

REVIEWS

Edited by G. W. JOHNSTONE

BOOKS

Birds of Prey in Europe by Maarten Bijleveld, 1974. London: Macmillan. Pp xvii + 263, b. & w. pll 2, figs 5. 234 x 156 mm. SA43.75 (£12.50).

Maarten Bijleveld, who works for the World Wildlife Fund, has written an historical review of man's impact during the last three centuries on diurnal birds of prey in Europe.

Systematic persecution of these birds started in the eighteenth century. The prime motive was to protect game and, with the advent of the breech-loading shot-gun in the nineteenth century, the slaughter of game and raptors intensified. Big rewards were offered — for each eagle killed the Duchess of Sutherland paid one guinea, a princely sum in 1832. The slaughter continued to the middle of the present century with brief respites during the two World Wars. This persecution and other human influences such as biocides and alteration of habitat have taken their toll but the author avoids any attempt to estimate to what extent each process has contributed to the massive decrease of numbers. As quoted in the Preface, K. H. Voous has estimated the population of birds of prey in Europe in 1965 at one per cent of those present in 1815.

A country-by-country account is given of the present status of each European species and the current legislation affecting birds of prey. Some practical measures to help preserve those remaining are discussed. A novel method is the use of large shiny glass spheres, which apparently repel some species and could save migrating Goshawks from being shot near French chicken farms. However the outlook is gloomy; no general improvement can be expected and the author predicts further declines in the numbers of at least half the species now present. This is presumably why the book's end-papers are funereal black.

Australian raptors have not suffered much persecution in the name of game preservation although large numbers of some species have been destroyed to protect livestock. The chief victim has been the Wedge-tailed Eagle with more than 300,000 being destroyed in the thirty years to 1970. Clearance of bush for agriculture, the introduction of rabbits and other changes in land-use must all have affected numbers of raptors but to what extent is not known. None of the twenty-four species of diurnal birds of prey found in Australia appears to be in danger of extinction but Macdonald (1973, *Birds of Australia*) classed seven (Letter-winged Kite, Square-tailed Kite, Black-breasted Kite, Red Goshawk, Spotted Harrier, Black Falcon, Grey Falcon) as rare or uncommon; work to clarify the status of some of these would be worthwhile.

Dr Bijleveld gives us a most thorough, if at times anecdotal, account of the decline of birds of prey in Europe and one can hope only that his predictions prove incorrect. For a book of this size, which includes only two black-and-white plates, the price seems exorbitant; even obtaining it direct from Britain (for half the Australian price) seems an undue expense.

M.G.B.

New Zealand Albatrosses and Petrels: an Identification Guide by P. C. Harper and F. C. Kinsky, 1974. Biological Society, Victoria University of Wellington (comprising *Tuatara* 21 (1 & 2)). Pp 80, col. pll 2, b. & w. pll 11, figs 25. 137 x 211 mm. \$NZ 2.50. (Available to RAOU members for \$NZ 2.00 + postage from P. C. Harper, Zoology Dept, Victoria Univ. Wellington, Private Bag, Wellington, NZ).

At last here is a field-guide to the sixty-one species of Procellariiformes likely to be met in New Zealand waters, which can be used with confidence not only there but in Australian waters south of the Tropics and throughout much of the Southern Ocean. No longer need the voyager take with him a small library to identify the birds he will meet; this guide will answer almost all his requirements. Perhaps a minor caveat is that it does not include oceanic species from other avian orders but no doubt the problem then would have been to know where to stop. As it is, two previous publications are superseded by this booklet: *A Guide to the Larger Oceanic Birds (Albatrosses and Giant Petrel) of New Zealand Waters* by J. Moreland (1957 *Tuatara* 6(3): 99-107) and *Guide to Identification of Shearwaters and Petrels in New Zealand Waters* by J. P. Croxall (1971, Auckland War Memorial Museum). And it is a great improvement on both.

A short Introduction gives helpful advice about observing and recording birds at sea, and brief notes on the birds' biology. This is followed by a key, which works well as an aid to identifying a sighting to the level of species or group of similar species. Accounts of each species occupy the bulk of the rest of the guide. The information given is sensible: length and wingspan, a detailed description of field characters (with italics for key points), likelihood of confusion with other similar forms, flight and ship-following behaviour, and pelagic and breeding distributions. Inevitably, some details are disputable. For example, it is stated that White-chinned Petrels do not follow ships but in my experience they do so often and persistently. Also, I would disagree that the White-capped Mollmawk has black upper wings and mantle; a feature that distinguishes it from other mollmawks is that the upper wings and back are quite brown, often unevenly mottled. Both English and scientific names adhere strictly to the nomenclature of the *Annotated Checklist of the Birds of New Zealand* (1970) so that its errors are perpetuated (eg. *Diomedea melanophris* instead of *melanophrys*, *Daption capensis* instead of *capense*); but these are unimportant in a field-guide.

As the authors say in the Introduction, for identifying birds 'a picture is worth a thousand words' and, apart from a few photographs, this guide relies on drawings by Harper. On the whole these are successful (although he has pointed out to me (*in litt.*) that the breast of *Pterodroma solandri* appears pale and not dark as it should be because the printing was bad). The order in which they are shown takes some learning; similar-looking forms are grouped together and also species typical of certain areas (e.g. three Antarctic petrel species on one plate). Cross-referencing between accounts of species and plates is good but it is annoying to have to locate the illustrations this way, specially when the order of species in the text does not follow any recognized sequence. It would have been a good idea to include a scale in each plate; as it is, most species are shown about the same size and storm-petrels are actually figured larger than albatrosses.

Wide use of this guide in the Australasian region will do much to improve the standard of identification of albatrosses and petrels at sea and should make a definite contribution to work in this field. R. L. Stevenson thought that 'to travel hopefully is a better thing than to arrive and the true success is to labour'. The itinerant ornithologist in southern seas can now travel more hopefully than ever before, thanks in no small measure to the successful labours of Harper and Kinsky.

G.W.J.

Competition and the Structure of Bird Communities by Martin L. Cody, 1974. Monographs in Population Biology 7, Princeton University Press, Princeton, New Jersey. Pp 137, figs 78, tables 18. 225 x 145 mm. Cloth \$US12.50; paper \$US6.95.

Theoretical consideration of the causes of species diversity by G. Evelyn Hutchinson and the late R. H. MacArthur sharply refocused ecologists' attention on the role of interspecific competition in animal (and plant) ecology. In the 1960s a plethora of studies on competitive relations emerged, many of which were interpreted as supporting the concept of ecological isolation. Birds, whose feeding and breeding behaviours are easy to observe and quantify, figured prominently in these investigations. Most studies, however, concentrated on groups of closely related species (often congeners), probably because their common ancestry and hence general ecological similarity were likely to yield the neatest patterns of ecological divergence under sympatry. The late David Lack admirably summarized a large section of these investigations in his typically lucid and readable, if somewhat dogmatic, book *Ecological Isolation in Birds* (1971). However, competition must also be a major determinant of ecological relations at higher levels of organization, such as the community and regional avifauna. Analysis of vertebrate communities is a new but growing investigation and this book by one of the leading workers in the field is therefore a timely contribution likely to help in crystallizing many of the theoretical and methodological problems involved. The monograph is described as an account of Cody's extensive field studies on bird communities supported by selected examples from other investigations. Throughout, the examples are organized to elucidate what the author considers to be the principal theoretical interests in ecology of avian communities.

Chapter 1 deals with the several ways in which ecological isolation has evolved in birds and is concerned primarily with groups of related species. The theoretical aspects will be familiar to most avian ecologists but, because most of the examples are American, there is a nice contrast with those given in Lack's book. I found it interesting and surprising that the author's studies revealed few examples of ecological segregation through the use of different feeding stations within trees as MacArthur demonstrated for North American warblers. This is a phenomenon which I believe Cody is premature in labelling as uncommon among birds generally. Segregation by selection of microhabitat (based on vegetational structure) within a superficially homogeneous habitat (Wyoming Willows) is well documented; this is a strategy for coexistence that is often ignored. The author's warning against the pitfalls inherent in assessing dietary overlap purely by stomach analysis is valid but he undervalues the use of such analysis in supporting feeding behaviour and bill measurements in studies of ecological isolation. Similarly, though his technique of recording feeding behaviour, based on assessing speed of travelling and durations of pauses, reveals interesting differences between members of a community, it gives an incredibly simplistic view of avian feeding and ignores the many subtle ways in which feeding behaviour can diverge and strengthen ecological isolation as, for example, Newton demonstrated for British finches (1967, *Ibis* 109: 33-98).

The next two chapters discuss the breadth and overlap of niches. The conditions favouring specialization and generalization in foraging ecology are examined by means of a model based on an actual example: two species of warblers co-existing in the foothills of Arizona where their preferred habitats, pine and oak woods, overlap. The role of physical structure of the environment, competitors and the predictability of resources in determining niches is examined. Data on the overlapping of niches are presented in matrices and dendrograms, the latter giving a readily assimilated impression of the composition of a community. As Cody illustrates, the matrices and dendrograms are powerful tools when comparing communities, enabling swift identification of ecological counterparts.

Chapter 4 deals with character displacement and shifts of niches occurring in response to varying competition; in particular, shifts between mainland and islands and seasonal shifts are discussed. Particularly impressive is the demonstration that Song Sparrows' territories are progressively smaller on islands in proportion to the number of mainland competitors not represented there.

Chapter 5 is an excellent account of parallel and convergent evolution in avian ecology, concentrating specially on the striking convergence in structure observed between taxonomically unrelated avian communities occupying similar habitats in different continents. The examples given (marine Alcids and grassland Emberizines) indicate not only that the phenomenon is not restricted to particular habitat types but that it occurs in structurally simple as well as complex habitats (Mediterranean scrub and beech forests). J. H. Crook has of course shown earlier that this convergence also extends to social organization.

Finally, the author discusses what one might term the apparent exceptions among birds to the principle of ecological isolation. He first describes cases in which resources are apparently non-limiting and used by many species in similar ways. He also offers the intriguing suggestion that availability of nest-sites is rarely a limiting factor and that divergence in selection of nest-sites has not resulted, as is often claimed, from direct interspecific competition but is merely a secondary outcome of selection for divergent feeding ecologies and protection of chicks. The subsequent discussion of interspecific territorialism as a strategy permitting the co-existence of ecologically similar species is sound but adds little to the earlier ideas of Orians and Wilesen (1964, *Ecology* 45:736-745) and Orians (1971, *Avian Biology*, Vol. I:513-546), except to suggest that the kind of temporal territorialism long known in some fields may be a widespread phenomenon promoting co-existence in birds; the evidence is lacking at present, though. The concept of partial partitioning of space between co-existing species through avoidance rather than overt aggression, for which some evidence is presented, appears plausible and merits further attention. However the notion that mimicry of the songs of ecologically distinct species might be simply a 'carry over' from selection for adaptive mimicry of the songs of ecologically similar species (supposedly leading to their partial territorial exclusion) is naive and ignores the other likely adaptive values of vocal mimicry (specially mate-attraction).

Cody distinguishes character convergence promoting interspecific flocking (social mimicry) from that promoting interspecific territorialism, though he points out that convergence (or, more strictly, lack of divergence) may promote both phenomena among some related neotropical Emberizines. His discussion of the probable adaptive values of flocking is outdated, uniformed and fragmentary. The theory that interspecific flocking of finches in winter in the Mojave Desert is adaptive in regulating 'return time' to renewable resources still seems incompletely thought out to me; other explanations should at least be considered, specially in the light of Krebs' demonstration of more efficient food-finding through local enhancement in interspecific flocks of parids in North America.

Several important criticisms of style can be levelled at this monograph. The marriage of a monographic account of the author's field work and a selective review (for that is what it is, despite the author's disclaimer!) does not entirely succeed. Research methods, statistical analysis and sample sizes are inadequately documented for a research report and there are indications (e.g. page 30) that some samples may be quite small. In the earlier chapters, I was sometimes in doubt as to whether a comment referred to Cody's own results or was offered as a generalization about all birds. The origins of some theoretical discussions seem not to be accurately attributed to their authors (e.g. the origins of the 'territory-size/travelling-time model' surely lie in C. C. Smith's and G. Orians' work but these are not mentioned). The book also contains several outright dogmatic, sweeping generalizations, though elsewhere a wil-

lingness to speculate intelligently is a refreshing trend to find in a scientific monograph.

Much of the terminology is pretentious and many arguments are unnecessarily complicated, in marked contrast with Lack's book. To be fair, however, this is a common fault in aspects of ecology at present, where there seems to be a vogue for presenting essentially simple, readily understood, yet inherently elegant concepts in a complicated form, which renders them both less comprehensible and less attractive. Equally, many of the figures are the negation of all that I was taught a figure in a scientific text ought to be, i.e. a summary of results that can be readily understood and swiftly assimilated. Many of these figures are absurdly complex and most have inadequate legends.

These criticisms notwithstanding, this is an important and very stimulating book, which all vertebrate ecologists should read. One of Cody's outstanding gifts has long been the ability to apply important theoretical concepts (not always original) to difficult problems in avian biology in a most illuminating way. His success here does not perhaps rank with that which he enjoyed with variation of clutch size with latitude, or the ecological aspects of reproduction, but it is considerable. Robert MacArthur once defined a community as 'any set of organisms currently living near each other about which it is interesting to talk'. Cody has certainly succeeded in making the analysis of communities interesting.

A.L.

New Zealand Birds by W. R. B. Oliver (second ed. 1955), facsimile reprint 1974. Wellington: Reed. Pp 662 with numerous b. & w. pll, 2 diagrams. 245 x 180 mm. \$A23.95.

Birds of New Zealand by G. R. Williams, revised ed. 1975. Wellington: Reed. Pp 110, with col. pll 50, locality map. 170 x 176 mm. \$A4.95.

Birds in New Zealand edited by C. J. R. Robertson, 1974. Wellington: Reed. Pp 136, with col. pll 8, b. & w. pll 6. 176 x 126 mm. \$A3.95.

Oliver's *New Zealand Birds* (1930) became a standard work and its small first edition was soon exhausted. Dr Oliver (1883-1957) worked on the second edition after retirement from his position as Director of the Dominion (now National) Museum of New Zealand. The result, a completely new publication, reviewed in *Emu* (1956, 56: 150-152) by the undersigned, has served so well that none of the many lesser works now available can replace it as a work of reference. Nor had any of the many lesser ornithologists now available shown promise of producing a successor to satisfy present needs. Reeds have therefore taken the step of producing a short-run facsimile edition in their Library Reprint series. The reprint is identical with the original, perpetuating most of its good qualities, with the notable exception of the photographs which have lost clarity, and all of its faults, except the colour plates, which were not up to modern standard and have been excluded. Because reproduction is by a photographic process the inferior quality of screened half-tones is understandable. Reeds have published so many fine bird books that they cannot be very proud of this replica. It is presumably justified by the demand for such a valuable work of reference but it is not cheap if we recall that the original price was £ N26.

Gordon Williams' book also has a history. Reeds followed the first edition (1963) with a revised edition in 1966 (reprinted in 1969) and further revised editions appeared in 1973 and 1975. This speaks for the book's success. It consists of 50 fine colour plates mainly by leading New Zealand bird photographers (Bigwood, Kinsky, Moon, Morrison and Soper), each depicting an indigenous species, with facing pages of text and an introduction by Williams. The species are well chosen, with a few rarities (Takahe and Stitchbird) among the mainly common species, so that the work would be a useful souvenir for the tourist bird-watcher. The text is light-hearted, easy to read and quite informative. The new edition differs from the first in be-

ing a 'Reed Colour Book', not a 'Kiwi Full Colour Book', in having a contents instead of an index and in new photographs of Kiwi, White Egret (White Heron of New Zealanders), Paradise Duck (still suboptimal), Pied Stilt, New Zealand Dotterel (I prefer the previous version), Black-backed Gull, Morepork, Stitchbird, Bellbird and Waxeye. I almost added 'Rock-wren', so different are the colour renderings of Soper's beautiful portrait of the supposedly duller female; but for the most part the colour values have been consistent through the editions. Changes in the text are hard to find but include bringing statistics and references up to date; next time, hopefully, the author will restore the Black Robin's specific status. My chief complaint is with a book with a short spine and wide page, because no one designs bookshelves for volumes of this shape, but the buying public apparently does not share this prejudice and on past performance and merit there is bound to be a 'next time'.

Birds in New Zealand is a new title in the Reed Tourist Library (which includes uniform volumes on history, the Maori, and New Zealand souvenirs). Each of its eight chapters is by a different author: bird habitats (I.A.E. Atkinson), forest and mountain birds (R. B. Sibson), birds and man (P. C. Bull), waterfowl and upland game (T. A. Caithness), waders (H. R. McKenzie), seabirds (F. C. Kinsky and the Editor), extinct birds (D. G. Medway) and rare birds and conservation (Sir Robert Falla). The half-tone blocks are distributed irregularly through the book, generally near references to their subjects. In the spate of recent New Zealand bird books the reader sometimes recognizes the familiar photograph of a bird or nest already published elsewhere or at least another of the same batch; there is an odd one here (e.g. Morrison's Caspian Tern as in Williams' book) but there are also many fresh shots by members of the New Zealand Government Wildlife Service. In addition to bird portraits, action shots show a flock of starlings at an airport, wildlife officers releasing Saddlebacks and a gem by Logan Bell depicts muttonbirders laden with shearwaters and 'protected' wekas. Photographs of mounted birds, however, are surely an anachronism, acceptable only for extinct species. The colour plates, spaced throughout the first half of the text, are on mat paper, a relief from excessive glossiness, and are all fresh but some of them scarcely justify use of colour. The jacket photo (uncaptioned and uncredited) is a striking group of three Royal Albatrosses. The other photo of this species is labelled 'Southern Albatross', presumably a slip for 'Southern Royal Albatross'.

Atkinson sets the scene with an essay on New Zealand environments from ocean to mountain-top, from virgin islets to man-made farmland and plantation. He makes the point that 'the topographic and climatic variety of the New Zealand landscape . . . is by no means paralleled by an equal variety of bird habitats', because settlement, drainage, farm and pine-forest development continue to enroach on the remaining wilderness. Introduced feral mammals have had 'a homogenising influence in reducing birdlife and making habitats more similar to each other'. He recommends diversification of the rural and afforested landscape to enhance its aesthetic quality and increase its recreational potential.

Sibson tells the story of a land long-forested, with abundant and distinctive birds ranging from giant moa to tiny Rifleman, modified by Polynesian and then by European colonists until 'it is virtually impossible to find an area of mainland native forest that has not in some way been altered by European man and his attendant animals'. He then takes the reader on a journey from the estuarine mangroves of Northland through the sorry remnants of North Island forests to the South Island, mentioning the birds that a tourist may hope to observe and some he will not, such as the unconfirmed records of the North Island Thrush and Bush Wren cited for East Cape Peninsula.

The third contribution, by P. C. Bull, is 'Birds and Man', covering both Maori and European use and abuse of birds for food and recreation, their control, conservation and management and their successes and failures in the face of the changed ecological conditions and introduced predators for which man is responsible. W. H. Hudson began his famous essay of the

same title (1915) with a sympathetic concern for the bird, rare at that time: 'To most of our wild birds man must appear as a being eccentric and contradictory in his actions. By turns he is hostile, indifferent, friendly towards them, so that they never quite know what to expect'. Sixty years later Bull echoes the same concern in a New Zealand ecologist's terms: 'Contemporary man's ever-growing demands on natural resources are leaving fewer and fewer undisturbed habitats for native birds and, currently, he is developing increasingly efficient methods for destroying species that compete with him for food or other resources. These developments are disturbing not only to those who feel concern for the birds, but also to those who realise that birds are an essential part of a healthy and diverse environment for man'.

'Waterfowl and Upland Game birds' by T. A. Caithness returns to the tourist-guide approach adopted by Sibson. After a general summary of the wetland fauna, he briefly indicates localities where the visitor may hope to observe each species on a list that includes shags, bittern, herons, spoonbill, grebe, stilt and rails as well as duck, geese and swans, quail, pheasant and partridges.

H. R. McKenzie's short section on the wading birds surveys the characters, distribution and status of the native shorebirds but merely lists the forty-one species of northern-hemisphere breeders that have been identified with varying confidence as migrants to New Zealand during the southern summer. The latter are grouped according to their annual numbers on a seven-point scale that ranges from 'many thousands' for Bartailed Godwit and Knot to 'rare stragglers' (twenty-three species) with a final category of two species 'not yet fully recognised'. Population numbers of the breeding species are a novel aspect of this article. The estimates McKenzie gives, whenever he can, are not only of immediate interest to conservationists but a base-line from which the inevitable future changes can be judged.

Kinsky and Robertson deal comprehensively with seabirds under several headings. More than two centuries have passed since Samuel Johnson criticised scientists' writing and wished 'that the editors of these papers would have some regard to the purity of our language' but good material is still marred by sloppy construction of sentences and punctuation, emphasizing that a most important qualification for a publishing ornithologist is ability to write good prose. Thus the reader learns of 'floppy yellow crests nesting in large open colonies', and that the largest race of Wandering Albatross 'occurs only in the New Zealand region at Macquarie Island' (correctly 'at Macquarie Island only'). Reed ought to use authors' royalties to

employ a good editor and earn the gratitude of writers and readers alike: all scientists need such a service.

Confirming Lockley's inference (*Encyclopaedia Britannica*, 1974), recent research shows that the great albatrosses first breed successfully at nine years old and may live half a century. In surveying the penguins and petrels geographically, the authors restate a number of useful distributional generalizations, for instance, the trend from underground to surface breeding in penguins with increasing latitude. Black-winged Petrels and South Georgian Diving-petrels seem to have been overlooked in an otherwise complete coverage.

Treatment of the shags by comparison seems skimpy and confusing: the yellow-footed Spotted Shag is included in one of two groups of marine pink-footed shags and its three subspecies attributed to 'the New Zealand mainland and continental shelf', although the Chatham Islands lie on a shelf separate from that of New Zealand. The section on gulls, terns and skuas suffers from unrelated participles and illogical syntax, i.e. bad grammar. Thus the Black-backed Gull 'though now generally a colonial breeder . . . scattered groups or single nests can be found . . .'; 'Successful association with man has changed the species from purely a marine one to becoming a wide-ranging scavenger inland'.

Medway's short account of extinct birds blames man for most but not quite all the Holocene reductions and extinctions. His use of 'post-European' for the period of European settlement cannot pass without challenge, if one compares its logical meaning with 'post-Minoan' or 'post-Hellenic'.

Sir Robert Falla's final chapter gives New Zealand's veteran ornithologist the chance to express his views on rare birds of various categories and on the 'rare bird syndrome' in fellow conservationists. He also records his reservations about the South Cape Island Saddleback salvage operation of 1964, conceding that 'if it is granted that the South Cape Saddlebacks really were threatened, the species certainly has been saved'. Sir Robert gives the Forest Service a pat on the back for increasing from 162 to 809 hectares a State Forest area to be reserved to preserve a population of Kokako, but repeats his well known objection to widespread poisoning of mammalian predators or competitors as a management policy: 'Pipits or Keas . . . could be the rare birds of tomorrow', but 'the prospect . . . for all wildlife calls for concern rather than despair'. And that is a thoughtful note on which to end the notice of a little volume that deserves to survive to a revised edition, to perform a valuable service in introducing New Zealand birds to the newcomer.

C.A.F.

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