S. M. Walters, *Watsonia* **3**: 1–6 (1953), give two others. One has again to refer to the earlier Flora for information on such matters as the variation within *Allium vineale* and *Anthyllis vulneraria*. Even if much infraspecific variation could not be mapped, it is a pity that it is so often not even mentioned. *Poa subcaerulea*, given for 14 sites by Horwood & Gainsborough, is unaccountably completely omitted. Such quibbles apart, the editors and their co-workers are to be congratulated on having produced a most substantial county Flora to rank in many of its features among the best. It is very well designed and compact and a pleasure to handle. Vice-county 55 is now well-covered by the combination of this book and its companion, K. G. Messenger's *Flora of Rutland* (1971).

A. O. CHATER

Taming the flood. J. Purseglove. Pp. vii + 307 with 16 colour plates. Oxford University Press, in association with Channel 4 Television Co. Oxford & New York. Price £17.50 (ISBN 0–19–215891–0).

This is a book written from the heart, and with great skill, by a man who has worked in the water industry for more than a decade defending the natural resources and historical interests associated with rivers and their floodplains. Although parts of the book do deal with disastrous ecological consequences of the eras of land drainage and unsympathetic river management, it is not a tirade against those responsible. It does however recognize why much of such work was executed, the changes in legislation which made it possible, and the dream that reality and common sense will work together to put the clock back in the decades to come.

The book has eight chapters; merely listing their titles would not indicate the breadth of topics covered in them and the depth of research which so clearly has gone into the wealth of subjects tackled. This book is not just for botanists but for anyone with an interest in our cultural and ecological heritage. The historical aspects of 'claiming the fens' and the 'drainage of wetlands' adds to the interest of the book; for those with a realistic curiosity in deciphering what has happened through the ages to retain some of our last vestiges of wetland it is a must.

One of the great attractions of the book is the skilled way in which many topics are related to one another, linking the historical, human and botanical aspects of wetlands. However knowledgeable you may be on our wetlands, there is bound to be something new and interesting you will will learn from this book. Examples include learning that 'Somerset' derived from Anglo-Saxon times to mean 'summer dwellers', those grazers who could only use the levels during the summer, and that King George III was known as 'Farmer George' because of his financing of drainage improvement.

The book also contains a wealth of information on the history and flora of many key wetland sites – Cricklade, Derwent Ings, Halvergate, Hatfield Chase, Otmoor, Romney Marsh, Wicken Fen, etc. No other book has so clearly and attractively looked at what we have today and so meticulously linked it to the pastimes of our forebears. A large element of the book also looks at how the riches of our riversides have been an under-valued resource which previously had been linked to the lives and times of the 'fenmen' – pollards for stakes, osiers for basket making, cricket bats from willows, bomb fuses from Alder Buckthorn, aspirin from Meadowsweet and an endless list which includes the Medicinal Leech. For those who saw Jeremy knee-deep in a swamp, his legs festooned in these blood-suckers, in the television series which accompanied the book this was a painful reminder of the author's dedication to get a total feel for the subject he is reporting on.

Without doubt this is one of the most readable, and excitingly written, books on the cultural history and wildlife of our wetlands. It can be read avidly for hours or picked up for a few minutes at a time to gather snippets of great interest which awaken visions of bygone years of vast wilderness wetlands – and dreams of what it might be like in years to come. A brilliant read delivered with great passion and skill.

N. T. H. Holmes

Census catalogue of the flora of Ireland (Clár de Phlandaí na hÉireann), 2nd edition. M. J. P. Scannell & D. Synnott. Pp. 171, including a colour fold-out map showing the 40 Irish botanical vice-county divisions. The Stationery Office, Dublin. 1987. Price IR£4.80

Few other publications have been as warmly welcomed by Irish botanists as has the new edition of Scannell & Synnott's *Census Catalogue*. The first edition was published in 1972 and was constantly and widely used by resident botanists and visitors. Nevertheless it had become considerably out of date and the appearance of the new edition was timely.

Since 1972 considerable and significant advances have been made in knowledge of the distribution of the flora, with several new discoveries located as well as many new invasive and alien plants established and naturalized. As a result the new edition contains an additional 305 taxa of which 174 are considered native. Some of the most notable new additions include *Hydrilla verticillata* in H16, *Luzula pallescens* in H39, *Trifolium occidentale* in several counties along the south-east coast, *Carex depauperata* in H5, *Parapholis incurva* in H21 and *Cardamine impatiens* newly discovered in a native habitat in H23. Many of these additions result from recent taxonomic studies and include 95 *Taraxacum* microspecies and 60 *Rubus* microspecies. 42 species have been added to the list of naturalized and established aliens.

The book is made up of a series of short introductory chapters followed by a systematic list of the Irish vascular flora. Included in the introduction are two lists of species protected in the Republic

and in Northern Ireland as well as comments on the vice-county system (or botanical divisions), nomenclature and Irish and English names used, all of which are concise and useful for the interpretation of the systematic information that follows them.

The systematic section lists each taxon (species, subspecies or hybrids, not varieties) and its authority, some synonyms, Irish and English names and its vice-county distribution. A symbol is also provided to suggest whether the taxon is native or not. Where the taxon has not been seen since 1950 the vice-county number is given in brackets, thus providing an incentive for present-day botanists and vice-county recorders to track down the old records. Occasionally taxa are annotated with very brief notes on status, taxonomy or distribution. The English names given are those published in *English Names of Wild Flowers* (Dony, Jury & Perring 1986) but alternative commonly used names in Ireland are also given in brackets. The list of Irish names is an extremely valuable asset as such a comprehensive list is not easily available elsewhere.

The ideal time to write a review of any book is perhaps about one year after it has been published. By that time one will know whether it is really useful or simply takes up another inch of precious shelf space, rarely to be opened or consulted again. The *Census Catalogue* was published in 1987 and since that time it has become a valuable reference work and indispensable companion for all serious Irish botanists. My own copy is now well thumbed, dog-eared and has become, like the first edition, the base on which I have been able to plan the field work and urgent research necessary for botany in the vice-county for which I am recorder. As well as that, the book provides a handy source of species authorities and common names that can be consulted much as one would use a dictionary for spellings. I would have liked to see rather more synonyms included in the list than have been given so that some of the old and rather obscure taxonomy used in early Floras can be easily compared with modern day usage for the same taxa. Nevertheless some would probably argue, with considerable justification, that to include these would clutter the text and make the work much less useful for the non-specialist.

There are apparently few errors and the work has been completed with meticulous attention to detail. I hope that if errors are found over the next few years that the authors will consider publishing a list of errata so that we may use the book with considerable continued confidence in its accuracy. The systematic section is well and clearly laid out, each page has plenty of space for scribbled notes and other comments. The production of the book is also good with high quality paper and robust binding. The front cover has a good colour illustration depicting various grassland plant species against a fine blue sky; it is a very great improvement on the dull cover provided for the first edition. Inside several attractive line drawings by Rosamond Praeger from the National Botanic Gardens collection are also included.

In the introduction, we are told, the sources for each county record given is available on a card index, maintained at the National Herbarium (**DBN**). This is essential information for botanists wishing to pursue individual records further, especially as some are based on unpublished herbarium material or information received by the authors from correspondents.

Irish botanists are well served by this book and its authors. Most of us have come to take it for granted as an essential part of our botanical libraries, forgetting that of the two major islands of the British Isles, Ireland is the only one to have had such a catalogue compiled in recent years. Indeed one sometimes wonders how botanists in Britain have managed without one similar for so long.

P. S. Wyse Jackson

A checklist of the flowering plants and ferns of East Lothian. Edited by A. J. Silverside & E. H. Jackson. Botanical Society of Edinburgh, 1988. Price £2 (ISBN 0–903–077).
A checklist of the flowering plants and ferns of Midlothian, Edited by Douglas R. McKean. Botanical Society of Edinburgh, 1988. Price £2 (ISBN 0–903077–05–1).

These checklists will be warmly welcomed as heralding the significant progress towards the major objective of the Botany of the Lothians. This project was initiated by the Botanical Society of Edinburgh with the ready and vital collaboration of the Royal Botanic Garden, the University and the enthusiastic support of local botanists.

The trilogy will be completed by the publication of a West Lothian checklist which is in an advanced state of preparation. These lists have depended heavily on the dedicated industry of Miss

E. P. Beattie who until recently was B.S.B.I. recorder for the three Watsonian vice-counties. The final work will be more than a three-county flora and is planned to include floristic maps and authoritative accounts of the physical background which will reflect enormous changes in the environment, particularly in the present century.

The cover illustrations appropriately recall the area being recorded: the wind-blown coastal pines of Yellowcraig, East Lothian in one case and on the other with the species-rich volcanic mass of Arthur's Seat, elephantine in more ways than one, towering over Scotland's capital.

The checklists, it is hoped, will stimulate collecting by indicating areas and groups still requiring particular attention. The field work is planned by Dr Philip Smith on the basis of one kilometer squares. He plans meetings of recorders and is largely responsible for tactics and strategy. He has marshalled an impressive band of volunteers for the survey and is a most powerful and persuasive advocate for the whole scheme. Naturally, new records and recent sightings of species long overlooked have been made as the Survey has proceeded. Sadly too some extinctions are feared though, generally speaking, the flora is changing rather than shrinking. The aliens associated with the riverside milling operations are fewer but Leith, the seaport of Edinburgh, is still a rewarding locale for botanists. But not all is doom and gloom, for example, in the light, sandy soils of East Lothian where changes include the rapid spread of *Amsinckia* spp.

The Lothians are ecologically and climatically diverse and generally under-valued for botanical interest. Even the main urban area, Edinburgh itself, is threaded by ancient watercourses acting as wildlife corridors, has extensive green places and many trees.

These checklists are well-indexed, usefully annotated and well laid out. A jaundiced eye has been applied to suspect old records and the presumption of native status has been intelligently reviewed in many cases. Selected locations are cited to keep the size of the work within bounds and there are indications of frequency. B.S.B.I.-recommended English names are generally followed and are cited as synonyms where the Scottish name is more apposite. Thus Scottish Sticky Willie has priority over English goosegrass, even though it refers to a poorly regarded Englishman – William Augustus, Duke of Cumberland. Undoubtedly wild, he too was difficult to shake off in the mid-eighteenth century.

One purpose of checklists is to stimulate or provoke the reader to extend the record or to challenge it. These two publications should achieve this admirably.

SIR G. TAYLOR

Birds and berries. A study of an ecological interaction. B. & D. Snow. Pp. 268, with 12 figures and 83 tables. T. & A. D. Poyser, Calton. 1988. Price £16 (ISBN 0–85661–049–6).

This book is a tribute to the observational stamina of the authors. The bulk of the book draws on data obtained from nearly 1700 hours of recording between 1980 and 1985 in the countryside and gardens of Buckinghamshire. The authors made systematic observations of fruit-eating birds feeding on the native fleshy-fruited plants of the British Isles. These plants are mainly woody shrubs such as hawthorn, rowan and elder, and the book concentrates their interactions with the native fruit-eating birds of the British Isles.

It has been an achievement to analyse and compile these data into a most informative and fascinating book. The first part discusses the 39 native fruit bearing species and summarizes the use made of the fruit by fruit-eating birds. The most common fruit-eating species are the thrushes and finches, though tits, starlings, pigeons and some warblers will also take fruit. Interestingly, at least some fleshy fruits are available throughout the whole year, such as the evergreen yew, holly and ivy.

The second part discusses the fruit-eating birds themselves and the range of fruits taken by each species. Differences are noted in the preference of species, a preference not always dependent on the size of the fruit, though this can be important. The mistle thrush is one of the larger fruit-eating species and is capable of defending an especially rich source of fruit from other birds. This defence is a survival mechanism to enable the thrush to have a source of food during difficult times. A fully laden section of otherwise bare hawthorn hedge in early January is probably being defended by a mistle thrush.

The third part widens the discussion of relationships between birds and fruit-bearing plants by drawing the authors' U.K. data into a world-wide context. We are familiar with the concept of the

dispersal of seed by fruit-eating birds and the mutual dependence of the two parties. However, we are less familiar with the relative food content of different fruits and the adaptations present in both birds and plants to facilitate their co-existence. The co-evolution of plants and birds is also considered in this section.

This book is presented in the normal Poyser high quality format with which ornithologists rather than botanists will be more familiar. The text is well written, and the data have been presented in a way which is readily accessible from a study of the contents and index. This is important because the first two parts of the book are predominantly a reference source. This is perhaps a criticism which can be levelled at this book, though it is difficult to see how it could have been written in any other way. Many of the data are presented in figures and tables which have deliberately been kept simple for easy reading.

This book provides a great deal of evidence on the nature conservation importance of much of our native, mainly shrub flora and consequently the importance of hedgerows and similar habitats to our native birdlife. The book also gives clear guidance on the most effective species to plant for nature conservation purposes. As both a botanist and an ornithologist I can recommend this book as it has done much to heighten my own awareness of the subject and to encourage me to make my own observations.

D. M. PARKER

Flowers of the Himalaya – a supplement. A. Stainton. Pp. 86, with 128 pages of colour plates. Oxford University Press, Delhi. 1988. Price £15 (ISBN 0–19–217756–7).

The title of this book explains just what it is – a supplement to the excellent field guide *Flowers of the Himalaya* produced by Oleg Polunin and Adam Stainton and published in 1984. It retains the same format of brief but highly informative descriptions coupled with a large number of colour photographs. In fact the supplement illustrates all of the 350 species described within its pages and a good many that were included in the first publication but either lacked an illustration or were simply provided with a line drawing. Those from the original publication are cross-referenced back to it – effectively making the supplement an integral part of and essential companion to the parent volume.

In the supplement the author has included some species from subtropical altitudes, a few species well-known to Europeans but perhaps less familiar to others and also common showy introductions, thus broadening the scope of the first book. The new material is, of course, excluded from the brief keys in the earlier work which is a little unfortunate but the informed descriptions compensate for this. The quality of reproduction of the colour photographs is in general very good both in sharpness and colour; the few exceptions do not seriously detract from this high standard.

One might be tempted to wonder why, as one juggles the two books on the back of a patient yak, the new material was not simply integrated with the old and published as a revised edition. The author discusses this option but mentions the prohibitive cost of such an amalgamation and in my opinion this factor alone fully justifies his sensible alternative. It would be a great shame to prohibit any keen naturalist or, for that matter, any interested tourist, from acquiring the expanded version of this invaluable guide.

R. A. KING

Vegetation of inland waters. Edited by J. J. Symoens. Pp. xiv + 385. Kluwer Academic Publishers, Dordrecht. 1988. Price £76.50 (ISBN 90–6193–196–7).

This is volume 15/1 of an academic series entitled *Handbook of Vegetation Science*. It is the first of two dealing with aquatic vegetation – it concentrates on the vegetation of inland waters whilst its companion concentrates on wetlands of the world.

There are eleven chapters in the book, some of general interest to the field botanist, the majority of which are rather academic and aimed at the professional scientist working in the 'water environment' or the student. This is not a criticism since many of the chapters are well written, clearly structured (but sparsely illustrated) and providing very good background into such subjects as 'Water as an environment for plants', 'Photosynthesis of aquatic plants', 'Algal communities in

continental waters' and 'Aquatic plants in extreme environments'. There is, somewhat surprisingly, a chapter on the flora of periodically flooded plains and another on fens. Considering the companion volume is supposed to be devoted to wetlands these two chapters appear out of place in this book which did not accommodate chapters on lakes or ponds.

There are two interesting chapters on macrophytes in rivers, one detailing the relationship between water flow and vegetation, the other looking at systems of surveying, assessing and then applying such information for academic or practical purposes. Both highlight the great importance of macrophytes as creators of habitat for aquatic animals. In diverse systems they are less important but where there is little habitat variability the structure of the aquatic plant community is the main determinant of the animals assemblage. This aspect, and many others, is beautifully expounded by the much respected C. den Hartog and a colleague from the Catholic University in the Netherlands.

The brief outline of contents indicates that this is not a volume which will have great appeal to the majority of B.S.B.I. members. This does not suggest however that it is not a valuable book for the undergraduate or post-graduate student of aquatic sciences or the practising biologist in the water industry. It should find its way on to library shelves in universities and water authorities but could hardly be commended to even the most intrepid plant recorder with webbed feet.

N. T. H. Holmes

Domestication of plants in the Old World. D. Zohary & M. Hopf. Pp. ix + 249, with 39 figures and 25 maps. Oxford University Press. 1988. Price £35 (ISBN 0–19–854198–9).

This book is an authoritative, succinct and clearly written account of the ancestry, domestication and spread of many of our most familiar crop plants. The authors concentrate on S. W. Asia, Europe and the Nile valley, although reference is made to regions further to the east; the story begins in about 7500 B.C. with the growth of farming villages, combining cereal cultivation with animal husbandry, in the Near East. Not only are cereals and pulses discussed, but also oils and fibres, fruits and nuts, vegetables and condiments, and even wild-collected produce such as beech mast and the fruits of *Crataegus*. Frequent reference is made to weeds, the evolution of which is so closely tied in with that of crops.

Of particular value are sections on sources of evidence and methodology in archaeology, and representative sites with listings of species reported from them, arranged by country. There is an extensive bibliography and the text is liberally illustrated by maps and figures, notably showing diagnostic features of modern and, often carbonized, ancient plant structures from archaeological remains. These bring the historical context vividly to life.

This excellent synthesis of archaeological and genetical data is an essential reference work for those interested in the evolution of crops (and weeds), and for the interpretation of plant remains in archaeological studies. Hopefully it will encourage further cooperation between these disciplines.

J. R. Akeroyd

Saxifrages of Europe. With notes on African, American and some Asiatic species. D. A. Webb & R. J. Gornall. Pp. viii + 307, with 61 figures (line drawings and monochrome photographs), 3 tables, 75 distribution maps and 60 colour plates. Christopher Helm, London. 1989. Price £30 (ISBN 0–7470–3407–9).

The authors of this book have produced an authoritative and yet highly readable account which covers all the European species of saxifrage together with shorter notes on saxifrages found in other parts of the world, most especially in North America. It is a book with enough detail both to satisfy the taxonomist and to appeal to the naturalist and gardener. It is illustrated with many attractive colour photographs, some of which have been taken in the wild.

The book starts with a description of the taxonomy and biology of the genus *Saxifraga* which includes an account of the origin of the genus and its evolution to its present highly diverse range of sections and species. This part of the book illustrates a characteristic of the whole publication in that the treatment of the relevant literature is scholarly and, to the best of my knowledge, complete. The

introductory sections also include a historical account of the classification and naming of the saxifrage species together with notes on their general ecology.

The greater part of the book, over 200 pages, is taken up with a systematic treatment of all 119 European species. For each species information is given in a number of areas which will be of varying interest depending on the needs of the reader. The first sections are on nomenclature and description, including notes on species recognition, the existence of hybrids and the known chromosome number(s) of the species. The account then considers the distribution and habitat of the species and gives some guidance on the most accessible sites where the readers may see the species in the wild. This will be valuable information for the touring botanist and naturalist. Accurate distribution maps for many species are published here for the first time.

With many of the European saxifrage species being part of a much more extensive Eurasian and North American distribution, the final chapters of the book discuss, quite concisely, species which are endemic to Madeira, Africa, the Near East and Caucasus, and the Himalayan region. The 65 species of North American saxifrage are considered in more detail in the final chapter of the book. This chapter has aimed to bring together information on the complete North American flora and has succeeded admirably in this aim, though my only regret is that the treatment is not in as much detail as in the European species.

I have no hesitation in recommending this book to anyone like myself who has a weakness for saxifrages as a group but who wishes to have more confidence in being able to correctly identify a plant and, following that, to be able to read more about the distribution, biology and ecology of the species. It is an adaptable book which can be used, for the European species, both as a working Flora (keys are included) and as a source of reference for the less taxonomically minded. Finally, the standard of printing and production and the ordering of information in the book should nurture an interest in saxifrages amongst a much wider audience.

D. M. PARKER