

Book Reviews

Jupiter Botanicus. Robert Brown of the British Museum. D. J. Mabberley. Pp. 500, with 24 colour plates and 64 text figures. J. Cramer, Braunschweig. 1985. Price £43.00 (ISBN 3-7682-1408-7).

It may seem strange to be reviewing a book three years after its emergence from the press – and five even after the date of its preface. The reason for doing so in this case is that publication was attended by a quite exceptional piece of misfortune, as a result of which scarcely any copies were sent out at the time for review. That was not a fair measure of the volume's value and importance, and belatedly steps have been taken to repair the omission.

At the same time it is an open secret that the manuscript was a long time finding a publisher in the first place. And one can see why that was: to judge from the finished text and from hints dropped in the acknowledgements, it bore all too much resemblance to too many doctoral theses, in that so much effort was expended on the research that seemingly little was left over for producing a narrative that was easy, let alone enticing, to read. Biography is a particularly well-established genre, and it was surely courting danger not to make more attempt to meet the expectations that the public (or at any rate publishers) have of titles in that category.

Which is a pity, because Robert Brown is certainly a figure of the first rank in botanical history (whether or not one accepts the author's claim that he was "Britain's greatest botanist"); a full-scale study of his life and work has long been needed, and Dr Mabberley has fulfilled the scholarly side of his task with exemplary care and thoroughness. The problem seems to have been that he fell in love with his material and could not bring himself to discard enough of it to produce an account of the necessary selectiveness. Just about everything one could possibly want to know about Brown and his times is consequently to be found in his pages. It is indeed, as he terms it himself, a "source-book", and one that will be consulted, and with confidence, by generations of historians and taxonomists to come.

Much of the volume is necessarily devoted to Brown's work on the Australian flora and his pioneering researches in a variety of botanical fields apart from taxonomy. There is necessarily much, too, on his years successively in the employ of the Linnean Society (1805–22), Sir Joseph Banks (1810–27) and the British Museum, where he was responsible for heading a new botanical department from 1827 till his death in 1858 in his 85th year. B.S.B.I. members, however, are likely to find the two opening chapters of more particular interest, for in these Brown's little-known contributions to field botany in these islands are described.

It was while at Edinburgh University, as a 17-year-old medical student, that Brown apparently embarked upon botany seriously, starting a herbarium and exploring his native county of Angus in the company of the more experienced George Don. In 1791 their partnership was speedily rewarded with a singular piece of beginner's luck: the addition of *Scirpus hudsonianus* to the British flora in its only-ever-known station, the Moss of Restenneth. Three years after that, Brown on his own found a new grass, on which Smith was to bestow the name *Alopecurus alpinus* (though at first he mistakenly gave the credit for its discovery to Don). As an ensign in the Fifeshire Fencibles Brown then found himself posted to Ulster. There he was the first to recognise *Sagina maritima* as a distinct species and to collect several mosses that are now known to have been new to science. This work on bryophytes brought him into touch with James Dickson, the fellow Scot and Covent Garden nurseryman then compiling the fourth of his cryptogamic *Fasciculi*, and to that Brown became a major, if unacknowledged, contributor.

A special word of praise must be reserved for the series of superb watercolours by the Bauers reproduced in a special section at the end of the book. Over half of these, mainly of Australian plants and animals, are enjoying here their public début, after years of lying hidden away in the magnificent iconographical collections of the British Museum (Natural History).

D. E. ALLEN

The National Trust book of wild flower gardening. John Stevens. Pp. 192. Profusely illustrated with colour photographs, additional colour drawings and b. & w. marginal thumb-nail sketches. Dorling Kindersley Publishers Ltd., London, in association with the National Trust. 1987. Price £14.95 (ISBN 0-86318-219-4).

The concept of growing wild flowers in gardens has dramatically increased in popularity in the last decade, with a corresponding public awareness of the loss of wild flowers from native habitats. This book aims at encouraging the creation of a piece of countryside in urban and garden settings, as part compensation for the fast-disappearing countryside in the wild.

The attractively produced book has good colour photographs of more than 100 growing plants featured in the "Creating wild flower gardens" section. These are arranged for six types of garden: sunny, shady, semi-shady, water, rock and seaside, each species with photograph, description and cultivation instructions. The grouping is supplemented by eleven double spreads of wildflower snippets photographed on a parchment-coloured background.

A 30-page section entitled "Technique of wildflower gardening" includes notes on seed dispersal, collection and sowing of the seeds, general planning, cultivation and looking after the wildflower garden. A further 30-page section, entitled "Wildflower catalogue and useful information", lists plants for gardens of different aspects with cultivation notes for 156 of these. A section on useful addresses (B.S.B.I. not included) and an 8-page index complete the book. 3¢ National Trust Wildflower Gardens are listed, actively promoted by the Trust as part of its conservation role. John Sales, Chief Gardens Adviser, states in his foreword that the wildflower areas also enhance the overall design of these gardens.

This book should entice even tidy gardeners to consider wildflower cultivation. John Stevens was a pioneer in growing wild flowers for seed to meet the current need to supply this "quiet revolution taking place in our gardens", and he offers valuable practical suggestions on their cultivation from his experience. Growing plants increases our knowledge, and it is the author's hope that to grow wild flowers will also increase the gardener's appreciation of these in the wild.

M. BRIGGS

A check-list of mycorrhiza in the British flora. J. L. & E. L. Harley. *New Phytologist* supplement 105 (2). Pp. 102. Available from the Executive Editor, *The New Phytologist*, Department of Botany, The University, Sheffield S10 2TN. Price £5.00.

Contrary to the assumptions of most botanists (and many mycologists), mycorrhizal associations between plants and fungi are very widespread. In the British flora, there are few species which have not been reported to have some sort of association with fungi, apart from annual plants which presumably have too short a life cycle for the association to be feasible.

The work includes an introduction which details the various types of mycorrhizal association, and in very basic terms the sorts of fungi that are involved, the check-list itself, with some notes on its organization, and no less than 723 references.

The list is arranged according to the *Excursion Flora of the British Isles* (3rd ed., 1981). Information on the type of mycorrhizal association, references to literature, and to the *Biological Flora of the British Isles* (*Journal of Ecology* (1941), et seq.), and a section of miscellaneous notes, are included. A distinction is made between studies on British material, and European studies on species occurring in Britain.

As the compiler of another large check-list, I am well aware that the amount of effort expended on such a project is out of all proportion to the number of printed pages produced. The authors should be congratulated on producing such an extensive and informative list. However, I have a few minor criticisms, which should not be allowed to detract from the favourable impression gained of the work as a whole.

The list would have been more compact if a tabular format had not been chosen. Plants whose associations have not been investigated are tabulated to no real advantage, though the blank columns may encourage other workers to investigate these species. References to the *Biological*

Flora could usefully have been incorporated into the general reference column. More detail might have been given of the fungal component of the mycorrhiza, though I am aware that in many cases it is difficult to be sure of the identity of the symbiotic partner.

This check-list should be of interest to botanists and mycologists alike, and will be as useful to workers in other parts of northern and western Europe as to those from Britain. At the very modest price quoted, it can be warmly recommended.

P. F. CANNON

Checklist of European pteridophytes. L. N. Derrick, A. C. Jermy & A. M. Paul. *Sommerfeltia*, 6: i-xx, 1-94 (1987). Botanical Garden and Museum, University of Oslo, Trondheimsveien 23B, N-0562 Oslo 5, Norway. Price NOK 70.00 (ISBN 82-74-002-0; ISSN 0800-6865). Obtainable from J. W. Dyce, Hilltop, 46 Sedley Rise, Loughton, Essex IG10 1LT.

This list is the first major updated output to be produced directly from the database of the European Science Foundation's Taxonomic, Floristic and Biosystematic Documentation System. It is essentially an updating, amplification and correction of the relevant data from *Flora Europaea*, Vol. 1 (T. G. Tutin *et al.*, 1964). Whereas the latter contained 244 accepted pteridophyte taxa, the present list contains 329, the increase being to a considerable extent due to the inclusion of more hybrids. The synonymy is vastly more extensive than that in *Flora Europaea*, and a total of 1259 synonyms are listed, all with their places of publication. Country by country distributions are given for all taxa at and below the rank of species, as well as a brief indication of world distribution. The arrangement of families, genera, species, subspecies (although the typical one comes first) and hybrids is alphabetical, and the system of Lellinger is followed for the circumscription of families. Only one variety (*Athyrium distentifolium* var. *flexile*) is recognised, but two new varietal combinations made in the introduction are surprisingly not included in the list. There seems to be a high degree of accuracy in the citations, and the nomenclature has clearly been very thoroughly checked. In a rare misprint, *Asplenium scolopendrium* subsp. *anti-jovis* is given for Britain instead of Bulgaria. So far as British and Irish taxa are concerned, apart from hybrids, the main changes from the last authoritative account, C. N. Page, *The Ferns of Britain and Ireland* (1982), are that *Ceterach* and *Phyllitis* are again sunk into *Asplenium*, the plant we have been calling *Dryopteris affinis* subsp. *stilluppensis* has become subsp. *cambrensis* Fraser-Jenkins (and subsp. *robusta* is sunk into subsp. *borreri*), and *Polypodium australe* Fée has again become *P. cambricum* L. There are six pages of valuable taxonomic and nomenclatural notes in the introduction.

The list is printed from camera-ready copy taken directly from the database. This has resulted in a layout and typography that are confusing and difficult to follow. Apologies are made for the lack of any diacritical signs (which of course makes the list difficult to quote from unless one is in a position to check from source what accents are required). Equally unfortunate, though, is the lack of any variation in type-face except for upper and lower case, and differentiation between accepted names and synonyms has to rely entirely on a rather poor system of indentation. The plant names are written to include the authors not only of the names but of the books in which they were published (if different), e.g. CRYPTOGRAMMA CRISPA (L.) R.BR. IN HOOKER - Gen. Fil. t. 115 B (1842). It is much to be hoped that future publications of this sort will not continue to offset the advantages of quick and easy updating by using such unhelpful and inaccurate typography. The synonymy is also not as user-friendly as it might be; and although some synonyms are explained away, others, for example *Aspidium distans* Viv. (1825), under *Dryopteris affinis* (Lowe) Fraser-Jenkins, based on *Nephrodium affine* Lowe (1838), are not, and the reader would have to repeat the work which the authors of the list have presumably already done to discover why the earliest epithet, *distans* Viv., is not the one to be adopted.

This list will immediately become the standard checklist for Europe and will be of great interest even for those only interested in the 110 or so British and Irish taxa that it covers. With its detailed synonymy and thorough checking it should also help to stabilise the notoriously unstable nomenclature of this group of plants.

A. O. CHATER

Iconographia palynologica Pteridophytorum Italiae. E. Ferrarini, J. Ciampolini, R. E. G. Pichi Sermolli & D. Marchetti. Extracted from *Webbia* 40 (1). Pp. 202, with 71 b. & w. plates. Firenze. 1986. Price not stated (ISSN 0083-7792).

This large and useful volume contains much valuable information. All Italian taxa are included, with their spores depicted as 550 micrographs. The description of the spores is greatly aided by the provision of a very useful illustrated and cross-referenced glossary of the terms used within. Chromosome numbers, genomic formula, notes on reproduction and the total geographic range (with distribution maps cited) are given. Note that the spore sizes given are derived from spores observed in air, and also that the photographs, although generally good, are like my own SEMs – sometimes a little less than sharp.

A key is given to the genera, species and subspecies of all Italian Pteridophytes, based on their spore characters. This will prove valuable to many, including palaeobotanists.

This collaborative work by four authors has been competently co-ordinated by Pichi Sermolli in his usual thorough-going manner. The work is a precursor to his book on Italian ferns, which is in preparation now.

P. J. EDWARDS

The Brightest Jewel. A history of the National Botanical Gardens, Glasnevin, Dublin. E. C. Nelson & E. M. McCracken with original watercolours by Wendy F. Walsh. Pp. 275, with 1 colour photograph, 15 colour plates and 150 b. & w. illustrations. Boethius Press, Kilkenny, Ireland. 1987. Price £26.00 (ISBN 0-86314-083-1).

The National Botanic Gardens at Glasnevin have a distinguished record in the history of horticulture world wide. Established in 1795 they were at one time the second largest botanic garden in the British Empire. This volume traces the Gardens from their formation through the peak of their international fame in the 19th century up to the present day.

From 1838 David Moore and later his son Frederick, who retired in 1922, established contacts at home and abroad and built up rich and extensive collections of plants. One of their particular enthusiasms was tropical orchids, but Glasnevin is also famous for raising many new cultivars of *Nerine*, *Lachenalia* and a host of other plants.

The work not only represents the definitive history of Glasnevin but also provides considerable insight into the history of botanic gardens, plant collecting and horticulture of the 19th and 20th century. A particularly noteworthy feature is the pairing of early illustrations and photographs with recent counterparts. How little the Yew Walk has changed in 80 years is remarkable.

The planning and construction of the Curvilinear Range, contemporary with the Palm House at Kew, shows that the Victorian period suffered its share of problems and frustrations.

The work is admirably researched and written in a most readable and enjoyable style.

I. K. FERGUSON

The Euphorbiales. Chemistry, taxonomy & economic botany. Edited by S. L. Jury, T. Reynolds, D. F. Cutler & F. J. Evans. Pp. iv + 326, with black & white illustrations. Academic Press, London. 1987. Price £15 (ISBN 0-12-3924804) softback.

This volume is the published proceedings of a joint symposium organised by the Linnean Society of London and the Phytochemical Society of Europe and has been reprinted from *Bot. J. Linn. Soc.*, 94: 1-326 (1987). Of the 17 papers, ten are on various aspects of chemistry, six are taxonomic in some way and one deals with ethnobotany. Of the taxonomic papers, B.S.B.I. members will probably be most interested in the review of the classification and relationships of the Euphorbiales by G. L. Webster, and the discussion by A. Radcliffe-Smith of families segregated from the

Euphorbiaceae. Surprisingly for a symposium of this nature, there is only one paper which applies chemical evidence directly to the solution of a taxonomic problem – and this deals with *Euphorbia esula* and its relatives in North America. Many of the other chemical papers discuss aspects of the carcinogenic properties of diterpene esters and their derivatives, compounds widespread in the Euphorbiaceae. Accepting the pronounced chemical bias to the symposium, this volume is well-written and well-presented. I doubt, however, whether it contains sufficient of interest to B.S.B.I. members to make it a good buy for them.

R. J. GORNALL

Coevolution and systematics. Edited by A. R. Stone & D. L. Hawksworth. The Systematics Association Special Volume No. 32. Pp. xii + 147, with 30 text figures. Oxford University Press, Oxford. 1986. Price £22.50 (ISBN 0-19-857703-6).

All evolution is coevolution to some extent, there being a continuous spectrum from the most tenuous to the most intimate of coevolutionary interactions. It is with the extreme of the latter, the relationship between parasite and host, characterized by reciprocal evolutionary change in interacting species involving partial coordination of non-mixing gene pools, that this volume is concerned. The papers are largely addressed to the question of the extent to which 'Fahrenholtz's rule' and its corollaries, which essentially state that parasites and hosts have congruent phylogenies, really do apply in practice. The problem is considered both generally and in relation to special groups of hosts, such as *Nothofagus* and Australian marsupials, and parasites, such as aphids and lice.

The overall conclusion is that Fahrenholtz's and similar rules are invalid as generalities and may produce erroneous hypotheses of relationship; groups of parasites associated with a holophyletic group of hosts may or may not be holophyletic, as the case may be. The conclusions reached are pertinent to the consideration of other intimate and biologically significant coevolutionary phenomena, such as endosymbiosis, mycorrhiza, lichenization and gut biota. Hypotheses of pattern should always be developed independently of those of process.

C. JEFFREY

The flowering plants and ferns of North Lancashire. L. A. & P. D. Livermore. Pp. iv+148, with 735 distribution maps. L. A. & P. D. Livermore, 8 Durham Avenue, Lancaster, LA1 4ED. 1987. Price £4.95 + £1.00 postage & packing (ISBN 0-9512644-0-0).

This publication covers the northern part of Watsonian vice-county 60, West Lancashire, specifically the administrative area of Lancaster District Council. To the best of my knowledge no account of the flora of this area, or of the vice-county as a whole, has been published since Wheldon & Wilson's *The flora of West Lancashire* appeared in 1907 (reprinted 1978). The recent publication is a praiseworthy attempt to fill the gap and may arguably be considered a model for other district floras.

The survey area covers 220 square miles (c.570 km²), involving some 180 tetrads, with fieldwork in the main carried out during the last six years. The area of the botanical survey is considered in terms of Wheldon & Wilson's Flora, but no attempt is made to give a detailed account of the geography and geology (on cost grounds); rather the reader is referred to the earlier work.

A short account compares the changes in flora since 1907, and the mapping system by the standard tetrad method is described. There follows a brief synopsis of the area's habitat types with their associated flora. This is a very rich district ranging from the Lancashire coast to the Pennine moorland, and from acidic mosslands to the Morecambe Bay limestone.

The main list of the flora includes hybrids as well as plants of garden or similar origin and is followed by 732 distribution maps. Critical groups are well covered with the exception of *Hieracia*, though, given the difficulty in obtaining identifications of this genus, this is hardly a criticism of the authors. However, although the referees for the more critical groups are acknowledged, no

reference is made to which of the records they identified. Neither is there any mention of where the voucher specimens are housed. Inevitably in any work such as this there are odd omissions, *Eriophorum latifolium* for one; and is *Epilobium tetragonum* quite so common?

Yet, one can only praise this publication and the hard work that has so obviously gone into its production. It provides a valuable account of the area's flora and will undoubtedly become a standard datum from which to assess the floristic changes in future years. It is a must for field botanists in that part of England or anyone intending to spend any time in this rewarding part of the country. The authors' attempt to keep the price so low is commendable, but I for one would prefer to pay more and have something a little more robustly bound.

P. JEPSON

Biosystematics in the Nordic Flora. Edited by Bengt & Lena Jonsell. *Acta Universitatis Upsaliensis/Symbolae Botanicae Upsaliensis* 27 (2). Pp. 256. Distributor: Almqvist & Wiksell International, Stockholm – New York [1986]. 1987. Price SEK 160 (ISBN 91-554-1941-0).

This is an account of the Proceedings of a symposium held at the Royal Swedish Academy of Sciences on the occasion of the centenary of the Bergius Botanic Garden, Stockholm University, Sweden, on August 27th–29th, 1985. The symposium brought together a large gathering of botanists, many of whom were active in biosystematic studies in the Nordic flora, and the 25 papers presented cover a wide range of topics, including much to interest British and Irish botanists. There are excellent accounts by two prominent English taxonomists, Professor Clive Stace on "Hybridization and plant taxonomy" and Dr Max Walters on "*Alchemilla*: a challenge to the biosystematists", while critical groups are well represented with studies on the *Campanula rotundifolia* complex, the *Carex flava* group, *Cochlearia* and *Euphrasia*. Research on the Gramineae is covered by papers on the genera *Anthoxanthum*, *Deschampsia* and *Festuca*. "Man's influence on the establishment and composition of the national flora" by M. Ryberg provides an account of the role of man as a dispersal agent in the Swedish flora and of the effect of human influence on natural and semi-natural plant communities; it contains much data relevant to these islands. A further paper by R. Svensson & M. Wigren, entitled "A changing flora – a matter of human concern", describes the decline of many cornfield weeds and the changing pattern of village ruderals due to modern grain-cleaning methods, improved manure management and better husbandry. This is a useful publication, similar in many ways to some of the B.S.B.I. Conference Reports. It should be acquired by all those with an interest in the flora of northern Europe.

D. H. KENT

Planting a Bible garden. F. N. Hepper. Pp. vii + 160, with 73 line drawings and 41 colour photos. Her Majesty's Stationery Office, London. 1987. £6.95 paper-back. (ISBN 0-11-250011-0).

Nigel Hepper has a close interest in this subject – he is the author of HMSO's *Bible plants at Kew* and has himself laid out Bible gardens. The result is, for those inclined that way, all that could be wished for – discussions on the frequent extreme uncertainties of just what plant is intended by the various references and translations, and how to grow them or substitutes. For many are impossible out of doors outside the Holy Land, and some even there.

Personally, I would find such an odd assortment of plants unsatisfactory, above all when the best that can be done is quite often to have a similar, or not so similar, species – ideas towards this are listed under each sort described, e.g. the 1867 yellow British hybrid *Cytisus* × *praecox* for the white *Retama*, or *Iris pseudacorus* for *Acorus*. Mr Hepper makes the best of these difficulties, and one wonders why (so far as I know) only two churchyards include any of these as such, as many are easy enough to grow. The book is a *tour de force* by him, all the drawings, all the photos and all the text being his.

D. McCLINTOCK

The complete book of British berries. D. C. Lang. Pp. 223, with 108 colour photographs and 103 line drawings. Threshold Books, London. 1987. Price £19.95 (ISBN 0-901366-34-X).

In this book, David Lang confines his attention to those fruits which can loosely be called berries. The author's claim to deal with all the true fleshy fruits found as natives or widespread introductions in Britain is fully justified, with 96 species covered, including some, such as *Fuchsia magellanica*, of which fruit illustrations are rare.

The introductory text has chapters explaining about the different kinds of fleshy fruits and where to find them, plant poisons and how to treat them, a species list entitled "Can we eat them", and a second list of the species covered in the book with known or potentially poisonous ones marked. There are a number of minor but alarming discrepancies here. Depending on which list is consulted, Rowan for example, is either good to eat or potentially poisonous, a distinction of some importance to the eater. Nor is the text any more reassuring, concluding with the statement that "the process of boiling involved in making jelly or jam could well destroy these (poisonous) properties". Only "could well"? I think I will stick to strawberry jam!

At the end of the book are a rather serendipitous glossary, an extensive bibliography and a usefully cross-referenced index. The middle of the book is devoted to descriptions of the species, arranged in the taxonomic order used in *Flora Europaea* (not the one most familiar to British botanists). In addition to the text, which describes leaves and flowers as well as fruits, and includes notes on ecology and distribution, each entry is accompanied by a colour photograph of the fruit and a line drawing, usually of a flowering stem, flower or fruit. The photographs are excellent, sharply focused, and with true colours, and are the best feature of the book. The line drawings are rather crude, adding little to the book. For comments on the history and uses of the various fruits the author relies heavily on those oft-quoted herbalists, Culpeper and Gerard. I found Mr Lang's own comments on the toxicology, symptoms and treatment of the poisonous species of more interest.

This particular book falls into an odd category, more than a coffee table glossy, less than a field guide. The author conceived his book as an aid for those with "minimal botanical knowledge to identify plants in fruit". The lack of any kind of key to the species is a major drawback, and I fear Mr Lang's intended readers may find using his book for this purpose a frustrating exercise.

J. R. PRESS

The plant-book. A portable dictionary of the higher plants. D. J. Mabberley. Pp. xii+706. Cambridge University Press, Cambridge. 1987. Price £20.00 (ISBN 0-521-34060-8).

When Willis's *Dictionary of the flowering plants and ferns* was revised and enlarged by H. K. Airy Shaw for the 7th edition (1966), he confined the entries to generic and family names and those of higher ranks, omitting much that had been treated by Willis himself in the earlier editions (1896-1931). The missing parts (common names, uses, etc.) were subsequently included by F. N. Howes in *A dictionary of useful and everyday plants* (1974), whilst Shaw's 8th edition of the *Dictionary* proper (1973) was in the same format as the 7th. Many botanists, however, while appreciating the increased and more up-to-date coverage of the works of Shaw and Howes, lamented the absence of a single-volume comprehensive small-size dictionary; and it is this lacuna that David Mabberley has attempted to fill.

Mabberley's book is certainly small (23 × 12.5 × 4 cm); and it is more comprehensive than Shaw's in that it contains a large number of common names from many regions of the world and a considerable amount of economic information in addition to the purely taxonomic and distributional data. It is not - nor could it be - completely comprehensive. The less usual botanical synonyms, for example, have been omitted; and I failed to find one or two modern common names, e.g. Gallant Soldiers (*Galinsoga parviflora*). On the whole, however, I should regard the use of the word 'comprehensive' as well justified; and the wide coverage of literature has made it reasonably up-to-date. Shaw's volumes include summaries of the classifications of both Bentham & Hooker and Engler & Prantl; but the text is full of his own ideas of family and generic

relationships, only some of which have gained acceptance. Mabberley has "tried not to innovate" and has adopted Cronquist's system (1981) as standard; and it is that system that is summarized at the end of this volume. His own views, therefore, are seldom revealed; but they do sometimes appear, e.g. when he uses the sign '~' ("sometimes included in, has recently been included in, should be included in or is very close to") before a generic name. The references to recent or standard monographs or revisions, however, are a very welcome innovation and do compensate, to some extent, for the absence of the subfamilial and tribal positions of the genera that have been a feature of 'Willis'. Was it necessary, though, to include a *nom. nov.* (p. 371) for a genus of orchids in such a work?

The format, in general, is acceptable and helpful. Would that it were always possible, however, to distinguish which author's names are abbreviated. This can be done only for those of generic synonyms, not for those whose generic names are accepted. All in all, however, this really is a book that should be on the bookshelf of every botanist, not to mention other biologists who are concerned with vascular plants.

N. K. B. ROBSON

The origins of angiosperms and their biological consequences. E. M. Friis, W. G. Chaloner & P. R. Crane. Pp. x+358, with 44 text figures and 15 tables. Cambridge University Press, Cambridge. 1987. Price £27.50 (ISBN 0-521-32357-6).

The contents of this fascinating and informative book were mostly presented as papers at the Third International Congress of Systematic and Evolutionary Biology at the University of Sussex in August 1985. They provide, overall, a clear and reasonably comprehensive picture of the current 'orthodox' view of the origin(s) of the angiosperms, although references are made by some contributors to the divergent opinions of e.g. Meuse, Axelrod and Burger (but not to those of Melville).

An 'Introduction to angiosperms' by the editors provides a very useful summary of the facts and opinions about their nature and evolutionary history, after which Doyle & Donoghue summarise previous ideas about their relationships and give a detailed account of a cladistic analysis of the groups concerned. From this it would appear that the angiosperms are the sister-group of the Bennettitales + Pentoxylales + Gnetales, and that all these taxa form the sister-group of the Caytoniales, which in turn links them to the Glossopteridales (a group of seed ferns). Parrish's discussion of Late Cretaceous and Early Tertiary geography and climate provides a helpful framework into which the data of the other authors can be placed and indicates that large areas of the earth were semi-arid (with steppe, taiga or Mediterranean climates) when the angiosperms were apparently undergoing their major evolutionary divergence.

Of the other contributions, the chapter by Friis & Crepet on 'Time of appearance of floral features' will be of great interest to many *Watsonia* readers, whilst Collinson & Hooker's description of the 'Early Tertiary of southern England' reveals a very different vegetation from that encountered now on B.S.B.I. excursions, e.g. reedswamp with palms.

In general, I can thoroughly recommend this book for those who want to know the current orthodox state of knowledge and opinion on the angiosperms, i.e. that they are monophyletic, arose in or soon before the Early Cretaceous, were probably Magnolioid in form, had pinnate venation in leaves and 'carpels', etc. Apart from Doyle & Donoghue's preliminary discussion, you will not find much about the views of those who disagree with this picture, although it is clear that the simple flower of e.g. Chloranthaceae appeared very early in the evolutionary history of the angiosperms. Would that palaeontologists took seriously Melville's data on dichotomous venation and gonophylls in the angiosperms and their relatives.

N. K. B. ROBSON

