

Book Reviews

A Rum Affair. Karl Sabbagh. Pp. ix + 223. Allen Lane, The Penguin Press, 1999. £16.99, ISBN 0-713-99277-8.

Karl Sabbagh is a Cambridge graduate and a television producer but not a botanist. This is a book about a botanist, about the unmasking by fellow botanists of fraudulent botanical records made by Professor J. W. Heslop Harrison in the Hebrides during his pioneering researches there with students from Newcastle University in the period 1935–51. In particular, it focuses on the part played by J. E. Raven and his visit to Rum in 1948, after he had been let down by the distinguished botanists that it was originally planned would accompany him. Raven found persuasive circumstantial evidence of plants being fraudulently introduced which he wrote up in a riveting manuscript that he brought back to his fellow dons at Kings College, Cambridge, where it was hushed up for 50 years. John Raven, the kindest and most sensitive of people and an expert and meticulous botanist found himself in the most invidious position. He alone of all those who had doubted Heslop Harrison's records had found evidence of fraud in the field, others just failed to refine the plants and insects claimed by Heslop Harrison. Raven had been a conscientious objector in the war, he would never have launched a personal vendetta.

Sabbagh has taken the trouble to research the nature of botanists, and field botanists in particular, he perceives that "botany is very different to a love of cultivating plants. In fact, there seems sometimes to be very little overlap" and, quoting from John Raven's friend, Tim Clutton-Brock, "my impression is that botanists are really fascinated with the details and the facts, whereas zoologists like working in bigger, broader-brush, theoretical frameworks". Heslop Harrison came to zoology before botany. Sabbagh's perceptions of us botanists, and his misconceptions, are refreshing, though some of the misconceptions might have been avoided if his research had included a day on a B.S.B.I. field meeting where he would have learnt an appreciation of the endless scope for errors in fieldwork.

The book is a vignette on the social structure of British botany in the nineteen thirties and forties. There are class prejudices, there is the Oxbridge-Redbrick divide, there are amateurs and professionals, there is Rum itself as a personal fiefdom of the Bullough family. There are cliques and rivalries but, transcending all, there is a culture in which there was a great reluctance to expose a fellow scientist especially when he had a family of successful scientists following him. There is much excellent biographical detail not only on the Heslop Harrisons and Ravens but also of other prominent naturalists of the day, including Frank Balfour-Browne, "Willie" Clark, J. E. Dandy, Dick David, E. B. Ford, George Taylor, Max Walters and A. J. Wilmot.

It is not clear if Sabbagh grasps why publication of an exposé was in a sense unnecessary. The botanical grapevine was sufficient. The relatively few who had a need to know because it might affect their research were tipped off. Inevitably, the insinuations sometimes suggested too black a picture. Be that as it may, many of Heslop Harrison's "dubious" records have since been refound.

Many a botanist has left a trail of dubious records behind him, and much trouble they have caused, but fraud, as such, is usually thought to be rare. Sabbagh studies the motives for scientific fraud, which he illustrates with other examples and suggests it to be much more common than generally thought. Quoting Felix Franks "If ever the delicate balance between making a living, searching for the truth, and obtaining the approbation of one's peers is upset, then there is the danger of deviant science". Nowhere, however, does he suggest that advancing years could have had something to do with it, or that some of the arrogance and dogma with which Heslop Harrison ruled his university department could have affected him under the maxim "power corrupts, absolute power corrupts absolutely".

This book is a first rate read, you will not put it down until the end. And, if you are a botanist, you will be left, fraud aside, with personal heart searching as you seek a humble approach to the intractable intricacies of nature.

M. E. BRAITHWAITE

A Naturalist's Shetland. J. Laughton Johnston. Pp xii + 506. T. & A. D. Poyser. 1999. £27.95, ISBN 0-85661-105-0.

It is some 20 years since the first publication of Sam Berry and Laughton Johnston's monograph on "The Natural History of Shetland" in the Collins *New Naturalist* series. Since then, much has changed in Shetland and much of this change has had a major effect on both the islands' natural heritage and our understanding of it. Of course this change had been largely anticipated at the time of writing, as the oil industry was already having a tremendous impact on the social, environmental and economic fabric of the islands. It is therefore timely that the state of the environment and our knowledge of it should be revisited, and who better than one of the original authors of the *New Naturalist* book.

The book is not simply a re-working of the previous book: indeed it has been thoroughly revised and an enormous amount of new material added, especially information and understanding gained from the many ecological and environmental studies that have taken place in the intervening years. Although the extent and scope of the book remains as broad as it was 20 years ago, the structure of the book remains largely unchanged (despite different chapter headings), moving through the physical influences on the landscape; the history of colonisation; and then on to the nature of the biological communities that make up Shetland's natural environment. The new information is crucial though; for the botanist, the publication of Walter Scott & Richard Palmer's *The Flowering Plants and Ferns of the Shetland Islands*, published in 1987 after the original *New Naturalist* volume is a case in point, and Laughton Johnston has incorporated a substantial amount of recent botanical work including the improved understanding of the Alpestrina hawkweeds (now 'protected' under the U.K. Biodiversity Action Plan) and the many studies on the enigmatic, but endlessly fascinating, serpentinite soils of the Keen of Hamar N.N.R. The final chapter of the book, reflecting perhaps the time we live in, deals with issues of sustainability: issues previously dealt with under the chapter devoted to conservation! The influence of the oil industry on the natural history has been all-pervasive. In some cases the effect has been direct, in terms of built development e.g. the giant oil terminal at Sullom Voe) and the effect of spilt oil on the coastal and marine environments, especially from high profile incidents such as the *Esso Bernicia* and the *Braer*. But the oil industry has brought wealth to the islands, which has been used to fund much other change. The influence of grants to the agricultural industry is one of the most noticeable in terms of its impact on Shetland's semi-natural vegetation. Laughton Johnston deals with these subjects effectively, and brings us right up to the present and the challenges that the islands (and their environment) face as we start another century.

The book is a *tour de force*. Its format and presentation have been well thought out, and the insertion of many new figures, sketches, and colour photographs give it a sense of quality that justifies its price. Some of the photographs have been strangely cropped and appear too small, but this rarely detracts from the overall feel of a real gem of a book, that will last well for at least another 20 years. Buy it if you are at all interested in Shetland, or plan to go at some time in the future. There's everything in it that you'd ever want to know about Shetland and a lot more besides!

A. DOUSE

British Red Data Books 1 Vascular Plants 3rd edition. Compiled and edited by M. J. Wigginton, Pp. 465. J.N.C.C. Peterborough 1999. £30, ISBN 1-86107-451-4.

It is 16 years since the publication of the 2nd edition of the Red Data Book for Vascular Plants, and in this time there have been many field surveys, county Floras, and local red data books. The previous slim volume was very much a basic factual account which stimulated more detailed work and helped set the scene for better things to come. This book, with 465 textual pages, expands significantly on the autecology, distribution and changes in populations of the species that have taken place especially in the last 20 years. Comments are also provided on the European or world-wide status.

The introductory pages set out the background and context of the book and summarise the all-important data sources. Without accurate record-keeping and meticulous checking, it would not have been possible to produce a meaningful and rigorous account for each species, or the summary tables. Accurate records also provide the essential platform for the analysis of numbers of populations, spatial changes, and colonisation of new areas in a truly scientific, rather than conjectural, manner.

There are 289 native or probably native species and subspecies that are considered to be threatened or near-threatened in Britain addressed in this volume, compared with 317 in RDB 2nd edition. This is due to the fact that 44 taxa have been excluded because they are non-native, introduced, casual, escaped, varieties, hybrids or of dubious status. There are now 20 extinct species as opposed to 19 in the 2nd edition; the most recent extinctions being *Agrostemma githago*, *Crepis foetida* and *Neotinea maculata*. On the other hand species identified by *Scarce Plants in Britain* as being rare have been added.

A significant change is in the revised I.U.C.N. threat categories, which have now been agreed after much debate, and which aim to provide clearer guidelines for evaluating rarity. Before, there were four categories and now there are eight. They are intended to help assess priorities for conservation on an international scale.

For each species the text follows a similar format, beginning with habitat, associates and reproductive biology. Historical and present geographical ranges are then described with population details. Information on threats and conservation management is provided and, finally, commentary on the distribution in a wider context i.e. European and/or world-wide. These accounts were contributed by many botanists, both amateur and professional, but the majority have been distilled by the editor, Martin Wigginton. His dedication and meticulousness have ensured that much of the existing and new information has been incorporated into the book. Margaret Palmer's patience and guidance ensured that these efforts came to fruition. The valuable contributions from other authors, following the excellent example set by the *Nationally Scarce Plants* volume, ensure that the individual accounts are unique, and provide variety for the reader. Some accounts are more erudite and detailed than others, reflecting the author's depth of knowledge and experience of their species. But this does not unduly detract from the work, as we know there is still much to be discovered about our rarer plants, and it leaves room for additional notes in the 4th edition!

Some of the most useful information is contained in tabular form e.g. the list of species protected by the various international and national regulations, and a list of endemics, 71% of which are threatened or near-threatened. Occurrence of species in different habitats shows the importance of our coastal areas, calcareous grasslands and mountains. Planners will be delighted to see the rare species listed for counties and unitary authorities.

In the conservation section, the many practical and positive steps that have been taken during the past 20 years through the activities of English Nature's Species Recovery Programme and Plantlife's Back from the Brink campaign, plus the Wildlife Trusts, the National Trust and the Wildflower Society, are discussed. Threats from habitat destruction, pollution, collection and global warming continue to exist but, on the whole, the decline of the rarest species has been halted and the status of many has become more secure.

Recently, thoughts have been focused on genetic aspects, and this is a subject which has been neglected botanically. Now there is an increased awareness of the conservation of genetic diversity and a section summarises current aspects and highlights this as an area of work that needs increased effort.

There are a few drawbacks to note. The volume is definitely too heavy to carry far and the maps for some species could be considered a waste of space (those with one or two dots or numbers). There is also the exclusion of Ireland and the Channel Isles (but there is the Irish Red Data Book 1988 to compensate).

I am well aware of all the hard work and collaboration that is needed to produce such a volume, and I have no hesitation in saying well done to all concerned, on producing a work which is informative, interesting to read and, on the whole, well laid out, and a substantial improvement on the previous editions.

L. FARRELL

Sir Joseph Dalton Hooker, traveller and plant collector. R. Desmond. Pp. 286. Antique Collector's Club, Woodbridge, with the Royal Botanic Gardens, Kew. 1999. Hardback £29.50, ISBN 1-85149-305-0.

No British botanist can have started life with so favourably auspicious a pedigree as the younger Hooker: a professor of botany who would shortly become Director of Kew, for a father, Dawson Turner for a grandfather and James Dalton for a godfather. He would subsequently reinforce that by marrying the daughter of Henslow and, when she died, the widow of Scotland's leading naturalist, Sir William Jardine. Various other scientific luminaries can be found slotted into that dynasty on all its sides. Though very different in temperament from his father, it must have seemed foreordained that he would have a no less illustrious career in the same line of work.

That Ray Desmond should write this major biography seems almost to have been foreordained too. After many years as librarian and archivist of Kew he has produced in a steadily more impressive stream a history of the India Museum, a history of the botanical exploration of India and the long-needed, definitive history of the Royal Botanic Gardens themselves. Now this massive accumulation of expertise has eventually all come together in this scholarly yet highly readable, lusciously illustrated account of the man who will always be associated first and foremost with the exploration of the flora of the Himalayas and the enrichment of our gardens with so many of their finest rhododendron species.

As early as the age of five or six Joseph Hooker gave signs of having inherited the family's taxonomic *blick* by identifying the moss *Bryum argenteum* on a Glasgow wall. In addition to that, though, he turned out to have enormous physical stamina, acute powers of observation, that painstaking industriousness typical of so many Victorian 'workaholics' and, not least, a shyness which bred a complete self-sufficiency. This combination of qualities ideally equipped him for the role of explorer, the role which he himself must surely have recognised as the one most central to his being. This took him first to Antarctica, as a naval surgeon in his early twenties; then came the years in India – the most momentous experience of his life, to which Desmond fittingly devotes no fewer than six chapters, the main bulk of the book – and finally, as late palliatives for his enduring restlessness and love of travel, shortish trips to the Middle East, North America and Morocco. As a result he acquired a wider knowledge of the World's flora at first hand than any of his contemporaries and was able to make important pioneer contributions to plant geography. In particular, he supplied valuable ammunition to Darwin, his long-time friend and confidante, who chose him as the first to hear of his conversion to the view that species are not immutable.

Unlike the elder Hooker's achievements, which were pre-eminently in building institutions, as a teacher and administrator, the son's were essentially in his individual capacity as a scientist. Kew was not necessary to his career except in providing him with a permanent base as a taxonomist, and it was not indeed till he was nearly forty that that base became a secure one, when at last the post of Assistant Director was created for him by the government. That was only a half-solution, however, for he was not at all cut out by temperament for life as a public administrator: short-fused and often brusque, he was tactlessly impetuous and inflexible in dealings with civil servants and politicians where his father had been the soul of diplomacy. An academic position would have suited him far better, if only he had not been precluded from that by a lifelong aversion to speaking before audiences.

If the author has one weakness as a historian and biographer, it is in closing his eyes overmuch to the frailties of his subjects. It is only in the very last paragraphs that he allows us to learn of Hooker's petty and shameful treatment of W. H. Fitch, the artist to whom he owed so much (and some of whose superlative hand-coloured lithographs are reproduced in this book). And we are not told at all of his unpardonable subverting of Welwitsch in that heroic man's legal battle with the Portuguese government over his Angolan collections.

Of more moment to readers of this journal, though, is the absence of any reference to Hooker's publications on British botany. That there were indeed any of these at all is, on the face of things, surprising, for he would appear to have scarcely looked at a wild plant in these islands after his student days were over. Rather, as H. C. Watson was moved to complain to J. G. Baker in 1866, he seemed to hold "British botany in a sort of contempt". It is all the odder, therefore, that he undertook *The student's flora of the British Islands* for Macmillan's around that very time, a period, moreover, when he was seriously behind with the *Flora of British India* and having to carry the entire load of Kew's administration (for Thiselton-Dyer only arrived in 1875 to relieve him of much of that). It is known that his then solitary scientific assistant, Baker, whose

knowledge of British plants was profound, contributed at least the excellent section on *Rosa* and there must be a suspicion that he ghosted a good deal more. For the work certainly met with a favourable reception, went to three editions and several reprintings and was still the preferred text of some field botanists as late as the 1950s, when Clapham, Tutin and Warburg finally edged it into extinction.

Hooker's name was to become very much more familiar, though, as one of the duo to whom that all-too-hardy evergreen, the *Handbook of the British flora*, was accredited from the 5th edition onwards. The creation originally of George Bentham, who had knocked it off back in 1858, as only that incredible man could have done, as a before breakfast relaxation ("for the ladies", as he once admitted), this brought to bear on the taxonomy of this country's vascular plants the broad species concept advocated by those, at Kew and elsewhere, who were struggling to impose order on the almost overwhelming mass of novelties pouring in from newly-explored regions of the globe. The ruthless 'lumping' that this approach involved conveniently resulted in a much simplified text which held a particular appeal to beginners. But by lending his authority to what amounted to a dismissal of years of critical work by those who knew our flora far better, Bentham did serious and lasting harm to British field botany. On the credit side, however, was the equally lasting influence of the companion volume of illustrations by Fitch and Worthington Smith, first introduced in 1880. Those black-and-white figures, which cried out to be painted in, were to send hundreds over the years scouring the British Isles on a lifetime quest to register by that means the finding of as many as possible of the species depicted – as a substitute for the herbarium specimens which would previously have served as trophies.

Again, this was an incongruous publication for Hooker to have taken on, though it is not at all clear whether its editing required much from him in the way of either work or knowledge. Probably he did so in part out of loyalty to Bentham's memory and in part because in his retirement he felt in need of the money that this even steadier seller could be relied on to continue to bring in. It is ironical, and sad, that so misguided a work, in which his involvement may well have been tangential at most, outlasted by far everything else that he published and served to keep his name before the public. For a man who ranks as one of Britain's all-time botanical greats it was very far from being an appropriate memorial.

D. E. ALLEN

Atlas Florae Europaeae. Distribution of Vascular Plants in Europe. J. Jalas, J. Suominen, R. Lampinen & A. Kurtto, eds. Committee for Mapping the Flora of Europe & Societas Biologica Fennica Vanamo, Helsinki, 1999, vol. 12 Resedaceae to Platanaceae, pp. 1–250. ISBN 951-9108-12-2.

Volume 12 is the latest in the series from the Atlas Florae Europaeae Committee. As I shall explain later, it is much more than a set of maps, although there is no shortage of these in the present work (343 in all). Although eleven families are dealt with altogether (Resedaceae, Sarraceniaceae, Droseraceae, Crassulaceae, Saxifragaceae, Parnassiaceae, Hydrangeaceae, Escalloniaceae, Grossulariaceae, Pittosporaceae and Platanaceae) most of the volume is taken up with treatments of *Sedum* and *Saxifraga*. Taxa are mapped down to the level of subspecies, with spots and other symbols indicating presence/absence, extinction/probable extinction, native/alien status, etc. A cut off date of 1930 is used to distinguish recent from older records. This does not give an especially accurate picture of present-day distribution, such has been the pace of extinctions in some taxa, although even with this criterion the vulnerability of some taxa is clearly evident, e.g. the chronic decline of *Saxifraga hirculus* across much of its continental distribution.

The authors/editors of the respective accounts have taken the opportunity to revise the treatments provided in Flora Europaea (editions 1 and 2) and, at least as far as *Saxifraga* is concerned, they have included not only necessary nomenclatural changes, but also new taxa that have been recently recognised or discovered in places as far apart as Spain and northern Scandinavia. In many such cases a certain narrowing of the species concept can be detected from the earlier Flora Europaea account. In my view, this can often be a good thing, because scrutiny of the resulting distribution maps reveals interesting patterns of geographically correlated variation that would otherwise have been obscured. Analysis of these patterns from a phylogeographical perspective is now possible using the various molecular techniques that are available, and by this means we learn more about how our flora has evolved and become distributed.

Apart from the detailed maps, the notes on distribution, the revised nomenclature and updated taxonomy, what else have the authors/editors provided for us? The answer is an extraordinary amount of information by way of literature references not only to the nomenclature and taxonomy but also to studies of biosystematics (which here includes almost any aspect that has a bearing on variation or relationships), with chromosome numbers being singled out for detailed attention. The treatment of chromosome numbers deserves special praise because it is both comprehensive (citing a list of the countries from which the counts were made) and critical (indicating aberrant, problematic or otherwise erroneous counts), and includes references to the original literature. Speaking as someone who has attempted such a review of the genus *Potamogeton*, I know just how much work is involved in this task alone.

In short, the authors and editors are to be congratulated on a most impressively detailed and accurate piece of work which will join its predecessors as an essential reference for anyone with an interest in plant geography, evolution, floristics and conservation.

R. J. GORNALL

Flora of Cornwall. Atlas of the Flowering Plants and Ferns of Cornwall, with notes on some species recorded on the Isles of Scilly. C. N. French, R. J. Murphy & M. G. C. Atkinson. Pp. 400. Wheal Seton Press, Camborne. 1999. £40, ISBN 0-9534613-0-0.

The need for an entirely new Cornish Flora has been keenly felt for some while. The present work, unlike its predecessors, is an Atlas. It is based on systematic tetrad recording by a small team of volunteers begun in 1987, along with a wealth of old and not-so-old records gleaned from other sources. The scope of the Flora is formidable, with entries for some 2,600 vascular plant taxa. Its treatment of aliens and critical groups like brambles and dandelions is particularly impressive. Many sub-taxa not mentioned in Stace (1997) are included, though the taxonomic value of some of these must be questionable. (What, for example, is *Festuca ovina* var. *hispidula*?)

The volume is in A4 format, with the usual introductory sections covering geology, soils, climate, vegetation history and so on, plus descriptions of the main plant habitats and essay-length pieces on four regions (Bodmin Moor, the Lizard, West Penwith and the Isles of Scilly). The habitat/vegetation accounts are detailed and well-rounded but, rather oddly, only "wetlands" and heaths are described in terms of their NVC communities.

The book attempts to deal with the *whole* of Cornwall although, as the authors admit, coverage of the Isles of Scilly is considerably less thorough than the rest. The islands are (inexplicably) omitted from the distribution maps, which means that for species with no mention of Scilly in the text one is left not knowing whether they occur there or not. For example, on p. 58 *Ranunculus bulbosus*, *R. parviflorus*, *R. sardous* and *R. sceleratus* are all found on Scilly, but (unlike *R. repens*) are not listed as such (and incidentally *R. marginatus*, given as "thought to be extinct", is still extant on St Martins). The introductory essay on the Isles of Scilly (p. 31) lists certain "missing" plants that are common on the mainland, including at least two (*Stachys officinalis* and *Dipsacus fullonum*) that *do* occur there. This reviewer, for one, ended up wondering whether the Isles of Scilly would have been better left out of the book altogether.

The species accounts provide useful summaries of habitat preferences, conservation status, distribution and abundance. Tetrad dot maps - showing old (pre-1980) and recent (post-1979) records - are placed within the text, and for all the less common species there are lists of selected localities. Production constraints have meant that maps are limited to four per page. This is not a problem when the unmapped species are rarities with all their localities listed in the text, but it is slightly annoying that some "less rare" plants are without maps too (e.g. *Cerastium semidecandrum*, *Ranunculus sardous*, *Picris hieracioides* and *Persicaria amphibia*).

Assessments of "conservation status" are based on *Scarce Plants in Britain* (1994) and, unfortunately, the badly out of date 2nd edition of the Red Data Book (1983) rather than the 3rd edition (1999). Readers should therefore take the categorisation of rare species (and the maps on p. 6) with a hefty pinch of salt! The "locally scarce" list on p. 381 is an updated version of one produced for the *Red Data Book for Cornwall and the Isles of Scilly* (1997), but the rationale behind the selection of species is not stated and the omission of *Brachypodium pinnatum*, *Carex disticha*, *Catabrosa aquatica*, *Neottia nidus-avis* and *Trifolium fragiferum*, for example, is hard to understand.

Floristic similarities and differences with neighbouring Devon, and beyond, would perhaps have merited further commentary and analysis. To anyone living "up-country" it must seem strange that in Cornwall *Berula erecta*, *Briza media*, *Dactylorhiza fuchsii*, *Hordeum secalinum* and *Leontodon hispidus* are all extremely rare, while *Valeriana dioica* and *Limonium vulgare* (to name but two) are missing altogether. Each county has its own special quirks, of course, but Cornwall seems to have more than its fair share!

Even the most thoroughly researched Flora will fall short of being the last word on its subject. As the authors rightly say, "this Flora ... should be considered as part of an ongoing study" (p. 1). It is an important milestone that will, in its turn, stimulate a new wave of botanical recording in the county. And, yes, I am pleased to report that there *are* plants out there still waiting to be discovered: a brisk walk along the coast between Millandraeth, Looe and Portnadler Bay in October produced a list of 200-odd species, including new tetrad records for *Atriplex portulacoides* and *Verbena officinalis*, and post-1979 "firsts" for *Asplenium marinum* and *Geranium rotundifolium*.

At £40 this Flora is not cheap, but as a turn-of-the-century guide to the botanical delights of this strange and wonderful county it is probably indispensable. Despite its few shortcomings, it stands as a fitting tribute to the enormous effort of all those involved in its production. Anyone with more than a passing interest in Cornwall's plants should make sure they get hold of a copy.

S. J. LEACH

Flora of Cornwall on CD-ROM. Cornwall Business Systems. 1999. £40.00 from CBS House, Albany Road, Redruth, Cornwall, TR15 2HY

By producing the *Flora of Cornwall* on CD-ROM format, it is possible to include much more than appears in the book. All of the introductory chapters and appendices can be read on screen if desired, but the bonus is that the database on which the Atlas section of the Flora is based is also included, from which maps can be generated, including species not mapped in the Flora. The CD-ROM database also contains some records extra to the Flora. Many more photos than could be produced in the book are also included.

Species are searched for using Latin or common name lists arranged alphabetically. On selection, the species caption from the flora is reproduced, one or more photos of the species appear, if available, the map is generated and the records listed. The map can be generated on one of a choice of six bases including a geological base, at one of four sampling scales, 10-km, 5-km, tetrad and 1-km scales. The records for the species are listed giving grid reference at tetrad level, locality, date and recorder(s) and can be ordered by grid reference or year. Some limited querying of the records can be undertaken on a date basis, such as records for a particular year, before or after a chosen year, or for a date range.

A gazetteer of Cornwall is included, searchable by place name or by grid reference, and pinpointing places on the map. This links to the Flora database, making it possible to list the records for a particular 1-km square, or to produce a printable species list for the square. Like the Flora records and map, these lists can be limited to particular date choices.

Other add-ons of interest are a tourist map of the county and photographs and information on local landmarks. The species photographs can be searched and viewed on their own.

Using a recent PC with a fast CD-ROM, the map and records were generated fairly quickly for the rarer species, less than 15 seconds for species such as *Polygonum maritimum* or *Rumex rupestris*, which have about 100 or less records. However for commoner species, there is some waiting time involved; to generate *Agrostis capillaris*, listed as the 100th most commonly recorded species, took 90 seconds if the records were listed by year or 160 seconds if listed by grid reference. Other than a few error messages on installation, which were notified with this review copy, the only problem some users may have is resetting their usual display resolution on use to be able to view the CD-ROM full screen.

As the first county Flora to be produced on CD-ROM as well as traditional book format, this is surely an indicator of the future. This CD-ROM will be invaluable for any botanist regularly requiring more detail than can be gleaned from the printed media.

A. STEWART

Britain's Rare Flowers. Peter Marren. Pp. xv + 334. Poyser Natural History, London. 1999. £24.95, ISBN 0-85661-114-X.

Over a decade ago a book published with the title *Wild Flowers in Danger* caused widespread concern because it was mainly a guide to where to find our rarest plants and the book itself added to their danger. So, you might expect *Britain's Rare Flowers* would take you down the same path to the exact spot – but you would be wrong. Peter Marren has written a celebration of our 300 rarest species bringing them to life along with all those botanists, past and present, who have found them and enthused about them over the last four centuries – a book for the armchair rather than the field.

What the author set out to do, and achieved so triumphantly, was, as the American writer John Burroughs said of Gilbert White, 'to seize the significant and interesting features and put the reader into sympathetic communication with them'. He takes you on a journey, first to meet the fathers and elders of British botany, from William Turner to George Claridge Druce, who discovered our flora, and then to areas like the Lizard Peninsula, Avon Gorge, Breckland, Upper Teesdale and the Scottish Highlands which hold the highest concentrations of rarities. During the journey he manages to convey the excitement of discovering or rediscovering a rare plant in a wild place even after a tiring day in ghastly weather.

Later he looks at individual species and considers the value of research in assisting their conservation. He can be wise and challenging and points to a growing gap between theoretical scientists and practical conservationists in the last 30–40 years (partly a direct result of the disastrous break-up of the Nature Conservancy Council). However, his admission that he is not a scientist perhaps explains his ambiguity about the effects of collecting and a failure to appreciate that the picking of daffodils can be beneficial and that banning it has caused decline. On the other hand his non-academic view that long-established introductions like the spring crocus and spring snowflake deserve protection and were properly included in Eds 1 & 2 of *British Red Data Book 1: Vascular Plants* and should not have been excluded, as they were in Ed. 3, is surely to be welcomed.

The non-scientific background also shows in his failure to appreciate variation within species e.g. that there are native and introduced forms of sainfoin, the former in the ancient turf of the Wiltshire Downs and only the latter brought in as a fodder crop in the 17th century, or that there are native forms of weed species on beaches and river banks and others which have come in as followers of man. Elsewhere he gets into a muddle with Batrachian *Ranunculus* hybrids placing *R. aquatilis* × *tripartitus* in the New Forest where the taxon is *R. omiophyllus* × *tripartitus* (*R. × novae-forestae* S. D. Webster).

It is the mixture of fact and anecdote which make the book so palatable and informative but, as these examples show, it cannot be used as an entirely reliable source. There is a wicked story of one of the 14 remaining wild cotoneasters on the Great Orme being cut down by ill-trained conservationists but the truth is that there are only seven native bushes and none of these or any translocated plants have been destroyed. Inaccuracies have crept into the captions (a non-botanical picture-editor?) so that Welsh botanists will be surprised to learn that *Chamaemelum* (*sic*) *nobile* is 'now restricted to scattered localities in southern England' when there are 8 10-km square records on their coast north to Llyn. The photo of Lundy cabbage, *Coincya wrightii*, given as on p. 121 in the index turns up on p. 124 with a caption reading 'two kinds of beetles seem to eat nothing else' whilst the adjacent text names three.

The index is the worst feature of the book – totally user-unfriendly. It is arranged in alphabetical order of English names starting with the first word so that to find references to our mountain saxifrages you need to look under Alpine, Drooping, Marsh and Tufted, but there is no consistency – both native Limes are together! Moreover, recommended English names are not always used: to find Goldilocks Aster, *Aster linosyris*, you would need to know that the Marren name is Hair-leaved goldilocks. There is no alphabetical list of Latin names.

So if you want reliable facts about Britain's rare plants (and no index at all!) turn to Ed. 3 of the British Red Data Book (Wigginton 1999 see Review p. 350), but it will not compare as a good read with Peter Marren's compelling story – but regard some of that as fiction – and the index is friction.

F. H. PERRING

Vegetation of the British countryside – the Countryside Vegetation System, Ecofact Volume 1. R. G. H. Bunce, S. M. Smart, H. M. van de Poll, J. W. Watkins & W. A. Scott. Pp. 224. Dept. of Environment, Transport and the Regions, London. 1999. Price £48.00. ISBN 1–85112–155–2

Measuring Change in British vegetation, Ecofact Volume 2. R. G. H. Bunce, S. M. Smart, H. M. van de Poll, J. W. Watkins & W. A. Scott. Pp. 144. Dept. of the Environment, Transport and the Regions, London. 1999. Price £10.00. ISBN 1–870393–47–3

Ellenberg's indicator values for British plants, Ecofact Volume 2 Technical Annexe. M. O. Hill, J. O. Mountford, D. B. Roy & R. G. H. Bunce. Pp. 45. Dept. of Environment, Transport and the Regions, London. 1999. Price £5.00. ISBN 1–870393–48–1

One of the biggest problems faced by distribution ecologists and conservation campaigners alike is that the British vascular plant flora (impoverished though it is by continental standards) appears too vast in terms of species to survey quantitatively. Where is the plant equivalent of the common bird census, plant conservationists cry – well, this may be it.

These three volumes are the first major publication resulting from the Countryside Survey: the results from the Countryside Surveys of 1978 and 1990 undertaken by the Institute for Terrestrial Ecology have been analysed and compared, giving for the first time a quantitative, objective and repeatable survey of the vegetation of the British countryside. The data are collected from 508 1-km squares containing over 13000 plots, selected by stratified random sampling so that the full range of landscape types are included. The data collected include species lists with abundance from quadrats and the results have been analysed in a multitude of ways. So, what do we get in these three publications? To start with, 37 groupings of plants by their ecological preferences, and 100 broad vegetation classes called the Countryside Vegetation System or CVS. Does this replace the National Vegetation Classification (NVC)? No – the two systems are very different – the NVC covers semi-natural plant communities in detail and the sample plots were selected deliberately rather than randomly; the CVS aims to cover the vegetation we encounter in the wider countryside, with the random samples allowing statistical analysis for monitoring change in the British vegetation.

In Volume 1, there is an abundance of coloured distribution maps of vegetation classes, pie charts and histograms of landscape associations, soil and land cover, together with comparisons with and relationships to the NVC and also Grime's plant strategy characterisations (based on three basic strategies – competitor, ruderal or stress-tolerant, or combinations of these three). Volume 2 provides lists of the vegetation classes and indicator species groupings. There are even statistics on the decline of butterfly (larval) food plants and effects on lowland farm birds. The second volume is also supported by a technical annexe containing re-calibrated Ellenberg values for the British flora, which I have already found invaluable. If you haven't encountered Ellenberg values before, these constitute a set of ecological indicator values based on a plant's tolerances of temperature, light, pH, etc. and are particularly useful in attempting to quantify some of the vaguer aspects of descriptive plant ecology.

Overall, the amounts of data contained within are staggering, perhaps even overwhelming, but the project is well on its way to confirming what many of us have suspected for some time – that nitrogen-loving competitors are on the increase at the expense of less competitive species. There is no doubt that the data can be used as serious campaigning tools for changes in modern agricultural methods, but my impression is that these messages are almost lost in the mass of information; hopefully we will see a series of papers published as extracts from these reports. The programme is being repeated as part of Countryside Survey 2000, so we can expect further updates on the state of British vegetation, in addition to Volume 3, *Causes of change in British vegetation* (in prep.). Following Countryside Survey 2000, it will be interesting to see if the periodicity of the surveys is right. The point of monitoring is to detect change and ten years may tell us of change and of loss – but will it give us enough time to do anything about it?

In the introduction to Volume 1, the NVC, the Phase I Handbook and the Flora Britannica are listed as essential items for the ecologist's tool box. While I might take issue with the inclusion of Flora Britannica, I would suggest that these volumes are essential reading for any professional plant ecologist, especially those involved in plant conservation. However, at over £60 for the three softback volumes, together with the dense technical content, it will be the truly dedicated amateur botanist who dips a toe into the Countryside Vegetation System.

S. J. WHILD

The liverwort flora of the British Isles. Jean A. Paton. Pp. 626. Harley Books, Colchester. 1999. £52.50, ISBN 0-946589-60-7.

Liverworts in the British Isles (BI) grow in an almost continuous range of habitats from the lowlands to the highest mountain summits. Of about 6,000 species known in the world, the number in these islands, 296 species, two subspecies and five varieties, seems quite insignificant, but they comprise nearly 70 per cent of the European liverwort flora, and their richness and diversity in the western parts of Britain and Ireland is of great international significance.

This is not the first liverwort book for the BI to be produced this century; but it is a definitive, modern work. The pages are approximately A4, the text is in two columns and each of the 314 text figures contains many individual drawings, all by the author. After the preliminaries an Introduction of 21 pages contains sections on Collection and Preservation, and Examination of Material. One on Habitats and Distribution lists species of diverse habitats and then species characteristic of five more specialised habitats. There are sections on Conservation and on how to use the text and figures. Ending the book is a useful illustrated Glossary, a list of Vice-Counties of the British Isles with a map, a Bibliography and an Index.

The bulk of the book is the Flora wherein every taxon at present known in the BI is keyed out, described and illustrated. Full descriptions, even including unpublished chromosome counts, are followed by statements on habitat, ecology, altitude, associates and distribution both within the BI and without. Then there are notes on distinguishing features, comparisons with other species and observations on morphological variations. Each taxon has a fine Figure or Figures which accompany the descriptive section and illustrate everything one would want. For example, that of the common liverwort *Cephalozia bicuspidata* which is '... in almost any moist or wet, shaded or insolated habitat ... from sand, loam, peat ...; also on rotting wood ...', has over 60 individual drawings which include several habit figures (female, male and sterile), leaves, cells and stem sections.

Primarily an identification manual, its importance to those studying plant communities in the BI and Europe will be profound and cannot be over-emphasised: the rich accounts of the ecological requirements and associated species were gathered from the author's intimate field studies of the plants over many years. With the excellent, all-encompassing illustrations, keys and full descriptions, this book is a highly significant event in the study of European liverworts.

Through the publication in the 1900s of several important books on mosses and liverworts in the BI, and an active British Bryological Society, our bryological flora is probably the best known in the world. It is because of the intense interest thus aroused and of the expertise of dedicated bryologists like Jean Paton that species are still being added to the British and Irish lists, some of them new to science. This hardback with covers bearing splendid colour photographs is not for the pocket: it weighs over 2.5 kg. Harley Books has done well to add this attractively produced work to their already distinguished list.

Jean Paton is to be congratulated on a splendid achievement. This is a veritable *tour de force* that will compel the respect and admiration of bryologists world-wide and become the most used liverwort book in the British Isles and Europe in the new century.

A. R. PERRY