

introduction to each species and following it with the lightly edited text of Buller Mr. Turbott has welded the old with the new, preserving the justly famed style of the early author and aptly bringing up to date the present status of each bird. An example of this, selected at random, is the treatment of the Pied Stilt. Mr. Turbott compares the present distribution of the species with the past, showing its increase and spread and he confirms Buller's suspicions of an internal seasonal movement of population. And another, the White-fronted Tern, shows Buller's account to stand to this day, except for the partial migration to and from Australia, something of which the early author had no opportunity of knowing. These instances show the value of this edition. It has not been necessary to reproduce the textbook material since it is readily available in so much of the modern literature. The measurements and other descriptions of birds remain the same but the numbers, habits and habitat are matters which need this kind of revision. It is good, too, to perpetuate the great artistry of Keulemans.

It is often indicated by reviewers that they have a duty to find something to criticise. If this is correct the present reviewer has failed dismally, being unable to find any fault in this splendid re-presentation.

— H.R.McK.



Animal Navigation. By R. M. Lockley. Pan Books Ltd. (Pan Piper Series) 75c.

This paperback, by the well-known ornithologist who pioneered banding work on the Manx Shearwater at Skokholm almost 40 years ago, has much of interest to readers of *Notornis*. The title is a bit misleading, since in the process of working up to discussion of navigation and migration, eight chapters, nearly half the book, are devoted to reviewing our knowledge of the senses of animals.

Anecdotes drawn from the author's own experience and wide reading (back to Leonado) are interspersed through the intriguing summaries of modern knowledge of animal psychology and behaviour. The reader who has not kept up with more specialised publications can thus get acquainted with such fascinating discoveries as echo-reception (sonar) in bats (Griffin) and dolphins, the sense of direction in starlings (Gustav Kramer), use of polarized light by bees (Von Frisch), and the internal chronometers of fiddler crabs. The experiments described show that almost all vertebrate and most invertebrate animals that migrate over long distances have an acute sense of direction or geographical position, as well as an internal biological clock, so that some can navigate by solar time by day and some by sidereal time at night. Lockley is now convinced that nocturnal sea-birds carry a sound-memory of the distinctive echo-pattern of the terrain near their burrows, and that the calling of incoming petrels is to obtain the familiar echo-pattern by which they can locate their burrows accurately (and avoid obstructions).

Lockley has made the most of his brief visits to New Zealand, and brings in many local observations — of a sea elephant's sensitivity, of the binocular eyes of opossums seen on our highways, of the kiwi's sense organs, of grunting leatherjackets, of glowworm caves, of the colonising Monarch butterfly, of the ubiquitous hedgehog, of the lack of rabbit fleas in our rabbits, of sea-bird islands. But even without these local references, *Animal Navigation* would be entertaining and instructive reading.

— C.A.F.



Refocus on N.Z. Birds. By G. J. H. Moon. A. H. & A. W. Reed, \$6.

So well-known are Geoff Moon's expertise as a photographer and his perceptiveness as a field naturalist that this rich volume needs no recommendation. Let it suffice to say that one bird photographer of many year's experience said that after perusing it he felt like throwing his cameras away.

The author's mastery of technique is in evidence throughout; but particularly in his flight shots of Morepork and Kingfisher arriving home and in the picture of a Pigeon feeding its chick before dawn. It is good to see at last our elusive Dabchick, obviously at ease, adequately presented in colour. On the whole the reproduction of the colour plates is of a high standard; though there are a few of the seemingly inevitable lapses. The Reef Herons in the cave are too brilliantly blue to be true and the trio of Spoonbills are positively roseate. But what a scoop!

On Hen Island the author was not content simply to photograph birds at their nests. Sitting patiently for long hours in a stuffy hide by a water-hole, he secured pictures of Saddlebacks, Bellbirds and Parakeets drinking, bathing and casually going about their lawful occasions. Further afield, as he turned his attention to some of our Australian invaders, Silvereyes, Coots, Whitefaced Herons and Black-fronted Dotterels posed before his discerning lens.

The book is timely. As northern New Zealand becomes more densely populated and the threat grows not only to the long, once lovely beaches but also to the offshore islands, we are grimly reminded of the need to conserve some wilderness areas and make them absolutely sacrosanct. The Fairy Tern, here immortalised in exquisite colour, is almost a lost New Zealand bird. Every year there are fewer beaches where Red-breasted Dotterels and Variable Oystercatchers may breed in peace, undisturbed by surfer or surf-caster. The public needs vivid books such as this in order that it may learn more of the beauty and variety of the avian heritage which it is in danger of losing. Hence may come a fuller understanding of the crisis which several endemic species are facing; and of the need for resolute and informed measures of conservation.

— R.B.S.