

# Book Reviews

**Editor's Note:** We are continuing to use the current currency codes. Thus Canadian dollars are CAD, U.S. dollars are USD, Euros are EUR, China Yuan Remimbi are CNY, Australian dollars a AUD and so on. You will find these are the codes now used by financial institutions and internet currency converters. I will include an updated note for the next few issues as a reminder.

## ZOOLOGY

### Evolution and Biogeography of Australasian Vertebrates

Edited by J. R. Merrick, M. Archer, G. M. Hickey, and M. S. Y. Lee. 2006. Australian Scientific Publishing Ltd., P. O. Box 68, Oatlands, NSW 2117, Australia. xxviii + 942 pages. 230.00 AUD Cloth, 170.00 AUD. Paper.

This massive tome, covering the current state of knowledge on how and why the Australasian vertebrate fauna came to be what and where it is today, is absolutely absorbing. There is a massive amount of content, supplemented by numerous illustrations of continental movements, possible movement corridors, fossil and extant organisms, phylogenetic trees, and reconstructions of extinct organisms and ecosystems. Furthermore, much of the writing, although detailed, is in an accessible and sometimes humorous form.

The book is subdivided into 38 chapters, each written by experts on their particular subject matter. These chapters are grouped into seven broad categories, five of them covering the major traditional vertebrate taxonomic subdivisions: fishes, amphibians, reptiles, birds, and mammals. The other two subdivisions provide introductory context (an introduction to systematics, the geological history of the Australasian region, historical and current climatic influences on evolution and dispersal, and the links between the biotas of New Guinea, Indonesia, New Zealand, and Australia) and a final section entitled "Accelerated Change – the Regional Future", dealing with modern techniques in molecular systematics, tracking of marine movements of Australasian pinnipeds, and the importance of conservation planning for the preservation of the unique biota of the region. The introductory set of chapters provides critically important background information for understanding the relationships of the various land masses that make up Australasia, how these land masses were arranged within the southern supercontinent Gondwana prior to its fragmentation in the Jurassic, the influence of rising and lowering sea levels during geological history, ancient climates and glaciation, and a plethora of other environmental attributes that have been instrumental drivers in the evolution and movements of vertebrates in this part of the world.

Because the focus of the book is on evolution and dispersal, there is heavy emphasis on the fossil record

and on phylogenetic reconstruction. In virtually all chapters, there is a review of the fossil record, including early hypotheses of origins of the given taxonomic group, as well as the influence of recent discoveries of fossils, as well as of modern molecular and other systematic techniques, on revising those earlier hypotheses. Thus, these chapters provide not only a summary of what is now known or hypothesized, but also a historical perspective on how the concepts developed and changed. There is interesting information in these chapters for both the specialist and the generalist, and also for those interested in the history of science. I did find the introductory chapter on systematics to be somewhat dogmatic, downplaying older approaches and advocating phylogenetic taxonomy, when I believe that most systematists now realize that even the older approaches have something to offer and their results can be integrated into the more modern approaches. Nevertheless, on balance, all of the chapters dealing with the systematics and evolution of the various vertebrate taxa are enjoyable to read and packed with information.

The authors clearly had fun writing these chapters, with many of them having a very engaging style. To give you an idea of some of the interesting chapter titles and passages in the book, here is a small sample: "Eons of Fishy Fossils" [Chapter 7], "Furry Egg-layers: Monotreme Relationships and Radiations" [Chapter 26], "Humans among Primates" [Chapter 34], referring to *Deinosuchus*, the largest crocodilian ever to exist, at 15 m in length "This generalist crocodilian could have taken on its contemporary, *Tyrannosaurus rex*, and won" [Chapter 18], referring to a fossil lizard "*Huehuecuetzpalli* ... from the early Cretaceous of Mexico, surely one of the most frightening names in all of palaeontology ..." [Chapter 19], and regarding marsupial origins "A far more complete fossil record will be required before we can confidently finger any particular taxon as the "original" marsupial. Whether North America or Asia is ultimately honoured as the marsupial "homeland", a curious twist to the story is that Gondwana, specifically Australia, might be the point of origin of placen-

tals." Scattered throughout these chapters, there also are important messages regarding conservation approaches and philosophy. In Chapter 23, dealing with island biogeography and the patterns of distribution of birds in Australasia, the author makes the point that conservation-oriented management must be directed at the entire landscape, not just the reserves. In various chapters, there are interesting thoughts on the selection of conservation reserves through the use of genetic characteristics of target populations, and the value of corridors to the movement of organisms across the landscape.

### A Wildlife Guide to Chile

By S. Chester. 2008. Princeton University Press 41 William Street, Princeton, New Jersey, 08540-5237 USA. 392 pages, 19.95 USD Paper.

This is a compact guide with a wide coverage. Not only does it cover birds and mammals, but includes reptiles, amphibians, butterflies, moths, marine life and flora. In addition there are descriptions of the Chilean landscape and a where-to-watch section. While it does not cover all wildlife, it does portray those you are likely to see in a typical trip. You get all this for less than 20 USD - a real bargain.

I was puzzled by the illustrations until I read they were a composite of scanned photos using Adobe Photoshop and a Cintiq monitor. The result is a photograph-like illustration arranged in the same format as a painted version. This works very well as the depictions are clear without the spurious shadows and odd shading that often plague pure photographs. This manipulation has allowed the author to show creatures at different angles, highlighting special field marks.

The sections covering birds, mammals, reptiles and amphibians follow the usual field guide format. The names are given in English, Spanish and Latin, with a listing of other names where appropriate. There follows a description of the key characteristics. This is essential as not all plumages are illustrated. So you have to read to know that a female Vermillion Flycatcher is radically different from the male. There are no range maps, but ranges are written and you need to refer to the country maps at the front of the book.

The plants are presented somewhat differently. The author has them organised into eight zones and she describes and illustrates a dozen or so key species in each zone. Some, like *Opuntia*, are presented at the genus level only. In total the book covers less than 100 species or about 2% of Chile's plants. For example, there are three orchids out of the fifty species listed for Chile.

Similarly, about one third of the frogs and only four snakes are illustrated. This is not as Spartan as it

There is so much of interest and value in this book that it is difficult to summarize all of it. Suffice to say that this book contains a great deal of detail, presented in an interesting way, and that anyone interested in the evolution and biogeography of vertebrates in Australasia, or in evolution generally, will find something of value to them in this book. I recommend it highly.

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sounds. On a typical trip I usually see a few of the commonest species of frogs and I average seeing one snake for every 10 days in the field. Similar comments can be made about the butterflies and moths.

The author has added numerous sections on basic natural history [e.g. Life of a frog or butterfly] throughout the text. While these are informative and fun, I am not sure they should be in a guide. Typically you want to compromise between expanding coverage and reducing weight. Also they tend to be rather curt and overly definitive. For example, the short explanation on the characteristics of butterflies and moths says moths fly by night. Most, but not all do.

The regional coverage includes mainland Chile and Easter Island, Desventuradas Islands, Juan Fernandez Archipelago and the Chilean Antarctic Territory. The text includes location, a little history, a physical description and coverage of the key species [especially endemics]. In particular there is a short, but interesting, coverage of Antarctica.

I believe this would be very useful as a guide in the field. The coverage is good for mammals and birds and is adequate for plants and the other animals. The illustrations show the key characteristics as well as any other method. Take, for example, the three stocky skuas, Chilean, Brown and South Polar; the text and plates do as good a job as can be expected on these difficult species. While it does not contain as many juvenile, female and flight illustrations for the small birds as Jaramillo's book [*Birds of Chile*. By A. Jamarillo. 2003. Princeton University Press, New Jersey], for the other sections it is really good. The large birds, such as albatrosses, hawks, and shorebirds are typically shown in flight. I would prefer to have depictions of, say, female siskins so I would take this and Jamarillo's book on any trip to Chile. For the Chilean Territories, however, this guide is a must.

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