

Book Reviews

Plant life of the Quaternary cold stages. R. G. West. Pp. xi + 320. Cambridge University Press, Cambridge, 2000. Hbk £65.00. ISBN 0–521–59397–2.

Every once in a while it is important to take stock and assess the mass of palaeobotanical information accumulated. This book does that and gives the reader an excellent, much needed review of plant life in the British Isles during the cold periods that characterised a large proportion of the last two million years (the Quaternary Period). Both palynological (pollen and spores) and plant macrofossil (seeds, fruits, etc.) evidence is examined and integrated into the discussion of vegetation history of the British Quaternary cold stages, an approach that should be noted and copied by other palaeobotanists.

After setting out the proposed aims for the analysis of cold stage floras there are a number of introductory chapters. One of these is an illuminating and important chapter on the type of sedimentary environments encountered in the fossil record and how investigations of taphonomic processes acting upon plant parts before they are deposited in modern analogue environments can allow more precise interpretations of cold stage fossil assemblages.

A compact disc accompanies the book which contains the database which is used as the foundation for the analysis of the cold stage fossil assemblages. Chapter 4 describes the structure of this database which contains information on the fossil sites, their chronology, the botanical remains recovered from each sample, the age of those samples, certain information on the biology, habitat and present distribution of the fossil taxa recorded, and a bibliography.

The latter part of the book analyses the data collected. Querying the database shows which taxa are found where, when and in what quantity. Discussions are presented about how to translate the quantity of remains into actual representation in the past vegetation. It appears that many taxa represented in cold stage deposits are present in certain parts of Britain today. Another interesting revelation is that many taxa are recorded in both temperate and cold stages, indicating how Linnean species can survive climatic fluctuations. A knowledge and understanding of the biology of the flora (life forms, life spans and variability of species) is essential in explaining such results and these are discussed. Vegetation, habitat, and climate is reconstructed for the cold periods, with the contribution of coleopteran, non-marine molluscan and vertebrate faunas to a wider view of cold stage environments also assessed. Climatic changes in a cold stage can be difficult to determine from the fossil assemblages, because extensive grassland, which is often represented in the cold stage fossil record, can exist under a range of climatic regimes. This is a difficult problem which is addressed.

The reviewer recommends this book to any member of the scientific community or general public who is interested in an account of the flora that once existed in Britain during the Quaternary cold stages, and its implications for understanding present flora and environment (including climate). The price tag of £65 is not too expensive for a hard-back book (plus CD database) of this type.

M. H. FIELD

British Plant Communities. Volume 5. Maritime Communities and Vegetation of Open Habitats. Edited by J. R. Rodwell. Pp. xiv + 512. Cambridge University Press, Cambridge, 2000. Hbk. £70.00. ISBN 0–521–39167–9. Pbk £32.50. ISBN 0–521–64476–3.

Work on the 'National Vegetation Classification' project began in 1975 and now with the appearance of the fifth Volume of 'British Plant Communities' it reaches a triumphant conclusion. Its completion is a tribute to those who initiated and fostered it, to its dedicated and indefatigable editor John Rodwell, and to his army of co-workers and helpers. The five volumes, taken together, display not only the size and complexity of the task they undertook but also the uniformly high quality of the final product. The preceding volumes have already amply proved its practical value and are widely accepted as essential tools in the hands of vegetation surveyors, managers and conservationists. Now that coastal vegetation and communities of agricultural weeds and open habitats are covered, this comprehensive and unique phytosociological treatment of British vegetation is complete.

A Preamble (as in earlier volumes) explains the background to the work and the style of presentation. The main part of the book consists of Community descriptions, arranged in four sections: Salt-marsh communities (28 in number); Shingle, strandline and sand-dune communities (19); Maritime cliff communities (12) and Vegetation of open habitats (42). Each section includes a key to the communities (described as 'a crude guide to identifying the types of vegetation' – helpful though not infallible!), and begins with an Introduction. These Introductions are a particularly useful feature and will appeal to the many botanists who have an interest in the flora and ecology of coastal vegetation, or in weeds and ruderals. At the close of this volume is a 14-page 'Phytosociological Conspectus of British Plant Communities' which users of the series have already looked for but of necessity had to await completion of the whole. This will facilitate cross-reference between different parts of the work, and will also enable comparisons with Continental schemes of classification.

The dynamic nature of much coastal vegetation, notably that of salt-marshes and dunes, creates certain problems for community classification, and its application in the field. A country-wide scheme such as this may not, in all cases, fit comfortably with the floristic variation and patterning of local sites. However, with experience of working in a range of sites and with a number of examples it will normally provide the user with a convenient and instructive framework, bearing in mind that it is based solely on floristic groupings and does not necessarily reflect ecological processes very closely. Special problems also confront the task of sampling and classifying communities of open habitats and arable fields, which in any case constitute a more heterogeneous grouping than most of the other vegetation types. However, they do have features in common, and in view of the scant attention paid in Britain to their phytosociology this is a most welcome component of the whole.

This volume, with its predecessors, will become for the foreseeable future the standard and indispensable handbooks for survey, classification and mapping of vegetation in Britain. Their intrinsic interest also extends to all students of the British flora, for whom they contain a wealth of relevant and valuable information. It is of the utmost importance, however, to heed the Editor's warning that this should not be treated as a 'static edifice' but as a working tool, which with use and in the light of further sampling and new data, will require up-dating in the future.

C. H. GIMINGHAM

The Flora of Dorset. Humphry Bowen. Pp viii + 373. Pisces Publications, Newbury, 2000. Hbk £45.00. ISBN 1-87-4357-16-1.

Dorset may be seen as a nursery of modern botanical thought. For the first half of the twentieth century Ronald Good developed an understanding of the correlation of plant distribution with external factors such as climate, drainage and soil type. Good's 1948 *Geographical Handbook*, and its subsequent revisions, have been the principal published sources of botanical information in Dorset until the recent production of Humphry Bowen's *Flora*.

In common with other recent floras the principal author is joined in the preparation of the introductory chapters. David Allen's account of some earlier workers on the Dorset Flora is of interest for its perception of field botany as a social phenomenon. The section on archaeobotany of the county, by Pat Hinton, is intriguing. Post-glacial evidence of vascular plants would be a valuable addition to any other County flora in preparation.

The *Flora of Dorset* is a flora of the tetrad recording tradition. The accounts and associated maps concentrate on post-1984 records. For each species the number of tetrads for post-1984 records are given together with historic records. The maps and the accounts, however, do not always tally. For example, the maps of *Ophrys insectifera* and *Platanthera bifolia* show eight and ten post-1984 records respectively. The text however only refers to four post-1984 sites for *Ophrys* and five for *Platanthera*. Those extracting data for use elsewhere should check the full records which are held in the Dorset Environmental Records Centre.

Most species accounts only give general locations such as a parish name within a tetrad. The more sought after groups such as the localities of orchids and sedges are more precise. The absence of a general map of the vice-county, combined with not using four figure grid references to identify tetrads, adds to the difficulty in identifying localities.

Judged against the two aims set out in its introduction the *Flora* may be judged as successful by

those searching for attractive plants. The leisure botanist will undoubtedly gain great pleasure from the Flora. Similarly keen gardeners and arboriculturalists will appreciate the many accounts of selected localities of some ornamental plants in cultivation.

It is unfortunate that our vice-county floras are now drawn upon by more people than just those who love wild flowers. With the advent of legal protection for wild plants and their habitats, and with the integration of biodiversity planning into the work of government, biological data are becoming very important. Both data, and any interpretation, is now subject to detailed scrutiny by those whose interests may not be primarily botanical.

It was therefore a disappointment that the excellent data that are contained within the Flora are prone to misinterpretation and challenge. At the heart of this vulnerability is the apparent lack of consistency of approach. For example, whether or not a species is extinct, or nearing extinction, in a county is of great importance. The Flora does record some species as extinct, i.e. *Pulicaria vulgaris* and *Oenanthe aquatica*. Other species with equally long periods since being last recorded and with similar histories of habitat change are in contrast not recorded as extinct, i.e. *Eleocharis parvula* and *Eriophorum gracile*. A clear and consistent use of criteria is not apparent.

The emphasis in the Flora on aliens, garden specimens and casual occurrences similarly complicates interpretation. Complications arise where accounts reproduce all records for a species but do not differentiate between persistent native populations, casuals and possible introductions. For example, the status of *Mentha pulegium* described in the Flora is difficult to reconcile with that in the 1994 Scarce Plant accounts reproduced in the 1999 Red Data Book. The discovery of the important population of *Mentha pulegium* in Purbeck in 1996 is masked by the other parts of the account. As the presence of this protected species has considerable significance not only to botanists, but also to the landowners, a proper understanding of its status is essential.

The Flora of Dorset will bring pleasure to many. It also provides a valuable point of reference upon which others may build. The interpretation of the data gathered for the Flora will need to be progressed elsewhere. The Flora of Dorset has raised many fundamental issues as to what a flora is for. If a flora intends to inform scientists or civil servants whose decisions can help or hinder the wellbeing of our wildlife and their habitats then a different form to that adopted by the Flora of Dorset is required. If we wish our county floras to serve a community wider than just botanists, we need to find clearer ways to communicate with those whose decisions determine the fate of the natural world.

C. CHATTERS

Wild Flowers of the Peak District. Text by Patrick Harding. Art Editor Valerie Oxley. Pp. 144. Hallamshire Press, Sheffield, 2000. Price £ 25.00. ISBN 1-874718-53-9.

Offering an interesting marriage between science and art, this book has a curious pedigree. It is the very professional outcome of a selection of work from students on a Botanical Illustration Certificate course for adults at Sheffield University. A well crafted appearance and articulate text brings credit to both the tutors and the students who produced the illustrations. Clearly the painters have worked from a basis of sound botanical knowledge. However, if you know and love the Peak District as a meeting point for highland and lowland Britain, you might be disappointed to find that it is represented by only sixty specimens of its flora, and few of the area's rarities find a place. But, among the criteria for a plant's inclusion have been the twin aims for a chronological treatment of the flowering year and the need to select paintable plants that can be depicted life-size. These are understandable restrictions. This reviewer misses the convention, usually found in botanical illustration, that adds enlarged details for a plant whose fruit, flower, leaf or root characteristics are particularly hard to define. Photographs are included in each species double spread and they sometimes clarify the situation; they also set the plant usefully within its environment. Regrettably, there is considerable variation between the printing of a painting, usually excellent, and its companion photograph where the colour is harsher.

The standard of the painting is consistent and very good, with each page beautifully laid out. The delicate drawing of some of the root systems, done, we are assured, from archive specimens, is to be applauded. A minor carp would be that there is considerable similarity of style in the painting of each plant. A plus is the absence of any text upon the actual illustration page, which, in some cases, becomes a work of art. I particularly liked the very painterly depiction of the ubiquitous Rosebay Willowherb, a notoriously difficult subject.

The text which is scholarly in detail but relatively light-hearted in delivery, is very fine. Where Latin nomenclature has been changed in recent years both old and new names are included. There is a lot of useful information in the introductory paragraph for each plant. For those who enjoy their Grigson, the inclusion of folk-names, folk-lore, herbal, medical and domestic uses associated with the plant, make good reading. An early chapter briefly discusses the area's climate, geology and biotic factors.

This is not a volume for the pocket or rucksack, but would be a happy addition to a flagging botanist's bookshelf, or a coffee table. Furthermore, if your fieldwork is increasingly done more by wistful memory from an armchair than by being part of the muddy boots brigade, this book could be a delight. You would not need another mortgage in order to buy it!

M. M. MARTIN

Zander. *Handwörterbuch der Pflanzennamen. Dictionary of Plant Names. Dictionnaire des noms de Plantes*. 16th edition. W. Erhardt, E. Götz, N. Bödeker & S. Seybold. Pp. 990. Eugen Ulmer GmbH & Co., Stuttgart, 2000. Hardback. ISBN 1-903257-01-8. Marketed by The Plant Press, Lewes, East Sussex.

Professor Robert Zander (1892–1969) produced the first edition of his *Handwörterbuch* in 1927, and went on to revise it up to the ninth edition in 1964. Since then 'Zander', as it is generally known, has been revised by two or more other authors; of the current four only Seybold was involved before the 16th edition, which is the first to be trilingual and which includes about 3,640 genera, 20,000 species and 10,000 synonyms. The alphabetical listing of these genera and species occupies the bulk of the book (626 pp.), but comprises only one (no. 6) of 11 chapters. It claims to cover the most important cultivated plants and nearly all the native plants of central Europe, and hopes in future editions to take in plants of western and northern Europe as well.

Zander is a much used reference work, and in turn follows the most generally accepted standard publications such as the *International Code of Botanical Nomenclature* (1994), Brummitt & Powell's *Authors of Plant Names* (1992), Kubitzki's *The Families and Genera of Vascular Plants* (1990 onwards), Cronquist's *The Evolution and Classification of Flowering Plants* (1988), Dahlgren, Clifford & Yeo's *The Families of Monocotyledons* (1985) and Mabberley's *The Plant Book* (1997). It is unique in scope. Perhaps closest to it is Griffiths' *Index of Garden Plants* (1994), which covers about three times as many taxa and includes potted descriptions of them, but omits many purely wild plants, has fewer supplementary chapters (see below), is less wieldy and costs £40. Hence Zander has 43 and Griffiths 15 species of *Trifolium*; but the figures for *Solidago* are 18 and 38 respectively. To give an idea of the coverage of a purely cultivated genus, Zander has 75 and Griffiths 120 species of *Opuntia*.

For each species Zander provides the Latin name (plus the gender of each genus); authority; German, English and French name(s); a series of symbols that denote growth form, flowering period, garden usage (e.g. border plant, hanging plant, cut-flower plant, hothouse plant, decorative-fruit plant), whether scented, officinal (its designation 'Off' is omitted in error from the list of abbreviations), poisonous or otherwise useful, and conservation/protection status; and a detailed list of its native territories. The English names were apparently compiled by Charles Quest-Ritson (Salisbury); in the main they are the familiar ones, but there are also many much less used names and many well-known ones are omitted. For example, *Montia fontana* is given no English name, while *M. perfoliata* is called Miner's Lettuce and Winter Purslane; Spring Beauty is (?mis)applied, along with Siberian Purslane, to *M. sibirica*. Hence the standard English name is omitted from all three! The French names seem to me even more patchily quoted; for example *Tussilago farfara* is not provided with one even though it is called Pas d'âne in all my French Floras. It is not difficult to find other minor errors, such as spelling mistakes, in the book, but on the whole it is well produced and authoritative.

The other ten chapters provide a wealth of additional and often surprising information: 1 – biography of the authors of all 16 editions; 2 – explanation of botanical nomenclature and of the pronunciation of Latin names; 3 – systematic list of families of vascular plants (following Cronquist and Dahlgren *et al.*); 4 – alphabetical list of families with the genera listed alphabetically under each; 5 – an elaborate (17 pp.) hierarchical listing of the world's phytogeographical regions; 7, 8 & 9 – indices of German, English and French plant names (the

above comments on these are reinforced by the 96, 71 and 19 pages respectively devoted to each); 10 – list of abbreviations and full names of authorities of plant names; and 11 – a short bibliography. All the free text in these chapters is triplicated in the three languages.

For all people seriously interested in plants, Zander is a most valuable handbook of information. First and foremost it provides a list of virtually all the plants that one is likely to encounter, with a wealth of information about each. Many of the other chapters are most likely to be of use to those without access to a botanical library, enabling them to refer to, *inter alia*, the most commonly used systems of classification, the rules of botanical nomenclature and the standard abbreviations of authorities. Probably no other book provides quite this range of information, certainly none in such a handy compact format. This first trilingual version of Zander deserves a much wider circulation among English speakers than previous editions have enjoyed. If the next edition succeeds in improving the list of English names and in adding or emending the entries of the wild and cultivated plants that grow in the Atlantic fringes but not in central Europe, it will be indispensable.

C. A. STACE

Causes of Change in British Vegetation. Ecofact Volume 3. L. G. Firbank, S. M. Smart, H. M. van de Poll, R. G. H. Bunce, M. O. Hill, D. C. Howard, J. W. Watkins and G. J. Stark. Pp. 98. Dept. of Environment, Transport and the Regions, London, 2000. Price £8.00. ISBN 1–870393–51–1.

This is the third volume in this series. It has as its stated aims to: 1. Identify the causes of observed changes in botanical diversity, 2. Assess the relative importance of land management and other factors, such as pollution, 3. Recommend land management practices for the maintenance and enhancement of diversity, 4. Develop predictive techniques for determining ecological impacts. With aims like these, this could well be described as being the botanical conservation holy grail – not only does it confirm in hard scientific terms what we felt we knew all along; that nutrients are up, diversity is down, with an increase in competitors, but also it offers reasons, solutions and a method for stopping this happening again (or at least for letting us know if it's happening again). So, does it deliver?

The authors identify four major drivers of vegetation change, being 1. Changes in agriculture, 2. Changes in the management of roadside verges, 3. Conifer planting and 4. Inputs of nitrogen and other nutrients. These are further broken down into individual factors such as waterside management, and the impact of leisure. There is an informative table on how these drivers shifted between the surveys and their effects on various environmental factors. They then go on to define twelve Indicators of Botanical Diversity (or I.B.D.s), such as Ellenberg scores per plot, frequency of scarce species, and food plants for animal groups. These drivers and the indicators are then linked by chapters on the causes of change and policy implications. Hidden in the latter chapter is a table which is perhaps the most informative part of the document, listing policy initiatives such as S.S.S.I. designations, Nitrate Sensitive Areas or Biodiversity Action Plans against eighteen drivers such as drainage and conifer planting, then assessing the impact that these policies have had on the drivers. The remaining forty five pages consist of twenty explanatory 'boxes' and annexes, making this a highly readable and digestible document. Is there a down side? My only grumble was that there is much emphasis on Ellenberg's continentality scores, which were ignored in the technical annexe, while salt tolerance was covered but not in the plots analysed; but this is pretty much a minor point.

So, in answer to my question, yes, it does deliver. These are the hard data, the 'smoking gun' that our campaigning conservation cousins should use as evidence to influence policy, although it would be interesting to know if we will ever get the chance to see original data. This series of Ecofact publications should continue to contribute in an objective, dispassionate way to the conservation lobby's armoury and together with the forthcoming Atlas, form a formidable data bank on which to base their case.

S. J. WHILD