

occurring regularly within the Americas are described in great detail, while the rare visitors and vagrants receive less thorough treatment. Thus, the text on American Herring Gull *L. [argentatus] smithsonianus* extends to nearly eight pages while that for its European counterpart covers only two. Maps included in the species accounts show only distributions in the Americas, not the species' global range, so that, for example, the European range of Great Black-backed Gull *L. marinus* is not shown. Finally, there are glossaries of technical and geographical terms and a list of abbreviations used in the book.

In my view, this book is excellent. For the most part, the quality and reproduction of the photographs are good and each species and age-group is illustrated with photographs of numerous individuals. As gulls are approachable and relatively easy to photograph, it is generally difficult to find gull images that have the 'wow factor'. There are, however, many in this book – for example, the in-flight shot of an adult Red-legged Kittiwake *Rissa brevirostris* (Plate 9.0) is wonderful. I was particularly interested to see numerous images of many different individual Mew Gulls *L. [canus] brachyrhynchus*, Common Gulls *L. [c.] canus* and Kamchatka Gulls *L. [c.] kamtschatschensis*, while the selected photographs of Thayer's Gull *L. thayeri* (particularly second-cycle birds) I found both instructive and mind-boggling. Plates showing various hybrids are similarly excellent, and a great surprise for me was the selection of images showing putative Ring-billed Gull × California Gull *L. delawarensis* × *L. californicus*, Ring-billed Gull *L. delawarensis* × Mew Gull, and Laughing Gull *L. atricilla* × Ring-billed Gull *L. delawarensis*. The unidentified bird resembling a Relict Gull *L. relictus*, but photographed in California (Plate 1.1–1.15), is simply fascinating. A number of very useful photographs showing mixed-species flocks are included; these give a real sense of relative size and jizz. It is important to recognize that in a book of this nature it is not possible to cover every detail, so the text can only ever be a summary of what is known. In this context, I found *Gulls of the Americas* to be comprehensive and authoritative.

Hardly a month passes without a new family monograph being published. Some of these have been rather poor, so should you buy this new one? I would say 'yes'. Whatever your interest in gulls, you will find this book useful. You can dip into it and simply enjoy the plates, or read the detailed sections on the Thayer's Gull–Kumlien's Gull–Iceland Gull *L. thayeri*–*L. [glaucoides] kumlieni*–*L. [g.] glaucoides* complex and discover how little we really know about these birds. In my view, *Sylvia Warblers* (Shirihai *et al.*, 2001) is by far the best recent monograph, as it not only summarizes previous work, but also includes much new information; it sets agendas. *Gulls of the Americas* is not far behind: again, it summarizes extremely well and includes some new information, though it is perhaps not quite agenda-setting.

Chris Gibbins

JAMIESON, B.G.M. **Reproductive Biology and Phylogeny of Birds**. 2 volumes: 6A and 6B of the Series (edited by B.G.M. Jamieson) *Reproductive Biology and Phylogeny*. 609 pages (6A), 532 pages (6B), many colour and black-and-white figures, also tables, in both volumes. Enfield, NH: Science Publishers, 2007. Hardback, \$119.50, £66.90 (6A) and \$105.00, £58.80 (6B), ISBN 978-1-57808-502-6 (Set), 978-1-57808-386-2 (6A), 978-1-57808-444-9 (6B).

These two substantial volumes, 6A concerned with phylogeny, morphology, hormones and fertilization, 6B with sexual selection, behaviour, conservation, embryology, and genetics, represent a major contribution to the reproductive biology of birds. Barrie Jamieson conceived the series in 2001 and has not only overseen the production of a succession of other volumes on vertebrate reproduction, but has done so at an impressive pace. The rationale for the series is that phylogeny provides the 'necessary framework for an understanding of reproductive biology'. This viewpoint stems from Jamieson's own detailed studies of the ultrastructure of spermatozoa, which he has used as a phylogenetic tool – a topic epitomized by his own monumental chapter (162 pages) entitled 'Avian spermatozoa, structure and phylogeny' in Volume 6A.

The topics addressed here are diverse and include the following: classification, the testis, copulatory structures, the female tract, endocrinology of reproduction, follicle development, spermatogenesis, spermatozoa, testis size, sperm size and sperm competition, fertilization, ultraviolet coloration, carotenoids, odours and signalling, signal selection and the handicap principle, sexual dimorphism, courtship and copulation, sexual conflict, paternity, parental care, brood parasitism, conservation, embryogenesis, and sex determination.

So comprehensive is the range of topics covered that any avian biologist interested in reproduction will find these reviews extremely useful. Of particular value is the fact that rather than focusing solely on the adaptive significance of traits as a behavioural ecologist might have done, or solely on mechanisms as a physiologist could have done, the chapters here encompass a wide range of approaches, spanning phylogeny, development, anatomy, causal mechanisms and adaptive explanations. For the avian behavioural ecologist interested, for example, in spermatozoa, Tom Aire's chapters on the anatomy of the testis (Volume 6A, Chapter 2) and on testicular cycles (Volume 6A, Chapter 7) provide excellent overviews of the mechanistic aspects. Jamieson's chapter (Volume 6A, Chapter 8) considers in great detail the phylogenetic aspects of sperm design (in particular, sperm ultrastructure). Briskie and Montgomerie (Volume 6A, Chapter 9), on the other hand, consider sperm design in terms of sperm competition, that is, from an adaptive, evolutionary perspective, and Stepinska and Bakst (Volume 6A,

Chapter 10) present a detailed overview of the process of fertilization.

The first volume focuses predominantly on reproduction, whereas the second ranges more widely, with several chapters on signalling (via plumage and odours), sexual selection, sexual conflict, extra-pair paternity, parental care, cooperative breeding, and brood parasitism. The chapters on signalling include a useful overview of courtship and copulation by Montgomerie and Doucet (Volume 6B, Chapter 6), a topic that at first sight seems slightly old-fashioned in the sense that few ornithologists currently bother to conduct research in this area. As the authors point out, there has been no overview of avian courtship since Edward Armstrong's *Bird Display and Behaviour* (1947) and no overview at all of this topic from the perspective of individual selection. Montgomerie and Doucet present hypotheses for why birds engage in courtship, including (1) no function, (2) to synchronize physiologies, (3) maintaining the pair-bond, (4) to assess mate quality, (5) species recognition, (6) sex recognition, and so on, pointing out that few of these hypotheses have been convincingly tested, and even where they have, they have been tested individually rather than simultaneously evaluating them as alternatives. This is followed by a discussion of the variation in the form and frequency (seasonal, diurnal) of copulation behaviour, and the various hypotheses that have been proposed to account for this variation – a rich source of ideas for budding ornithologists. In fact, taken together, the chapters that make up these volumes contain a wealth of suggestions and opportunities for further research.

Areas of scientific endeavour sometimes go out of fashion because researchers run out of ideas, or because of technical limitations, or because researchers feel that all the important questions have been answered. However, 'old' topics are often worth revisiting, especially when the intervening period has seen the development of new questions and new technologies. Simply by thinking about courtship in terms of testable hypotheses invites immediate re-evaluation of this topic, with the potential greatly to enhance our understanding of bird behaviour.

The two volumes are well produced and well illustrated on glossy paper. References follow each chapter (rather than being placed together as a single bibliography) and each volume has its own index.

Edited books sometimes fail to attract the attention they deserve, possibly because their chapters are less smoothly coordinated than those in authored books, but these two volumes should be on every ornithologist's bookshelves. At first sight, the chapters here do not appear especially well coordinated, but the diversity of topics and the interconnections between them is what makes these volumes a significant event in ornithological publishing.

T.R. Birkhead

LIGUORI, J. **Hawks from Every Angle: How to Identify Raptors in Flight.** 132 pages, 339 colour photographs on 69 plates, 32 black-and-white photographs, 2 colour maps, 3 tables. Princeton, NJ, and Woodstock, UK: Princeton University Press, 2005. Paperback, £12.95, ISBN 978-0-691-11825-3 and 0-691-11825-6.

Hawks from Every Angle provides the reader with intricate photographs to help identify the 19 raptor species most frequently observed at migration sites throughout North America. While excellent flight photographs from the side ('wing-on'), beneath, and head-on are included, as one would expect, the range showing birds angling away and/or flapping is more important, as an observer seldom gets the perfect view depicted in most field guides. Photographs of different colour phases (morphs) are also included as appropriate for particular species. Furthermore, similar-looking species are compared and contrasted, and the reader's attention is drawn to the small telltale signs that will allow for accurate description and identification.

Some additional information is given in the text, but it is the wide range of photographs and their captions that are the focal point of this book, and those seeking information on raptor biology and ecology will clearly need to consult other sources. On the other hand, the section on migration sites should be of more general interest and, in the tables of counts, the figures for Veracruz (Mexico) in the fall are simply staggering: Turkey Vulture *Cathartes aura*, Broad-winged Hawk *Buteo platypterus* and Swainson's Hawk *B. swainsoni* sometimes pass through in their millions.

Perhaps some will consider this book to be 'the wrong size' for a field guide, but it is actually no larger than many other North American bird guides, which have generally increased in size over the past 10 years. It may be best suited for those who already have some basic skill at raptor identification (i.e. the ability to identify a raptor if it is perched on a fence post). Novice birders and those with little knowledge of raptors will probably benefit from coming to it later when they have gained more experience.

Kurt K. Burnham

LOVEGROVE, R. **Silent Fields – The Long Decline of a Nation's Wildlife.** 404 pages, numerous line drawings, 2 appendices. Oxford: Oxford University Press, 2007. Hardback, £25.00, \$50.00, ISBN 978-0-19-852071-9.

Unfortunately, the title and subtitle of this interesting book misleadingly suggest coverage of declining hedgerow songbirds, and Corn Crakes *Crex crex*, Common Quails *Coturnix coturnix*, etc., in the agribusiness arable. I wrongly anticipated a vertebrate counterpart to Oliver Rackham's fascinating studies of the (botanical) countryside, but no, this book is solely about the history of pest control – specifically the records of 'vermin' killed and recorded in parish records and shooting estate archives. Nonetheless, I