

REVIEWS

Edited by G. W. JOHNSTONE

SPECIAL REVIEW

The Palaearctic-African Bird Migration Systems by R. E. Moreau, 1972. London: Academic Press. Pp xvi + 384, b. & w. pll 31, numerous maps, tables and figures. 165 × 255 mm. \$A24.00.

Moreau did not see this, his last book, in print, but would have been delighted with the reviews published in *Ibis* (1974, 116: 96-97) and *Auk* (1973, 90: 699-701). His literary editor, Dr Monk, who deserves praise for having finalized this book without altering Moreau's inimitable style, explains in the foreword that additional chapters had been planned by the author. Nevertheless students of bird migration should be grateful that the part completed has been published, because it provides stimulation and encouragement for those who would pursue further studies on the intriguing problem of long-distance migration.

Enormous numbers of migrants make the yearly round trip from the Palaearctic to Africa south of the Sahara and back. The complexity of this movement has been studied deeply only during the last decade or so. Moreau for many years took a great interest in this phenomenon and was in the forefront of those perceptive individuals who first ventured the hypothesis that long-range non-stop migration across the Mediterranean and the Sahara was on a broad front. Many of his early predictions have been substantiated or upheld. Two aspects in particular intrigued him: how could Africa hold so many birds each northern winter in addition to the local populations and how were the migrants adapted to make such long journeys?

In an attempt to answer these and many other questions, the book is divided into four parts. Parts I and II review the ecological factors that apply in the breeding areas ('The source of the migrants') and in their winter quarters ('Africa as a reception area').

In Tables I-V the palaearctic warblers, other passerines, raptors, waterbirds and other non-passerines that winter in Africa are listed. Their breeding distributions are divided into three columns, those west of 45°E, those between 45°-90°E and those east of 90°E. Several species are listed across the entire range and fifteen that winter almost exclusively in Africa have populations from the Palaearctic east of 90°E (Table VI). I use the word 'almost' with caution; one of the species is the Barn Swallow *Hirundo rustica*, populations of which also winter in southern Asia even reaching northern Australia, but Figure 9 shows a swallow ringed in South Africa and recovered in Asia east of 90°E; another species is the Corncrake *Crex crex*, which has been recorded as a rare vagrant in Australia. Moreau explains that some of these species from eastern Asia make 140° of westing to reach Africa and cover an estimated 9,000 kilometres. Some individuals may cross the Indian Ocean on the north-east monsoon. He cites personal evidence to support this view; besides, the Greenland race of the Wheatear *Oenanthe o. leucorrhoa*, which winters in West Africa, is known to cross the Atlantic Ocean.

Changes in vegetation since the last glaciation, the topography of the two areas, weather during migration,

factors like the altitude and speed at which migrants fly, their possible endurance, problems provided by natural barriers, adverse winds and the hostile environment in transit over oceans and deserts and at their destination are discussed in the first two Parts to provide evidence of the immensity of the migrants' capabilities. The variety of habitats encountered by the migrants is illustrated in Plates 1-31.

As explained in the foreword, one of the chapters contemplated by the author was on the physiology of migration and one may suppose that it would have been an up-to-date version of what he wrote in his 'Problems of Mediterranean-Saharan migration' (*Ibis* 1961, 103a: 373-427, 580-623), but he hints (p. 44): 'Perhaps we must conclude that current ideas, admittedly sketchy, about the energetics of the fat consumed in flight are wrong.'

On a speculative note, Moreau next deliberately 'tosses a few figures in the air' (his own wording to emphasize that they must not be taken too seriously) and suggests that in the autumn five thousand million birds excluding waterbirds may head south within the area covered by his book. This is extrapolated from censuses carried out in Finland, Cyprus, Russia and sub-Saharan Africa, and though only an estimate it should be taken seriously until someone comes up with an alternative. On arrival in Africa, this vast influx, mainly of insectivorous species, is concentrated into a smaller area and superimposed on the indigenous avian population where it might be expected to throw a strain on the available food resources, though these may be supplemented by flying termites and lake flies (chironomids) at the time when premigratory fattening takes place for the northward journey. Strangely this competition between migrant and local species occurs without any apparent serious consequences; nevertheless Moreau admits that this poses a major biological problem yet to be fully elucidated (Moreau's Paradox, as in fact it has been named).

Part III provides the essence of the book, outlining available information on habitat, densities of populations, dates of arrival and departure and variations in weights of 187 species. This Part is supplemented by the delightfully simple, but detailed, distribution maps at the end of the book.

Part IV is on general topics and contains a number of miscellaneous headings like the needs of the migrants for maintenance in Africa and the effects of daylight and temperature; Moreau concludes that the physiological demands of a migrant in its winter quarters may be only something like 60 per cent of what it needs in the Palaearctic. The recurrence of individuals in their African localities is shown in Tables XIX-XXI. There are nineteen pages of references, but strangely there would appear to have been little liaison with MAPS and their work in eastern Asia (see next review).

K. D. Smith has added a valuable appendix of species excluded by Moreau on the grounds that they are marine, coastal or vagrants. This appendix completes the record.

There are a few inconsistencies in the estimated numbers of individual species (p. 46, and in Part III; for instance, *Sylvia atricapilla* and *borin*, 200 or 340 million?). An obvious error is the placing of Nairobi in Tanzania on the end-maps, but I am sure these may be excused and are compensated for by the general quality and excellence of this book.

Migration and Survival of the Birds of Asia by H. Elliott McClure, 1974. Bangkok, Thailand: Sahamitr Karn Pim. Pp vi + 475, numerous maps, tables and figures. 208 × 275 mm. (Obtainable free of charge from the author, SEATO Medical Research Laboratory, APO San Francisco, Calif. 96346, USA.)

This book presents a detailed account of the work carried out by the Migratory Animal Pathological Survey (MAPS) on bird migration in Asia as part of a study of medical relations. In the foreword the author, who was MAPS ornithologist from its inauguration in 1963, remarks that the publication of Moreau's book (see previous review) was awaited with considerable anxiety, but it presents data complementary to that presented by MAPS and *vice versa*.

In Part I the author first reviews various migration routes suggested in the past and summarizes them (Fig. 10). Next he discusses medical relations, the structure and work of MAPS, geographical and linguistic problems, China as the 'Great Void' and the problems of recoveries and defines the varying forms of migration. A synopsis of the palaeo-history of migration follows; in it the author explains: 'But the flight paths of today . . . show affinities not with man's misadventures but more closely with the gradual approach of India and the proximity of Africa. So tight have these bounds been fused that even the approach and presence of Australia since the Pliocene has not stimulated many species to go on from Asia to new lands for the winter, to do so would require a radical bend to the southeast and all of the trends have been southwest'. The major flyways of the northern hemisphere are illustrated in Figures 20-27. The first four are taken from Lincoln (1939, *The Migration of American Birds*) but the remainder are presumably drawn by the author.

The greatest number of species (171) was banded at Dalton Pass, Luzon, N. Philippines, where traditional netters have for generations attracted birds by light at night, reaping a rich harvest; consequently the position of the Philippines relative to migration routes, the source of birds there (Table 9) and movements over mountains in the tropics, e.g. Dalton Pass, are discussed. Of 176 recoveries reported, only six were from outside the island. Because similar trapping at night was done at Fraser's Hill in Malaya, a description of the position of Malaya relative to migration routes concludes this part.

In Part II the author discusses the movements and survival of species. There are many maps and, although several illustrate the movement of only a single bird, they nevertheless present information with clarity and are enhanced by insets of small drawings of some birds. Some records (particularly of pelagic species) are taken from reports and reviews published elsewhere, e.g. by CSIRO. Of 1,218 species banded by MAPS, recoveries were reported for 255 species. It is interesting to note that in eastern Asia the rate of recovery or harvest among birds (from hunting?) is so high that recoveries can be expected when more than 200 individuals have been banded. Most recoveries indicate short-distance migrations; excluding pelagic species, long-distance recoveries (1,000 km or farther) have apparently been reported in only Ardeidae, Anatidae (much Japanese and

Indian work quoted here), Charadriidae, Hirundinidae and Motacillidae. This Part is summarized in two Tables: the survival of recovered birds by species (Table 12) and among birds that were recaptured and released (Table 13). The record for longevity is shared by the Large Olive Bulbul *Pycnonotus plumosus* and the Brown-throated Sunbird *Anthreptes malacensis*, two of each surviving for 141 months. There are four pages of references cited. Part II is the essence of this book.

A list of bands recovered by species is given in Part III and can be regarded as an appendix. It is very comprehensive, indeed formidable.

There are some discrepancies in the numbers quoted, e.g. the total number of species banded at Dalton Pass is given as 171 (Table 2) but 164 on page 54. Tables 12 and 13 are out of sequence, appearing on pages 308-320; this is referred to on page 57 but is nevertheless confusing. The typographical errors, some of which are corrected in Errata at the end, are too numerous to mention. However, as explained in a postscript at the bottom of page 468, the typists and type-setters had little understanding of English and I would agree with the author that in the circumstances they did remarkably well. The quality of printing is good but in the copy reviewed Table 10 was difficult to decipher because inking on the reverse was heavy. The binding of the book is weak. These points are minor and I would recommend this detailed presentation of data to any ornithologist who seeks further knowledge of what goes on north of Australia.

Taken together these two books present the most up-to-date comprehensive review of palaearctic migration. Probably the major difference between the two works is that Moreau has based his book more or less entirely on long-range migration and has incorporated information on matters like fluctuations in weight and reserves of fat, which are the hallmark of the long-distance migrant. Most species mentioned in his book have breeding and wintering areas separated by at least fifteen degrees of latitude. He also had more sources of information, in addition to his own vast experience of African ornithology (his own personal references cited span forty-five years); consequently he has presented the general trends with most species and summarized the total information available.

McClure on the other hand has presented in great detail all the available knowledge on the movements of most species within his sphere, though one must be cautious in interpreting general movements and drawing conclusions on the basis of only one or a few recoveries. Many of the movements recorded in his book are short. There is nothing on weights but this is understandable considering the trapping methods involved (quite a number of the birds banded seem to have been bought from professional trappers); the absence of physiological data should not be misconstrued as a criticism of his book because the motivation behind his study, explained on pages 9 and 10, was to define bird movements as part of a larger study of their potential as vertebrate hosts of human arbovirus infections and vectors of other human infection.

The authors have minor differences of opinion on theoretical aspects of the evolution of migratory patterns. Although Moreau concedes that migration as a phenomenon has existed as long as birds have flown, he argues that the incredibly varied patterns must have evolved during the last 10,000 years or so. McClure has taken a more extensive look at the geological past and conjectures that some of the migratory impulses were established as

far back as the Miocene at a time when the land mass of India was joining the Asian continent. The idea of India 'thundering in' (bottom p. 33) adds a touch of humour to an otherwise prosaic subject. Another point of contention arises from Figures 26 and 27 in McClure's book, which show the eastern and western European flyways as going either side of the Sahara. Though irrelevant to the main text of his book, they are in conflict with Moreau's hypothesis (now generally accepted) that trans-Saharan migration by some species at least is carried out on a broad front, most individuals making the journey non-stop.

McClure explains the absence of migration of many species of landbirds to Australia by the late arrival of the land mass of Australia on the scene. Although the evidence of migration of waders to Australia is well documented, there is undoubtedly little evidence of the

smaller palaeartic landbirds in northern Australia; however, the Barn Swallow and three wagtails, *Motacilla flava*, *citreola* and *cinerea*, have been seen in small numbers. Perhaps the paucity of records in the north of Australia is because there is little hunting (unlike further north) or because there is not much mist-netting, which in Africa demonstrated the presence of some of the more secretive species in numbers far greater than was apparent from sight records.

Whether more extensive movements of palaeartic migrants into northern Australia will eventually be proved, there should be concern in Australia because exotic diseases may be introduced by birds not only as vertebrate hosts but mechanically. The changing environment in the north, for instance the Ord River Dam in the Kimberleys, requires constant monitoring.

V.W.S.

BOOKS

The Status of Birds in Britain and Ireland by the Records Committee of the British Ornithologists' Union, 1971. Oxford: Blackwell Scientific Publications. Pp xviii + 333. 223 × 164 mm. £3.00.

Breeding Birds of Britain and Ireland by John Parslow, 1973. Berkhamsted: T. & A. D. Poyser. Pp 272, figs 12, tables 10, maps 225. 252 × 160 mm. £3.60.

Why review books entirely about British birds in an Australian journal? Most readers will probably not be interested in the details of either book and may grumble that it is done merely to pander to the sentiments of a few expatriate Britons. But there are at least two good reasons for doing so. The first book, referred to hereafter as *The Status*, represents a modern approach to the making of a checklist from which, now that we are struggling to revise our own checklist, we may be able to benefit. Both books implicitly demonstrate how knowledge has been improved by a well-trained network of observers, mostly amateur, and a well-coordinated system of appropriate publications.

The two books are intertwined and complement one another, which is why they are being noticed together. Much of the substance of Parslow's book first appeared in eight instalments in *British Birds* during 1967 and 1968, and Parslow was responsible for a great deal of the work that went into *The Status*. Thus the two books have considerable similarity and uniformity. *The Status* is really the latest checklist of British birds and Parslow's book might have been called 'The Checklist of Breeding Birds', though it goes beyond that, as we shall see.

Opinions about the purpose of a checklist vary from the idea that three quarters of its value is in a full generic and specific synonymy to the belief that it ought to concentrate on the distribution and status of the birds. Conventional lists usually make a compromise and often fall between the two stools; they tend to lean towards taxonomy by giving some synonymy or at least a reference to the original description of types and generic names and emphasizing subspecies by style of presentation, while cutting down on status and distribution. However, needs change as ornithology grows and, though taxonomy remains the handmaiden of the whole discipline, its importance has decreased in relation to other branches as is clearly shown by the contents of international journals during the last fifty years or so (see Moreau, *Ibis* 101: 19–38). Thus, there is a tendency in countries well worked ornithologically to think that checklists ought to be slanted towards field and biological aspects. Moreover, a checklist is after all merely a photograph

of knowledge of the birds of a region at a particular period. The resulting picture of distribution and status can be sharp. But parts of the taxonomic picture may be out of focus or touched up into arbitrary sharpness because of the difficulties of definitions and agreement and because some taxonomic decisions are still matters of opinion. In short, as Mr Mountfort says in his foreword to *The Status*, a checklist 'cannot hope to achieve universal approval'.

It so happened that no specialist in taxonomy was in the team that compiled *The Status*. The Records Committee, therefore, wisely in my opinion, dodged the taxonomic problem simply by following the sequence of Peters's Checklist (a decision incidentally that caused something of a schism among British ornithologists) and by adopting the nomenclature used by Vaurie in *Birds of the Palearctic Fauna*. Orthodox trinomial nomenclature is used but in a minor key instead of being emphasized as the basic division of the style of presentation, and information on status and distribution is greatly expanded compared with former lists. Species are categorized in four groups (those recorded in the wild in the last fifty years, those recorded in the wild but not for fifty years, those introduced and established with a feral breeding stock and those recorded in the last fifty years but doubtfully for various reasons) and further categorized into six groups according to status as resident, migrant, introduced, casual or former breeders and winter, scarce or passage migrants—a neatness that would be hard to achieve for Australian birds because of nomadism, partial migration or pure ignorance. The title was chosen deliberately to show clearly that the emphasis of the list has shifted away from taxonomy toward field ornithology. Being of *hoi* ornithological *polloi* and having been a stranger in some strange lands, I cheer the result because it seems to me that anyone visiting Britain for the first time can now find out quickly and accurately what birds he is likely to see where, when and how commonly. It is not yet at all easy to do this when one comes to Australia for the first time.

If it is not a hyperbole to claim that *The Status* is the *summum bonum* of practical checklists for the time being, it does not mean that in Australia we can follow suit or learn much from it—now. All circumstances surrounding our attempt to revise the Checklist are different—a continent to cover, less knowledge of all ornithological matters than in Britain, much more taxonomic leeway to make up, even Mathews. The crux of the matter seems to me to be that the 1926 RAOU Checklist paid no attention to subspeciation and was

out of touch with the taxonomic thought of its time. Our failure to issue a revision in the last fifty years has made matters worse. Obviously I cannot comment on the decision that was taken to include full generic and specific synonymy in our revision, at least of Part I (non-passerines), but it is fair to say that a complete up-to-date arrangement of the mess that was the 1926 list is needed and that full synonymy can benefit specialists in taxonomy, who will perhaps be grateful that the appalling task has been done once for all. However, here is the point. It is thought, quite rightly, that as soon as the new list appears we must prepare for its revision and I fear that the implication is that such a revision will be on the same lines as the list that is about to appear. If that is decided, my heart bleeds for the unfortunates who in ignorance are now waiting for the doom of being chosen in one capacity or another to compile another such document. I hope that the decision will be instead to revise on the lines of *The Status*.

The other interesting and important contribution made by both books is that they demonstrate implicitly the high degree of organization reached by ornithology in Britain. A glance at the introduction of either book shows that many people contributed and that without their efforts both books would have been fuzzy round the edges and could never have achieved their sharpness, detail and reliability. And these helpers are merely part of an army of ordinary folk who over the years have been organized through a hierarchy of clubs and societies to record systematically in standard ways. A particular aspect of this is most apparent in *The Status*, which gains much of its authority and reliability from the recommendations of the Records Committee, whose members compiled it. By its critical appraisal of field and other records this Committee broadened the validity of, and cut down doubt about, these records and simplified the whole matter of acceptance for the list. One hopes that our own recently established Records Committee will have similar success.

In addition, Parslow's book more than *The Status* shows that this organized control of field observations has gone along *pari passu* with a fairly deliberate development of outlets for publication of distributional records and the like at appropriate levels. *British Birds*, under the editorship of eminent and capable men ever since Witherby started it, has always specialized in matters of careful and accurate identification, field recording, distribution and status, and its influence has penetrated down to local publications such as annual reports of counties or groups of counties. Parslow acknowledges that his book is primarily a review of all this literature and, by compiling it, has demonstrated the benefit to be had from such an orderly house. If *The Status* is a photograph, his book is more a film of the times, because it discusses the changing status of breeding birds during the last thirty years and follows similar surveys made in 1926 and 1944, which naturally were more speculative because the details of the past were not there. His text is summarized in a series of admirable maps with various neat conventions that are becoming widely used in Europe for conveying information on status quickly. It hardly matters that these maps could probably now be refined as a result of information gathered by the British Atlas project and that some will surely be modified, even superseded, fairly soon.

The feast of facts provided by these books will probably interest few Australians, but I think that anyone who is interested in the progress and organization of amateur ornithology in this country ought to get hold

of them and ponder carefully the aspects that I have tried to outline. Admittedly our problems are different from those of a right little, tight little island, but have we tried or are we trying to tackle them methodically? Could anything approaching the detail and accuracy of these books be produced even for a small part of Australia, say, for Victoria? What is the likelihood that it could be done within the next ten years? I believe that basically we lack an organized and deliberate system of education in the ornithological field, such as is provided in Britain by a variety of field centres where people can learn the simple methods of exact field observation by on-the-job training and then go home to carry out what they learn on their own patch. We also lack a deliberately co-ordinated array of publications designed to share the cake of ornithological observations and field work sensibly.

One would choose neither of these books to pass the time on a rainy day; but they are invaluable references. *The Status*, however good it may be as a model for checklists at this time, will be superseded and take its place in the sequence of British lists. Parslow's book is probably already being overtaken by the Atlas project, but its value will increase with time and doubtless future British ornithologists and conservationists will treasure it, as we ourselves treasure Herodotus's account of ancient Egypt, because it provides a yardstick of the present against which future changes can be measured. If only we had something half as good for even part of Australia! After reading, or rather checking through, these books I put them down with feelings of envy and regret: envy that the British are now so well provided with exact and detailed knowledge of the status and distribution of their birds; regret that we are years behind simply because latent amateur talent was not harnessed long ago and still is not harnessed.

S.M.

List of Queensland Birds by G. M. Storr, 1973. Spec. Pubs West. Aust. Mus. (5). Perth: West. Aust. Mus. Pp iv + 178. 241 × 183 mm. \$8.00.

Though handbooks and lists of birds of other States have been published, Queensland until recently had none, probably because it is vast and has some 550 species or eighty per cent of the total Australian avifauna; this demands much greater effort for compiling its list than for any other State whose birds are much better known than Queensland's and fewer by ten per cent (NSW, WA) or even twenty per cent (Vic., SA).

Storr's book is the first annotated list of Queensland birds and provides an excellent basis for discussion and more research. Both professionals and non-professionals will quickly discover its usefulness and weaknesses in locating the gaps in our knowledge of distribution and taxonomic and ecological status of Queensland birds. Because not all species are known to the same degree in any region, a uniform treatment is impossible for anyone who, acquainted with most birds in a region, might otherwise feel confident in tackling a handbook. Such a task usually becomes formidable if one tries to give the same information for every species; many taxonomic problems, less obvious at first, become clearly intractable and distributional data that one had expected cannot be found. Storr has courageously attempted to overcome some of these problems by abandoning the orthodox approach and freely adopting unpublished accounts and opinions. He began his search for information on Queensland birds as soon as his earlier work, *List of Northern Territory Birds* (1967, Spec. Pubs West. Aust. Mus. (4)), had been published. During the following five years many

friends who had first-hand knowledge of Queensland birds helped him with unpublished information; he also had unpublished observations of W. B. Alexander.

The treatment of each species follows the pattern of the NT list: the trinomial entry (for polytypic species) with a vernacular name, followed by range, status (abundance, habitat, migration and breeding), taxonomy (for selected species only, with one or two references or author's opinions) and 'field guide' (for some subspecies only). The length of the annotation ranges from two lines (for many seabirds) to over half a page (for Crested Pigeon, Cockatiel, Apostlebird). For economy, the bibliography and taxonomic references given in the NT list have been omitted, but the gazetteer of nineteen pages giving the coordinates of all place-names mentioned in the text is very useful.

The uneven treatment of species, not entirely a reflection of uneven amounts of information available for different species, reduces the value of the annotation considerably. Excessive splitting of families and species could have been stimulating if proper discussions were appended or at least less annoying if a particular checklist had been followed in doing so. Referring to Storr's twelve families consisting of 150 species of muscivapids (including Australian sylvids), J. D. Macdonald (1973, *Sunbird* 4: 43) puts it kindly: 'It can be accepted that he (Storr) is a very able taxonomist and that his opinions, based on long experience, deserve close attention'. Grouping of the so-called Australian robins in Turdidae was presumably based on rather feeble arguments put forward by Storr (1958, *Emu* 58: 277), but the reference was not even listed in this or the NT list. What is misleading in this particular example is that, though Storr recognizes Rhipiduridae, Monarchidae and Machaerirhynchidae among Australian flycatchers, and Acanthizidae, Maluridae and Sylviidae among Australian warblers, he treats the robins with Turdidae. He considers Turdidae to embrace the thrushes and typical flycatchers, presumably other than those that have differentiated into distinct lesser taxa, each of which, however, has been given the status of a family. Thus, one is expected to find *Microeca*, *Petroica*, *Eopsaltria*, *Poecilodryas* and *Heteromyias* in Turdidae, which may be misinterpreted to indicate the same ranking of Australian and Palearctic robins. One also finds Grallinidae with *Grallina* among these split families and Corcoracidae with *Corcorax* and *Struthidea* in front of Artamidae. The author's excuse for giving such treatments is that 'family names are inserted merely to help the reader find his way through the text'!

The treatment of species and subspecies is even more puzzling. That of *Pachycephala caledonica pectoralis* has already been pointed out by Macdonald (loc. cit.). Many breeding populations, including migratory races, whose distribution is considered disjunct in east and north-west (e.g. *Myiagra rubecula*, *M. inquieta*), Cape York Peninsula and humid tropical lowlands (e.g. *Malurus amabilis*, *Meliphaga gracilis*), and the north-east and south-east (e.g. *Zosterops lateralis*, *Ptilonorhynchus violaceus*) are divided into subspecies. However, if the sort of minor morphological differences described under the 'field-guide' for three subspecies of *Rhipidura rufifrons* and three subspecies of *Rhipidura fuliginosa* were applied generally, many more species should have been split into subspecies, notably *Anas superciliosa*, *A. gibberifrons* and *Grus antigone*, whose polytypy is well established. Among the confusing group of *Coracina*, two subspecies are recognized under *papuensis*: *C. p. hypoleuca* (White-breasted Cuckoo-shrike) and *C. p. robusta* (Little (Papuan) Cuckoo-shrike). *Eopsaltria australis*, on the other hand, was given the subspecific name of the southern

race, *E. a. australis*, presumably synonymizing the Northern and Southern Yellow Robins at subspecific level, and simply named Yellow Robin. Inconsistency at the other extreme is found in *Zoothera (Oreocincla) cuneata*, which is given specific status on the basis of non-clinal differences in size, but *Zosterops lateralis chlorocephala* is retained as a subspecies on the same ground. If subspecies are to be discussed for Queensland birds, earlier studies by Ramsay, Mathews and Mack require close examination. However, I found only two passing references to Mathews and none to the others.

The vernacular names generally follow the RAOU Checklist; thus *Dendrocygna* spp are still called tree-ducks. However, for some reason the southern and northern species of *Orthonyx* are called Log-runner and Chowchilla respectively. Where a subspecies was ranked as a species in the Checklist, the available vernacular name is used, but no vernacular names are given to other subspecies or newly erected species (e.g. *Zoothera cuneata*). Apart from the above examples (including the cuckoo-shrikes), which might cause some confusion, the stability of the vernacular names is in contrast to the trinomial system adopted in the book. For practical purposes, one could do well by using just the vernacular names given and ignoring all subspecies unnamed in English.

No grounds are given for changes of generic names. On page 143, Tooth-billed Bowerbird is called *Ailuroides* (genus for catbirds), Golden Bowerbird *Amblyornis* (a New Guinean genus) and Regent Bowerbird *Ptilonorhynchus* (genus for Satin Bowerbird), which now no longer agrees in gender with the unaltered specific name (*chrysocephala*).

The species *confirmandae* are indicated by square brackets, but here again one finds inconsistencies, e.g. the inclusion of Vieillot's Storm-petrel and the exclusion of Pacific Gull, White Tern, Chestnut Quail-thrush and others, which have been listed with references in Lavery's *List of Birds of Queensland* (1969). It is curious that although Lavery's list has become available in the course of Storr's search of the literature there appears to be no reference to it or follow-up of doubtful records from it. In the apparently doubtful case of Partridge Pigeon, the author ignores his own published account (1953, *Emu* 53: 230) in the annotation.

Of disappointment to many, the 'field-guide' is mostly quite inadequate in the field and the stated range is often inaccurate. Although the gazetteer is helpful, most users would have found a distribution map more useful than a string of names of localities. Within the range of a species, abundance and breeding season often vary, particularly along the two major gradients in Queensland, of moisture and temperature. In addition, opportunistic breeders in the arid zone complicate matters. Detailed information, such as given for Channel-billed Cuckoo, is obviously not available for all species and the breeding season given is sometimes misleading (e.g. Sooty Tern, White-cheeked Honeyeater).

Despite its shortcomings, Storr's list is a valuable contribution to Queensland ornithology and will serve as a useful source. Recent issues of *The Sunbird* have begun to carry articles filling in gaps and bringing information up to date. This is a healthy sign of development, which has undoubtedly been spurred by this book. Clear printing on good-quality paper and excellent binding in boards add to its lasting value. I noticed no misprints. Dr Storr is to be congratulated on his achievement and the Trustees of the Western Australian Museum on their support for a bird list of another State.

J.K.

Seabirds by David Saunders, 1971 (reprinted 1973). Melbourne: Sun Books. Pp 160, col. ill. (by Ken Lilly) 114, figs 5, maps 28. 110 × 180 mm. \$A1.25.

This small paperback succeeds well in its aim 'to produce a broad account of the world's seabirds', filling a rather surprising gap in the shelves of semi-popular books on birds. It is remarkably comprehensive; not content to cover only most species of Sphenisciformes, Procellariiformes, Pelecaniformes and in the Charadriiformes, skuas, gulls, terns, skimmer and auks, all in nice taxonomic order, the author adds phalaropes, some marine ducks, divers and the two sheathbills. Perhaps it is this completeness that commends the book more than anything else.

Saunders reckons that 285 species may be considered as seabirds and the index includes references to 195 of these. Many of those omitted are not well known, but Australasians might justifiably have wished for passing references to Pacific, Dominican and Silver or Red-billed Gulls. Latin names are given, in the index and where a species is first mentioned in the text. Inevitably, treatment is uneven, ranging from two pages for the Great Auk to a mere labeled illustration for the Persian Shearwater.

Perhaps also inevitably, there are inaccuracies and inconsistencies, particularly between the text and the many maps of breeding localities and patterns of dispersal. The non-breeding range of the Waved Albatross is shown as restricted to the seas south and east of the Galapagos Islands; yet in the text we learn that it also ranges west to Japanese waters. According to another map, Abbott's Booby breeds at an unnamed location north of Madagascar as well as at Christmas Island in the Indian Ocean. Pomarine Skuas from the entire Arctic region apparently winter only off western Africa; what about those elsewhere round Australia? *Pygoscelis antarctica* is Chinstrap Penguin in the text but becomes Ringed Penguin under its illustration.

Most of the illustrations are simple and attractive, although some colouring is a little odd. The lovely pink, black, blue and yellowish bill of the Antarctic Fulmar is rendered a disappointing horn colour; Buller's and White-capped Albatrosses are shown with identical bills. We are treated to two illustrations of Sabine's Gull, facing left (p. 106) and the same painting reversed (p. 121). The only giant-petrel mentioned is *Macronectes giganteus*, but the bird illustrated closely resembles *M. halli*. Incidentally, that hoary old story about the colour phases of *M. giganteus* gets another airing, unchanged in seventy years since Edward Wilson's day: 'the white (phase occurs) in high latitudes, the dark in more temperate regions'. How one wishes that Shaughnessy's convincing debunking of this myth (1971, Aust. J. Zool. 19: 77-83) could be made compulsory reading for all who choose to write about these birds. Another chestnut surfaces on page 31: 'the Wandering Albatross has a wingspan of 370 cm (12 ft)'; a *maximum* of 330 cm is generally accepted.

Most of the text reads quite well, although occasional obscurities occur. It is difficult, from the account of the breeding cycle of the King Penguin, to arrive at the conclusion that many individuals breed only twice every three years. The migrations of many species are mentioned in varying detail but, surprisingly, not the circumpolar wanderings of many albatrosses.

Many intriguing facts in the text are left unexplained where, in the absence of definite answers, a little speculation would have been welcome. Why do Caspian, Roseate and Little Terns occur in all temperate continents except South America? Why are most storm-

petrels and shearwaters nocturnal on land? Why do skimmers have an eye, unique among birds, with a vertical slit for a pupil, like that of a cat? But it is just another merit of this informative and stimulating guide to seabirds that, after reading it, one itches to know more.

G.W.J.

Birds of Prey by John Rignall, 1971. London: Purnell. Pp 93, col. pl. 62, figs 3, b. & w. pl. 47, maps 1. 310 × 220 mm. \$A3.95.

This copiously illustrated book would appear to be designed for the primary school library market; my nine-year-old son assures me that it is a good book for people of his age and upwards. The accounts of flight, the effects of pesticides, migration, falconry and the significance of predation are clear and comprehensible. These are followed by a general overview of sundry species of falcons, hawks and eagles, vultures and (relatively briefly) owls. Some indication is given of the relation of a species with its environment; perhaps there is rather too much about relations of species with one another. Some lines have been misplaced in printing (pp 30 and 35) and one page of the review copy had been damaged during the production process.

However, a student who merely looks at the pictures will be made aware of the beauty and variety of birds of prey and of their inhabitants; and if he reads the text he will learn something of their interdependence.

R.A.B.

The Falkland Islands by Ian J. Strange, 1972. Newton Abbott: David and Charles Ltd; Harrisburg: Stackpole Books. Pp 256, b. & w. pl. 29, maps 3. 220 × 145 mm. £3.50.

Any book on the Falkland Islands must be judged against its predecessors and, if the author lives there, will be judged by the residents and can hardly be controversial. Two books, Boyson's *Falkland Islands* (1924) and Cawkell, Maling and Cawkell's *The Falkland Islands* (1960), have already documented the area thoroughly; Cobb's *Birds of the Falkland Islands* (1933) and Pettin-gill's *Penguin Summer* (1962) have covered the ornithology. Thus the author had set himself a rather formidable task, particularly because he is still a resident.

Much of the content repeats or revises earlier material with a few additions from more recent papers, the author being careful not to draw any conclusions. The main value of the work to those interested in the area lies in the author's summary throughout the text of recent changes; unfortunately, he has allowed small inaccuracies to creep in, which could have been easily checked (p. 152, 'the Stanley station was fitted in 1961 . . . to record information transmitted from the Canadian satellite "Alouette 1", the first of several satellites which the station has covered.' Actually, the station was installed to record the earlier UK-1 and Ariel and did not work Alouette until its launch late in 1962).

Because Strange has been deeply involved in promoting conservation and forming reserves in the Islands and had studied the fauna considerably, I am surprised and disappointed by the lack of first-hand material—the more so because he uses much information from R. W. Woods's paper (1970, Ibis 112: 15-24) without citation. The scant ten pages devoted to 'Avian Fauna' are really surprisingly unenlightening. Latin names are given for plants and mammals but the birds miss out.

I think that this work is primarily aimed at tourists visiting the islands and adds little to the existing literature.

M.C.

Young Animals: invertebrates, fish and amphibia, reptiles, birds, mammals and man by Bernard Stonehouse, 1973. Peter Lowe. Pp 172, col. pll 185, figs 13. 215 x 275 mm. \$A7.50.

Few authors have written in detail about young animals; so this broadly based and generously illustrated book is welcome. When considering animal populations we often tend to think only of adults, forgetting that in many species adults are far outnumbered by young at various stages of development. Young individuals may in fact be more typical members of a species than are their adults (the neotenuous Axolotl is an extreme case). At least, the behaviour and ecological requirements of its young are important aspects of the biology of any species.

Within the framework of the whole animal kingdom, the chapter covering both reptiles and birds is inevitably in fairly general terms. In spite of limitations of space the text on birds is surprisingly comprehensive, presented under headings of young birds, fledging, orphans and parasites, and instinct and learning in birds. This would be an ideal book for school libraries, as an introduction to animals and as an interesting and unusual approach to the subject. The author succeeds in writing in a style that holds the interest of the reader and the attractive and well-chosen coloured photographs illustrate points in the text very nicely.

E.M.McC.

PAPER

Population Ecology of Migratory Birds, 1972. Papers from a Symposium held at the Migratory Bird Populations Station, Laurel, Maryland, 9-10, October 1969. U.S. Dept. Interior Wildl. Res. Rep. 2. Price not stated. (Available from Division of Public Documents, U.S. Government Printing Office, Washington, D.C.)

I was very disappointed with this symposium. The title led me to believe that the contributors would discuss the population ecology of migratory birds, which I expected to be contrasted with the ecology of non-migratory birds, followed by an analysis of how migration affects the ecology of populations. It is not quite true to say that the symposium failed totally to achieve these aims, but there is little in it about the effects of migration on the population ecology of birds.

Like the proceedings of too many symposia, this volume is a collection of odd papers that have little relation to each other and, as I have already mentioned, to the avowed theme. The summing-up by Hickey, which should have pulled everything together, does not. With the exception of Carrick's paper on some Australian birds, the contributions are all from the Northern Hemisphere. Besides the papers by Hickey and Carrick there are nine other contributions: three concern waterfowl, two discuss the use of banding data in population studies of birds, one discusses techniques of censusing, one looks at the influence of territory on bird populations, one considers the importance of movements in the biology of Herring Gulls, and Henny, with the collaboration of Wight, discusses once again the effects of environmental pollution on the populations of North American birds of prey. Unfortunately there are no papers on migratory waders and none on the ecology of migratory birds in the non-breeding season.

For Australian ornithologists, Carrick's paper will be of greatest interest, but the papers on techniques and the use of banding data are also valuable and applicable to Australian conditions. The paper on Herring Gulls by Drury and Nisbet is good and should be read. Populations of Herring Gulls have been increasing in New England since the 1880s and this paper documents changes in the biology of the Herring Gull associated with the increase in numbers. Young birds now disperse

more widely and winter farther north than they did in the early phases of increase. The breeding range has been extended to the south. By contrast with other papers in the symposium, this one discusses the effects of movements on population ecology and there is an interesting discussion of the ecology of species in changeable versus stable environments.

It is a pity that Carrick's paper does not reach the same standard. Entitled 'Population ecology of the Australian Black-backed Magpie, Royal Penguin, and Silver Gull', it presents in some detail the results of his study of Magpies and discusses these, along with his main findings on the Penguin and Gull. As a source of data on these birds, it will be valuable to many. In particular, the work on the Magpie is brought up to date, superseding Carrick's only previous paper from this study (1963, Proc. XIII Int. Orn. Congr.: 740-753), but it makes tedious reading and in my opinion lacks interesting discussion.

The general discussion at the end of Carrick's paper hinges on the perennial topic of regulation of populations. Unfortunately it seems to me that it founders on the rocks of an out-of-date interpretation of the meaning of competition and uses archaic terminology. To call forms of competition like territorialism antisocial behaviour hardly helps. It does, nevertheless, include brief summaries of the findings of population studies of some other species, which will be useful to students (although they can hardly be expected to know that they must look for such material in the proceedings of a symposium on migratory birds). Carrick's conclusion is that all the evidence 'points to the individual bird claiming, through intraspecific aggression, the maximum amount of resources that it can efficiently deny to others of its own sex'. Unfortunately, to support such a hypothesis (in particular the words 'maximum' and 'efficiently'), far more detailed information about size of population, nutrition and the relation between territorial behaviour and other forms of behaviour associated with dominance and dispersion is needed than is presented for any of the three species dealt with in this paper.

H.F.R.

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