Book Reviews

Change in the British Flora 1987-2004 (A report on the BSBI Local Change survey). M. E. Braithwaite, R. W. Ellis & C. D. Preston. Pp. iv + 382. Botanical Society of the British Isles, London. 2006. £12. ISBN 0-901158-34-8.

Botanists have always been fascinated by the distribution of species, as witnessed by the Herculean efforts of B.S.B.I. members in gathering records for the two Atlases, and the plethora of county Floras complete with lists of localities and dot maps at tetrad or 1-km square resolution. Although we might get weary of it at times, square-bashing remains something of a national pastime.

Make no mistake; the end-products of all this recording activity (the Red Data Books, Atlases and County Rare Plant Registers) are absolutely vital to those of us working to *conserve* the British flora. But while dot maps tell us a great deal about the distribution of each species, they say rather less about how that distribution is changing through time, and next to nothing about the environmental factors 'driving' those changes.

Desirable as it may be, the scope for developing a botanical equivalent to the Breeding Bird Survey or Butterfly Monitoring Scheme is extremely limited. Counting birds and butterflies is much easier, on the whole, than counting plants. Many plants are simply 'uncountable' – without digging them up you can't tell where one individual ends and the next begins, and taking account of the seed-bank is practically impossible. Multiply these problems by the sheer numbers of species involved and you begin to see why botanists have generally opted to record presence/absence within sample plots and grid-squares to generate distribution and *frequency* data – rather than attempting direct counts to give *abundance* data of the sort favoured by zoologists.

But there is a great deal that can be gleaned from dot-map frequency data, as demonstrated by the *New Atlas*, which included a quantitative analysis of changes in the British flora between the periods 1930-69 and 1987-99, along with a 'change index' for those taxa mapped in the 1962 Atlas and again in the *New Atlas*. The *New Atlas* analysis was a real eye-opener, with species like *Chrysanthemum segetum, Gnaphalium sylvaticum, Ranunculus arvensis, Pedicularis sylvatica, Scleranthus annuus* and *Spergula arvensis* being listed in the 'top 100' species showing the greatest relative decrease between the two recording periods. This paved the way for a root-and-branch revision of the *Red Data List* for Great Britain in 2005.

The analyses of change in the *New Atlas* and the *Red List* were based on 10-km square data; yet there has always been a suspicion that data at this scale could be masking (or under-estimating) some of the changes taking place – after all, within a 10-km square a common species occurring in 25 tetrads could, in theory, be lost from all but one tetrad (a *colossal* decline) without having any effect on either its 10-km dot distribution or its frequency at 10-km scale. This is a problem, of course, with dots at *any* scale, and indicates the need for a variety of surveys at different spatial scales. It also suggests that declines in more widespread species may be more readily discernible by examining presence/absence data from smaller sampling units such as tetrads or 1-km squares. A difficulty with smaller units, of course, is that blanket coverage of the country becomes impossible, so one therefore has to adopt some kind of sampling approach – which is where the B.S.B.I.'s 'Local Change' project, and the volume under review, makes its entrance onto the stage.

On the face of it, 'Local Change' has moved us to another level: the change indices are derived from *tetrad* data, and the time interval between the first (1987-88) and second (2003-04) surveys is just 18 years, covering the most recent date-class in the *New Atlas* (1987-99) and the five years following. This is a colourful and attractively produced book, well written, with lots of colour photographs and clearly set-out tables; but it is a *technical report*, and beneath its apparent accessibility there lurks a degree of complexity that many readers will find hard to penetrate. The data analyses, in particular, are bewildering, and even those with a reasonable grasp of mathematics are likely to struggle to make sense of the statistical methods (and underlying assumptions) employed, although – to be fair to the authors – these are fully explained in an Appendix. Great care has been taken to point out the limitations of both the data and the analytical methods

being used. Throughout the report there are caveats and 'cautionary notes', and readers need to bear these in mind when interpreting and using the results. In particular, for any measure of % change there is also a measure of the *confidence* that can be attached to it, and all too often the 90% confidence limits point to considerable uncertainty as to the reliability and extent of the changes being reported.

Species are grouped according to Broad Habitats, then divided into subgroups by means of a TWINSPAN analysis of their British distributions as given in the *New Atlas*. Grouping species in this way has certain advantages, of course, in that one can then look at changes across a whole *suite* of species having similar national distributions and habitat requirements; but, to be honest, I found the TWINSPAN groups really rather unhelpful, and would have preferred a simpler analysis (as in the *New Atlas*), with species examined individually first, and then *en bloc* to discern those ecological, phytogeographical, morphological (etc.) attributes particularly associated with 'stable', 'decreasing' or 'increasing' species. You can, of course, pick your way through the report in search of the ecologically (and statistically) significant – and tabulated results for all species, in alphabetical order, are helpfully given in an Appendix – but at times it is a bit like searching haystacks for needles.

Nevertheless, there is much in this report to quicken the pulse, and much, too, of relevance not just to conservationists 'on the ground' but also to those working in policy areas like climate change and sustainable land-use. For example, as hinted at in the *New Atlas,* it seems clear that quite a few species are now increasing markedly in response to climate change, or at any rate the recent run of warmer temperatures, including 'southern' or Mediterranean plants like *Geranium rotundifolium, Medicago arabica, Oenanthe pimpinelloides, Ranunculus parviflorus, Ophrys apifera* and *Anacamptis pyramidalis*. Many increasing neophyte taxa have their origins in warm-temperate or subtropical regions, e.g. *Campanula poscharskyana, Conyza sumatrensis, Allium triquetrum* and *Geranium pyrenaicum*, and it is likely that these, too, are benefiting from the milder weather.

Declining species are predominantly those associated with nutrient-poor (infertile) habitats such as calcareous grasslands and heather moorland: species like *Alchemilla xanthochlora, Briza media, Centaurea scabiosa, Cirsium acaule, Pedicularis sylvatica, Rhinanthus minor* and *Viola lutea*. This agrees with the general findings in the *New Atlas* but, interestingly, the 'Local Change' survey has thrown up a number of species which, while 'stable' or showing only slight decline at 10-km square scale, have apparently undergone significant recent declines at tetrad scale. Some species of arable/horticultural land continue to decline, including *Chrysanthemum segetum, Galeopsis speciosa* and *Silene noctiflora*, but others are apparently increasing, possibly benefiting from agri-environment schemes introduced since the original survey (e.g. set-aside, arable field margins, etc.).

Many declining species, as one would expect, seem to have been mostly lost from tetrads away from their core areas, usually in parts of the country where they were already pretty thin on the ground. Are 'nature conservation' activities making a difference to these species? Certainly, it would be interesting to know whether 'edge-of-range'/outlying populations are becoming increasingly restricted to 'protected sites' – SSSIs, County Wildlife Sites, Protected Road Verges, etc. – or agri-environment land. That many rare/scarce plants are now found mainly on protected sites has been well demonstrated in some areas (see, for example, the entries in the Dorset Rare Plants Register), but for more widespread 'decliners' the relationship has yet to be investigated – a worthwhile subject for future study, perhaps?

The 'Local Change' survey came hard on the heels of 'Atlas 2000', and to many B.S.B.I. foot soldiers there seemed to be little time for recuperation between the end of one campaign and the start of the next. But the effort has surely been worth it. The authors do their best to tease out the main conclusions of the survey, while being honest and up-front about its limitations. The results seem to raise as many questions as they answer, but there is much here to inform and provoke, and anyone interested in Britain's flora and how it is changing should get hold of a copy. One thing *is* clear: change happens simultaneously at a range of spatial scales, and if we are to document and understand it we need to have a whole batch of projects working at different scales and employing different recording methods and analytical techniques – of which the 'Atlas' is one, and 'Local Change' is another. No rest for the square-bashers, then?

S. J. LEACH

The Botanist. The botanical diary of Eleanor Vachell (1879-1948). Edited by M. Forty & T. Rich. Pp. 227. National Museum of Wales. 2006. Softback. £19.50. ISBN 0-7200-0565-5.

Eleanor Vachell's diary has long been known to the happy few from a typescript in the National Museum of Wales, and now, thanks to the diligence of Michelle Forty and Tim Rich, this incomparable document of some 200,000 words is available to the wider botanical public. I am not aware of any other writing that so vividly communicates the enjoyment, the excitements and the detailed mechanics of plant-hunting in Britain and Ireland, except perhaps parts of the generally rather more sober New Naturalist book *Mountain Flowers* by John Raven and Max Walters. Eleanor Vachell was the daughter of a distinguished Cardiff physician and amateur botanist with whom she started, at the age of twelve, compiling what was to become an outstanding private herbarium. She began a diary at the same time. The work under review is not so much daily entries as a series of narratives written up in the third person, mostly apparently after the event. Her driving forces were a passionate desire to see every British plant, an ambition to colour in her illustrated "Bentham" (in fact Fitch's *Illustrations of the British Flora*, and Butcher & Strudwick's *Further Illustrations*), and above all her friendship and good-natured rivalry with other botanists. She was a serious investigator, corresponding with and sending specimens to experts on many difficult groups, including *Potamogeton*, *Rosa*, *Fumaria*, *Centaurium*, *Rhinanthus*, *Callitriche* and *Limosella*.

The diary covers most of the country, and Vachell's most regular companions on the innumerable, often successful, often disastrous, but always high-spirited expeditions were four other lady enthusiasts who constituted themselves as the Trudgeleers (a term of expressive but obscure Irish origin). Others who figure prominently include Francis Druce, T. J. Foggitt and his wife, A. J. Wilmott, N. D. Simpson and R. W. Butcher, and many of the other botanists of the period, from the aged J. E. Griffith to the young Paul Richards, appear at some time or other. Various Botanical Exchange Club events, the International Botanical Congress at Cambridge and a BSBI meeting in Merioneth are vividly described. G. C. Druce makes many appear-ances, none more memorable than on a wet and unsuccessful outing to see *Potentilla rupestris* on the Wye when he behaved with singularly poor grace. Vachell was short of funds until an inheritance from an uncle in 1938, but by 1927 she had saved up enough from writing regular botanical notes for the *Western Mail* (which she did from 1921 to 1948) and from wireless talks to buy a third-hand Clyno car. She changed to a second-hand Swift Coupé in 1932, and then to a Morris later the same year. As an account of the perils and joys of early motoring alone the book is worth reading.

Predictably, hunts for familiar rarities such as *Cypripedium* (one of the few plants she never saw in spite of the most extreme efforts) and *Trichomanes* (at Killarney the party was expensively tricked into being taken on horseback to see planted-out specimens by a noisy group of predatory locals including a trumpeter and a photographer) figure prominently. But more interesting and less fashionable taxa such as the splits of *Thalictrum minus* and the upland *Deschampsia* species get equal attention. Repeated expeditions to most of the chief localities for rarities, such as Lochnager, which she climbed seven times, and Ben Lawers, are described in great detail. It is a measure of the sheer gusto of the writing that the 1921 account of a catastrophic climb up Lawers in appalling weather, when no plants were seen and the author was reduced at one point to crawling up to the summit cairn in thick mist carrying her vasculum in her teeth, is even more vicariously enjoyable than the account of the successful expedition two days later when virtually all the rarities were seen. The circumstantial detail of sites and populations makes many of the entries of real historical interest.

The editors have provided an index that includes genera, personal names and, especially helpfully, the main counties visited. The personal names understandably lead one sometimes to just a name rather than a particular person, for example "Mr Taylor" refers to Peter as well as Sir George Taylor. A few interesting names are missing, such as E. H. T. Bible of Aberdyfi on p.125, and Robert Dick, deceased but touchingly apostrophised on p.107. In the text "The botanical nomenclature has largely been updated to modern genera, though sometimes where the historical context might be lost ... the original names have been retained", but it is not indicated where this updating, which to some extent applies to species as well as genera, has or has not been done; it would have been more helpful, and editorially correct, to have retained the original names and given the modern ones in brackets.

A. O. CHATER

A Natural History of Nettles. Keith G. R. Wheeler. Pp. x + 300 plus CD-ROM with 143 colour plates. Trafford Publishing, Victoria, Canada. 2004. Softback. ISBN 1-4120-2694-6.

This is a monograph on the genus *Urtica* and its relatives on an epic scale. The author says that he has 'tried to produce a book for naturalists [and] scientists ... with a large number of photographs and illustrations [that] would appeal to the general public.' Thus, it combines the enthusiasm and polymath expansiveness of a Victorian natural historian with the latest techniques in microscopy and scientific enquiry. The author has explored an enormously diverse range of topics, often introducing a topic in one chapter and returning to it in more detail later. This is not a book to read straight through, therefore, but, rather, one to browse and dip into for sections of particular interest. It will, perhaps, be of special interest to teachers who will find a great wealth of fascinating facts and ideas for students of all ages.

On the botanical side, the author starts with the classification of the Urticales and descriptions of the floral structures and pollination mechanisms in *Urtica*, with wonderful illustrations. This is followed by a brief account of *Urtica dioica*, *U. urens* and *U. pilulifera* in Europe with an interesting section on var. *dodartii*; this was once thought to be a different species but it does not breed true and breeding experiments in the early 20th century showed that the pellitory-like leaf characters were controlled by a single recessive gene. Roman nettle is thought to be extinct now in Britain, apart, perhaps, from botanic gardens: in the 1970s I saw a small colony that was maintained in a corner of Pembroke College garden, Cambridge. Chapters 14 and 15 cover the worldwide and British distribution of *U. dioica*, its nutritional requirements, establishment, growth and general ecology. The book concludes with two chapters on the 'sex life' and breeding systems in *Urtica* spp., and an appendix on the other British 'nettleworts', *Parietaria judaica* and *Soleirolia soleirolii,* again with superb illustrations.

Three whole chapters are devoted to the micromorphology and functioning of stinging trichomes, and the composition and effects of the toxins in the Urticaceae and in other, quite unrelated, families. The microscopic details of trichomes are illustrated in six full page photographs and drawings but the colour illustrations on the CD-ROM must be viewed to appreciate them fully. As a child in south India, I was shown and warned against 'elephant nettle', *Girardinia diversifolia*, and having seen it again while trekking through rainforest in Tamil Nadu in 2000, I was particularly fascinated to read the account of 'tropical tormentors' in chapter 7. The New Zealand nettle tree, *Urtica ferox*, which I have also seen, is clearly not in the same league for size and fierce stinging properties as the giant stinging trees, *Dendrocnide* spp., of Australia. Horses can even die from contact with these plants. On the other hand, many invertebrates are unaffected by the stinging hairs. The description of the way in which a caterpillar overcomes the defences of *Cnidoscolus urens* (Euphorbiaceae) is another fascinating story.

Other chapters describe the place of nettles in folklore and literature and the use of nettles for food and fibre. Nettle fibre is stronger than flax fibre and its use from early historical times is well known but its production in Germany during the First World War may not be so well known. In 1915, apparently, ten million acres in Austria were thought to be 'splendidly adapted to the cultivation of the nettle', twice that needed to replace cotton imports, but 2.7 million kg were harvested without any special cultivation.

Chapter 11 describes the life history, distribution and field studies on associated species such as Greater Dodder, *Cuscuta europaea* and fungal rusts. This is followed by two chapters on the insects associated with *Urtica*, again with several full page plates, which can only be fully appreciated in colour on the CD-ROM. The painting of the leaf hopper *Eupteryx aurata* is especially beautiful. In this field again the author contributes interesting first hand accounts of territorial and courtship behaviour among vanessid butterflies and unusual oviposition on nettles by Painted lady butt-erflies, *Cynthia cardui*, during a particularly large invasion in 1996.

There is a very large reference list and a good subject index. Critical readers may, however, be rather surprised by the inconsistent use of italics for scientific names. This seems almost random except in the case of *Urtica* and relatives, which are generally printed in Roman font. There are also quite a lot of typographical errors, some of which have been corrected by hand. Among authors' names quoted in the text, Perrin should be

Perring, for example, and Rackman should be Rackham. Since this book is available through 'on-demand publishing', it may be possible to correct some of these minor faults in future productions. The author says that this book 'has been much maligned by the conventional book publishers'. It does, indeed, fall outside the norm in today's economy-conscious and specialist publishing world but I hope others will, like me, obtain 'pleasure from entering the world of the nettle patch.'

B. N. K. DAVIS

*Atlas Florae Europaeae. Distribution of Vascular Plants in Europe. Volume 13. Rosaceae (*Spiraea *to* Fragaria*, excl.* Rubus*).* Edited by A. Kurtto, R. Lampinen & L. Junikka. Pp. 320. The Committee for Mapping the Flora of Europe and Societas Biologica Fennica Vanamo, Helsinki. 2004. Softback. 120 euros. ISBN 951-9108-14-9.

Atlas Florae Europaeae issued its first volume in 1972 and reached the end of the first volume of *Flora Europaea* with volume 12 in 1999. There has now been a further long pause, occasioned partly by the death of Jaakko Jalas and the retirement of Juha Suominen, who were the founding editors.

The commencement of maps covering volume 2 of *Flora Europaea* has allowed a new look and small modifications to the layout. These include an amended grid system (principally for the purpose of fitting in with atlases of other groups and largely affecting areas of sea) and very useful coverage map of all the taxa covered in this part – which allows one to see straight away likely lacunae – together with the customary list of deviations from *Flora Europaea*. The territory divisions and the acronyms tie up with the Euro+Med PlantBase, newly set up in 2000. The maps themselves have, at last, totals of the dots under the various date and status categories.

This volume is the first of four for the Rosaceae, a family made deeply complicated by apomixis; indeed two of the next three parts are to be devoted solely to *Alchemilla* and *Rubus*. That will leave *Sorbus, Cotoneaster* and the *Pyrus/Malus* complex for the last volume. This first part has 286 maps of which 54 are of *Rosa* and 150 of *Potentilla.* All other genera are small. The coverage of most genera is introduced by a general map for all the taxa covered, which allows one to see both the richness of that genus in each country and how well each has covered it - particularly relevant for critical groups.

After *Spiraea* and *Filipendula* comes *Rosa*, and for readers from Britain and Ireland, a treatment very difficult to get to grips with, particularly under Section *Canina*. The treatment here broadly follows *Flora Europaea* and thus fundamentally differs from that in Stace's *New Flora* and Graham & Primavesi's B.S.B.I. Handbook. To add to our complications, the general map that prefaces the account shows that France, our nearest neighbour, has little enthusiasm for the genus other than a very broad treatment.

Up to the *Canina* group there are no problems, other than the interesting point that the widely naturalised *R. rugosa* is barely recorded for France, which must be just recording bias. After the *Canina* group the synonymy is more or less comparable with ours and there is little to comment on other than perhaps the non-recording of *R. sherardii* from France. I do not think this review is the place (even assuming I had the skill) to provide a detailed comparison for the two treatments of the *Canina* group. Suffice it to say that each species or aggregate has a detailed (I was tempted to say bewildering) section on taxonomy, through which the skilled or patient could trace the treatment of the species concepts more familiar to us. Thus their *R. dumalis* is our *R. caesia* subsp. *glauca* and their *R. subcanina* is our *R. caesia* subsp. *glauca* × *canina* (*R.* ×*dumalis* sensu Graham & Primavesi pro parte).

Next come smaller genera including *Sanguisorba* and *Geum*. Nothing particular to say there, but they are followed by the large *Potentilla* genus prefaced by *P. fruticosa, P. palustris* and *P. rupestris* split off into *Dasiphora, Comarum* and *Drymocallis* respectively. These alterations date from 1990 but do not seem to have been even discussed here. *Potentilla argentea* is split into *P. argentea* and *P. neglecta*, with the latter reaching W & S France and Scandinavia but not (yet) here. The native range of our alien species *P. norvegica, P. intermedia* and *P. recta* is well shown. *P. tabernaemontani* is mapped as our Spring Cinquefoil and *P. neumanniana* is shown only as a local apomict in Germany and Scandinavia. Interestingly, *P. anglica* is shown in France as very rare with many extinctions.

Perhaps one has to be grateful for this magnificent work of scholarship – in many ways much more full and satisfactory than the original written Flora – and ignore the fact that on current progress it might be complete by 2120. Personally I find the current progress deeply unsatisfying. I would much prefer a statement now of as many species as can be easily dealt with, leaving the critical groups as aggregates if necessary. Though there have been other distribution atlases for Northern Europe and Scandinavia it is a real bore that these do not cover around 40% of our flora, and even if they do, they are often based on data that are very old.

Finally, the price. I am sure that it can be justified for the scientific work involved and the limited market. But it is totally out of court for anybody with

other than the deepest pocket, especially as British natural history booksellers cite prices between £110 and £145, and this does not help dissemination of the valuable distribution and taxonomic work contained in this Atlas.

D. A. PEARMAN

The Wild Flower Key, revised and expanded edition. F. Rose & C. O'Reilly. Pp. 576. Frederick Warne. 2006. Softback. £19.99. ISBN 0-7232-5175-0.

Since its publication in 1981 *The Wild Flower Key* has become one of the most popular field guides to the British flora. By combining taxonomic keys with illustrations of diagnostic features, 'Rose', as it is affectionately known, has helped a generation of British botanists to develop the critical skills required for field identification. This new edition incorporates much new information on the distribution, conservation and taxonomy of British species including many aliens which are now well established in the wild in the UK.

Much of the work for the new edition has been carried out by Clare O'Reilly (née Coleman), a freelance botanist who abandoned a career in environmental law to complete it. Clare has edited and expanded many of the species accounts and, with the help of leading botanists, improved the keys to difficult genera. In addition, there are new chapters on 'Plant Status', 'Ancient Woodland Indicators', 'Wild Plants and the Law' and 'Finding and Recording Wild Plants' as well as useful lists of botanical references and websites for beginners.

Although the introductory keys remain unaltered, the nomenclature and family orders have been revised to follow Stace (1997), only diverging where the authors disagree (e.g. *Gymnadenia*) or where recent taxonomic changes have been large (e.g. *Anacamptis*). This is a great improvement on the rather inconsistent taxonomic treatment of the first edition. However, most of the diagnostic characters are still based on CTW (second edition) and are therefore woefully out of date. This is a shame given the wealth of new information recently made available. The keys to families, genera and species were one of the best features of the first edition and these have remained largely unaltered (although see Primavesi 2006). More controversial will be the removal of north-west European species not present in the UK, such as *Arnica montana* and *Digitalis lutea*, although surprisingly two British neophytes have also been removed (*Holosteum umbellatum*, *Legousia speculum-veneris*). The line drawings of common native grasses have also been dropped, presumably because the wonderful companion volume to grasses is now available (Rose 1989). These deletions have made way for over 50 aliens which have become widely naturalised over the last fifty years (e.g. *Buddleja davidii*, *Fallopia japonica*, *Hirschfeldia incana*, *Hyacinthoides* × *massartiana*, *Persicaria wallichii*, *Solidago canadensis*) and illustrations of 20 native montane species that were omitted from the first edition (e.g. *Betula nana*, *Diapensia lapponica*, *Koenigia islandica*, *Linnaea borealis*, *Loiseleuria procumbens*, *Moneses uniflora*, *Oxyria digyna*, *Silene acaulis*). The coverage of the new edition is therefore less biased to the south and more reflective of the British flora at the start of the twenty-first century, including all natives and long-established introductions, all non-natives in over 300 10-km squares and non-natives in 50-299 10-km squares if they are invasive or easily confused with natives.

Substantial changes to the layout have made the book much easier to use in the field. The illustrations are more spaced out on the page and some poor quality pictures have been reproduced more accurately (e.g. *Viola* spp.) although one or two have suffered from enlargement (e.g. *Myrica gale*, *Thesium humifusum*). Virtually all the line drawings

have been redrawn and are now much clearer (see *Fumaria* spp.) and the 'ID Tip' boxes which provide handy hints and illustrated glossaries to diagnostic features for around twenty large families will no doubt prove popular with beginners. The design is refreshingly modern whilst retaining much of the original format and, if you treat your books as badly as I do, you'll appreciate the plastic cover which appears to come as standard.

Some of the deficiencies of the first edition remain although most are only minor drawbacks. The tone of the new introduction is rather immodest and I'm sure less energetic colleagues will resent the increase in size (it is considerably heavier than Clive Stace's (1999) *Field Flora*, for example). Unfortunately there are still many typographic errors, some of which were not corrected by the publisher in order to meet the publication deadline (these are listed in Coleman (2006)). Many illustrations are on separate pages to the accompanying text, which can prove irritating, and some users may find the plethora of abbreviations (e.g. in describing distribution, habitats, status etc.) a little bewildering. The selection of illustrated species remains frustratingly incomplete and many taxa will still be too poorly covered for more experienced botanists, in particular infraspecific and critical taxa (e.g. *Alchemilla* spp., *Erophila* spp., *Montia fontana*). One wonders whether these could have been better covered at the expense of very rare species such as *Orchis laxiflora* or the vegetative keys to flora of specific habitats that, although being one of the best features of the original, are probably rarely used. Also a simple table of ecological attributes (e.g. soil pH, moisture, fertility, life-form, etc.) would have been more informative for beginners than a bald list of Ancient Woodland Indicators ('AWIs').

Although this edition of 'Rose' is neither entirely suitable for the beginner nor for the advanced student it will be warmly welcomed by both amateur and professional botanists alike. Its combination of dichotomous keys and illustrations of diagnostic features bridges the gap between more elementary pictorial guides and more serious taxonomic works which can be so off-putting to botanists with little or no formal taxonomic training. This new edition is more comprehensive, stylish, and user-friendly than the original and is therefore likely to be the most popular field guide on the market for many years to come.

K. J. WALKER

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