REVIEWS

Bibliography of N.Z.A.R.P. Publications 1956-1972. Supplement No. 1. [Christchurch]: Antarctic Division, Department of Scientific and Industrial Research, March 1974.

The Antarctic Division of the DSIR has responded quickly to the need for up-to-date information on scientific publications by issuing quite promptly the first supplement to the "Bibliography of N.Z.A.R.P. Publications 1956-1972," reviewed in the previous issue of *Notornis* (21 (1): 95-96, March 1974). Readers who like to keep up with ornithological research in the Antarctic by perusing the *Antarctic Journal of the United States* will be grateful, nonetheless, for this supplement (which promises to be No. 1 of an annual series) since the background information which they so often seek is now well documented: General (5 items), Biology (9), Geology (22), Ice & Snow, Oceanography, and Physics (atmospheric and terrestrial). Most of the items have been published during 1973 but a number of items omitted from the 1956-1972 period are now included and are placed at the beginning of the appropriate subject categories which, incidentally, are those used in the currently-appearing *Antarctic Bibliography* produced by the Library of Congress.

Of the 9 items in the section "Biology," 5 are from the 1956-1972 period and include 3 on birds published in *Notornis* (1966, 1967, 1968) and 2 of the 1973 publications are from *Notornis* Vol. 20 (by J. A. Fowler) with the listing also of a Ph.D. thesis in the University of Canterbury by E. B. Spurr entitled "Social organisation of the Adelie Penguin *Pygoscelis adeliae*."

It might be some time yet before all the 1956-1972 publications are discovered considering the great variety of journals in which they have appeared (recalling that the 69 bird papers listed in the *Bibliography* appeared in over a dozen different periodicals).

Those who know of others which have been published and not noted (or are likely to appear in obscure places) would help by informing the Antarctic Division so the listings can be perfected. We are pleased to commend this effort to document the already too widely scattered literature of Antarctic birds and their surroundings.

E. W. D.

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Pelagic studies of seabirds in the central and eastern Pacific Ocean. Edited by Warren B. King. *Smithsonian Contributions to Zoology*, No. 158. 1974, US $3.70 (for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

In 1963 the Smithsonian Institution began an ecological survey of the central Pacific Ocean, a project known as the Pacific Ocean

Biological Survey Program (or POBSP for those who like acronyms). The area under study included about 4 million square miles of the central Pacific between 30°N - 10°S and 138° - 180°. An account of this project and its origin can be read in the *Annual Report of the Smithsonian Institution* for 1965, pp. 24-30. This volume of seabird studies is the first in a series summarising the observations made at sea by the POBSP. Some readers may be familiar with the *Pacific Bird Observer,* a bimonthly newsletter issued from September 1965 by the POBSP " in an effort to promote the understanding of birds and their relation to man in the Pacific." Much of this publication has had notes of interest to New Zealand marine ornithologists. The present volume shows the results of its stimulation of interest in banding returns from the inhabitants of various island groups and other information from both POBSP personnel and observers of other countries.

" *Pelagic studies . . .* " consists of seven papers by various authors based on the results of the POBSP activity from 1963 to 1968. Patrick J. Gould introduces the series, outlines the development of the Program, describes the study areas and their features, discusses methods and procedures in observing bird species and recording information, gives a general account of the oceanography and marine biology of the area related to the distribution and movements of the seabirds. He follows this with a separate account of the biology of the Sooty Tern *(Sterna fuscata),* stressing behaviour, distribution and abundance and correlations with physical conditions and showing, in particular, how its distribution at sea depends on erratic food supply, location of breeding islands, breeding timetable and post-breeding dispersal pattern. Other authors treat their species in a similar way but varying according to the nature and detail of the information available: Gerald A. Sanger on (a) the Black-footed Albatross *(Diomedea nigripes),* (b) the Laysan Albatross *(D. immutabilis);* Richard S. Crossin on the Storm Petrels (Hydrobatidae), although with little of specific interest to a New Zealand ornithologist apart from a general discussion on habits and feeding behaviour of storm petrels. However, the bar diagrams of seasonal moult stages of various species are especially informative. Despite the author's statement that " the major reason for lack of positive knowledge regarding Pacific Ocean hydrobatids is the logistics problem with which the student of these seabirds must contend . . . ," the figure illustrating the winter density of Leach's Storm Petrel based on POBSP field work is a good example of graphic presentation of an oceanic distribution. Movements of White-faced Storm Petrels which might be of New Zealand origin are also discussed; Patrick J. Gould, Warren B. King and Gerald A. Sanger on the Red-tailed Tropicbird *(Phaeton rubricauda),* in which an appendix tabulating published data on the distribution of the species (including New Zealand records) is especially valuable, and Chandler S. Robbins and Dale W. Rice on recoveries of banded Laysan and Black-footed Albatrosses. The bibliographic references for each paper are lumped together as six pages of " Literature cited " which contain a numer of citations not so well known.

The most interesting paper for New Zealand users is doubtless that on the Wedge-tailed Shearwater *(Puffinus pacificus)* by Warren B. King.

The Wedge-tailed Shearwater breeds on many islands of the tropical and subtropical Pacific. King points out that the infrequent sightings of this species at sea (in the POBSP area, at least) belie the fact that it is abundant and widespread and he shows how some of its subtropical populations make extensive migrations whereas tropical populations are present at sea near their breeding islands most of the year and may not migrate. King writes about the light-phase and dark-phase morphs of the subspecies, *P. p. chlororhynchus* from all the islands in the Pacific and Indian Oceans except the Kermadecs, Norfolk Island and Kandavu (Fiji) where *P. p. pacificus* an all-dark form occurs, and his discussion is very relevant to the New Zealand scene in which a northern subspecies, *P. p. cuneatus* has been identified in addition to straggling *P. p. pacificus*. King notes (on p. 54) that the southernmost record of the Wedge-tailed Shearwater is a U.S. Fish and Wildlife Service band return from Cook Strait on 8 November 1965, a light-phase bird banded as an adult on 19 September 1963 on Johnston Atoll. He comments on another light-phase bird reported on by Falla (1962; *Notornis* 9 (8): 278-9) from Makara, near Wellington; " On tenuous grounds Falla assigned this bird to one of the north Pacific light-phase breeding islands, rather than the Shark's Bay, Western Australia, breeding grounds where light-phase birds occur as well." Readers of Falla's conclusions (based, as he said, " on the evidence of specimen comparison as distinct from theoretical possibilities . . .") will know whether " tenuous " is really a fair assessment of his examination, which should certainly be studied again while King's review is being read. The breeding " phenology," as King calls it (= " the study of the times of recurring natural phenomena " — OED), i.e. the breeding cycles, at northern subtropical, tropical Pacific and southern subtropical localities are discussed. Published pelagic records of " scattered individuals or small groups of dark-phase birds " in the Southwest Pacific close to New Zealand are listed. Distribution and abundance are correlated with currents and a similar attempt is made for sea surface temperatures and salinities at which Wedge-tailed Shearwaters were observed but here correlations are hardly demonstrable and only the ranges themselves appear significant. Specimens, moult and band recoveries are detailed. The sequences of moult of light-phase and dark-phase birds are of special interest to us. Feeding behaviour is also usefully outlined.

The series of papers in this first collection of POBSP results make some fine correlations of pelagic distribution in relation to breeding cycles, location of breeding sites, feeding behaviour and food supply, and to the physical features of the marine environment. All those interested in the " why and wherefores " of seabird distribution (and especially of those that straggle to New Zealand waters from the equatorial Pacific) will find this volume both stimulating and informative.

E. W. D.