Book Reviews

Mediterranean wild flowers. M. Blamey & C. Grey-Wilson. Pp. 560, with 192 pp. of colour plates and numerous marginal line drawings. Harper Collins, London. 1993. Price £25.00 (ISBN 0–00–219901–7).

This is a comprehensive field guide to the flowers of the Mediterranean coasts and islands, including trees and introduced species. More than 1,500 species are illustrated by Marjorie Blamey's colourful paintings which are bound together in the centre of the book. The format is similar to that of *The illustrated Flora of Britain and Northern Europe*, published by this artist and author in 1989, but the smaller size of the new volume makes it more easily carried and convenient for holiday field work. This compensates for losing the pleasing coloured marginal paintings in the earlier volume, and thus having text and illustrations together; in the new guide there are helpful line drawings illustrating significant characters of some of the plants. The species are listed by their Latin names in the text, followed by English names which give easy access for those not familiar with Latin; for me this is a great improvement on the format of the earlier book, which was arranged under English names.

Alas, on the dust jacket it is stated to be a "complete" guide to the native and introduced flowers of Mediterranean coasts, and also includes those species found growing up to 1000 m altitude. This reads like a publisher's description rather than the authors', as complete coverage of this very rich and varied area of considerable size would need a book of much larger dimensions.

The division of the region into three sections in the Introduction puts Crete and the Balkans into the Western Mediterranean, but these floras are generally considered to be more closely allied to those of Mediterranean countries further east than to those of the western Mediterranean and the Iberian peninsula. From my experience the marked differences between the floras of eastern and western Mediterranean have been insufficiently stressed in the distribution notes. We are told that the most commonplace northern European species have been omitted; but some are included.

Over such a wide area the distribution data must have been partly written from sweeps through the literature. As an example from Crete, where many new records have been published in recent years, *Lamium purpureum* and *Filago arvensis* are given as "not in Crete", but both are listed in *Crete: checklist of the vascular plants*, by Sir Colville Barclay (1986), and have been seen by the writer in western Crete. But the Cretan tulips are clearly set out and differentiated.

To be complete for any one area would not be within the scope of this guide, but it gives excellent general coverage. With the clear paintings, brief but diagnostic text, and the line drawings, it should be possible to identify a good proportion of plants seen, despite the absence of keys. The book will fulfil its aim to promote an understanding of this unique flora, and it is a reminder of the often magically beautiful Mediterranean coastal and island flowers.

M. Briggs

The genera of the Umbelliferae. M. G. Pimenov & M. V. Leonov. Pp. 156, one map, one table. Royal Botanic Gardens, Kew and Botanical Garden of Moscow University. 1993. Price £12.00 (ISBN 0–947643–58–3).

The Umbelliferae are traditionally labelled as 'difficult' by amateurs and professionals alike, so any new publication which may help to unravel the taxonomic complexities is always welcome. In a family containing over 3600 species in 455 genera the proportion growing as natives or aliens in the British Isles is significant with a maximum of about 120 species in some 40 genera, i.e. about 3% of the world's species and 10% of the world's genera are represented here.

The published work is a listing of data gathered on the GNOM (Generis NOMenclator) computer database which remains open for corrections and additions, thus reflecting current nomenclatural knowledge of genera in the Umbelliferae. Adopting a modified version of Drude's *Classification* (1897–98), the bulk of the work comprises an alphabetical list of genera with authorities, place of publication of the protologue, type, subfamily, tribe and subtribe. For each entry this is followed where appropriate by any generic synonyms, geographical distribution, number of species and finally any relevant literature. Unlike some works of this nature the information is easily read and well laid out with the appropriate use of a range of typefaces and adequate spacing between entries. About a fifth of the work is given over to a comprehensive list of references, which is more than adequate although omitting some of the regional Floras consulted by the authors.

The authors have adopted a relatively narrow generic concept throughout but admit to difficulties with critical genera such as *Peucedanum*. They recognize the genus as having perhaps only six or eight species closely related to the type, *P. officinale*, a rare species in our flora being confined to East Anglia, but much more widespread in continental Europe. However because many of the remaining species previously placed in the genus are of uncertain position, they list *Peucedanum* as having 100–120 species with the proviso that more work is needed and that this is probably the most complex taxonomic conglomerate in the Old World Umbelliferae.

Dedicated to Professor Lincoln Constance, who has spent most of his life studying the Umbelliferae, this is an excellent compilation of data which will be invaluable to any serious student of the family, but especially for those trying to grapple with the many problems of nomenclature and generic delimitation encountered in the subfamily Apioideae.

S. G. KNEES

The Flora of Ditchley: wild flowers of an Oxfordshire estate. A. J. Dunn. Pp. xi + 68, with twelve colour photographs and estate map. Privately published by Dr Catharine Wills, Sandford St Martin, Oxfordshire. 1992. Price £16.45 (ISBN 0–9521310–0–5).

This is the flora of a private estate in the foothills of the Cotswolds. The 17 ha (46 acres) consist mainly of farmland, several plantations and a few hectares of ancient woodland.

Miss Dunn gathered botanical records from 1985 until 1992, the most exciting one being a new site for the Downy Woundwort, *Stachys germanica*, one of our threatened species. She has studied the habitat requirements of this plant in great detail and published the findings in *Watsonia* **16**: 430–431 and **18**: 359–367. Thanks to the loving, careful management of the landowner, the late Mr Martin Wills, the range of species is impressive; indeed half of the 443 recorded species are additions to the official county records for the estate.

The book is well written and has some very readable chapters on the history and natural history of Ditchley, but I would have welcomed a better map. I also regret that the author does not give exact plant locations, though she mentions that index cards for each plant, carrying full details, are available on request. Whilst I understand her concern for secrecy in the case of a few rare plants, the general lack of precise data is bound to diminish the appeal of the book.

M. BAECKER

The Wiltshire Flora. Edited by B. Gillam. Pp. x + 386, with eight pages of colour plates and 622 maps. Pisces Publications, Newbury. 1993. Price £27.95 (ISBN 0–9508245–8–5).

Despite its large size (84 km from north to south), Wiltshire has traditionally shared the fate of Lincolnshire and Northumberland of lying off the main botanizing routes and enjoying too slight a reputation for rarities to lure outsiders into paying visits to it expressly. The task of investigating its flora has consequently fallen almost wholly on the shoulders of its resident botanists, a task which they have increasingly discharged with remarkable frequency and thoroughness. In the space of only 36 years they have given us a county Flora of the classic type of outstanding quality, an

extensive supplement to that and now this further very substantial volume which is a kind of hybrid between the two.

Most attractively produced, this latest work embodies the results of the Wiltshire Flora Mapping Project of 1984–92, an undertaking which is shown to have had a complex gestation and to have given rise in turn to an unusually elaborate organizational structure, with a Steering Group, a Science Group, successive Project Coordinators and ultimately a Publication Working Party. The whole modus operandi, including the recording methods, is described in commendable detail on pages 3–6 and 112–118. Emphatically a team effort, in which the B.S.B.I. Recorders for the two vice-counties, David Green and Ann Hutchison, have played a major part (with responsibility, most notably, for the systematic list), it has ended up by giving rise, as in Surrey and Sussex, to a permanent body dedicated to carrying on the study of the county's flora into the future. Even had no publication resulted, this outcome alone would surely have been justification enough for all the work that the project has entailed.

J. D. Grose's 1957 *Flora* was a product of the pre-mapping era and the 1975 *Supplement* was essentially a mere appendix to that in concept. In the intervening years, however, the county's landscape had been drastically altered and the need had begun to be felt for a total re-survey on the basis of the standardized mapping units offered by the National Grid. A major feature of this latest volume is consequently over 600 tetrad distribution maps of all but the commonest and the more critical species. In addition, it has most of the introductory sections now standard for county Floras, 35 colour plates of various shapes and sizes depicting sample habitats and some of their more attractive individual species, and a series of short essays, by different hands, on certain plants of more particular local interest – a welcome and valuable innovation (if slightly marred by the choice of oppressively large type for the titles).

As usual, though, it is the systematic list which accounts for the main part of the text and to which most readers will turn in the first instance. One thing here that will strike them very quickly is the size of the floristic debt the county owes to the fact that its boundaries in H. C. Watson's day took in a tiny part of the super-rich New Forest (and ironically, if perhaps inevitably, most of the records resulting from this appear to have been a by-product of the concurrent fieldwork for the forthcoming *Flora of Hampshire*). No less eye-catching are the helpful figures at the foot of the accounts of the species indicating the percentage of 10-km and either 2-km or 1-km squares in which each was recorded during the project. These take the place of the inherently vaguer verbal estimates of frequency conventional till now in works of this kind. Impressive, too, is the care given to the precise detailing of habitats and of the extent to which species differ in quantity between one area and another. It is a pity, though, that a wish to keep wordage and punctuation to a minimum has had the result of making many of the lists of localities too condensed for ready comprehensibility.

Much less pardonable, by contrast, are the status categories adopted: each species is designated either "native" or "introduction", with no distinction made between arable weeds of age-old presence, putative relics of former cultivation, ephemeral adventives and established horticultural exotics. The traditional Watsonian terminology certainly has its defects but it is greatly more informative than this kind of despairingly aggregate treatment. To discard it wholesale, instead of seeking to improve it with modifications, is merely obscurantist and does no service to the army of local workers on whom the task of refining our notions of status so heavily depends. Even with just two categories in play, though, there is evidence in these pages of still some considerable inexactness: *Sinapis arvensis* is classed as a native, for example, but *Thlaspi arvense* and *Raphanus raphanistrum* are dismissed as introductions – for no reasons that are apparent. In common with nearly all local Floras, moreover, no allowance is made for the fact that many species are of multiple status locally: seemingly indigenous, maybe, in certain habitats, accidentally brought in in others, a relic of deliberate cultivation in yet others. To force every species into just the one, most 'respectable' category (as Watson himself unfortunately did) can only be to convey a seriously misleading idea of the more complex reality.

Lastly, the unwary should be warned that this work is, by deliberate design, a 'snapshot' Flora, a record of everything found within just the period under study, not an account of all the vascular plants known to have occurred in Wiltshire since records began. Because of this time restriction – and it is not clear why the work had to be so hurried – pre-1984 records are excluded except where necessary as a historical benchmark and the coverage of the larger critical groups is sketchy at best. On the one hand this has meant that many species for which reliable past evidence of their

occurrence in the county exists have no place in these pages, even though the fact that they may still persist in the localities in question could serve as a fruitful challenge to present-day investigators. The recent exciting disinterment in **BM** of E. J. Tatum's century-old specimen of *Gentianella ciliata* consequently earns no mention (indeed, the combing of herbaria formed no part of the project, by definition). On the other hand it has seriously reduced the value of the book to anyone whose interest lies primarily in critical plants. The account of *Taraxacum* does not extend beyond three aggregates and that of *Rubus* is a bare list of species without localities, omitting (because observed a few years too early) what is probably the one flowering plant taxon confined to this county in Britain, namely *R. arrhenii*, as well as, with no such excuse, *R. stenopetalus*, the rediscovery of which in Wiltshire and confirmation as a result as British was reported in this journal during the duration of the project. As two *Rubus* specialists live in next-door counties, it seems a pity that more effort was not made to secure a better coverage of at least that group, the more so as the duplicates collected by Grose at W. C. R. Watson's side in 1948 have mostly been destroyed by insects and the correctness or otherwise of the determinations published in the *Flora of Wiltshire* badly needs to be established. Perhaps the splendidly hyperactive botanists of this county can now be induced to make a Critical Flora of Wiltshire the next object of their exertions?

D. E. Allen

Roses of Great Britain and Ireland: B.S.B.I. handbook No. 7. G. G. Graham & A. L. Primavesi. Pp. 208. Botanical Society of the British Isles, London. 1993. Price £11.50 (ISBN 0–901158–22–4).

This long awaited addition to the B.S.B.I. Handbooks continues the high standards set by earlier volumes in the series. The authors have produced an authoritative account which, for the first time, makes the genus accessible to British botanists. The excellent line drawings by Margaret Gold complement accurate and unambiguous descriptions of the twelve native and eight introduced species. Much research in the field and in herbaria has enabled the authors to describe 83 hybrids. Most hybrids are not mapped, but a list of v.c. records is given; I could find no explanation of "non-directional records" (it means the seed parent is not known and not that the plants have grown in all directions!).

The nomenclature and order of the species is the same as in Stace's *New Flora*. English names are given for all species though I doubt if "Columnar-styled Dog-rose" will be very popular! I was pleased to see "Eglantine" retained for *R. rubiginosa*, it would be sad to lose it to the cause of English binomials. One other change from Stace is the addition of "Northern Dog-rose" for *R. caesia*; this seems a little premature given the frequency of Leicestershire records for both subspecies on the maps.

The introductory chapters are essential reading for anyone wishing to study wild roses. I found the accounts on morphology and general characters particularly useful, with clear illustrations of growth forms, prickles, leaf shapes, leaf serration, hips and shape and disposition of the sepals. This account, together with a very useful section on collecting and pressing roses and a glossary which puts some of the more obscure terminology into plain English, should help the amateur rhodologist get started. The history of classification is described and the problems presented by the peculiar reproduction and promiscuous hybridisation show why the genus has been so difficult for taxonomists. The section on ecology and distribution is very interesting; several species appear to be limited only by lack of suitable soils or habitat. However, I suspect the influx of new records stimulated by this book may show up new patterns not yet visible from the paucity of accurately determined records available to the authors.

There are two dichotomous keys, one including alien species, the other just the natives. Both are effective and my trials with five named herbarium specimens all proved successful. Initially it seems odd to have two keys doing the same job, but I found it reassuring to reach the same conclusion using slightly different combinations of characters. Using the keys amply demonstrates the need for good specimens and for the annotation of characters such as sepal disposition and bush shape whilst in the field. The keys do not identify hybrids except for the frequent *R.* × *dumalis*.

32 distribution maps at a 10-km square scale cover the native species and selected hybrids; only accurately determined records have been used. As the authors point out, the maps of critical species

and hybrids are provisional. The maps for the *R. canina* groups, *R.* × *dumalis* and *R. caesia*, all show the authors' surveys of Leicestershire and Co. Durham, but little else. If these taxa are as frequent in other parts of the country as they appear in these two counties then a great deal more recording is needed before we have an idea of real distributions. The symbols used to show the two date classes on the maps are squares and triangles rather than the black and white circles of earlier volumes. I found this visually less effective, making it harder to pick out declines in range.

The book finishes with an extensive bibliography containing 289 entries. As 90% of these are pre-1975 and a third are foreign I feel much of this is of limited interest to most readers.

The new 'Demy 8vo' format (almost A5 size) is an improvement on the cramped feel of the earlier volumes, but there is a lot of white space and the layout does not make the best use of the larger page size. I do not like the sombre cover design; the black edges give a funereal feel to a book about such beautiful plants. Like *Crucifers*, the text has been printed from camera-ready copy, and this gives a slightly fuzzy look to the text as opposed to the crisp typesetting of Handbooks nos. 1 to 5. The use of hyphenation is bad, many words being split with only two letters left at the end of a line.

The fact that flowers are of little diagnostic use has meant they hardly feature in this book. This will perhaps disappoint those who, like me, were first attracted to wild roses by the dust-jacket of Keble Martin's *Illustrated Flora*. It may also limit its sales appeal, but this is a book which all B.S.B.I. members should buy. It has brought the study of British Roses into the twentieth century and will stimulate me, and I am sure, others, to take much more notice of this neglected genus.

M. N. SANFORD

Atlas of the bryophytes of Britain and Ireland. Edited by M. O. Hill, C. D. Preston & A. J. E. Smith. Volume 1: Liverworts (Hepaticae and Anthocerotae); pp. 351, including 293 distribution maps. Volume 2: Mosses (except Diplolepideae); pp. 400, including 367 distribution maps. Harley Books, Colchester. 1991, 1992. Price £25.00 (ISBN 0–946589–29–1, vol. 1); £30.00 (ISBN 0–946589–30–5, vol. 2).

Using the first volume of this bryophyte distribution atlas, it took me exactly 3 minutes and 47 seconds to find out which liverwort is the most widespread in Britain and Ireland. It is *Lophocolea bidentata* which is recorded from 2,421 10-km squares in the two countries (including the Channel Islands). Of course, this fact is not one of the most interesting ones to be taken from the *Atlas*. Nevertheless the example shows that the data are presented in a form that makes them readily available.

The complete *Atlas* will comprise three volumes and will present distribution maps for the whole bryophyte flora of Britain and Ireland amounting to nearly one thousand taxa. The area covered comprises about 3,500 mapping units (10-km squares of the British and Irish national grids and of the UTM grid in the Channel Islands).

The introductory chapters of the first volume deal with the history of bryophyte recording in the British Isles, the mapping scheme used (including information on the availability of records from the database), and the evenness of the survey. The first map provided shows the number of liverwort species recorded in each of the 10-km squares. No attempt is made to distinguish between differences in investigation effort and differences in regional species diversity. Will that problem be discussed in the "detailed analysis of geographical coverage" planned for the final volume?

The liverwort volume contains 289 distribution maps for the hepatics and four for the hornworts of Britain and Ireland. The map dots are differentiated as to the date of the last record (before or since 1950). Accompanying the maps, short texts by various authors give additional information for each taxon in standardized format. These texts include data on altitudinal distribution, ecology of the species, number of grid squares in which the taxon is mapped, sexuality, fertility, means of propagation and general distribution. Additional remarks on various subjects are given where appropriate.

The distribution maps are followed by eight maps showing selected environmental factors, including the mean concentration of sulphur dioxide in the atmosphere in 1987 (UK only). In a special chapter of the second volume Crundwell considers the bryophytes of Britain and Ireland in

a European context. 367 moss distribution maps of the same type as for liverworts follow and deal with about half the moss flora of the archipelago.

Both published volumes conclude with bibliographic references and a "list of localities cited in the text" with their co-ordinates in the appropriate national grids that are shown in a separate map (for people not familiar with the grid system, an explanation of the use of it would have been useful); each includes an index to the taxa, including selected synonyms.

No mention is made of the total number of records on which the *Atlas* is based. It must be a question of hundreds of thousands. With the exception of the BeNeLux countries there is no region in continental Europe with a comparable state of knowledge. However, Crundwell's "guess" that "our present 10-km square records are a little over two-thirds of those we would have were our knowledge complete" seems to be somewhat optimistic. Of 17 relevant records from two small collections made without any special knowledge and intention in Scotland and in Southwest Ireland four are new to their squares. From my own experience in bryophyte mapping and considering the enormous task undertaken, I judge any degree of completeness of more than 50% an excellent result. Of course, the data ought to be examined for less obvious biases produced by the method of mapping. But the maps give the experienced user the decided impression that the high value of the data for various kinds of numerical interpretation are not substantially affected by errors or incompleteness.

I am looking forward to see the *Atlas of the bryophytes of Britain and Ireland* completed. It is an invaluable tool for bryologists, biogeographers, botanists, conservationists and ecologists, and an important work far beyond the area covered.

E. Urmi

The families and genera of vascular plants. Edited by K. Kubitzski. Vol. 2: flowering plants, dicotyledons, Magnoliid, Hamamelid and Caryophyllid families, edited by K. Kubitzski, J. G. Rohweder & M. Bittrich. Pp. x + 653; 140 figs. Springer-Verlag, Berlin. 1993. Price DM 478 (ISBN 3–540–55509–9).

The Englerian tradition of preparing integrative botanical monographs is alive and well, to judge from this latest volume in the series first reviewed in *Watsonia* **19**: 44–45, 1992. It covers three of the major subclasses of the dicotyledons, and an introductory chapter provides a chemosystematic overview of these together with a fourth, the Ranunculidae. The main body of the volume consists of a descriptive section for each family followed by keys to subfamilies and genera, generic synonymy and a short description of each genus, a sketch of its geographical distribution and an estimate of the number of species it contains. There is a selective bibliography at the end of each family treatment, and an index to scientific names is provided at the end of the volume. The quality of both printing and binding is excellent.

This is an encyclopaedic treatment, with one major limitation as a consequence. There was a need to prepare complete accounts for each family, and the editors were obliged to compile some treatments themselves when specialists either failed to deliver their promised contributions, or were unavailable; this makes the final product somewhat uneven. In Kubitzski's account of the Plumbaginaceae, for example, the generic splitting carried out by Linczevski in subfam. Staticoideae, resulting in around 30 species of *Limonium* sensu lato being transferred to 13 new genera, has been accepted but with reservations. The revision provides no new insights into the evolution of the family, and the key to genera uses characters such as leaf width and stigma shape to separate groups which the author admits will not stand the test of a critical revision. Other treatments, by contrast, such as that of the Fumariaceae, are up-to-date and definitive.

In the preface to this volume, Professor Kubitzski takes stock of the rapid development of molecular techniques for probing the relationships between genera, families and subclasses of dicotyledons, and the extent to which these discoveries have been incorporated into conventional classifications. There is still enormous scope for applying these new methods to the study of taxa at the level of genera and above, but relatively few authors have gone on to prepare monographic treatments at this level which specify morphological characters for the newly characterised taxa.

The present editorial team, with its mixture of youth and experience, must therefore be

congratulated for attempting such an ambitious project, albeit one which is heavily dependent on outside contributions: 38 authors were responsible for the present work. The formidable price of this volume may well place it beyond the reach of all but the largest botanical reference libraries, but copies will no doubt be in demand from a wide range of users. Since the only analogous modern work, John Hutchinson's *The genera of flowering plants*, remains incomplete, one hopes that the present series may soon be continued and eventually completed.

J. R. EDMONDSON

Algarve plants and landscape. D. J. Mabberley & P. J. Placito. Pp. xvi + 300; 279 colour and 269 black and white illustrations. Oxford University Press, Oxford. 1993. Price £45.00 (ISBN 0–19–858702–3).

This is a difficult book to categorize. As its subtitle, "Passing tradition and ecological change" indicates, the authors have set out to characterize the flora of the Algarve province of Portugal within a detailed context of the region's geography, geology and, particularly, traditional agriculture. There is also a balanced assessment of the impact of tourism, the region's relatively recent, but certainly its currently most potent, economic factor.

The natural vegetation of the Algarve is described essentially within the framework of the province's three main subdivisions, the coastal zone, the more inland and largely base-rich soils of the 'barrocal', and the complex of acidic shales and other substrates of the upland 'serra'. The style is decidedly didactic, with observations for example on the derivation of plant names, their ecology and uses, details of pollination by pseudo-copulation in some orchid species, and, consistently, with Portuguese names for plants, communities, etc., given in parentheses. Many of these plants are illustrated with colour plates and a fine series of line drawings by Rosemary Wise. Unfortunately, the plates are reproduced in small format, grouped 15–18 to the page, and as a consequence are sometimes of limited value. The drawings are on the whole effective and helpful. A further section deals with the many exotic species encountered in streets and gardens in the province. A feature of this book is that the plant life is not presented in isolation, but rather is interspersed with sections on, effectively, local human geography. This extends to a survey of fishing practice, with lists of fish species and molluscs, and other aspects of local economy, such as sea-salt production along the coast, and above all, with an extensive exposition of traditional and more recent innovations in agricultural practice in the region. This includes accounts of olive, carob, figs, grapes, citrus and many other crops, each with extensive details of local cultivars. Indeed, this central section sometimes gives the impression of a text in economic botany.

Throughout, this book is profusely illustrated with black and white photographs of plant communities and landscapes (including a series which contrast scenes in nineteenth century aquatints by Landmann with the same locality captured in a recent photograph) and crop cultivars, and also with line drawings, e.g. of traditional agricultural implements, and over 20 maps. A more judicious selection of rather fewer maps would perhaps have been more helpful: e.g. a general introductory map with more place-names than the minimal Tavira, Faro and Silves provided in Fig. 1 would have given a useful orientation; and readers will be amazed at the extensive areas of the Algarve where, apparently, the average age of the population is over 100 years, as depicted in Fig. 238. An omission in the legend seems to be responsible. A more serious omission is the lack of author citation at relevant places in the text for any of the nearly 500 references listed in the bibliography. This can only hinder the reader who wishes to pursue a particular topic further.

For plant lovers who have acquired a property in, or who regularly visit the Algarve for what the tourist trade refers to as 'quality' holidays, this fact-laden book is recommended as a means of enhancing their understanding of the region. For those visitors who prefer to toast themselves on the beaches, with only the occasional excursion inland and minimal interaction with the local inhabitants, the detail provided in this book is likely to be offputting, as is its price. This is a pity, because mass-tourism, either by package-tour arrival at Faro airport, or via the new international bridge across the river Guadiana from Spain, is changing the flora and traditional life-style of the

Algarve at an accelerating pace. Mabberley and Placito's enthusiasm for the region, which is evident in this book, allows us to share something of its cultural heritage before it is too late.

P. E. GIBBS

Scandinavian ferns. B. Øllgaard, with illustrations by K. Tind. Pp. 317; 103 line drawings and 114 colour plates. Rhodos, International Science and Art Publisher, Copenhagen. 1993. Price paperback D.kr. 375 (ISBN 87–7245–530–6); hardback D.kr. 425 (ISBN 87–7245–532–2).

Scandinavian ferns is sub-titled "A natural history of ferns, clubmosses, quillworts and horsetails of Denmark, Norway and Sweden." It is natural history at its best. The text and illustrations recount meticulous and detailed observations of Scandinavian Pteridophytes. All that has been observed of their reproduction, variation, ecology, distribution and even the origin and meaning of their names, is presented to the reader.

The 114 water-colour plates are painted from living subjects and breathe a life rarely found in botanical illustrations. Clouds of spores erupting from *Botrychium lunaria* or shoots of *Equisetum variegatum* with huge mosquitoes hanging dangerously over-head convey an impression of life for these simpler Pteridophytes. Many of the fern illustrations are equally delightful – those of *Cystopteris* for example – but my feeling was that the bold style lost some of the intricate beauty of *Athyrium* and *Polystichum*. Whole plant illustrations invariably include rhizomes, and habitat paintings show other species for scale and context. Frequently there are details of scales, individual pinnae, sori, prothalli, young plants, croziers, even a droplet of water being excreted from an *Equisetum telmateia* sporeling. Line drawings inserted in the text illustrate spore architecture, cells in the annulus, stem cross-section and the fronds of hybrids and subspecies where appropriate.

There are keys to all species, and additional subspecies and varieties (eleven) and hybrids (25) are dealt with in the text. Taxonomically there are a few differences from recent British Floras; *Diphasiastrum alpinum* and *D. complanatum* are placed within *Lycopodium* for instance. As a nomenclatural romantic I was pleased to see *Asplenium viride* rather than the cumbersome and unfamiliar *Asplenium trichomanes-ramosum*.

The comprehensive text and illustrations might be of interest to British botanists wishing to complement their British Floras. 56 of the 72 species described in *Scandinavian ferns* are members of the British flora and all of the genera recorded from Britain bar only *Adiantum* and *Trichomanes* are represented in the book. *Diplazium sibiricum* (family Woodsiaceae) was a new species for me, and I was pleased to learn of an additional six *Botrychium* species not found in Britain. Taking this large format book into the field would be cumbersome and only spoil the paintings. It is definitely a book for the armchair where the text makes easy reading. I would recommend anyone contemplating a botanical excursion in Scandinavia to consider buying a copy.

G. STARK

The release of genetically-engineered organisms. Edited by B. Shorrocks & D. Coates. Pp. 48. British Ecological Society Ecological Issues No. 4. Field Studies Council, Shrewsbury. 1993. Price £3.50. (ISBN 1–85153–853–4).

The lack of easily obtainable and factual information on current ecological issues has led the British Ecological Society to produce a series of booklets. Each booklet, representing the work of a group of experts, deals with one topic and the fourth of the series is concerned with Genetically Modified Organisms (GMOs). An organism is genetically modified if new combinations of genetic material are achieved by techniques other than traditional breeding or other natural methods. In the first chapter the ways in which genetic information is transmitted and manipulated are summarized.

Although these booklets are aimed at a wide audience, including teachers and policy makers, this essential introduction on genetic engineering may be difficult to understand and possibly off-putting to readers without a good genetic background, despite a good two-page glossary. Subsequent chapters are easy to read and the second one discusses the risks associated with the release of GMOs

into the environment and their potential environmental problems in relation to our knowledge of the ecology of invasions by exotic species. The two main problems posed by GMOs are firstly the transfer of a gene to a related species and secondly the creation of invasive organisms.

The following three chapters discuss the potential risks associated with the release of microbes, plants and animals. The section on plants deals essentially with genetically modified crops and arable weeds, and little mention is made of grasses and ornamental plants. Horticultural plants are unlikely to become the target of genetical engineering in the very near future. However, because of their economic importance, it is only a matter of time before transgenic ornamentals are produced. Traits such as frost resistance and those related to the reproductive biology (e.g. flower colour or structure) are likely to be targeted and these traits affect plant distribution and abundance. For example if flower attributes are modified the pollination success and associated seed production might be affected which could alter abundance. Since a very large proportion of invasive species are escaped ornamentals the potential threat is great, whereas few if any terrestrial plant crops are known to be invasive in natural or semi-natural vegetation. The problem with GMOs is that the outcome of a particular genetic change is uncertain and like exotic species we are not able to predict which species will become invasive in a particular environment.

The booklet is nicely produced and includes three pages of references giving readers the opportunity to investigate particular issues in greater detail. Despite the poor treatment of ornamental plants, this booklet, like the others in this series, is an essential source of information on a current and potentially increasing environmental problem.

P. BINGGELI

Flora of Northumberland. G. A. Swan. Pp. 351; eight transparent overlays, 14 pages of colour plates. Natural History Society of Northumbria, Newcastle-upon-Tyne. 1993. Price £36.00 (ISBN 0–9520782–0–1).

As children we would slide down the Willington ballast hills on pieces of cardboard, never realizing the diversity of plant colonists that occurred there. Sadly, these white hills and their diverse floras have disappeared, as have those of a vast number of lowland aquatic sites and many square kms of open moorland. My grandfather, a herbalist in the Hexham area, knew the flora well and regularly sent his children on collecting trips. Interestingly, a modern plant chemist has now produced a comprehensive treatment of the plants of Northumberland. George A. Swan has done a magnificent job of documenting and describing the native and naturalised flora of this large and botanically-understudied county.

As an expatriate Northumbrian convalescing in St Louis after some serious surgery, I had hours of pleasure reading of the plants that are now extinct, the ones I missed seeing when I lived in England and the new occurrences of some interesting taxa, especially *Ophrys apifera*, Bee Orchid. The format of the book is pleasing, with maps at the 5-km square level showing historical, recent and current occurrences, all checked by the author before being accepted, and the text is in a clear type on the quarto pages. A comprehensive gazetteer and a section on local habitat terms will help visitors find their way to the various cited links, slacks, slakes, denes, hopes, cleughs, and other areas of botanical interest. How fortunate that botanists have visited and thus ensured a mention in print for Blakehopeburnhaugh, a strong candidate for the longest English place-name! Incidentally, the terms Black and White in many settlement names may refer to former monastic orders, as suggested by the village of Blanchland, Blackfriars in Newcastle and the two churches in tiny Bywell.

The plants are listed in the *Flora Europaea* sequence but the names follow the recent publications of Stace and Kent. A 50 page section by Angus G. Lunn describes the environment of vice-counties 67 and 68. The 109 species of Dandelion, *Taraxacum* have received an expert treatment in the hands of John Richards. The remainder of the book is the sole effort of George Swan, although he does fully acknowledge the companionship and active assistance of his wife Margaret. The Natural History Society of Northumbria published the volume and Mrs Grace Hickling, our late heroine of local natural history, apparently persuaded Mr Swan to undertake the task.

The book will surely encourage further botanizing in the region. Who will be the first to confirm

Spring Gentian (*Gentiana verna*) and other plants not yet documented as county records? Incidentally, the Bee Orchid recently found in the very grass where decades of pupils from Wallsend Grammar School took their first ecology classes is probably a new colonisation because I am sure we would not all have missed such a beautiful plant. Horses at the annual fair could have introduced the seeds, and lime from the crumbling viaduct of Stephenson's Killingworth wagonway (which incidentally gave the world its standard railway gauge) could provide the necessary habitat. The book also suggests numerous M.Sc. and Ph.D. thesis topics to the reviewer. Plant taxonomy is still alive at the University of Newcastle and, hopefully, this new *Flora* may inspire school and college teachers in the area. Mr Swan is only in his 70s and I wish him at least a further couple of decades of botanising. After all, he will need them because he has recently added bryology to his list of interests.

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