

Book reviews

Edited by P. DANN

The Ancestral Kestrel, edited by David H. Bird and Reed Bowman, 1987. Raptor Research Report No. 6. Pp. 178. 155 x 255 mm. US \$12.50. Available from the Raptor Research Foundation Inc. St. Croix Nature Center, 12805 St. Croix Trail, Hastings, Minnesota, 55033, U.S.A.

The Ancestral Kestrel is a collection of 16 papers relating to the systematics and ecology of kestrels. It emanated from a symposium in St Louis Missouri on 1 December, 1983. The papers were presented by contributors from five countries with the bulk coming from Canada and the United States of America. Hence the majority of papers are concerned with the American kestrel, *Falco sparverius*. Topics covered include: systematics, population, nesting and feeding ecology, habitat selection, energetics, dispersal, morphometrics, artificial nest-site selection and toxicology. In many of the papers, results are discussed in the light of current ecological theories and further research is suggested. The main value of this report is to provide a great deal of base-line data, useful for comparisons with other species of kestrel and Falconiformes. The report also contains a number of review papers which are of interest and relevance to the ecology of kestrels.

The first paper in the series attempts to determine the taxonomy of the *Falco* genus. Using a numerical cladistic program, a series of morphological and behavioural characteristics are examined and compared to an outlying species. This paper contributes to the discussion on the systematics of the *Falco* genus, an area still under great dispute and highlights the difficulty of determining taxonomic relationships amongst species.

The remaining papers in this work are dedicated to aspects of the ecology of kestrels. The first two in this part focus upon population ecology and are based on census data in North America and the United Kingdom.

The nesting ecology of kestrels is addressed in the next section with papers on the nesting success and distribution and nest-site choice. This section is followed by five papers on the feeding ecology of kestrels, four of which examine diet and hunting behaviour and one which reviews prey selection. The role of reverse size dimorphism and the problem of interpreting certain behaviours are discussed in the light of current ecological thought and areas requiring further research are suggested.

Following the section on habitat selection by sex, the concepts of habitat and niche split are discussed. The remaining papers fall under the broad headings of energetics, behavioural ecology and management issues. Among these is an interesting paper on dispersal and inbreeding avoidance. The authors note that dispersal patterns operate as a mechanism of inbreeding avoidance and if disturbance in the local conditions disrupts these patterns, the evolutionary stable inbreeding/outbreeding optimum may be affected.

The management issues covered in the final three papers of the report cover the use of artificial nest-boxes and toxicology.

This raptor research report is varied and, in places, extremely interesting. It covers a wide variety of subjects pertinent to the biology of the kestrels and to raptors in general. It also provides

base-line data which makes for useful comparisons with other species of *Falco*. I recommend it to those who have an interest in raptors.

Cindy Hull

Birds of Singapore, by Christopher Hails, illustrated by Frank Jarvis, 1987. Singapore: Times Editions. Pp. 168, 7 colour photographs, 5 maps, numerous tables, 131 species illustrated. 160 x 234 mm. \$29.90.

This hard-cover book aims to provide visitors, casual bird-watchers and newcomers with an informative and well-illustrated guide to the birds of Singapore. It combines colour illustrations, showing the bird's important characteristics, with a text conveying information on their known habits and distribution in Singapore.

The first part of the book comprises four sections dealing with an overview of Singapore itself, where the birds are, and how to identify them. The opening section provides a good introduction into the history, climate and geography of Singapore. Four main habitat types are identified and each are discussed in detail along with the different birds to be found and how they associate with each habitat. There are tables listing the common species found in each habitat type.

A 'where to go' section discusses ten birdwatching locations, giving directions to each and listing the main birds to be found. A large map of Singapore shows each of the ten locations and is also shaded to show six birdwatching habitats. Four sites are illustrated with small maps showing location, road names and nearby landmarks. Unfortunately, there are no scales accompanying the maps.

The next section provides some background information on the 295 species recorded for Singapore, with an informative discussion of migrant, resident, and vagrant species.

The main part of the book is a systematic account covering 131 species considered common in Singapore. Each account is numbered and starts with the English name, followed by the scientific name and the size of the bird in inches and centimetres. The texts discuss species' status, behaviour, general plumage, call, and similarities with other species, and also include useful information on species' ecology. There are illustrations for each species, including breeding and non-breeding plumages, and female and immature plumages where they differ from adult males. Subspecies are illustrated where more than one occur. The nests of some species are also illustrated. There are useful identification tables for egrets, small plovers, tailorbirds, female sunbirds, and outline drawings for terns and waders. The illustrations lack accuracy in places, being more artistic than technically detailed. However, they are adequate for identification.

Nomenclature for English names follows King & Dickinson (1975). I found two English names in the discussion on resident species not consistent with those of King & Dickinson (1975), or the rest of the book. At the back of the book is a checklist of the

birds of Singapore, a bibliography, a glossary of terms and an index.

Anyone with an interest in Singapore's birdlife will find this book both informative and very interesting. I found only two typographical errors, including a mis-spelt name in the acknowledgements.

Reference

King, B.F. & E.C. Dickinson, 1975. *A Field Guide to the Birds of South-East Asia*. Collins, London.

Jonathan Starks

Helping and Communal Breeding in Birds: Ecology and Evolution, by Jerram L. Brown, 1987. Monographs in Behaviour and Ecology (eds J.R. Krebs & T. Clutton-Brock). Princeton: Princeton University Press. Pp. 354, many B&W figs. 155 x 233 mm. \$37.00.

Helping is parent-like behaviour toward young that are not the genetic offspring of the helper. Brown's aim in this book is to examine the facts and theories that have arisen as workers, since the 1960s, have attempted to establish how such behaviour could evolve. Helping is an example of a behaviour in which some individuals appear to enhance the reproduction of others at the expense of their own. Such apparently 'sacrificial' behaviour is not easily explained by the traditional view of natural selection acting at the level of the individual.

Helping should be of interest to many Australian ornithologists due to the disproportionate number of Australian species that exhibit communal breeding and the history of studies of the phenomenon in this country following the pioneering work of Rowley (1965) on the Superb Fairy-wren *Malurus cyaneus*. This book provides an excellent introduction and overview of this complex and often controversial field of ornithological research.

The first four chapters of the book provide a sound introduction to important background information. They enable the reader to appreciate the questions posed by communal breeding and the difficulties encountered in formulating testable theories for the evolution of such behaviour. These chapters include an exhaustive and impressively up-to-date listing and classification of species currently known to exhibit intraspecific helping. The abundance of communal breeders in Australia receives particular emphasis in these early chapters. The fourth chapter introduces the important theory of inclusive fitness (Hamilton 1964), for which empirical studies of helping behaviour have provided a major testing ground.

Brown suggests that '... sharing of a mate or nest in group-territorial animals provides a widespread mode of origin of helping behaviour that is distinctly separate from origins based on the nuclear family'. In species exhibiting such 'nest-sharing' systems, three or more probable parents have their young in the same nest. He therefore devotes a chapter to examine the implications to the evolution of helping of mating systems in which paternity is uncertain (e.g. as in the Tasmanian Native-hen *Tribonyx mortieri*), followed by a second chapter which focuses on species in which multiple females lay in a single nest and where maternity is uncertain (e.g. as in the Magpie Goose *Anseranas semipalmata*). In later chapters he argues that recognising the distinction between species adopting 'nest-sharing' systems and those whose social system is centred on the 'nuclear' or 'extended family' (e.g. as in

the Superb Fairy-wren), can shed light on the evolution of helping in both systems (e.g. chapter 12).

Probably the most helpful attribute of this book is Brown's approach of considering the problem of communal breeding as comprising three separate, but interrelated, questions. They are: (1) Why do helpers delay breeding?; (2) Why do helpers delay dispersal?; and (3) Why do helpers help? He is assiduous in clarifying what different hypotheses do, or do not, explain. For example, he forcefully argues that some current theories, such as 'habitat saturation', may provide answers to the first two questions, but do not directly address the third, i.e. why should a nonbreeding, nondispersing individual bother to help feed young that are not its own. Each of the three questions is dealt with in a separate section of the book in a manner that helps clarify the status of current hypotheses.

The third question receives the greatest attention, being dealt with in five consecutive chapters. In these chapters Brown critically examines the empirical evidence for and against theories that suggest how helpers may benefit from helping. These theories are dealt with in two broad groups: (1) those that suggest helpers gain benefits in indirect fitness (Brown 1980) by increasing the lifetime reproductive success of nondescendent kin; and (2) those that suggest helpers gain benefits in direct fitness by mutualistic or reciprocal exchanges of aid.

The presentation of alternative testable hypotheses is generally clear, often being in the form of simple mathematical models. Several tables (e.g. Table 14.4) provide good summaries of current hypotheses. Brown highlights the confusion and unnecessary controversy that has arisen due to the sloppy use of terminology. His attempts to clarify the situation in both the text and in an extensive annotated glossary at the back of the book are, in the main, successful, although unanimous agreement among researchers in the field is unlikely. In some parts of the text Brown's writing style seems unnecessarily defensive and caustic, especially when presenting alternative interpretations of data or when discussing the explanatory power of certain theories presented by other workers (e.g. Woolfenden and Fitzpatrick 1984). Such an approach adds little to his arguments and is at times distracting.

The chapters dealing with alternative hypotheses form the core of the book, while the final three chapters cover the topics of conflict in communal breeders, diet and group territoriality and a synthesis of the ideas presented earlier.

As a proportion of the total book, few of the concepts or data presented are new, and in some places large sections of the text draw heavily on Brown's earlier work (e.g. chapter eight is largely a direct quotation of Brown (1982). Brown's (1974) three-phase theory for the evolution of communal breeding (condensed and reproduced as an appendix) is re-examined and defended in chapter fourteen in the light of the results of over a decade of subsequent field studies. The limited amount of new material however, is compensated for by the thoroughness and clarity with which Brown reviews the evidence for and against current hypotheses.

I recommend this book as a comprehensive and readable review of a complex field. It is a book that will hopefully stimulate further experimental studies of communal breeders, which for Australians at least, there is no shortage.

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Michael Clarke

Ecology and Conservation of Grassland Birds, edited by P.D. Goriup, 1988. ICBP Technical Publication No. 7. Cambridge: International Council for Bird Preservation. Pp. 252, many tables, maps and figures. 138 x 216 mm. £17.

In the mountain areas of south-eastern Australia, a small group of graziers has pastured cattle on public land for almost a century. The degradation of the restricted alpine grasslands and herbfields resulting from this practice has been documented in detailed research stretching back at least 30 years. That the cattle continue to graze is testimony to the power of these rural oligarchies, the insidious momentum of tradition, the pragmatic preference of governments for actions leading to short-term gain at the expense of predictable long-term consequences, and the low value accorded to ecological factors in economic equations. These problems consistently underpin the regional accounts of conservation of grassland birds compiled in this volume. These are daunting problems which, throughout the world, have led to the parlous current status of grassland birds and to a shudderingly bleak outlook for many of these communities.

More so than for any other habitat, grasslands have been linked intricately with people for many thousands of years. We have lived in them, cultivated them, grazed our livestock on them, and created them by draining wetlands and clearing forests. Their floristics and structure (and consequently avifauna) have been determined by the fire regimes we impose upon them. Compared with forested habitats, grasslands have low species diversity (and explicitly, of birds) and take comparatively little time to pass through a successional series. Accordingly, they are habitats whose status, extent and health can mostly be directed as we see fit. The trouble is that we use this power to exploit these habitats without regard to the conservation of them. This volume shows this to be a universal characteristic, as much a feature of Scotland and Spain as of Brazil and Bangladesh. However, in the rapidly developing countries of Africa, South America and Asia, accelerating population growth coupled with access to pesticides, fertilisers and modern machinery, now places enormous pressure on the dwindling natural areas. For some grassland birds, this process may result in temporary benefits, as forested areas are cleared for pasture. For the most part these are 'weedy' species, the starlings and sparrows of the world. More often, specialised grassland birds suffer from destruction or deterioration of habitat through the imposition of 'unnatural' burning regimes, overgrazing, cropping or spread of weeds. Many are also hunted for food or 'sport' (notably the bustards and grouse) or for the cagebird trade (parrots and finches in South America, Africa, Asia and, still, Australia). This volume chronicles the grassland species which have not been

able to cope with these pressures and indicates that extinction is an inexorable fate for many of them.

Sadly, this volume suffers from lightness of editorial touch. In a lame and brief introduction, the editor excuses the lack of definition of 'grassland' and 'grassland bird', surely an important basis for such a book. Chapters of a perhaps understandably, uneven standard follow, on the regional conservation of grassland birds. Research and conservation is much more advanced in the USA and Canada than in less developed countries. Unfortunately there is no contribution from the USSR, and only a sketch from China. Ecological data presented are disappointingly meagre, and the title of the volume is consequently misleading. The drawback of the regional approach is that this volume lacks any synthetic (or detailed) discussion of factors applying universally to grassland birds, notably the use and effects of pesticides. Indeed the lack of synthesis and overview is unforgivable, especially given that the problems facing grassland birds have many similarities throughout the world, that taxonomic (or ecological) relatedness links many of the birds involved in the regional accounts, and that remedial actions and conservation priorities offered in one location may well be applicable across a broader geographical scale.

In a chapter on Brazilian birds, E.O. Willis and Y. Oniki bite the political bullet and internationalise the conservation problems of that country. They argue that conservation in developing countries involves a different set of values from those used in more affluent countries. Specifically they recommend an Aid-to-Parks program, whereby donating governments and the banks of the industrialised world forego some component of loan repayments by the local establishment of land for conservation purposes. In this way the forces driving the ruthless exploitation of natural land in debtor and developing countries may be slowed, and thereby precious time granted to enable their governments to introduce more rational economic and ecological planning. A ray of hope . . .

Kate Fitzherbert and David Baker-Gabb describe the Australian (indeed, Australasian) situation. In comparison with the plight of grassland birds in the rest of the world (and also, of grassland mammals in Australia), our bird species have been fortunate. We have lost the Paradise Parrot, and New Zealand, the New Zealand Quail. A further 22 species are listed as threatened, including the Flock Pigeon, Princess Parrot, Night Parrot, Golden-shouldered Parrot and Gouldian Finch. For only three of these species (Takahe, Plains Wanderer and Cape Barren Goose) have there been detailed ecological and management studies, although work is in progress on the Golden-shouldered Parrot and Gouldian Finch. This listing of species is made difficult by our ignorance of the status of so many Australian birds, a deficiency which the RAOU's Conservation Committee hopes to remedy with the production of a justified list of species considered rare, threatened or endangered. Fitzherbert and Baker-Gabb describe the diversity of Australian grassland types (arid hummock, arid tussock, shrub steppe, arid and semi-arid low woodlands, tropical and subtropical, and alpine), and their constituent bird faunas. Unfortunately, they perpetuate a jaundiced and utilitarian view of some of these habitats by using the term 'wasteland' in part of their vegetation descriptions. They use distribution maps and terms from *The Atlas of Australian Birds*, though the interpretation of these may be difficult for readers not familiar with the quirky method that text used to denote abundance.

Fitzherbert and Baker-Gabb list the current problems for grassland birds in Australia as: (1) over-grazing and agricultural development; (2) inappropriate burning regimes; and (3) illegal trapping, in that order. Testimony to the political clout of grazing and agricultural interests is the appalling lack of research on the

effects of these industries on wildlife, and specifically on the distribution and abundance of birds in Australia. Government conservation bodies would seem to shy off such research. And yet in vast areas of Australia grazing has degraded, and continues to degrade, critical habitat for many Australian birds. The grassland reserves that we do have are often small, unrepresentative (the leftovers after prime grazing land has been alienated) and poorly managed. Grasslands, in particular, because of their short successions and susceptibility to fire, may require active and considered management. The imposition of suitable fire regimes is required in order to retain habitat for particular animal species. This demands detailed research on the requirements of individual species. Such information on relationships with fire is now known for many Australian mammal species but, to our shame, for only a handful of Australian bird species. The shame continues with our failure to wipe out the illegal poaching trade in our grassland parrots and finches, and in calls to legalise the export of such birds.

The ICBP is to be commended for organising this overview of conservation of birds in grassland habitats throughout the world. Through such an approach we can measure the extent of the conservation problems in our region and recognise that such problems are even more difficult in most other areas of the world. This volume follows similar publications on tropical forest birds (beside which the outlook for grassland birds is almost rosy), seabirds, New World parrots, island birds and raptors.

John Woinarski

Wildfowl – An identification guide to the ducks, geese and swans of the world by Steve Madge, illustrated by Hilary Burn, 1988. London: Christopher Helm. Pp. 298, col. pl. 47, maps. 150 x 233 mm. \$59.95.

This one volume guide to the waterfowl of the world is both a timely and valuable contribution to the literature of the Anatidae.

Waterfowl have long enjoyed a special relationship with humans and this work adds to our appreciation of these magnificent birds.

Following Delacour's classic work in the 1950s, the subsequent works by such authors as Johnsgard, Todd and Soothill & Whitehead were published at least a decade ago. Certainly there have been excellent national and regional works on waterfowl, such as Frith's *Waterfowl in Australia* and Weller's *The Island Waterfowl*. Regional Handbooks such as *Birds of the Western Palearctic* contain a wealth of detailed and up-to-date information. Nevertheless a well planned and presented guide summarising current knowledge including recent journal literature is welcome.

This book has many pleasing features. It combines the format developed by Chandler Robbins for his *Birds of North America*, and used in the new Slater: maps, a short text on distribution and the main distinguishing features are placed opposite the plates, with the more conventional longer detailed text in a separate systematic section. This enables all the plates to be grouped together for ease of quick reference and comparison, although it is annoying to find that the order of species on the plate and

accompanying short text are occasionally different, presumably for pictorial reasons.

The introductory section provides an insight into the planning and organisation of this book. The explanations of the protocols used and guidance to the reader are clear and concise. The general notes on field observation, including waterfowl topography, plumage, hybrids, escapes and detecting species in mixed flocks are useful for the beginner and experienced alike. The use of only standard vernacular names is refreshing.

The emphasis in the detailed texts is on field identification, voice, geographical variation, and distribution, with short notes on plumage, habits, habitat, population trends and general measurements. These texts are easy to read and very informative despite their condensed nature for a single volume. The format and layout make it easy to read.

The maps are clear despite being small and the colour coding for breeding, continuously occupied, and non-breeding range provides a clear understanding of species distribution. The maps and distribution notes for Australian waterfowl are clearly based on *The Atlas of Australian Birds*, the most up-to-date and authoritative data. The map and text also indicate the many introductions of wildfowl throughout the world.

Hilary Burn's plates are a delight. They give a clear depiction of the species and a faithful reproduction of the colouration, although there is a limited range of postures depicted. Certainly I find that artwork is more useful than photographs in a guide of this kind. The artist is not restricted in postures or plumages, and rarely are there satisfactory photographs of flying waterfowl. I detected some variability in the lifelike nature of the postures and in the plumage detail. For instance, some species seem to be very "stiff", whilst other plates appear to be too clean and clearcut, such as that of the Pink-eared Duck. Certainly some of the Australian species such as the Pacific Black Duck, Grey Teal, Chestnut Teal, Freckled Duck and Musk Duck are excellent. The artist has also been able realistically to depict the subtleties in the mainly monochrome plumage parts of such species as Hooded Merganser, Maned Duck, Rosybill and the Shelducks.

The use of small depictions of the typical land and water habitat in the plates adds to their charm. Whilst some of the birds in flight seem a little 'schematic', I found some of the artist's best work to be ducks on the water.

Clearly I consider the book should be on the shelves of all serious students of the Anatidae. It complements the more detailed treatment of species found in other texts, and provides a most useful comparative reference on the world's waterfowl.

Roger Tory Peterson, in his Foreword to *Wildfowl*, not only congratulates the author and artist for 'producing such a wealth of concise information in a format that is both easy to read and contains a minimum of scientific terminology'; he also stresses the threats to wetlands and waterbirds throughout the world. This is perhaps a sombre note on which to introduce such a book, but a timely warning that we must be ever-watchful over the fragile habitats upon which the conservation of species depends.

Sid Cowling