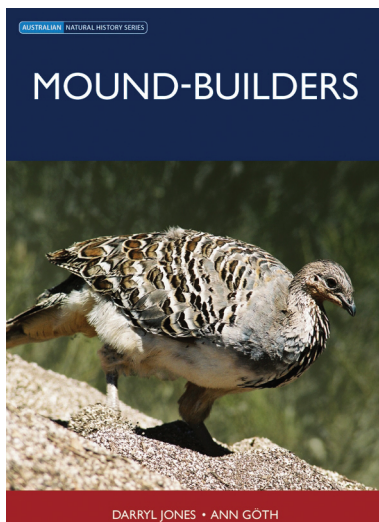


## BOOK REVIEWS



### Mound-Builders

Darryl Jones and Ann Göth 2008. Australian Natural History Series, CSIRO Publishing. Paperback, 128 pp, colour photographs plus figures and draft illustrations. ISBN 9780643093454. RRP \$29.95.

The book *Mound-Builders* examines the three species of megapodes that occur in Australia; the Australian Brush-turkey *Alectura lathami*, Malleefowl *Leipoa ocellata* and Orange-footed Scrubfowl *Megapodius reinwardt*. The book was written by two of Australia's leading authorities on this distinct family of birds. Darryl Jones has been researching these birds for 30 years in Australia, as well as Papua New Guinea and Indonesia. He has studied many aspects of their biology and ecology and co-authored the monograph *The Megapodes*. Ann Göth has researched megapodes in countries including Tonga and completed her PhD research on the Australian Brush-turkey. The authors have published their research findings widely. In *Mound-Builders*, the authors have summarised findings from their diverse research, and that of many others, and presented their overview in a concise and easily read format.

The book begins with the chapter *Familiar yet distinct* which gives a brief account of the interest in megapodes through time, from early explorers and naturalists to indigenous people and the discovery of these species in Australia. The Australian species are introduced, as well as the distinctive traits of the megapodes in general. Fittingly, the authors pay tribute to the legacy of the work undertaken by H.J. Frith on the Malleefowl during the mid-1900's, acknowledging his immense contribution to understanding megapodes.

*Taxonomy, distribution and Habitat* (chapter 2) explores the origins of the megapodes as a group with a particular focus on where the Australian species 'fit in'. The 22 extant species from the monophyletic Megapodiidae (i.e. from a common ancestor) are listed, showing the seven genera, of which three include the Australian species. Records of two extinct Australian megapodes are detailed. The chapter concludes with a general

description of the appearance, distribution and habitat of the three extant Australian megapodes, as well as a brief account of past and current negative impacts on species distributions and habitats.

Chapter 3, *Appearance and ecology*, first explores the size and appearance of each species, including differences between the sexes. For each species there is an interesting and quite detailed descriptive account of vocalisations and how this is used for pair bonding and contact with other individuals. The foods and feeding ecology are discussed, with references made to a number of specific studies on this topic for each of the species. It also highlights the lack of information available on aspects of diet, particularly for the Orange-footed Scrubfowl. There is a relatively brief discussion of the movements of the species, which concentrates on the day-to-day movements of individuals around their territories, particularly for the Australian Brush-turkey. I believe this section would have benefited from more discussion of the larger scale movements of the species. For example, the Australian Bird and Bat Banding Scheme database contains records of Australian Brush-turkey moving 26 kilometres and Malleefowl 37 kilometres. Other characteristics of the species covered briefly in this chapter are moulting and life-span, again noting that these aspects are poorly understood.

The defining characteristic of megapodes – the construction of large mounds of decomposing organic material for the incubation of their eggs – is considered in detail in chapter 4 *The mound*. Many aspects of the mound are covered in detail including mound construction and maintenance, mound temperatures through incubation, location of the mound and the breeding season. The strong dependence of breeding success on suitable rainfall is highlighted for all three species. This chapter provides a stimulating overview of the mound, a remarkable adaptation of megapodes. It is amazing to consider that this adaption works in two very different environments in Australia; the humid tropics in Australia's north (Orange-footed Scrubfowl) and the arid interior (Malleefowl).

*Abandoned eggs* – while an apt title, probably downplays the immense investment put in by birds tending mounds! – tracks the life of the megapode embryo during the incubation period. The table in this chapter provides a valuable summary of the characteristics and special adaptations of megapode eggs and incubation, comparing this to other birds to show why each characteristic is important during the incubation phase. Such characteristics include extremely large eggs relative to female body weight to enable the development of precocial (i.e. far advanced) chicks and thinner egg shells to facilitate water and gas exchange to and from the egg. Clutch size and hatching success are covered. There is a fascinating section on the influences that incubation temperature can have on incubation period, embryo mortality and chick weight. There is also evidence presented from recent research linking incubation temperature to sex of chicks hatching from mounds; eggs hatching females were found at significantly higher temperatures in mounds than for males. The authors state that to their knowledge, this is the first time an affect on offspring sex has been reported in birds.

The next step in life, hatching and growing into adulthood, is explored in *Growing up without parental care*. Again, much is learnt in this chapter about the fascinating and unique traits of these birds. It includes a description of how, after hatching, the chicks dig their way up through the mound and to the surface; a process observed using an artificial 'digging box' that resembled conditions in a natural mound. With supporting illustrations, the reader gains an understanding of the amazing feats involved, with chicks emerging from mounds probably more than 24 hours after hatching. Then, life on the outside is considered, including the initial movements of individuals after exiting the mound (basically run for your life to the nearest bit of suitable shelter!). Based on radio-tracking studies, the reader learns that individuals may move at least two kilometres per day immediately on exiting the mound. There is a detailed section on chicks recognition and awareness of food resources and potential predators; the ability to recognise potential predators is discussed using findings from a study of captive Australian Brush-turkeys by the author providing one of many examples in this book of the authors reporting on their own research in an informative and understandable way and making it accessible for a wide range of readers.

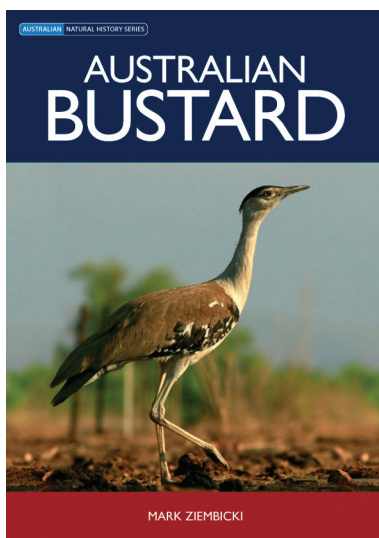
The social and reproductive behaviour of the species is discussed in the seventh chapter (*Social and reproductive behaviour*). Mating systems and parental care are then covered, much of this being based on Malleefowl research. The influences on megapode mating systems are discussed for each species separately. It is interesting to read the differences between the species. The Australian Brush-turkey male puts great effort into attracting females, which are happy to please any number of males. Conversely, Malleefowl pairings are described as more austere, adopting a more monogamous mating system. This chapter again highlights the distinctiveness of megapodes as a group, but also the distinctiveness of species within the family.

The book concludes with the chapter *Conservation and management of Australian mound-builders*. It describes threats such as egg harvesting and hunting, both which are much less common today. Conservation of each of the three species is then considered in turn. The Malleefowl and Australian Brush-turkey have been heavily impacted since European settlement through a combination of habitat loss, introduction of predators and threats associated with encroaching urban development. Pleasingly, a number of active conservation measures are mentioned. The final part of this section discusses ways that mound-builders, particularly the Australian Brush-turkey, can be accommodated harmoniously in suburban areas where they occur. Hopefully, through this book many more people become aware and understanding of these unique birds.

As has been a feature of the re-incarnation of the *Australian Natural History Series*, the text in this book is superbly supported by high quality colour photographs. These are complemented by a number of drawn illustrations and a range of summary tables and figures. The editors have done a wonderful job of ensuring that the text is free of the 'nuisance' mistakes that have occurred in other volumes in the series.

The book is thorough and the information is well-presented. It is a very good account of this fascinating group of Australian birds. The authors have done a great job of translating scientific research into a format that will appeal to a wide audience. This book should appeal to those with a general interest in wildlife, including people who may encounter an Australian Brush-turkey in their local neighbourhood and wish to know more; it will also be a valuable addition to the bookshelves of ornithologists.

Grant Palmer  
Centre for Environmental Management,  
School of Science and Engineering  
University of Ballarat



### Australian Bustard

Mark Ziembecki 2010. CSIRO Publishing. Paperback, 102 pp, colour photographs. ISBN 9780643096110. RRP \$39.95.

Here is another opusculum in the Australian Natural History Series from CSIRO Publishing. This one struggles to just over one hundred pages, including a Preface, an Acknowledgements section, a Bibliography, an Index, eight pages of colour plates, and a few blank pages thrown in for good measure.

The book is in eight chapters: Talking turkey, concerning the place of the Bustard in Australian life today; Bustard dreaming, concerning the bird's importance to indigenous people; Taxonomy and characteristics; Status, distribution and habitat; Diet and daily routine; Exploding bustards, concerning the bird's breeding routines; Movements; and Threats and conservation.

The Bustard formerly occupied most of the Australian continent – it was once common in the vicinity of present-day Melbourne – and in spite of its range having contracted, especially from the south-east, it is still very widespread. So it spans many climate zones including the climatically variable arid areas. Perhaps not surprisingly, its ecological responses are also varied.

We learn here that the Australian Bustard is a lekking species, at least in parts of its range. It forms "classical" leks where males display close to and in sight of each other and which