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Book Reviews

British and Irish Butterfly Rarities: Migrations, Extinctions and Introductions

Peter Eeles
Pisces Publications, 2023. 338 pages, hardback with many colour photographs. ISBN 9781913994105. £32.50

Peter Eeles produced his magnus opus *Life Cycles of British and Irish Butterflies* in 2019, detailing the current breeding species. When I reviewed it for *TGN* 27(3), I commented that he had omitted migrants which could become established, as well as species that had been lost from the British list but might return. This beautiful book is clearly the reason, as it tackles these very topics and therefore represents a companion volume. It concentrates on three groups of butterflies:
(1) Primary Listings: 25 species that are recognised migrants or have been lost to the British list;
(2) Adventive Species: A further 29 species that have arrived here from time to time – often by unknown means;
(3) Questionable Records: Ten species that are probable errors.

Like his earlier book, this is a superb publication full of gorgeous photographs and a text which is remarkably absorbing.

The Primary Listings group begins both alphabetically and taxonomically with the Apollo butterfly (*Parnassus apollo*). If the eyebrows of keen lepidopterists initially rise at the inclusion of this magnificent species, join the club. However, against all expectation, Eeles has discovered 20 references to specimens recorded in the U.K. – the last in 1986. While several early records are necessarily vague, others bear an aura of authenticity; a 1957 record was a squashed individual on the pavement of Tavistock Square, London, while a 1955 specimen caught at Folkestone is in a local museum. The entry for the Apollo is typical, running to ten packed pages. All stages of the butterfly are covered by multiple colour photographs with accompanying text. There is a map of its European distribution and photos of typical habitat. Nearly four pages are devoted to the sightings, with each considered in turn; three possible sources of the butterflies (southern Norway, the Eifel and Vosges Mountains) are discussed. Other butterflies in the Primary Listings group include the Camberwell beauty (*Nymphalis antiopa*), large tortoiseshell (*N. polychloros*) and scarce tortoiseshell (*N. xanthomelas*), as well as many fritillaries, blues, whites and browns. Species that have become famously extinct in Britain, such as the large copper (*Lycaena dispar*) and black-veined white (*Aporia crataegi*), are notable entries - the black-veined white receiving no less than 14 pages and its disappearance is described as one of our great butterfly mysteries; sections on these two butterflies also mention the many attempts at re-introduction. Where a species has irruption years, these are documented and discussed. Where a species has more limited appearances, each known sighting is mulled over. One key issue (resident or migrant?) is often debated at length.

The Adventive Species group are accorded less room, with 29 species being covered in 18 pages. Illustrations are limited to the adults. Many have appeared here through imported plants and foodstuffs and are unlikely to trouble the British List for long. But if you are of a betting disposition, may I recommend the geranium bronze (*Cacyreus marshalli*) as a potential exception. Originally from southern Africa, I have seen this small member of the Lycaenidae in many parts of the Mediterranean and Eeles gives dated sightings in almost every European country.

The Questionable Records section is also short but is notable for some lengthy discussions of individual claims, e.g. for the scarce copper (*Lycaena virgaureae*).

There is a short section at the end – Future Prospects – that deals with legal aspects (especially assisted colonisation) and some topics which all authors find obligatory (pollution, climate change, habitat degradation) as well as trends in migration which may reflect the number of recorders rather than the number of butterflies.

Apart from simple misidentification, many pitfalls are alluded to in the course of the book. Unscrupulous dealers (e.g. “an unprincipled man named Plastead”) could pass off species collected on the continent as British in order to increase their rarity and price to collectors. The release of butterflies at weddings and funerals may involve colourful alien species from butterfly farms. Caribbean and Central American species such as the Julia (*Dryas julia*) or the owlets (e.g. *Opsiphanes* spp.) are clearly linked to fruiterers that stock bananas. People who collected both in Britain and abroad could muddle up the provenance of catches or move specimens around in their cabinets with confusing results.

That said, the new world monarch (*Danaus plexippus*) is firmly established in the Atlantic islands (I have seen adults and larvae on Tenerife), mainland Spain and Portugal. This is a robust invasion and it is heading north. Even more inexorable is the northward march of the map butterfly (*Araschnia levana*) notable for its two annual broods which are so utterly unalike. It colonised the whole of the Netherlands in 20 years, moving north at a rate of 15 km/year; in Finland it has managed 60 km/year. What it will do when it collides with the Channel remains to be seen.

If you bought Eeles' original book, you should certainly consider this one also. It is produced to the same very high standard and it really does act as a "part two". It also injects elements of history, detective work and evaluation which I found fascinating. Thoroughly recommended.

Tony Payne

Avian Architecture: How Birds Design, Engineer and Build

Peter Goodfellow
Princeton University Press, Revised Edition, 2024. 176 pages, hardback. ISBN 9780691255460.
£25.00

A revised and expanded edition of the original 2011 publication, the book has the same structure as that of the first edition, with a foreword from the consulting expert, in this case Professor Tony Williams rather than our own Professor Mike Hansell. After a brief introduction, nests are classified into ten types with a chapter on each, including an illustrated summary of that nest type followed by case studies across taxa and biogeographic realms.

Topics covered start from the most basic Scrape Nests, through Holes and Tunnels, Cup-Shaped and Dome Nests to the more complicated and sophisticated Hanging, Woven and Stitched Nests. Away from the nest as a safe structure to raise the young is a fascinating chapter on Courts and Bowers, although strangely this includes only a single example from New Guinea. The 12th and final chapter takes another excursion away from traditional nests to cover Edible Nests and Food Stores, with a detailed case study on the yellow-bellied sapsucker and its "orchards".

Much of content is the same as that of the first edition, but with subtle improvements. In some cases, new images of the featured species are used, others feature the same image but with greater detail and often with a richer colour palate. Illustrations are also in improved quality/clarity. I am sorry that the image of the parent wren in mid-flight, bill full of harvestmen, approaching a nest entrance full of open mouths in the first edition has been replaced, but nowhere else does the new edition suffer in comparison.

Where case studies have been retained from the first edition there are few changes to the text, probably an indication of how well the original was written. There have been changes to the presentation of the case studies, with white rather than buff background and the removal of the unnecessary lines bordering the various sections of the case study. Strangely, nest measurements are now given primarily in imperial units rather than the original metric units.

New content is included, with additional case studies on species such as great tit, mandarin duck, wood warbler and Clark's nutcracker. Although the subject is avian architecture, the species accounts do not adhere completely to the topic: there are some fascinating side-notes on subjects ranging from the distraction displays of killdeer to interactions between the cactus wren and their predators the gopher and whip snake.

My favourite sections of the book are the regular illustrated features on how a particular nest is constructed – the "Velcro" technique of the long-tailed tit for example. Another lovely half-page figure which caught my eye was the explanation of how the horned grebe, normally clumsy on land, has evolved a nest structure and launching technique to most efficiently access its nest. My favourite illustration in the whole book is in the new case study of the white-necked rockfowl – a charming image of an adult with a bill full of mud. To my shame, this is the first time I had even heard of the species!

To summarise, a fascinating, well written and superbly illustrated book that would make a perfect present for the ornithologist in your life, or for anybody with even a passing interest in the natural world. Whilst much of the content is the same as in the first edition, there is enough new material and improvement from the original to make this a book worth investing in and treasuring.

Stewart White

Hedges

Robert Wolton
British Wildlife Collection No. 13. Bloomsbury Publishing, 2024. 400 pages, hardback with colour photographs. ISBN 0781399411714.
£36.00

Hedges continues the excellent standard of the British Wildlife Collection series. Perhaps the significance of hedges has been underestimated in the discussion of habitats, but this volume puts any misconception fully to rights. The author, Robert Wolton, is exceptionally well qualified to do the subject justice, having a diverse background as an ecologist, naturalist, researcher and farmer. Having specialised in farmland management, as well as being a hedge specialist for Natural England, his personal experience from running his own farm in Devon adds that anecdotal touch which makes *Hedges* such a readable book. The inclusion of many diagrams and excellent photographs adds to this.

The Preface and Acknowledgements begin with a general comment in which the author, viewing from an aeroplane, rejoices in the fact that, despite their depletion over the last 80 years, Britain and Ireland still have a landscape substantially defined by hedges. A large number of acknowledgements follow, including input from numerous organisations as well as personal acknowledgements that include his wife, Paula.

The first four chapters define a hedge, outline the history of hedges and examine cultural attitudes towards them, as well as assessing their current extent and condition. This section begins by referencing the definitive book on hedges (published in 1974) whose authors, Pollard, Hooper and Moore, worked for the Nature Conservancy at the time. Combined with the extensive works of Oliver Rackham, these provide an extraordinary

background to compare with more recent data and are much used in subsequent chapters. In 1974, hedges were still being removed following an attitude caused by food shortages during and post war, encouraging cultivation of all possible ground. This overview is followed by a chapter which poses the question "What counts as a hedge?" The answer is a working definition which includes not only the linear feature of trees and shrubs, but also the associated herbaceous vegetation. The third and fourth of these introductory chapters covers the detailed origins and history of hedges including diversity and related farming and cultural practices. Finally, superb data and analyses of losses and gains are presented, one conclusion being that we still have 700,000 km of hedges in Britain and Ireland. This could be dull, but the combination of maps, table diagrams and fascinating information remedies that possibility entirely.

The next group of five chapters deals with hedges as living systems with all their huge biodiversity. The first heading – Reservoirs of Life – sums this up, looking at the very many and diverse habitats afforded by single and multiple hedge systems, banking or no banking, and each one with its own character. In a countryside with so much intensive farming, the diversity of all forms of life associated with hedges is examined, enumerated and illustrated. The photographic material is a delight. Wolton pulls in experts where it is required, making good an historical lack of detailed hedges wildlife data. This too is examined in the context of species connectivity. The "heart" of a hedge, making diversity possible, is the shrub layer. Diversity, including climbers, makes every hedge more or less unique. Hedgerow trees add to the mix with an interesting conclusion that leaving occasional trees to reach height above the shrub layer can add much to the value and diversity. This leads to a discussion of "Bottoms, banks, margins and ditches" which increase diversity, with so much variety of plant and animal and fungal life. Life-cycles include those of butterflies, harvest mice, bats and bees and much more. Such well-illustrated examples make joyful reading.

Three significant ecological topics are considered next. The first looks at traditional uses of hedges as boundary markers and livestock control. This can be linked with the production of fruit, nuts and fodder, coupled with windbreaks for shelter for livestock, crops and dwellings. Fuel and construction increase the value of hedges too with each species having its own special value. I did so enjoy the anecdotal material such as a photo of slow herding cattle browsing their own choice of leaves of best medical value. Next is the consideration of hedges in soil conservation, cleansing water and reducing flooding. Hedges are beneficial in each of these problems which have become more pressing than ever before. The author backs these conclusions with his Devonshire farming experience as well as different country-wide examples. Hedges have been undervalued in so many ways, including the notion that hedge space simply reduces crops. However, in a chapter headed "Crop pollination and pest control" the author argues against this. The diversity of pollinators enhanced by the presence of hedges is examined and illustrated using data from Britain and several continental studies. Bumble bees and orchards are looked at from Normandy to Devon. Thanks to parasitic wasps and other natural predators, pest control can be enhanced too, allowing diversity and richness in habitat for so many creatures. "Do hedges have a significant role in carbon capture and storage?" is asked in the next chapter. This is a topic undergoing considerable research with immediate modern relevance. Hedges store carbon above and below ground and Wolton covers this topic well with data and evaluation. There is an overlap with the final chapter in this mixed section – the use of hedges for wood fuel. Balancing the saving on other fuels with the loss of carbon from hedges is ably covered in this chapter and perhaps those with open fires, wood burning stoves and enjoyment of bonfires should read with personal attention. It does make a very interesting read.

The penultimate chapter is by far the longest in the book – Hedge Management. This chapter is wide-ranging in its content, putting together all the aspects opened up and discussed in earlier chapters, and adding the extra impacts of time, opinion and regulation on hedge management. Hedges are changing living systems and almost certainly need some management. Left alone, they often become a row of trees. So, what is to be done? Problems, types of hedge, and the specificity of use are all looked at along with descriptions of methods and evaluations of control. Some conclusions might be counterintuitive: the flattening of tall hedges with big machines can actually work! Having worked in landscaping for many years and having a large garden with many hedge types and related issues, I did like this chapter a lot. For those who are really keen, excellent descriptions are given on how to construct and maintain all sorts of fancy layered hedges. A book in itself! The final chapter looks ahead. The author is optimistic. The public and organisations seem to be moving with the author. Hedges are being given due respect and consideration, hopefully leading to an improvement in their condition which is often badly needed. Finally, there are some data sets: "Key results from 33 local surveys in England, 2006-2010. Lists of Trees and shrubs and lists of Priority species significantly associated with hedges in the UK".

To conclude, I particularly like the way each chapter has a clearly defined topic heading, then an introductory statement of chapter content, followed by detail and finally "concluding remarks". This book covers a fascinating range of topics associated with hedges. It is extremely well written. Not only are complex data presented in tables and charts but the photographic content illuminates the text so well. This, coupled with the anecdotal examples makes it very readable. Consequently, I think this book's audience could extend from the professional wanting conclusive data and discussion right through to anyone at all interested in natural history. You might never have thought of hedges as being special; this will be a mind-changer, I'm sure.

Alison Moss

A History of Dinosaurs in 50 Fossils

P.M. Barrett
Natural History Museum, London, 2024. 160 pages, hardback with 76 illustrations, photographs and diagrams. ISBN:9780565095338.
£17.99

With over 1,000 known species of non-avian dinosaurs described and many more undescribed, this book successfully rationalises our current knowledge into easily digestible chapters. It is well written and easy to read and dip into. You don't need to read it from cover to cover, as each chapter (and dinosaur) is written as a stand-alone short story. A book entitled *A History of Dinosaurs in 1000 Species* would probably be too large to carry and too difficult to wade through. The choice of 50 dinosaurs is about right and slips neatly into the genre of other similar fossil-related books such as *The History of the Plants in 50 Fossils* or *The History of Life in 100 Fossils*.

Rather than attempt to write a compendium of all dinosaurs, this book identifies the key fossils that tell the complete story of our current understanding of dinosaurs. There will be many favourite dinosaurs not mentioned, nor illustrated, in the book, but that does not matter. What is crucial is the story of how we know what we know. As Barrett states: the book is an "accessible introduction to the many facets of current dinosaur science" and "not a definitive list".

The book starts with an introduction explaining the reasoning behind the book and how many of the examples stem from Barrett's own research at the Natural History Museum in London. There are few people more qualified to write a book such as this than Paul Barrett. He is a much respected and widely published leader of dinosaur research in the U.K. What he doesn't know about current research on dinosaurs could be written on the point of a pin.

The chapters are arranged in historical and stratigraphical order. The first dinosaur chapter covers *Megalosaurus*, the first scientifically described dinosaur (the centenary of this publication was in 2024). The following chapter explains what a dinosaur is, using *Mantellisaurus* as the example. After that, the dinosaurs are placed in stratigraphic order from their origins, with the non-dinosaur *Teleocrater*, to their extinction, with *Tyrannosaurus*. Throughout the other chapters we learn about the evolution and diversification of dinosaurs as well as their diets, armour, sounds, feathers, size, weapons and skin. Not only this, but we also learn about new techniques that are being applied to discoveries that help us find out more about how they looked and how they interacted with each other and their environment. The colour of their feathers is based on patterns and types of melanosomes – a relatively recent discovery in 2010. The eggs of dinosaurs can tell us more about dinosaur reproduction and parenting skills – as well as the gender of a dinosaur on those rare occasions when eggs have been found within the skeleton. New techniques applied to dinosaurs such as CT scanning help to unravel how dinosaurs could see and hear, and the shape and size of their brain. My own favourite (from my own stomping ground) was the image of a Scottish dinosaur footprint from the Isle of Skye on page 127.

I was relieved to see the photographs and illustrations are a good size allowing much detail to be seen. This is not always the case in many other dinosaur books which try to pack in as many dinosaurs per page as possible. The only issue I had with the images was that there are no scales to the images, so it is impossible to tell how big the fossils are without knowing them personally. An additional listing of the specimens with images at the back of the book is also a very useful reference.

As a dinosaur researcher, I find this book compelling; as a palaeontologist, I find it interesting; as a reader, I find it gripping; and the child in me finds it essential to satisfy my craving for all things dinosaur. I would recommend this book to anyone who enjoys fossils, dinosaurs, or general science.

Neil Clark

The Larger Moths of Scotland

Roy Leverton & Mark Cubitt
Triphosa Publications, 2024. 332 pages, hardback with colour photographs. ISBN 9781399976268.
£44.99

There are many books on the moths of Great Britain and Ireland, and it is perfectly possible to obtain books devoted to the moths of single English counties – Lancashire, Wiltshire, Surrey and Yorkshire for example – but volumes specifically dedicated to the moths of Scotland seem to be a different matter entirely. For years I have successfully used *Moths of the Forth and Tay & Loch Lomond National Park* by David Bryant as well as John Knowler's *An Annotated Checklist of the Larger Moths of Stirlingshire, West Perthshire and Dunbartonshire* but these are regionally restricted; nothing is available that deals with Scotland as a whole.

Now two very eminent Scottish entomologists, Roy Leverton and Mark Cubitt, have decided to take matters into their own hands with an ambitious privately published book of coffee-table format that details nearly 600 macro-moths found in Scotland. The achievement is a very substantial one, but they have had help; the Acknowledgements page (at the beginning rather than tucked away at the end) lists nearly 60 people who have provided assistance, and more than 70 who have helped with illustrations. These lists are a roll-call of many of the great and the good in Scottish lepidopteran circles and this enhances confidence in the final product.

The book begins with a 12-page section covering general issues including the factors that influence the frequency and distribution of moths in Scotland (geology, altitude, summer and winter temperatures, annual rainfall), the origin of moths after the last Ice Age, Scottish races, recent gains and losses (gains far outnumber losses), and the history of moth recording

and record keeping. The introductory section ends with a "how to use this book".

Each species account begins with a paragraph of what the authors have decided they want you to know. This can vary, and the Hepialidae are a good example. For the map-winged swift (*Korscheltellus fusconebulosa*) the general account concentrates on its appearance, for the common swift (*K. lupulina*) it is a caution not to confuse the moth with the bird of the same name, for the gold swift (*Phymatopus hecta*) it is entirely devoted to communal lekking. Idiosyncratic and unpredictable perhaps, but not in a bad way. There then follows a paragraph on range, distribution and habitat accompanied by a map of Scotland showing records. A short paragraph looks at trends in frequency, listing the records pre-1970, 1970-99, post 2000. These are invariably interesting but one wonders if they mirror moth numbers or recorder effort; the authors always give their view as to numerical or geographical stability. There is a short paragraph on flight period with a calendar histogram. The final paragraph is entitled "Recording issues" and is full of fascinating insights. For the gold swift mentioned above, only seven were trapped at one site over a period of 32 years, while 60 were counted in ten minutes outside the trap; thus, for some species, trap records may give little insight into population density. For the map-winged swift (also mentioned above), the moth is so numerous in places that mis-identifications only affect the data sets of other Hepialidae species.

Each moth is represented by at least one good-sized colour photo of the adult in a natural pose. I personally find this far more useful than the more traditional "spread-eagled in the collecting cabinet" approach of yesteryear. In truth, there are not that many examples where the hindwing helps to identify the species. Where it does (e.g. the lunar yellow underwing (*Noctua orbona*)), the traditional open-winged view is given.

Only the brave would literally field-test this book – it is 12 x 9 inches and weighs nearly 4 lb – but I recently attended a moth-trapping event at Caerlaverock and found the entries gave me considerable additional insight. Three moths that certainly never appear in my Glasgow back garden are the Chinese character (*Cilix glaucata*), the yellow-tail (*Euproctis similis*) and the least yellow underwing (*Noctua interjecta*) – the first two because southern Scotland represents their northernmost British limit, but the last because it is largely absent from the central belt though it occurs on either side of it. Moreover, while both the Chinese character and yellow-tail have remarkably stable distributions, unchanged over at least the last 30 years, the least yellow underwing made a sudden (migratory?) leap into Scotland but requires open country near sandy coasts.

There is a table devoted to "plausible additions" to the Scottish list and adventives brought in by design or accident. The authors suggest that a worrying development is spoof claims, backed up by photographic evidence, and one wonders whether AI will have any serious impact in the future. There are at least 200 papers in the references section and the usual indexes of Latin and English names.

Everyone interested in moths in Scotland should own this excellent book, but it is not just for Scottish lepidopterists. There is plenty here for enthusiasts all over Britain and even further afield. It represents a labour of love which is authoritative, insightful and highly recommended.

Tony Payne

A Guide to the Pyralid and Crambid moths of Britain and Ireland

Mark Parsons & Sean Clancy
Atropos Publishing, 2023. 508 pages, hardback with many colour photographs. ISBN 9780955108648. £80.00

Following hard on the heels of the second (and enlarged) edition of the *Field Guide to Micro-moths of Great Britain and Ireland*, by Sterling, Parsons and Lewington, this book focuses on two of the larger micro-moth families which together form the superfamily Pyraloidea. The group includes moths such as the tiny grass-moths (e.g. *Chrysoteuchia culmella*) that you might disturb when walking through long grass in summer, and larger, more colourful moths such as the small magpie (*Anania hortulata*) that initially might well be taken to be macro-moths, and indeed in species lists of former times, both families were included among the macro-moths.

In 1986, when Barry Goater published *British Pyralid Moths*, he reiterated what his predecessor Bryan Beirne had said in 1952: that the group was "comparatively neglected" by amateur lepidopterists (Beirne, 1952). Goater's book did also cover the Crambidae, and the current publication is testament to the success of that slim volume in stimulating interest in and recording of these families. The authors include a table of some 40 species added to the British list since 1986, and in these days of climate change there will no doubt be others in the coming years, so they helpfully include links to websites which will provide updates.

The book is an extraordinary effort by the authors that has resulted in a magnificent volume. There is an extensive introductory section outlining how the species accounts are organised, followed by useful labelled diagrams covering morphology, and notes on finding the moths, and related conservation issues. Over 400 pages are devoted to the individual species, each one having two or three pages covering both adults and larvae with copious photographs of both, a bar indicating flight-time, and a U.K. distribution map. The photographs of adult moths are mostly as they appear in life at rest, but some (mainly the doubtfully British and adventive species) are shown as pinned specimens – and there are nine full-page colour plates showing pinned specimens (with spread wings) of all species, similar to those in Goater. These colour plates are followed by photographs

of genitalia of 181 species, a list of food-plants and associated species, and lastly a list of vernacular names, based on those given in the latest edition of *Field Guide* mentioned above, but also giving a number of names formerly in use. On the topic of vernacular names, the authors stress the need always to add the scientific binomial, in view of the potential confusion resulting from some of the earlier names and others of unknown provenance.

I should also mention the Technical Editor, Mark Tunmore, and David Wilson, photographer, who contributed to making this book such a spectacular achievement.

REFERENCES

Goater, B. (1986). *British Pyralid Moths*. Harley Books, Colchester. https://doi.org/10.1163/9789004632110

Beirne, B.P. (1952). *British Pyralid and Plume Moths*. Frederick Warne & Co. Ltd., London.

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