

Book reviews

Edited by P. Dann

THE PETRELS: THEIR ECOLOGY AND BREEDING SYSTEMS

by John Warham

1990. Academic Press; London. Pp. 440, figs, tables 18, appendices 2, 172 x 250 mm. £28.50.

John Warham has been actively studying petrels for 40 years. This volume is the first of what is intended to be a two-volume *tour de force* of the Procellariiformes, and reviews the advances made in our understanding of this order of seabirds.

The order spans a range of habit and body size from the tiny storm-petrels, able to survive and migrate such huge distances despite the vagaries and extremes of a marine existence, to the albatross — that group of birds which have inspired poets and biologists for centuries.

In this volume, Warham dedicates individual chapters to introducing each of the major groups of petrel, whether they include representatives of one genus (*Bulweria* and the shearwaters *Puffinus*), closely related genera (fulmars, gadfly petrels and Blue Petrel and prions, *Procellaria* and *Calonectris*) or individual families (albatrosses, storm petrels, diving petrels). This division of treatment is largely based on common sense and makes the text logical to follow.

The final five chapters present a comparative account of the breeding biology of the members of this order; an initial chapter introducing general aspects of reproductive strategy, followed by a chapter dealing with each of the pre-egg, egg, incubation and chick stages of petrel reproduction.

Allometric considerations of petrel breeding biology are an underlying theme of this book; comparative data spanning the size-range represented within the order are presented for many breeding biology parameters. This approach effectively defines the petrel 'blueprint' and draws attention to anomalous data and their ecological significance, emphasising those environmental conditions that have posed constraints on the evolution of adaptive strategies of survival for particular representatives. Perhaps more could be made of this analysis, but in synthesising the data, and in directing readers to the primary literature, this volume will encourage research directed towards solving many remaining mysteries. In compiling these relationships with body size, Warham's research has been exhaustive, as the reference to about 1000 previous publications testifies.

Knowing that a companion volume to this is in preparation that will 'look in more detail at behaviour, physiology, population biology and food', it is difficult

to criticise areas where information is lacking in the present volume.

Despite the stated topics to be covered in the following volume, this first tome does introduce some of these, with brief sections on populations in the introductory chapter, and on food in each of the chapters dealing with specific families or genera. For those interested in the feeding ecology of this group, these 'snippets' will be too brief and incomplete. However, this initial volume is a rigorous description of the group and their breeding biology. It should be appreciated by seabird biologists in particular and all ornithologists interested in the 'comparative method'. As it claims to deal with many aspects of petrel biology that are currently at the forefront of much research effort, the next volume is eagerly anticipated.

Michael Whitehead

NATURE CONSERVATION: THE ROLE OF REMNANTS OF NATIVE VEGETATION

Edited by D.A. Saunders, G. Arnold, A.A. Burbidge and A. Hopkins

1987. Surrey Beatty & Sons; Chipping Norton. Pp. xiii + 410, colour plates 35, b&w sketches and maps 126, 215 x 305mm. \$72.

NATURE CONSERVATION 2: THE ROLE OF CORRIDORS

Edited by D.A. Saunders and R.J. Hobbs

1991. Surrey Beatty & Sons; Chipping Norton. Pp. xii + 442, colour plates 6, b&w sketches and maps 114, 215 x 350mm. \$80.

Clearance for agriculture has caused the decline of more Australian bird taxa than any other threatening process. In most of south-eastern and south-western Australia the continued survival of more than half the native bird species will depend on how we manage the pockets of native vegetation that remain. These two books, and a further volume in preparation on the reconstruction of fragmented landscapes, contribute much to our understanding of what is needed.

Though now over four years old, the first book has value as the first in what will probably be a continuing series. It confirms the importance of remnants to nature conservation and considers the many problems that those Australian states that have yet to introduce tree clearance controls will experience when they, too, have nothing but remnants to manage. It will remain for

some time a benchmark for anyone attempting to conserve biological remnants in fragmented landscapes.

The second book, which won the 1992 Wildlife Publication Award for editorship, grew out of the first and deals with a particular type of remnant, corridors of natural vegetation between larger patches. The value of corridors has caused considerable debate among the scientific community, and a computer simulation in the book by Soulé purports to show that under certain circumstances, corridors can be detrimental to wildlife conservation. However, the concept of corridors has captured the imagination of both land managers and the public. It is the underlying philosophy behind planting schemes in areas where trees have been lost and in tree clearance guidelines in Queensland.

In fact, as this book shows, evidence for the use of corridors as conduits is sparse and still requires intense research to prove what is intuitively likely to be correct. In most circumstances, however, such proof is unnecessary. As the editors conclude, it must be assumed that corridors are useful even if their primary conservation value is as remnants rather than in the facilitation of gene flow. They, and many of the papers, then go on to give prescriptions for corridors management, mostly backed up by useful examples. This information is also summarised in a simplified form in an accompanying booklet for use by land managers and educators, an example that should be standard practice for conference editors.

What is largely lacking from these books, but which hopefully will be considered in future volumes, is how

to prevent the decline in diversity that is the inevitable consequence of the isolation of remnants, why particular species are vulnerable to local extinction and how remnants can be managed to give these species an advantage. Landscape ecology of the type considered in these books is fine for establishing general principles but there is still a major role for autecology, of the type described by Andrew Bennett in the first book on potoroos in south-western Victoria, when it comes to management on the ground.

Both volumes are the proceedings of conferences and workshop. Thus, though all papers have been subject to peer review and edited to a high scientific standard, there are inevitable omissions and repetitions. There is also a bias in both books towards south-western Australia, though leavened by examples from other parts of Australia, Britain, the USA and Africa. This regional bias is not necessarily a disadvantage. The variety of approaches taken in the west, and the thoroughness with which the Western Australian landscape has been reduced to remnants, means that examples from that region are good models for similar problems elsewhere.

Also the publishers, Surrey Beatty and Sons, deserve special praise for not just these two books but for their overall contribution to Australian ecology. They have been responsible for turning numerous grey conferences into rigorously refereed black and white scientific literature and deserve strong support from all Australian ecologists.

Stephen Garnett

The following people were consulted as referees during 1992. The editor thanks them for their help, without which the standards of the journal could not be maintained (* indicates read more than one paper).

S. Ambrose, B. Beehler, G. Beruldsen, S. Blaber, W. Braithwaite, S. Briggs, L. Brooker, M.G. Brooker*, M. Brown, R. Brown, A.H. Burbridge*, C. Catterall, L. Christidis, R. Crozier, P. Dann, S.J.J.F. Davies, J. Diamond, H.A. Ford*, C. Frith, P.J. Fullagar*, J. Goss-Custard, S. Halse*, M. Jensen, R. Johnstone, L. Joseph*, C. Kerley, K. Kerry*, J. Kikkawa, R. Kingsford*, A. Lill, R. Loyn*, D. Macfarland, R. Major, S. Marchant, P. Menkhorst, C. Minton, R. Nias*, M. Newman, I. Norman, R. Noske, P. Olsen, D. Paton, R. Patterson, R.B. Payne, S. Pruett-Jones, G. Robertson, D. Robinson, F.N. Robinson*, E.M. Russell*, D.A. Saunders*, P.J. Slater, G.T. Smith*, S.C. Tidemann*, R. Webster, R.D. Wooller*, J.C.Z. Woinarski, B. Wykes, R. Zann.