Book Reviews

Waders of southern Africa

Phil Hockey (Illustrated by Claire Douie)
Struik Winchester, Cape Town, 1995
288 pp.
Price R250.00
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Phil Hockey is southern Africa's 'Mr Waders', so his recent magnum opus has been keenly awaited by ornithologists and birders. This beautifully produced book is the most authoritative and up-to-date compendium of readable information available on this marvellous group of birds. Hockey's easy style of writing and his enormous knowledge and enthusiasm combine to give the readership an unparalleled work of reference — a work geared to a public far beyond the academic or professional ornithologist.

The opening sections of the book introduce the waders. The Introduction is subtitled *Waders in perspective*: it is a pithy outline of his approach to the subject, as well as to the systematic composition of the order Charadriiformes. A series of clear coloured maps follows, showing the main features of Africa, the conventions used in the distribution maps, the main place names mentioned in the text, and the present and erstwhile South African provincial boundaries and names (some already out of date, such is the pace of politics in this 'new' country!).

A chapter on migration, called *From Siberia to the Cape* tells of the great feats of annual travel undertaken by the Palaearctic waders which use Africa as their nonbreeding grounds. Some journeys cover 15 400 km between their end points. How these journeys are accomplished in terms of fuel, navigational abilities and other factors is treated here. *Making a living* is an account of the foods and feeding methods of waders: bill shapes, food types, foraging techniques, responses of prey animals, resource limitations and so on are the subject matter of this chapter. The breeding biology of waders is the topic of the last of the preliminary chapters, appropriately headed *Investing in the future*.

The bulk of the book — about 190 pages — is a species-by-species treatment of the 48 regularly occurring species of southern African waders, both resident and migrant. The subheadings for the chapters on the breeding species include Distribution, Habitat, Food and foraging, Breeding biology and Conservation. Additional headings are sometimes invoked when material on Taxonomy and Relationships with other waders needs to be dealt with. The nonbreeding migrants are treated somewhat more variably under such headings as Breeding distribution, Nonbreeding distribution, Migrations, Habitat and foraging behaviour, and Conservation.

Each species account is accompanied by a distribution map. Maps for migrants show both breeding and nonbreeding distributions, as well as a set of arrows indicating their broad migration routes. Maps for residents show the entire African range of the species. Each species account also has a full-page colour plate, painted by Claire Douie. These plates are, in my opinion, the Achilles heel of the book: they show the birds (adult, immature, juvenile and eggs, where relevant) in colour against lightly pencilled backgrounds of habitat vignettes, rather after the manner of Finch-Davies, but less successfully. Some of the plates also have smaller-scale birds in flight, to show pertinent identification features. The artwork is somewhat stilted and has a rather old-fashioned look, though some of the paintings are quite appealing. No matter what their artistic shortcomings may be, however, they are generally accurate in form and colour, and I believe they show promise of better things to come from Douie's brush and pencil.

Here and there in the text are smaller pencil drawings of waders by Andrew Barlow, most depicting particular behaviour patterns and/or typical habitats; and now and then a small colour picture of a wader from one of Claire Douie's definitive plates is used as an embellishment in the margin or as an end filler. This is a nice touch and reflects the attractive design of the book as a whole.

The final section of the main text is headed *Rare and vagrant waders*. The 26 species, dealt with here in about half a page to a page each, are those migrants from the Palaearctic which seldom penetrate Africa further south than the tropics, as well as some of the New World migrants which appear to get blown off course or otherwise deflected to Africa from their normal routes. Only one vagrant species, the Spur-winged Plover *Vanellus spinosus*, does not originate from the northern hemisphere. The historical and seasonal records of these vagrants are listed in a Table.

Half a page of text headed *Waders to watch for* is accompanied by a Table of species of waders not yet recorded in southern Africa, but which may reasonably be expected to occur in the future.

The final chapter, entitled Conservation, completes the body of the text. Southern African waders, despite their English names of 'waders' on the eastern side of the Atlantic and 'shorebirds' on the western side, are by no means all birds of waterside or wetland habitats. At least 11 species (or about 30%) inhabit grasslands, bushveld and semi-desert. Conservation of waders therefore entails protection, not only of the subcontinent's wetlands, but also of some dryland habitats favoured by waders, many of which are threatened by overgrazing, ploughing and unwise fire regimes. The conservation of the migrant waders is complicated by their movement patterns: they may enjoy protection at one end of their journey, but not at the other. Even worse, some suffer from threats at both ends, especially those species from settled parts of Europe, which migrate to almost as heavily settled parts of southern Africa. They run the further gauntlet of severe hunting pressure in southern Europe and North Africa.

The population trends of the coastal waders of southern Africa, with the exceptions of the Palaearctic Curlew *Numenius arquatus* and Ringed Plover *Charadrius hiaticula*, do not appear to have been negatively affected this century (surprising, considering the increased volume of motorized beach transport in recent years). Some species appear actually to have increased in numbers. The population trends of all the species of southern African waders are described in very broad terms in two Tables, but it has to be admitted that there

are no definitive studies on most of our waders, from which such trends can be more than guessed at. However, these Tables, subjective though they may be in part, with their possible reasons for a given trend, up or down, are a most useful and informative analysis. Several breeding species of wader appear to be decreasing in numbers, notably Water Dikkop *Burhinus vermiculatus*, Burchell's Courser *Cursorius rufus*, Temminck's Courser *C. temminckii* and the Rock Pratincole *Glareola nuchalis*. It may be significant that three of these waders belong to the family Glareolidae and that two of them are birds of dry habitats. All four of them have rather specialized habitat requirements, so human impacts are likely to affect them most severely.

A Glossary, an extensive Bibliography, an Index and a List of Subscribers complete this outstanding book. Although, as Hockey says in his Introduction, 'this volume is far from being the final word on southern African waders', it will certainly be the definitive word on these delightful birds for many years to come. It is in any event a benchmark for any future work on waders on the African continent.

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Apple Snails in the Aquarium

Gloria Perera and J.G.Walls

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The Apple Snails (Family Ampullariidae) are amongst the most popular invertebrates bred by aquarists. This is due largely to their relatively large size (they include the largest freshwater gastropods), their boldly banded shells and the bright yellow colour variants of, for example, *Pomacea bridgesi*. This book is thus aimed principally at aquarium enthusiasts, but it is a useful guide to the Ampullariidae of the world and will therefore be of interest to malacologists as well.

The Family Ampullariidae is distributed throughout most of the tropics and although the taxonomy of its Afrotropical members has been updated recently by Brown (1994), the Neotropical and Oriental species are less well known. This is important to South African malacologists because at least two species of the Neotropical genus *Pomacea* have been introduced into the country via the aquarium industry, probably within the last decade. *Pomacea* spp. are known in the aquarium business as mystery snails, and they can be troublesome. One species has already been found in a suburban watercourse in Durban and experience in other countries has shown that introduced species can become invasive and spread rapidly with considerable environmental impact. Since the South African aquarium industry has a brisk trade with the Far East and elsewhere, it is likely that more introductions will occur in the future but identifying them will be difficult. This book will help us do so.

There are six chapters, all copiously illustrated with colour photographs, some of which are superb and provide excellent detail of live animals and their shells. There is a glossary and even a recipe for ampullariid escargots! Chapter 1 is an introduction to the apple snails, their biology, habitats, systematic position and economic importance. Chapter 2 presents a more detailed account of ampullariid biology, especially reproduction, feeding, and predation and includes notes on collecting methods. Chapter 3 deals with the culture of ampullariids and the optimum conditions in which to keep them.

Chapter 4 presents a valuable synopsis of the Neotropical genera and Chapter 5 the Afrotropical and Oriental (Old World) genera. In these two chapters, key morphological and ecological characteristics and notes of interest are given for individual genera and the most common species within each. For the Neotropical fauna notes and in most cases, accompanying illustrations, are provided for 17 of the commonest species of *Pomacea* (there are estimated to be 75–150 species), nine of the 11 species of *Asolene* and the monotypic genus *Marisa*. I was surprised to find that the type genus *Ampullaria* now belongs to the 'older literature'.

Twelve species of *Pila* are included, six each from Asia and Africa, and most are illustrated as well. *Pila* is the only genus present in Asia. Of the other African genera, *Lanistes* is dealt with in some detail (10 species are illustrated) while *Afropomus* and *Saulea*, both monotypic, receive brief mention. Variability in shell colour is a feature of the Ampullariidae and the authors have illustrated colour variants, both natural and specially bred, of several species. The last chapter provides notes on other snails commonly found in aquaria, viz. species of the prosobranch Families Neritidae, Viviparidae and Thiariidae and of the pulmonate Families Lymnaeidae, Planorbidae and Physidae.

Although written for aquarists, this book is of considerable value to malacologists and the senior author is in fact a professional malacologist with wide experience in the use of ampullariids in the biological control of the snails that carry bilharzia in the Caribbean. I have reviewed it from a malacologist's point of view. The systematics of the Family Ampullariidae are, as the authors make clear, far from being properly understood and this book serves as a useful introduction to the various genera. Although the text describes diagnostic characters at both generic and species levels and the photographs are generally good, I would have liked a key to genera, particularly *Pila* and *Pomacea*, as well. Overall I can recommend it as an easy-to-read guide to snails of the Ampullariidae, one that will hopefully stimulate much needed research into its systematics, especially of those species distributed via the aquarium industry.

Reference

BROWN,D.S. (1994) Freshwater Snails of Africa and their Medical Importance, Revised 2nd Edition, Taylor & Francis, London.

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The African Leopard: Ecology and Behavior of a Solitary Felid

Theodore N. Bailey

Columbia University Press, New York. 1993
xviii + 429pp
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Theodore Bailey spent two years doing intensive field work on leopards in the Kruger National Park between 1973–1975. He captured 30 leopards 112 times during his study and radio-collared 24 individuals. Over 2000 telemetric locations and 135 direct observations of leopards contribute to his examination of leopard home ranges, activity patterns and social organisation. He collected kills and scats to determine leopard diet and monitored the prey community to elucidate the feeding ecology of leopards. The resulting volume presents these field observations as a readable, comprehensive account which stands out as the most complete scientific study produced on this elusive cat to date.

There is a wealth of information here which is generally well-presented. The introductory chapters deal with the study sites, methodology and parameters of the prey population. The main body of the text presents extensive data on leopard behaviour and ecology while one chapter deals with the leopard and its relationships with other predators. The final section examines why the leopard remains one of the most widespread large carnivores and details conservation issues and strategies. 103 tables and 74 figures present the data succintly and summary sections at the end of chapters reiterate the main points. Extracts from Bailey's field notes enliven the text and give the reader a sense of the immediacy of field biology. For example, paging between the sections on mortality and relationships with other predators, I discovered that the hyaena-killer, male M23, eventually fell prey himself to another predator, a crocodile. I would have liked to see a summary table of sex, age and mortality data of individual leopards and the period of monitoring for each to enhance this feeling for the study animals.

Occasionally, the information is presented in an order which makes it difficult to follow. The discussion of feeding ecology is separated from details of the prey population by three chapters and I found myself referring back between the two sections. Similarly, I thought the chapter on social organisation should have followed the information on home ranges and movements. More 'user-friendly' maps could have been used to depict ranges and movements which are presented with the distracting detail of contours, roads and drainage lines. I found a mistake in Table 4.6 in which the footnotes explaining weights of different impala age classes have been juxtaposed. However, these are minor problems and do not detract from the quality of information in the book.

As with all good studies, this work raises many questions for future research. I was intrigued that starvation was the main cause of leopard mortality, particularly given that the study site was optimum leopard habitat. Unfortunately, the reasons for this were unclear to the author. Although sub-adult animals seemed to have difficulty hunting, five previously healthy adults also became emaciated. Despite a decline in the numbers of impalas, prey was still abundant in the study area and two individuals suffered a decline during an increase in impala numbers. As with most studies of large mammals, the restricted duration of the study permits the researcher only a glimpse of the whole picture. As Bailey himself notes, perhaps the study's greatest limitation is that it was conducted in protected, prime leopard habitat which contrasts vividly with the situation in most of the species' range. A comparison with observations from sub-optimal habitat, such as that occupied by the relict population of leopards in the Cape province, emphasises how little we know about leopards outside conservation areas. Although the leopard has shown remarkable tenacity in persisting outside reserves, more information is needed as man and cat increasingly come into conflict in these areas if the leopard is to survive there.

This book will find its way into the libraries of many wildlife specialists. Carnivore biologists will appreciate the depth of detail on an otherwise little known species which may represent a model for the many solitary, unstudied cat species. Bailey's examination of the inter-relationships between leopards, their prey and their co-predators will benefit wildlife managers who base their decisons on an understanding of such relationships. The discussion of problems in conserving large cats will appeal to conservationists whose work can benefit from Bailey's suggestions. All workers in these fields should have a copy of *The African Leopard*. This well-researched, accessible volume will enhance understanding of predators in their environment and hopefully contribute to the preservation of wilderness areas like the magnificent region where Bailey did his work.

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