Book Reviews

Great Natural History Books and their Creators. R. Desmond. Pp. 176, with numerous colour and black and white plates. The British Library. £25. 2003. Hardback. ISBN 0-7123-4774-7.

This misleadingly titled and packaged book is not just the hopelessly generalised coffee table book one might expect, but rather a series of brilliantly written narratives mostly describing the tortuous genesis of a number of the major illustrated Floras. It opens with a somewhat breathless but very informative account of the book trade from the time of Ray onwards (it is astonishing to learn that Lackington's bookshop in London, the Temple of the Muses, claimed to have over a million books in 1793). After this, Desmond gets into his stride with the discovery of the New World and the investigation of the flora of Asia, and with the stories of the botanists and other naturalists concerned.

The heroic perseverance of many of them is astonishing, none more so than Rumphius, who worked doggedly at his massive and illustrated *Herbarium Amboinense* in the Moluccas in spite of becoming blind, losing wife and a daughter in an earthquake, losing his books, specimens, manuscripts and drawings in a fire, losing a second wife, having his replacement drawings stolen, and finally losing half the completed work in a shipwreck (fortunately a copy had been made). It was not published until the 1740s, nearly forty years after the death of this veritable Job among botanists. Some of the stories have a quite operatic quality. Elizabeth Blackwell became something of a botanical Fidelio by thinking up and illustrating *A Curious Herbal* to get her husband out of a debtor's prison, while he inside wrote the descriptions. When she did get him out, two years later, he went to Sweden and became physician to the King and, after a series of political intrigues that read like a draft for the plot of Verdi's *A Masked Ball*, was beheaded. Scientific intrigue has its place too, none more bizarre then the account of how the ornithologist Audubon took revenge on Rafinesque, who had smashed his favourite fiddle by using it to kill bats invading his bedroom when he was Audubon's guest, by inducing him to publish a series of fictitious fish.

Desmond has vivid accounts of many other works, including *Flora Graeca*, *Banks's Florilegium*, Curtis's *Flora Londinensis* and the *Botanical Magazine*, *The Temple of Flora* and Oeder's *Flora Danica*. This last was seen by the author in the 1760s as the first contribution to an illustrated Flora of the whole of Europe, something that was briefly resurrected in Czechoslovakia two centuries later during the *Flora Europaea* project but has never yet been realised. A chapter on nature printing and similar techniques makes one realise how fortunate we now are with our scanners in being able so easily able to reproduce images of plants on paper. The final chapter is about clerics as authors, including Gilbert White and Keble Martin. The book is lavishly illustrated but, judging from the latter's Primulaceae plate, which has a brownish cast and quite fails to show the freshness of the plate in the first edition that it purports to represent, the colour reproduction is not infallible.

A. O. CHATER

Arable plants - a field guide. P. Wilson & M. King. Pp. 312. Wild Guides, Old Basing, Hampshire. 2003. Hardback. £15·00. ISBN 1-903657-02-4

Arable plants – weeds growing among field crops – have over recent decades shown the most dramatic decline of any major group in the British flora. Currently a fifth of the species targeted for conservation action in the UK occur on arable land. Reforms to agricultural policy aimed at steering agriculture away from production towards environmental benefits may help to restore threatened arable weed communities to Britain's fields. As such there is a need for an accessible, comprehensive guide for non-specialists. This book goes a little way to filling that gap.

The first section serves as an introduction to the subject. The authors briefly describe the origins of the arable flora and the impacts that historical changes in land use have had on its development. They continue with a discussion of the effects that increasingly mechanised and intensive farming practices have had on arable plants before concluding with a brief summary of the role that agri-environment schemes are playing in arable plant conservation. The text is upbeat and simple in

style and will be accessible to a wide range of readers although some of the content is repetitive. It is interspersed with a good range of photos, maps and textboxes though the organization is somewhat jumbled and lacks overall cohesiveness. Shakespearean quotes, detailed farm maps, and a sequence of illustrations quaintly charting the effects of agriculture on a landscape through time (best described as "tea towel botany") add little value to the main text.

The next section begins with a discussion of the biology of arable plants and then proceeds to the heart of the matter, a field guide with profiles of 97 plant species. These are separated into broad-leaved species and grasses and ordered alphabetically using common names of genera (for example, Corn Marigold comes after Field Madder). Rather bizarrely, the keys are tucked into the middle of the plant profiles. They are not in fact taxonomic keys, more tables of plant characters. Each profile contains a brief description of the plant with notes on similar and associated species, habitat, soil types and management requirements for conservation. These are clear and provide information often missing from more standard guides. They are accompanied by colour photographs, a distribution map and illustrations of "important features" which are of variable quality (for example a line drawing of a *Viola arvensis* flower accompanies a photo of the same). Regrettably, the profiles focus exclusively on mature plants. The average visitor to an arable field will rarely encounter a perfect flowering individual; readers would surely benefit from illustrations or photos of other development stages e.g. seedlings. Phil Wilson included them in his *Field guide to rare arable flowers* (1994) as indeed do some existing guides, notably Hanf's (1983) *The arable weeds of Europe - with their seedlings and seeds* and Williams & Morrison's *ADAS Colour Atlas of Weed Seedlings* (1987).

The other glaring omission is that profiles are lacking for several major arable species, including *Chenopodium album, Polygonum aviculare* and *Stellaria media*. This is most disappointing. An uninitiated botanist could not take it into the field and confidently identify the majority of plants found. Indeed, the book is not what the title says - it is about *rare and declining* arable plants rather than arable plants *per se.* Just under a tenth of the species featured are extinct! Given the lack of space devoted to common vascular plants, it is surprising to see that a few bryophyte species are included.

The last section of the book, covering the threats and opportunities facing the arable flora, includes brief discussions and speculations about the use of new crops and other approaches to farming. It also includes a section on practical guidelines for the management of land for arable plants, and descriptions of successful conservation projects.

This is an interesting book that will appeal to a wide readership from farmers to policy makers. Botanists may put it on their coffee tables. It falls short as a field guide to arable plants but serves as a useful source book on the conservation of rare and declining arable plant species.

M. S. HEARD

Hewett Cottrell Watson: Victorian plant ecologist and evolutionist. F. N. Egerton. Pp. xxviii + 283. Ashgate Publishing, Aldershot. 2003. Hardback. £47·50. ISBN 0 7546 0862 X.

This biography of one of the most significant English botanists of the 19th Century is welcome – it fills a yawning gap. It has a special resonance for the B.S.B.I. and particularly for this journal which was named after Hewett Cottrell Watson because its contents "reflect all those facets of the study of the British flora which must for ever be associated with the pioneer work of H. C. Watson ..." (*Watsonia* **8**: 1, 1970). Yet I have reservations and cannot agree with the author (an American historian of science with a special interest in ecology who, by his own admission, was unaware of Watson's existence until he chanced upon some letters written to Charles Darwin) that "in plant geography and ecology, Watson's contributions were ... forgotten ...". That is an unjust assessment because it ignores more than a century and a half of botanical work here and in the Azores, not to mention references to Watson in publications other than *Watsonia*.

Hewett Cottrell Watson was not a "lovable" man. With scholarly probity, Egerton does not attempt to disguise this fact. Watson despised his father, writing in 1848 that "I never knew an individual towards whom I felt such a permanent and bitter antipathy as to my own father." Of "independent circumstances", able to "live comfortably" thanks mainly to a bequest from his mother's family, Hewett never had to find paid employment and so was able to pursue a varied

career as student, editor, author and botanist. He studied medicine at the University of Edinburgh but never graduated. Watson's involvement in the pseudoscience of phrenology, discussed at length by Egerton, is an aspect of this enigmatic man that may surprise those who know Watson's name only from his botanical work. He ventured abroad only once. In 1842, at his own expense, he joined a Royal Navy cartographic expedition to the Azores, commanded by Captain Alexander Vidal, and spent several months there, occasionally (when Vidal allowed) collecting on Pico, Faial, Corvo and Flores. From 1834 until his death in 1881, Watson lived a rather solitary life in Thames Ditton. Combative and quick to find fault, Watson eventually fell out with most of his contemporaries with the notable exceptions of Darwin (who acknowledged his debt to Watson in *Origin of species*) and Joseph Hooker.

With a daunting subject such as Watson, it is probably impossible to write a biography that is enjoyable to read and at times I struggled to comprehend Egerton's "Americanized" prose; according to a gracious acknowledgment many Americanisms were removed to accommodate "British tastes" following David Allen's "stylistic intervention". With its scholarly apparatus of footnotes and 40-page bibliography, there is no doubt Egerton's stolid tome is definitive. Of particular value is the 9-page chronological list of Watson's own publications which ranged from a 1829 contribution on phrenology to the posthumous second edition of *Topographical botany* (1883). The list seems to be complete but it isn't judging by the omission of four, albeit brief, signed notes (on "*Erica mackaii*", "*Eriophorum angustifolium* and *pubescens*", "*Crocus nudiflorus*" and "*Festuca loliacea*") published in *Companion to the botanical magazine* **1**: 225 (1837).

Omissions from a bibliography that is not claimed to be comprehensive are forgivable. Other faults are not so easy to excuse or overlook. Given Watson's importance as a botanist and pioneering phytogeographer, why does this biography (in a series devoted to "Science, technology and culture, 1700–1945") lack indexes to places and scientific names? I hope the blame for absent indexes lies with the series editor and the publisher, but the author himself must be responsible for other lapses. I wonder why Egerton consistently refers to the out-of-date 1977 edition of R. G. C. Desmond's *Dictionary of British and Irish botanists and horticulturists* instead of the revised and expanded 1994 edition?

Given my particular interest in European Ericaceae, I noticed two careless errors, surprising from an historian of ecology, which misrepresent Watson's botanical opinions and so are sufficiently serious to warrant detailed comment. On p. 35 Egerton succeeds in making Watson's British vegetation zones nonsensical. Egerton explains that each zone "contained indicator species which were absent from the zone above *and* [my italics] below" – *and* should read *or*. Then he makes a complete hash of the definition of the six zones. Watson's book contained this:

1. Agricultural zone ends where the cultivation of *Wheat* ceases.
2. Upland ~~~~~~~~~~~~~~~ *Corylus Avellana* ceases.
3. Moorland ~~~~~~~~~~~~~~~ *Carex rigida* begins.
4. Subalpine ~~~~~~~~~~~~~~~ *Calluna vulgaris* ceases.
5. Alpine ~~~~~~~~~~~~~~~ *Empetrum nigrum* ceases.
6. Snowy ~~~~~~~~~~~~~~~ land terminates.

"~~~~~~~~~~~~" does mean ditto but only for the three, underlined words, "zone ends where": the words "the cultivation of " should not have been repeated. Egerton's "Snowy zone ends where the cultivation of land terminates", to take only one line, is certainly not what Watson intended. His snowy zone began where *Empetrum nigrum* ceased to grow naturally and ended at the summits of the highest mountains where "land terminates"! Unfortunately anyone reading Egerton without Watson's original at hand will be utterly bewildered.

The other lapse has a similar confusing consequence. It occurs in the first sentence of the first paragraph on p. 93, summarizing Watson's observations and theorizings about the occurrence of "heaths" as he climbed to the summit of Pico ("the Peak" in his account), a magnificent dormant volcano which boast three native heaths representing three separate genera. Egerton has excised a crucial reference to *Calluna vulgaris* which was "that heath" that Watson wrote about thus:

" ... *Calluna vulgaris* had been observed lower down the Peak; and as that heath ascends in Scotland far above the *Pteris aquilina* [*Pteridium aquilinum*], I read the appearance of the latter as a fair indication that we were still within the natural limit of heaths ...".

This is an indubitably erudite tome but it is compromised by flaws that should have been noted and corrected. I hope the author and publisher will together rectify these and other errors promptly by means of an errata slip. Nevertheless, Egerton's biography is an essential reference book for all libraries concerned with the history of botany and plant geography of Great Britain and Portugal. However, given its cost, I cannot wholeheartedly recommend it to "ordinary" members of the B.S.B.I. – there are more enjoyable and readable books to spend your money on.

E. C. NELSON

A catalogue of alien plants in Ireland. S. C. P. Reynolds. Pp. 414. Occasional papers no. 14, National Botanic Gardens, Glasnevin, Ireland. 2002. Softback. ISSN 0792 0422.

This modest title hides what is surely the definitive work on the subject, covering, in addition to a valuable introduction, the history and detailed distribution of all alien plant taxa recorded in Ireland. The catalogue covers 920 alien species, of which 645 have been recorded since 1987. Incidentally *Alien plants of the British Isles* (Clement & Foster, 1994) and *Alien grasses of the British Isles* (Ryves, Clement & Foster 1996) cover between them nearly 5200 taxa, all those ever recorded in the British Isles. The *New Atlas*, with its accompanying CD-Rom (Preston, Pearman and Dines 2002) covers 1712 alien taxa, including archaeophytes, but does not include many of those last recorded before 1987.

So the Irish alien flora is relatively poor, but even so over two-thirds of the taxa covered in this new work were not dealt with in Scannell & Synnott's *Census Catalogue* (ed. 2, 1987), and most are sourced to an impressive Bibliography (850 entries). Indeed alien plants in Ireland (as in Britain) can now be seen to represent over half of the total flora in terms of number of species.

The introductory chapters are very relevant and interesting. After setting the background, covering the historical publications and previous treatments, the major part comprises a history and analysis of the alien flora, covering a historical overview and an analysis of the current situation which includes numbers, sources and impact. Details are given of historical trends and the 'turnover" of alien species – about 30% of those recorded in the past have vanished, for example, and the proportion of the total aliens recorded which originated from cultivation rose from 54% in the 19th century to some 70% today. Ireland has a high (higher than Britain) percentage of its alien flora occurring only as casuals (45%), and many of the others are found in very few sites. Another section covers the impact of alien plants, with a table of plants considered naturalised in natural or semi-natural habitats. A last section covers, in exemplary fashion, explanatory notes to the main catalogue.

The main catalogue – the meat of the book – covers all the species that are included as "certainly introduced" and "probably introduced" in the 1987 *Census Catalogue*, together with about 640 additional taxa not covered there. To these are added 11 taxa treated as "possibly introduced" in the *Census Catalogue*, but which Clement & Foster (1994) have called alien. Otherwise the "possibly introduced" taxa in the Census Catalogue are not covered in this work, which is probably a pity, since there are under 30 in that category and some discussion would have been interesting, though a few are dealt with in the Appendix.

In the main catalogue every species account is prefaced by notes on its history in Ireland. To an outsider this is really valuable information, and it is supplemented by details of the first record, where applicable. This is followed by all the records for those species not covered in the *Census Catalogue*, and updates for those that are. All these records are sourced, mainly to literature, but often from personal communications. This is extremely welcome and valuable and, of course, is additional to that which was covered in Clement's books. This reviewer would very much like the opportunity of achieving what Reynolds has achieved for Britain. The species accounts are in different fonts according to their treatment in the Census Catalogue. The publication of this new work did not wait for that of the *New Atlas*. I can quite see that the correlation of the two works would have been a very big task, but mildly regret the chance lost. There are, I am sure, good additional data in the *Atlas*, but also, I suspect, errors there too, both of identification and data submission. Reynolds includes a few records later than the *Atlas* cut-off at the end of 1999.

By and large the treatment of species between this work and the *New Atlas* is very close. *Fumaria bastardii, F. muralis, F. purpurea, Allium schoenoprasum, Juncus compressus* and

Viscum album, together with *Adoxa moschatellina* and *Lepidium latifolium*, are treated by Reynolds as alien, albeit often with covering notes, thus following the *Census Catalogue*, whereas in the *New Atlas* they are mapped as native. Conversely *Crepis biennis* and *Iris foetidissima* are treated by her as native, as opposed to alien in the *New Atlas*. She sensibly sets out the case for and against *Luronium natans* and *Stratiotes aloides* and sits on the fence! Most of the 139 archaeophytes in the New Atlas that occur in Ireland are treated as aliens by Reynolds, including all the *Salix* species we treated as archaeophytes in the *New Atlas* and, indeed, of the 33 not covered, and thus treated by implication as native, 12 were shown in the *Census Catalogue* as "possibly introduced", reinforcing my regret that she had not dealt with them. Indeed, this is my only significant disappointment, that by "making the pragmatic decision" referred to in the Introduction to follow the Census Catalogue for all status decisions other than the handful covered in Clement & Foster (1994) alluded to earlier, she has unnecessarily circumscribed herself, and omitted discussions that, given the quality of the rest of the book, would have no doubt been an interesting and worthwhile addition to this field that is exceptionally full of people riding their own hobbyhorses! For instance, I would have been interested in her view of the *Census Catalogue* categorising *Medicago arabica* as alien but, say, *Geranium rotundifolium* and *Picris echioides* as native.

The book is concluded by an interesting appendix covering nearly 50 additional species, treated as native, but including *some* of the "possible introductions" from the *Census Catalogue*, a superbly comprehensive bibliography, and a proper index – scientific and common names in one list.

The author must be congratulated in assembling this catalogue. I can unhesitatingly recommend it to anyone interested in the botany of the British Isles.

D. A. PEARMAN