

## Book reviews

### CONTRIBUTIONS TO THE HISTORY OF AUSTRALASIAN ORNITHOLOGY, VOL. II.

By William E. Davis, Harry F. Recher, and William E. Boles 2012. Published by Nuttall Ornithological Club, Cambridge, Massachusetts, USA. 532 pp., black and white illustrations and photographs. Hardback, AU\$55, ISBN: 9781877973491.

For the past quarter century, William E. Davis has endeavoured to facilitate publishing on the history of ornithology via *Memoirs of the Nuttall Ornithological Club* (NOC) based at the Harvard Museum of Comparative Zoology in Cambridge, Massachusetts, USA. Along with several co-editors and authors, Davis has published three volumes dedicated to the history of North American Ornithology and several more focused monographs on such topics as bird banding in North America and the NOC. In 2008, Davis, along with Harry F. Recher, Walter E. Boles and Jerome A. Jackson, edited the first volume dedicated to the history of Australasian ornithology. Volume II, edited by Davis, Recher and Boles, is now available.

The present volume includes histories of ornithology at Museum Victoria, the Australian Museum, Canterbury Museum, and Macleay Museum. In addition, there are two chapters on bird conservation at the Australian Museum and in New Zealand. Two chapters on the history of Australian ornithology in Antarctica and environmental ornithology at the Australian Museum complete this volume. This collection of essays offers insights into the institutions, the approaches, and above all, the people who pursued Australian ornithology over the course of the past century.

In the introduction, the editors acknowledge that most of the chapters constitute ‘court histories’ – that is to say, writings about institutions by ornithologists or avian biologists affiliated with them. Moreover, the editors note that these histories are descriptive rather than interpretative, although there are exceptions. As an example, Chapter 1 by Libby Robin on the history of the Royal Australasian Ornithologist’s Union (RAOU) notes that most ornithologists self-identify as ‘avian biologists’, to align themselves with the broader concerns of the biological sciences, but the history of the RAOU suggests a long-term commitment to what would be considered today as conservation biology. The Union struggled with ethical questions surrounding scientific collection – more so than museums and other scientific organisations. Official RAOU policy discouraged shooting for sport but left scientific collecting in a grey area along with egg collection. Of course, this issue divided the ornithological community at large. This chapter also emphasises the diversity of citizen science projects motivated by the ‘love of birds’ that the RAOU continues to support, most recently by establishing a variety of partnerships.

Most of the articles in the book draw upon a rich variety of published sources to develop the history of a particular museum or approach. Chapter 2, by Ian Abbott, offers an intriguing exception to this rule by presenting the text of an 1848 letter

written by William Colenso to Lord Derby. In more than 4000 words, the letter describes dramatic declines in many species of bird in New Zealand, brought about by hunting by Maoris; predation by introduced dogs, pigs, cats and rats; and anthropogenic fires. In the commentary, Abbott offers another explanation for the rapid and widespread demise of bird species: the introduction of disease.

Several of the papers in this volume examine collection development and research programmes at museums in Australia. At the core of Museum Victoria’s collection are the bird specimens provided by English ornithologist John Gould. The H. L. White egg collection was also one of Museum Victoria’s most valuable acquisitions, but as N. W. Longmore explains, its use was restricted to members of the RAOU by specific guidelines to limit access by ornithologists at the Australian Museum! Such strictures continued to constrain use of the collection long after the principal actors died. As at other museums, scientific collection triggered a public outcry when a museum curator acquired a specimen of Scarlet Robin (*Petroica boodang*) from the nest, to the consternation of campers at the RAOU campout. The attitude shift regarding scientific collection placed in sharp relief access limitations, like those for the White Collection. Later curators at Museum Victoria emphasised skeletal collections and eventually DNA facilities for molecular phylogenetics.

The history of the Australian Museum is featured in Chapter 4 by Walter Boles and covers a period of more than 180 years dating back to 1827. Ornithology, or at least the collection of bird specimens for exhibition – a critical distinction noted by Boles – has been a central concern at the museum since its founding. Like other major museums, ornithological collection activities have depended upon the appointment and support of a curator. Over the course of its long history, ornithology has seen great fluctuations in institutional support, depending on research and funding priorities. Detailed descriptions of collections at the museum – now numbering more than 80,000 – belie such shifts. Unfortunately, recent staff reductions suggest a current move away from ornithology.

In Chapter 5, Paul Scofield argues that Canterbury Museum in New Zealand followed a similar pattern of development, with periods of strong support followed by leaner times and eventual recovery. After considerable growth under its first three directors, including forays into the moa taxonomy, the collection stagnated under its next two, possibly three, curators, only to be revived following the appointment of Roger Duff as director and Ronald Scarlett as curator of osteology. It was Scarlett’s efforts as inveterate collector that most significantly shaped the character of the museum collection, with more than 8000 specimens attributed to him. One of the most interesting aspects of this chapter is the inclusion of brief biographies of the taxidermists. Despite the considerable influence of these and other skilled workers on museum collections, most accounts neglect their stories for the more visible directors and curators. This study also includes a valuable review of the collections, including references to significant sites.

Like other accounts of ornithological collections, Chapter 6, by Graham Fulton, reveals how the collection that became known as the Macleay Museum was developed through the efforts of a few dedicated individuals. Reminiscent of the Bartram's or the Agassiz's in America, the individuals were members of the same family, as the father (Alexander Macleay) passed the collection on to his son (William Sharp Macleay), who, after further expansion, handed over the collection to a cousin (and philanthropist), William John Macleay. Remarkably, the collection contains some of the rarest birds in Australasia, including the Night Parrot, some Dodo bones and 20 Kakapo! Transferring the collection to the University of Sydney preserved it in perpetuity for the people of Australia, or at least that was the intention of the bequest. Tragically, the university broke up the collections and subdivided the Macleay Museum Building for offices and teaching space. Fulton characterises such decision making (or lack thereof) as a betrayal both to the Macleay codicil and the people of Australia. In light of these events, Fulton's overview of the collection seems all the more poignant.

The final two chapters take a conceptual approach, offering a history of environmental ornithology at the Australian Museum, followed by a history of Australian ornithology in Antarctica. According to the authors of Chapter 7, Harry F. Recher and Graham H. Pyke, environmental ornithology thrived at the Australian Museum from 1968, with Recher's appointment as head of the Department of Environmental Studies, until the late 1990s, when the museum re-emphasised research, drawing upon the specimen collection. As a result, the authors argue, ecological and environmental studies of birds diminished along with attempts to establish ecological schemes that did not require specimen collecting.

In Chapter 8, B. Wienecke and K. Kerry note that, although some Australians accompanied various British expeditions to Antarctica, Australia launched its first expedition as a sovereign nation after independence in 1901. Such political distinctions influenced Macquarie Island (part of Tasmania) and Heard Island (later ceded to Australia). Douglas Mawson, a veteran of one of Ernest Shackleton's expeditions, led the first Australasian Antarctic Expedition (AAE), from 1911–14. In addition to discovering the Haswell Islands, Mawson's expedition found extensive colonisation by non-native species in both Macquarie and Heard Islands. Mawson advised the Tasmanian government to stop sealing and oiling activities on Macquarie. Later expeditions established meteorological and scientific stations on Macquarie and Heard (later closed). The recent history of Australian ornithology in Antarctica has been marked by management efforts verging on the heroic as scientists have worked to control populations of feral cats and, as a consequence, rabbits.

*Contributions to the History of Australasian Ornithology* provides many insights into the ornithological history of the region. The study of birds has undergone profound changes over a period lasting nearly two centuries. As in Europe and North America, Australian ornithologists have navigated the shifting sands of institutional support while striving to develop collections at museums, clarify the biology of Australian birds, and initiate and implement conservation measures. Their stories, collected here, reveal the intellectual, institutional, scientific

and conservation challenges that face ornithologists around the world as they continue to pursue bird study against all odds.

Frederick R. Davis  
Florida State University  
Tallahassee, Florida  
USA

## 40 YEARS OF EVOLUTION: DARWIN'S FINCHES ON DAPHNE MAJOR ISLAND

By Peter R. Grant and B. Rosemary Grant

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It is no secret that evolution is a hotly contested societal issue throughout the world. The evidence for evolution stems from many scientific disciplines, often requiring interpretation of historical events that occurred over massive geological timescales. However, perhaps the most straightforward way to study evolution would be to simply go into the field and watch it take place. This feat is, of course, much more difficult than it sounds. Nonetheless, Peter R. Grant and B. Rosemary Grant did just that – they witnessed evolution in real time. In doing so, they may have produced the ultimate exhibit in defence of evolution.

*40 Years of Evolution: Darwin's Finches on Daphne Major Island* is the Grants' summary of their four decades of incredibly detailed research on a handful of Darwin's finch species (genus: *Geospiza*) on one small volcanic outcrop in the Galápagos Islands. Part textbook and part popular science, the book should be accessible to anyone with a basic background in biology and will greatly expand the reader's understanding of evolution. The authors avoid technical jargon and present their ideas in an even-keeled, clear and concise manner. At times, their matter-of-fact tone seems almost at odds with the sheer scope of their research. As evidenced by the various chapter titles, the Grants have documented several key phenomena in evolutionary biology, all being played out among wild populations of birds. It is fitting that these eminent evolutionary biologists decided to study an organism bearing Darwin's name because they have carried on his legacy in a most spectacular way.

They begin by setting the evolutionary stage, describing the differences among the co-occurring species, and walking the reader step-by-step through the evolutionary changes that occurred during their 40 years of research. Over this period, the Grants measured the heritable phenotypic variation that served as the building blocks for natural selection and evolution of the finch populations. Collecting these data is no small feat and the Grants were only able to do so by capturing almost every individual on the island, monitoring their mating behaviour, finding their nests, and tracking their offspring into the next generation. Along the way, they witnessed evolutionary responses to climate variability, character displacement resulting from inter-specific competition, hybridisation and introgression

of traits from one species to another, and the generation of an entirely new species. The fact that the Grants observed speciation in action stands out as the most intriguing part of the book.

The process of speciation is one of the most difficult concepts in evolutionary biology, both theoretically and empirically. Darwin himself was plagued by the realisation that his process of natural selection necessarily demanded vast stretches of time before noticeable changes would arise in a lineage, let alone the creation of an entirely new one. As a result, most field researchers are only able to study either the precursors or the after-effects of speciation. That is, they take either a micro- or macroscopic perspective, choosing between examining a few individuals within a single population or broad variation across a phylogeny. The brilliance of the Grants' method is that they combined fine-scale analyses of several closely related species with a long timescale, allowing them to observe the origination of a new species. This is truly an incredible achievement for any researcher, let alone those who study long-lived, free-flying vertebrates on a remote island.

Despite the challenges presented by their study organisms, the Grants amassed a formidable body of work over decades of observation, and the impact of their discoveries is clear upon reading this book. Their research is so diverse in the range of data collected and analyses conducted that only through a cohesive summary such as this can one appreciate how it all links together. To that end, the authors conclude each chapter with a useful summary of their results, and similarly, a comprehensive synthesis at the end of the book.

At the end of the book, the authors address some important criticisms of their research that have seldom been discussed in print. Namely, they consider whether the lessons learned from their research can be applied more broadly to situations with different organisms and environments. The authors navigate this delicate topic tactfully, acknowledging the unique features of their study system, such as an intermediate population size convenient for detailed observation, and the special evolutionary dynamics of islands, while pointing out more general applications of their work. In particular, I found compelling their argument that the evolution of Darwin's finches on small islands is analogous to habitat fragmentation in other landscapes. With ever-more species threatened by anthropogenic habitat disturbance, perhaps the evolutionary phenomena described by the Grants will be more commonly documented in the future.

Also included in this final section is a chapter in which the authors contemplate the future of the finches on the island of Daphne. One of the most important findings described in the book is the sensitivity of the finch populations to environmental fluctuations. Accordingly, the authors discuss the prospects for the finches in the face of climate change and the increasing threat of invasive species on the island. These are both pressing issues that resonate beyond the Galápagos. Also provided is a glimpse into future research planned by the Grants and their colleagues, in which they intend to rely heavily on cutting-edge genomic techniques to examine the genetic basis of adaptations and how gene pools respond to selection. The reader is left with the impression that despite the countless insights already gained through the research detailed in this book, many questions still remain.

Visually, the book is wonderful, but in a somewhat understated manner. The finches do not boast gaudy plumage and although the book contains many excellent photographs, the colour figures – graphs and charts – are the key to its aesthetically pleasing presentation. Every major idea discussed in the text is supported beautifully by an appropriately detailed figure. Some of these figures carry more weight than any words could – for example, the figure that illustrates a clear evolutionary change in beak size of one of the finch species over 40 years. *40 Years of Evolution* is the type of book that one could digest thoroughly simply by reading the figures in sequence, and this feature adds to its general appeal.

This book will satisfy professional evolutionary biologists seeking a thorough understanding of the Grants' unique research programme and the myriad of important contributions they have made to the scientific community. It is also incredibly powerful as a pillar of support for the perennially assaulted theory of evolution in the public consciousness. It is not clear whether the authors intended this book to do double duty in this way – it does lean somewhat towards an academic audience – but it straddles scientific and popular literature gracefully. It should serve equally well as inspiration to researchers and those in search of enlightenment about the importance of evolution. The Grants show artfully that one can indeed witness evolution in action, in the wild, and on a timescale that would have shocked Darwin himself.

Daniel T. Baldassarre  
NSF Postdoctoral Research Fellow  
University of Miami, Florida  
USA

### SEEN BUT NOT HEARD: LILIAN MEDLAND'S BIRDS

By Christabel Mattingly, with an introduction to the artwork by Penny Olsen

2014. Published by National Library of Australia, Canberra, ACT, Australia. 208 pp., colour illustrations. Paperback, AU \$39.99, ISBN: 9780642277923.

I have been interested in the bird paintings of Lilian Medland ever since I was lucky enough to see her painting of a Providence Petrel in the collection of the National Library, so I looked forward to reviewing this publication. I found it a curious book – neither a real biography nor a book about a time and place in bird art but a slightly uneasy mix of both.

Christabel Mattingly is listed as the author, although her contribution is limited to a lean six-page biography of Lilian Medland that left me wanting to know more about her life and art. Born in England in 1880, Medland seems to have had an eventful upbringing and early career (raising lion cubs as a child, travelling and sketching in Europe, and training as a nurse and tending casualties of the Boer War). She evidently had little formal training as an artist but, while working as a nurse, attracted the attention of surgeon and ornithologist Charles Stoneham. Stoneham commissioned her to illustrate his series *The Birds of the British Isles*, establishing her as a talented artist.

In 1923, Medland married Tom Iredale, assistant to Australian ornithologist Gregory Mathews, and emigrated to Australia. Here, she produced several series of bird illustrations for Mathews' major book projects on Australian and New Zealand Birds, most of them never published. Mattingly provides brief details of Medland's working techniques and choice of materials, and mentions binoculars being always on hand, though Medland typically worked from specimen skins.

The biography is followed by a two-page introduction to the artwork by Penny Olsen, which provides an expert, but again very brief, commentary on Medland's paintings and practice, and gives a further glimpse of the circumstances in which she worked. The fact that so much of Medland's work was never published was evidently no fault of her own, and no reflection on its quality. Olsen's mention of the controversy surrounding Gregory Mathews and his individual take on the taxonomy of Australian birds is intriguing and more exploration would have been interesting.

The bulk of the book is made up of Medland's artwork, which is beautifully reproduced, mostly at close-to-original size. Details of several works are reproduced at a size larger than they were painted – something most artists dislike, but it does reveal working techniques. However, seeing many of the same images at different scales can become repetitious, especially where there are long series of plates crowded with small images. Olsen notes that the groupings of species on some plates was controversial, but taking this further would require the casual reader to do his or her own research. An exploration of Mathews' role, if any, in the failure to publish Medland's commissioned work would give some much-needed context to the identification artwork. The finished plates have an inherent interest in that they were never published, and there is some value in simply showing them all together as originally intended, but the overall effect is sometimes monotonous.

As the 53 unpublished field-guide-style colour plates for Mathews' *Handbook of Australian Birds* account for so much of this book, it is worth looking at them as a body of work in its own right. Having to fit large numbers of images onto a plate imposes restrictions on the way individual birds can be posed and placed, and this shows in Medland's work. They are paintings of their era, most reminiscent of Cayley's work in *What Bird is That?*, first published in 1931 and contemporary

with Medland. In comparison to the work of modern bird field-guide illustrators, both Cayley and Medland show a rather relaxed attitude to structure. For example, the way Medland renders the tertials on the folded wing in her birds is repetitive, almost diagrammatic, and makes virtually no attempt to highlight structural differences between species. (The Australian Chats have very distinctive long tertials that hide all but the tip of the primaries in the folded wing, a feature quite apparent in the field, but Medland renders her Gibberbird with short tertials; pp. 142–3). As a result, some of the birds look simply 'wrong' to modern eyes, and suggest differences between species that are misleading. This may be because so much of Cayley's and Medland's work had to be based on skins rather than observation in the field, while modern illustrators are able to rely heavily on photos of the living birds. Criticisms aside, Medland's birds are generally perfectly recognisable and her plates have a distinctive appeal.

Illustrators are usually limited in their options by the requirements set by their authors and publishers, so it is unfair to judge Medland's artistic talent simply on the basis of the colour identification plates. The 10 monochrome plates of structural details (head and bill shapes, legs and feet) show that she could produce drawings that were both attractive and precise, and laid out with a real sense of design. Examples of her early work are interesting; her painting of a Golden Eagle (p. 13) clearly owes a debt to the work of Archibald Thorburn, but her images of nestlings (p. 11) are full of life and quite different from the identification plates. For me, the standout image is her painting of a Providence Petrel (pp. 40–1), which shows a bird interestingly lit, alive and active, and part of its environment. It is a wonderful painting and in my opinion establishes Medland as a serious artist of the living bird. It is a pity she apparently had so little scope to work in this way.

A little more information about Medland's life and times, including Mathews' place as an ornithologist, could have made this book of broader interest, but it will certainly appeal to many for the period charm of the artwork.

Peter Marsack  
Wildlife artist/illustrator  
Canberra, ACT  
Australia