

Book Reviews

Dorset's disappearing heathland flora. A. J. Byfield & D. A. Pearman. Pp. 37 (text) + 47 (annexes). Plantlife, London & Royal Society for the Protection of Birds, Sandy. 1996. £10.00, ISBN 9–780903–138987.

This document does not, thank goodness, describe again the demise of Dorset's heathlands. That particular story is already well-known, with large tracts of heathland lost – and those remaining much fragmented – due to agricultural “improvement”, forestry, mineral extraction and urban expansion. Rather, it reports on the status of rare vascular plants on *surviving* areas of heathland.

The authors visited 390 heathland stands originally recorded by Professor Ronald Good as part of his remarkable floristic study of Dorset's vegetation in the 1930s. They found 137 (35.1%) had been “destroyed”, while 253 (64.9%) had “survived” insofar as they still supported some kind of heathland or other semi-natural vegetation. In Good's day each of these “surviving” stands supported at least one rare species (defined by the authors as including national *Red Data Book*, nationally scarce and Dorset R.D.B. species, plus a few other “species of note” – 41 species in all). The purpose of the new survey, carried out between 1990 and 1993, was to see how many of Good's populations of these species were still extant.

It was my Botany teacher at school who first pointed out to me that not finding a plant in a particular place was not the same as it not being there. Even so, the figures in this report are alarming. Of a total of 644 populations of rare species recorded by Good, the authors of the present study re-located only 163 (25.3%) – almost three-quarters had apparently been lost. This was more than *double* what one would have expected due to habitat loss alone. Take *Radiola linoides* as an example: Good recorded it in 74 stands, yet in the 38 of these stands still surviving in 1990–93 Byfield & Pearman could find *Radiola* in only two.

For a few species the situation may not be quite as bleak as suggested in the body of the report. For example, *Crassula tillaea* is given as having suffered a 100% decline in Table 5, as it had disappeared from all seven of the sites in which Good found it in the 1930s; yet in Annex 3 there are records of it from four of Good's stands in which he had not recorded it. Nevertheless, for most rare species the losses far outweigh the gains, for example: *Anagallis minima*, lost from eleven “surviving” stands and gained in just three; *Cicendia filiformis*, lost from nine, gained in two; *Lycopodiella inundata*, lost from 33, gained in none; and *Radiola linoides*, lost from 36, gained in four.

As the report highlights, very few of these rare heathland species are found in heath plant-communities (*sensu* N.V.C.). Most occur in mire, or in ephemeral or early-successional vegetation within the heathland mosaic – along footpaths and cart-tracks, around the margins of seasonal pools and in puddles, in summer-parched sandy grasslands, on village greens and tightly grazed “lawns”. The authors consider that lack of management, or insufficient management – and especially the decline of grazing – has been the main reason for the observed declines, allowing patches of open species-rich vegetation to become increasingly overrun by *Molinia*, *Juncus acutiflorus* and ericoid shrubs.

This report should be read by all those involved in the conservation of lowland heaths, not just in Dorset but elsewhere in the U.K. Its publication is timely, given the emphasis these days on biodiversity action plans and species recovery programmes. Management for rare species is a tricky business. Different species and *groups* of species – birds, reptiles, invertebrates and lower plants – have differing ecological needs. As this document makes crystal clear, on the Dorset heaths some major adjustments are required if the rare vascular plants are to survive. English Nature's Wildlife Enhancement Scheme for the Dorset heathlands, established in 1994, has already succeeded in getting grazing back onto many areas (about 2000 ha and 25 sites by September 1998) – just in the nick of time, let us hope, and an initiative very much in line with this report's view of what is needed. The authors do not beat about the bush: “in the long term we believe that only [through] the reinstatement of extensive pony and cattle grazing regimes over *large tracts* [of heathland] can the future of these plant species of nature conservation value be assured”.

Natives and Aliens – The wild flowers and trees of the Langdon Hills. Rodney L. Colc. Pp. 204. Basildon Natural History Society. 1996. £10.00, ISBN 0-9527849-0-4.

Since its inception in 1968 the Basildon Natural History Society has achieved much in promoting a greater awareness of the wildlife that surrounds the new town of Basildon, and the publication of this work marked its thirtieth anniversary. An evocative introduction includes the author's childhood memories of a time when it was safe for children to roam the local fields and woods unconsciously absorbing the natural world and, no doubt, coming home in a disreputable state.

The first part of the publication covers not only the geography and geology of the Langdon Hills, but also an interesting account of its history and of how the landscape and the people have affected the area leading to the mixture of natives and aliens that make up the flora that is present today. Part II is a list of the plants present, with a very readable account for each species which shows the author has an eye for detail, an extensive knowledge of the area and that he understands the factors that have resulted in the plants present today. Colour plates of some of the rarer flowers are included, but there are only two depicting the landscape, both of historical interest; perhaps a modern one for comparison could also have been included.

In summary, as a local Flora written for the local people, it serves its purpose admirably.

T. TARPEY

Wildflower Safari: the life of Mary Richards. W. Condry. Pp. 237. Gower Press, Llandysul, Ceredigion. 1998. £17.99, ISBN 1-85902-558-7.

There cannot be many B.S.B.I. members who have been the subject of a full-length biography, but when I finished reading this absorbing account, I felt that there would be few who would deny Mary Richards' worthiness for the honour.

Many readers will know of Richards only for her share with Peter Benoit in the "Contribution to the Flora of Merioneth" (2nd ed. 1963), but that is only a small part of her life. William Condry's warm and sympathetic account, which is based on her diaries, supplemented by her papers, letters and the memories of many friends, begins in her childhood and bowls along well, past her marriage in 1907 and extensive terms abroad before and after the First World War. There is no mention of funds, but they must have been quite liberal to allow these trips plus extensive travel within the British Isles as a keen member of the B. S. B. I. and the Wild Flower Society.

Her husband died in 1941, when Mrs Richards was 56. Up to this point, and for the immediate post-war years, her life is energetic, seemingly impervious to the elements and thus like that of many others of our members. But in 1951, at age 66, and less than halfway through the book, she leaves for Central Africa, at first for an extended holiday, but soon to live there. Her life departs from the ordinary, and the prose of the author changes too. The account of early days is well-written, but because he is relying extensively on diaries it becomes just a little a series of unconnected events. Year follows year with selected highlights. With the arrival in Africa the pace relaxes and the canvas broadens. I have done only a little botanising in Africa but the descriptions are right, the atmosphere is perfectly caught and with the accounts of the incredibly long days in the bush and then the ensuing hours of pressing and writing up, the reader is filled with amazement at her energy, stamina and achievement. She continued long, arduous collecting trips for over 22 years, until just short of her 89th birthday, collecting around 20,000 specimens for Kew. We are not told how many new species were discovered by her and her African assistants, but she had one genus - *Richardsiella* (Poaceae) - and 28 species named after her. Each year she made trips to Britain, taking up her botany here again!

William Condry says in his preface that years (20 in fact) have passed since the material was entrusted to him. We are fortunate that he completed the work just before his death and, indeed, saw the finished product. This is a nicely produced work with apposite photographs in colour and black and white.

D. A. PEARMAN

Flora of County Dublin. D. Doogue, D. Nash, J. Parnell, S. Reynolds, P. Wyse Jackson (eds.). Pp. 560. Dublin Naturalists' Field Club, Dublin. 1998. IR£25, ISBN 0-9530037-0-1. Special limited edition IR£ 150, ISBN 0-9530037-1-X.

It is said that the O'Connell monument in Dublin's main street was designed by a committee and that it is none the worse for that. The new *Flora of County Dublin* has been written by no less than 19 members of the Dublin Naturalists' Field Club, five of whom are credited with compiling and editing the work.

The county has been well served by Nathaniel Colgan's *Flora* of 1904 and a *Supplement* of 1961. The successful *Flora of the Inner Dublin* (P. Wyse Jackson & M. Sheehy Skeffington 1984) established a fieldwork team and a *modus operandi* which was used to good effect for the recent project. Fieldwork for the project continued until the early nineties though some more recent records are included.

Dramatic urbanisation together with afforestation, peat erosion, drainage, roadmaking and coastal exploitation have all taken their toll on the "wild" county though much of interest and value remains. Sixteen colour photos of good habitats are included in the *Flora*. Coastal habitats, gravel ridges, estate and semi-natural woodland, rivers and the mountains preserve the essential character of the flora as Colgan knew it.

Præger's 1919 obituary of Colgan is reprinted, emphasising his outstanding contribution and his palpable presence to students of Dublin's flora. A portrait of Colgan here would have been an enhancement.

The introductory chapters on topography, climate, geology, soils, history of the study of the flora, botanical districts and 18 habitat accounts are written by specialists or particularly knowledgeable members of the Field Club. Some are short factual accounts, some didactic and some discursive and provocative.

The account of the history of recording by Declan Doogue is a delight. There is a real sense of the author writing about kindred spirits. Some insecure references do not detract from this fine chapter: Wade's discovery of *Pastinaca* at Finglas Bridge predates the founding of the Glasnevin Gardens; caution should attach to any assessment of David Orr's record of *Centaureum pulchellum*, however "native" it looks now on the Bull Island. Orr perpetrated a large number of frauds, deliberately planting and subsequently finding rare plants or allowing others to find them!

The *Flora* is intended to stand alone. Colgan's 1904 records are repeated for the rarer plants. Tetrad dot maps are included for species with interesting or curious distributions, not wastefully for ubiquitous or very rare species. Colgan's irritating but justifiable use of an appendix for casuals and aliens not fully naturalised is followed.

The help of experts was enlisted for the critical genera, *Rubus*, *Salix*, *Rosa*, *Potamogeton*, *Taraxacum* and *Chara*.

I wondered whether *Sparganium erectum* records might not be almost all subsp. *microcarpum*. "*Circaea alpina*, weed at Blackrock" was surely *C. × intermedia*.

Epilobium obscurum, "occasional in base-poor wetlands" is also a common and troublesome garden weed, not at all particular about nutrient status. *Mercurialis perennis* may look native in several places in Ireland but is clearly spreading and a classic case of a relatively recent introduction. Colgan recognised it for what it is. *Trifolium fragiferum* survives at the Glasnevin pond by the River Tolka as McArdle reported it in 1902. *Hydrocharis* survived at Curragha at least until the mid-eighties.

The *Flora* has been handsomely produced. What a joy to have it at last between covers. It is a credit to the Club. The "Committee" approach has delivered a fascinating selection of introductory essays and a meaty and detailed account of Dublin's wild plants. Like Colgan's *Flora*, which was its model and inspiration, and the aforementioned O'Connell monument, it will become another of Dublin's worthy institutions.

D. SYNNOTT

Dandelions of Great Britain and Ireland. B.S.B.I. Handbook No. 9. A. A. Dudman & A. J. Richards, ed. P. H. Oswald. Pp. 344. Botanical Society of the British Isles, London. 1997. £15.00, ISBN 0-901158-25-9.

This fine and scholarly Handbook is the fruit of a quarter of a century's intensive study of the genus since Richards published his first attempt to bring order to British dandelions (*The Taraxacum Flora of the British Isles* 1972). The book is dedicated to the memory of the late Chris Howarth who played a major role in this revision. 235 species are described, a more than two-fold increase on the 132 in the earlier work since 34 of the latter are no longer recognised. There are excellent dichotomous keys, both to the Sections and to individual species or clusters of similar species. Bearing in mind the extreme difficulties of constructing keys to large apomictic genera this is as much as one can expect. There is also an ambitious multi-access key; it would be interesting to know just how useful such keys are in practice. 105 of the species are treated as "lead species", with closely similar species being given the same number followed by a letter. The descriptions are full and detailed and points of comparison between related species are clearly indicated.

The descriptions are augmented by silhouettes of whole plants and involucre drawings by the late Olga Stewart. There are interesting and helpful comments on apomixis, dandelion evolution and sources of variation, and invaluable advice on identification and on how, and how not, to collect. Distribution maps are provided for 178 species although these inevitably highlight the whereabouts of the relatively small number of dandelion enthusiasts. Sectional running heads are provided for the map section; it is a pity they are omitted in the main text.

96 (about 40%) of the species are thought to have been introduced and most of these are in the very large Section Ruderalia. The information on the extra-British distribution of the native species is patchy. There is a list (p. 15) of single species representative of phytogeographical areas. It would have been nice to have this expanded. The terms Western and Southern Atlantic hardly seem appropriate! One wonders whether, as in brambles, there are distinctive regional florulae.

There is a cryptic reference (p. 7) to a "*Taraxacum* herbarium of the British Isles" built up by Richards and later augmented by Haworth but with no reference to its present whereabouts. It is in the care of A. A. Dudman.

This is a first-rate Handbook, a worthy addition to the series and one of which the authors can be justifiably proud.

G. HALLIDAY

The Atlas Flora of Somerset. P. R. Green, I. P. Green & G. A. Crouch. Pp. xxiv + 292. Published by the authors. 1997. £25.00, ISBN 0-9531324-0-4.

There have been two previous Somerset Floras, one by R. P. Murray in 1896 and the other by R. G. B. Roe in 1981. Neither was furnished with distribution maps which are such important features of the present work. An even more impressive feature, which becomes clear as the book is studied, is the remarkably complete coverage of a large county over the last ten years. The area includes 977 tetrads and the average number of species recorded per tetrad is 311, which exceeds that in almost all recent Floras. The authors are to be congratulated on the exceptional thoroughness of their fieldwork, as well as on their presentation of the data. Perhaps all authors of Floras would benefit from being twins!

The initial information concerning methods, botanists, tetrad totals, geology and topography has been pruned to a minimum. It is supplemented by a summary of the 23 best botanising sites in the county, which at once demonstrates the breadth of the authors' local knowledge. Throughout the text there are helpful hints as to where to find good colonies of the less common species. The text itself is set out on A4-sized paper in twin columns, with inset maps for about half of the 2300 or so taxa mentioned. This large number of taxa includes many aliens. There are 16 pages of colour plates in the central section of the book, all taken by the authors, and a comprehensive index.

Although Somerset is conventionally divided into v.c.c. 5 and 6, its inland botany can be broadly described in three parts, West, Central and North. These parts are illustrated by many distribution maps in this Flora. To the west are the hills of Exmoor, with outliers in the Quantocks and the

Brendon Hills. These have high elevations, correspondingly high rainfall and acid soils. They are well provided with heath, bogs and *Quercus petraea* woodland, with plants such as *Agrostis curtisii*, *Eriophorum vaginatum*, *Listera cordata*, *Nardus stricta*, *Oreopteris limbosperma*, *Sibthorpia europaea* and *Wahlenbergia hederacea*. The authors conclude that *Leucojum vernum*, found in the lowlands here, is an ancient introduction. The central part includes the famous levels, where woods and even hedges are scarce, but the rhynes have a wealth of aquatics, e.g. *Alisma lanceolatum*, *Ceratophyllum demersum*, *Hottonia palustris*, *Hydrocharis morsus-ranae*, *Utricularia vulgaris* and *Wolffia arrhiza*. Here drainage and peatcutting have destroyed almost all the wet fen habitats, and *Lathyrus palustris* is all but extinct. If global warming does not trigger marine transgression during the coming century, this region may be further exploited to grow osiers for fuel. The northern part of Somerset is the least homogeneous, but it includes the botanically exciting limestone areas of Brean Down, Cheddar and the Mendips, with their relict populations of *Carex montana*, *Dianthus gratianopolitanus*, *Helianthemum apenninum*, *Koeleria vallesiana*, *Potentilla neumanniana*, *Saxifraga hypnoides*, *Thlaspi caerulescens* and rare *Hieracia*. Of course some species have distributions which do not fit this oversimplified picture, examples being *Cruciata laevipes* and *Rubia peregrina*; the latter is frequent inland in this county.

This Flora could be criticised for its omissions, the main being that it does not include that part of v.c. 6 which was part of the political county of Avon for the duration of the current survey. The reason was that a Flora for that ephemeral county was in preparation. The lack of sections on ecology and cryptogams can be remedied by future workers. The maps do not plot old records, but the text clearly states which species are thought to be increasing or decreasing. Conifers are perhaps less well covered than are other aliens, and the accounts of critical groups, such as *Rubus*, *Hieracium* and *Taraxacum*, are understandably incomplete. But these are minor quibbles. The Atlas Flora of Somerset can take its place as a first-rate modern County Flora, and is thoroughly recommended to residents and visitors alike.

H. J. M. BOWEN

The Flora of Oxfordshire. J. Killick, R. Perry & S. J. Woodell. Pp. xii + 386. Pisces Publications, Newbury. 1998. £45, ISBN 1-874357-07-2.

Oxfordshire has been a fortunate county, having had a series of Floras beginning in 1794 with *Flora Oxoniensis* by J. Sibthorp, updated by a series of later works. The last, published in 1927 was by G. C. Druce. Work started on this new one for v.c. 23 in 1968, the year Humphrey Bowen published his *Flora of Berkshire* for the adjacent v.c. 22 (which includes a substantial portion of present-day political Oxfordshire). However, the fieldwork behind this new volume has been executed extremely thoroughly over 28 years by an incredible number of botanists (duly acknowledged). Careful searching of herbarium and literature sources appears to have been carried out. There are some 90 pages of introductory material which give a good review of the topology, geology, palaeobotany (!), soils, climate, vegetation history and present-day communities (sumptuously illustrated in colour). A chapter entitled 'The Vascular Plants of Oxfordshire' actually gives details of some former Oxfordshire botanists, Floras, methodology of the recording exercise undertaken, inferences from the maps, dioecious species in the Oxfordshire flora and details of the structure and presentation of the species accounts. The lack of a decent topographical map is surprising.

The main body of the Flora (212 pages) enumerates the species systematically with clear tetrad distribution maps for all but the most ubiquitous and those found in less than eight tetrads. Nomenclature follows Stace, including his usage of English vernacular names. Clear and helpful notes are given on abundance and ecology. Herbarium specimens for interesting, rare or unusual records are cited. Casuals are included and noted in smaller type, as also are species unrecorded but which might be expected as they occur just outside the border (e.g. *Dactylorhiza traunsteineri* (Sauter ex Reichb.) Soó).

This Flora unusually contains a substantial (60pp) account of the bryophytes by A. Roy Perry and the late Eustace W. Jones. This is in the same format with similar details and again with sumptuous colour illustrations (43 on 8 pages). No account of the lichens is provided. The work ends with a useful gazetteer, bibliography and index to scientific and vernacular names.

Modern county Floras are no longer produced by a single enthusiast and expert, but by a team. The three well-known and distinguished authors have not only been supported by the experts on bryophytes, soils, geology, etc., but by very many distinguished amateur and professional botanists to give an authoritative full treatment.

The book, A4 size and heavy, is an altogether quality production. It is naturally going to be compared with the recent *Flora of Cumbria* by Geoffrey Halliday (University of Lancaster, 1997), which has set an incredibly high standard of both scientific content and production. The *Flora of Oxfordshire* comes up to this standard.

All the illustrations – line drawings, colour paintings (four full-page by Andrew Brown) and colour photographs are extremely good and beautifully printed. The book is not one to carry about, but for admiring and extensive reference in the library, office, study, etc. At £45 it is expensive, and it is to be hoped that botanists and plant-minded people will buy it. The authors, collaborators and publishers are to be congratulated on producing such a fine work. It is a shame we had to wait so long for it! Other workers currently producing county Floras must be intimidated about following these productions.

S. L. JURY

Scottish Wild Plants. Philip Lusby and Jenny Wright with photography by Sidney J Clarke. Pp. 116. Royal Botanic Garden, Edinburgh. 1996. Hardback £19.95, ISBN 1-8722091-17-1. Paperback £12.95, ISBN 0-11-495802-5.

This is a good book, ideal for dipping into for solace and inspiration in the winter and giving a fund of information for botanical excursions during the summer. It is the second in what is hoped will become a series on Scottish plant life and follows a broadly similar format to the book on Scottish orchids. In the foreword, David Ingram makes it clear that the aim of the book is to have professional botanists tell the story of some of Scotland's plants in such a way as to foster concern on the part of an increasingly conservation-conscious public.

The text consists of an introductory section which gives a brief history of the Scottish vegetation since the disappearance of the glaciers, an overview of the geographic elements represented in the Scottish flora and a discussion of the special features of the plants of the five broad regions of Scotland, often with reference to the plants included in the accounts. This is followed by a short section on the human influences on our flora, a sensible explanation of "rarity" and a too-brief discussion of practical conservation measures. The "meat" of the book follows with an account of some 45 plants. There does not appear to be a theme to the selection of species – except that it would seem that grasses and sedges are deemed not interesting or, more likely, not photogenic enough (or perhaps another book is already under consideration!). Many of the plants included are rare, some are quite frequent, but all have a good story well told.

As we have come to expect, the photographs are wonderful, but the reproduction is far too small to do them justice although it will have kept production costs down. The frontispiece of *Saxifraga oppositifolia* is mouth-watering and the inside-cover of the hardback edition, with a wide-angle shot of *Oxytropis halleri* and *Scilla verna*, is stunning. The design of the cover is rather odd, with a fine picture of Coire Ba and the west end of Rannoch Moor superimposed by a picture of *Moneses uniflora*.

The species accounts have a broadly consistent format detailing the history of the discovery of each plant, its British distribution, ecology, population biology and, where appropriate, conservation. As in the book on Scottish orchids, the distribution of each species is illustrated by a map of the botanical vice-counties in Scotland. For the rarer species, this scale is not very useful and can be very misleading – look at the distribution map of *Phyllodoce caerulea* and compare it with the distribution that is clearly explained in the text. Some explanation of the record of *Moneses uniflora* from Kintyre would also have been interesting!

The amount of information condensed into a couple of pages is impressive as is its diversity, ranging from historical anecdotes to seriously complex sex-lives. This is the main strength of the book: the amalgamation, in a very readable format, of information for each species that would otherwise require many different sources. Inevitably some accounts generate as many questions as

they answer and there are a few factual errors. One wonders whether a few references within the text would really have been such a disruption. For most people who have looked at plants in Scotland there will be some personal connection with the text; I was delighted to read that the first record for *Minuartia sedoides* in Britain was from Ben Klibreck, where I saw it in abundance a few months ago.

G. P. ROTHERO

The Ferns of Britain and Ireland. C. N. Page. Second edition. Pp. 540. Cambridge University Press, 1997. Hardback £95, ISBN 0-521-58380-2. Paperback £40, ISBN 0-521-58658-5.

Anyone already interested in ferns has seen this book before; it was first published in 1982. It was then (and still is) the "bible" for all pteridologists – describing, in a loquacious but very readable style, (almost) all the pteridophytes found in the British Isles, and their habitats and associated plants. General chapters (including 19 maps of environmental parameters) and multi-access and chart keys give a useful background. However, for those who already have the first edition, I find myself asking: "Do the changes/additions warrant the outlay this book requires?"

There are 100 or so extra pages; 20 on bracken alone with illustrations and descriptions of recent new taxa; three newly discovered *Equisetum* hybrids. Descriptions of taxa within *Dryopteris affinis* agg. have been brought into line with other recent authors but the hybrid *D. × complexa*, now included, is somewhat oversimplified. There is a useful discussion on *Asplenium adiantum-nigrum* and its serpentine form that is usefully recognised at subspecies level, [*corrune* (Christ) Rivas-Mart., probably more correctly called subsp. *silesiacum* Milde]. What have been added and indeed, enhance the book are some of Chris Page's excellent black-and-white photographs of plants in the field (e.g. *Equisetum sylvaticum* on p. 469). The silhouettes (printed with greater contrast than in the first edition) of leaves and whole plants certainly help to give the "jizz" of a species but in some cases this has been over-done (e.g. for *Selaginella selaginoides*, 19 plants over two pages). This is one case where the paler, but greater detail, "xerox" reproduction in ed. 1 is more effective.

Some things could have been improved, and indeed expected, if users' feedback had been listened to. Alien ferns are not treated, even in passing, and this is particularly sad in the case of *Azolla* (we may have two species), and *Equisetum ramosissimum*, the presence of which in Somerset may be natural. Field botanists need to be acquainted with these plants. There is still a major gap in the absence of stem T.S. diagrams of the *Equisetum* hybrids, a group on which Page is undoubtedly a world authority. The small sketch-maps of the British Isles are infuriating and in many cases, among the rarer taxa where new records have been made, the fact is not recorded – or the map is changed and the text not, or *vice versa*. There are errors in authors of Latin names which hinders its use as a standard reference and it is clear that Page has revised some paragraphs but not others which would have benefited from it (e.g. taxonomic concepts on p. 5). Taxonomic concepts have changed a lot in the last 15 years. There is no doubt that Chris Page's field observations are outstanding, and most of them are in this book. However, if he (and the publishers) are to achieve their aim of being really user-friendly, some serious editing to make the descriptive text *comparative* between close species or hybrids would be a great improvement.

Perhaps this edition was revised in a hurry; and maybe the publishers should take some blame too. To answer the question I posed above: the keen fern enthusiasts will want this edition, regardless, but this reviewer feels that the full potential of both the subject and the author has not yet been fully realised.

A. C. JERMY

The Natural History of Pollination. M. Proctor, P. Yeo & A. Lack. Pp. 479. Harper Collins, 1996. Hardback £35, ISBN 0-00219905-X. Paperback £16.99, ISBN 0-00219906-8.

The study of pollination biology has come a long way since the publication of Michael Proctor & Peter Yeo's *The pollination of flowers* (1973). So much so that the authors invited Andrew Lack to join them in writing an extensively revised and updated version of their earlier work. The result,

rather than going out as a second edition, has been published under a new title. The chief difference between the two works, apart from the enormous number of references to new studies, is that the new version adopts a rather more functional view of the phenomena involved and discussions are couched in terms of the costs and benefits to the various organisms involved. The subject matter covered, however, is similar between the two works, although the new version has a somewhat broader geographical scope, dealing with situations not only in the British Isles, but also on a world-wide basis – as the topic dictates; this is particularly noticeable in the improved coverage of the various vertebrate pollination syndromes.

Like its predecessor, this volume is packed with information and provides a fascinating and lucid discussion of the material in a style that is accessible to the intelligent layman as well as the professional. The topics that have benefited from updating are numerous and range from nectar composition and the chemistry of floral fragrances to late-acting self-incompatibility, the pollination biology of “primitive” angiosperms, and the ecology of pollination in plant communities; there is also a better account of the interrelationship between pollination biology and the genetical structure of populations. As a check on the extent to which new studies have been incorporated, I looked carefully at the section on water-pollination and found that all those discoveries that I knew about, including internal geitonogamy and underwater outcrossing in the Callitrichaceae, bubble-pollination in *Potamogeton* and new observations of members of the Zosteraceae, were indeed dealt with. The treatment of orchid pollination is now more integrated, being addressed in a single chapter rather than being split between two as before, where British and European species were separated from the exotics; much more is also made of floral deception and brood-site pollination. Another innovation that I liked was the presentation of certain topics and definitions in “boxes” that can be read more-or-less independently of the text.

Not surprisingly, in order to accommodate all the new material, some topics in the first edition have been omitted. Readers of this book who have an interest in the British & Irish flora will be disappointed to find that the short summaries of the pollination biology of selected plant species have gone, although some of the relevant data can still be found if searched for in the chapter on insect-pollinated flowers. Also gone is the discussion of speciation and reproductive isolation as promoted by different pollination syndromes. This is a pity because it is an important topic from an evolutionary point of view, although it is adequately covered in other books.

The photographic illustrations, including eight composite coloured plates, of both flowers and pollinators are first-class, and complement the text beautifully. In short, this is an excellent book and I can recommend it unreservedly to anyone with an interest in the natural history of pollination.

R. J. GORNALL

Plant Crib 1998. T. C. G. Rich & A. C. Jermy, with the assistance of J. L. Garey. Pp. vii + 392. Botanical Society of the British Isles, in association with the National Museums & Galleries of Wales and the British Pteridological Society, London. 1998. Paperback £15.00, ISBN 0-901-15828-3.

The concept of *Plant Crib 1998* can be traced back to Franklyn Perring's 'Blue Book' entitled *Hints on the determination of some critical species, microspecies, subspecies, varieties and hybrids in the British flora*, which was published in *Proc. B.S.B.I.* in September 1962 (Vol. 4, pp. 359–383) and also pre-published (March 1962) as a separate (price 3/6d) that was much used during recording for the *Critical Supplement to the Atlas of the British Flora* (1968). The more obvious predecessors of *Plant Crib 1998* (Wigginton & Graham's 1981 *Guide* (which was itself a revision of a 1976 work), Jermy & Camus's 1987 *The BM Fern Crib*, and Rich & Rich's 1988 *Plant Crib*) are outlined in the current work. This claims to have “been prepared to provide guidance with recording and identification of plants for the Atlas 2000 project”, but in fact it has turned out to be more than such a guidance, for it contains a lot of information which is not directly relevant to the Atlas 2000 work. For example, it carries sections on *Taraxacum*, *Hieracium* and *Rubus*, it includes many additional species (e.g. two in *Gilia*, three in *Amelanchier*) including a number not even known from the British Isles, and it covers several varieties (e.g. in *Galeopsis* and *Fumaria*), none of which will be included in Atlas 2000.

Plant Crib 1998 contains a large amount of very useful information that is certainly of enormous assistance in identification, and it should, if used wisely, greatly improve the accuracy of recording for *Atlas 2000*. The authors have performed an extremely valuable service in producing such a large and informative compendium in a very short time. The limiting time factor explains the rather loose editing that is evident throughout. The authors have been forced largely to accept what they have received, so that there are many cases where the treatment could have been more usefully much shorter (e.g. *Hymenophyllum*, *Oenothera*) or much longer (e.g. *Limonium*, *Melampyrum*, *Agrostis*), where glaring gaps in coverage exist (e.g. *Trichophorum* subspecies), where important references appear to have been overlooked (e.g. *Cerastium fontanum* and *Arenaria serpyllifolia*), and where there are obvious inconsistencies (especially in nomenclature) and even errors (e.g. *Deschampsia*). Such imperfections are to be expected rather than criticized, but the user needs to be aware of them. A corrigenda sheet is now available.

There are other important caveats for the reader to heed, all of which are hinted at by the authors in various places in the text. Firstly, this is not a book for beginners, but for the fairly experienced field botanist who will already have a good botanical vocabulary and will know how to distinguish each of the groups covered from taxa outside that group. Secondly, many of the “extra” characters used (i.e. those not usually considered diagnostic for the taxa concerned, but which are useful guides supplementing the strictly diagnostic features) are **not** absolutely diagnostic and must be used with great caution if they are not to mislead. The text must be scrutinized carefully to identify these, but sometimes they have found their way into the keys and tables, where they are liable to cause misidentifications.

I personally found the accounts of *Equisetum*, *Ranunculus* subg. *Batrachium*, *Alchemilla*, *Sorbus*, *Myriophyllum*, *Epilobium*, *Hedera*, *Callitriche* and *Carex* particularly valuable, but other readers will have their own favourite sections. No field botanist will fail to find a great deal of value in the latest *Crib*. It is not so much a permanent reference work as a commentary on the current state of knowledge on British plant taxonomy, a situation which is still changing rapidly and which will call for rather frequent new editions (rather than supplements) in future years. As the authors acknowledge, much further research, testing and updating needs to be carried out before *Plant Crib 1998* can be used as the basis for a Critical Flora of the British Isles. The latter is as distant a goal in 1998 as it was in the 1930s when first mooted.

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