

REVIEWS.

On the Pelagic Distribution of some Procellariiformes in the Atlantic and Southern Oceans, by G. J. van Oordt and J. P. Kruijt. *Ibis*, vol. 95, No. 4, pp. 615-37; 10 sketch maps.

This paper records the distribution at sea (with useful maps) of 11 species of petrel observed in the Atlantic and Southern oceans in December, 1951, and the first months of 1952, from the Dutch tanker "Barendrecht," carrying fuel for two Norwegian whaling expeditions in the Antarctic. This note emphasizes observations and conclusions about New Zealand species and includes comments by the reviewer in parentheses.

Leach's petrel (*Oceanodroma leucorhoa*) winters in large numbers in the South Atlantic off the West African coast and off the north-east coast of Brazil, judged by observations in the southern summer. (The single August New Zealand record is unseasonable, but the species is probably migratory in the Pacific too, judged by records near Galapagos Islands in November.) Wilson's petrel (*Oceanites oceanicus*) was observed migrating (i.e., birds all flying westwards) between Antarctica and 55°S. from 40°E to 140°E in the first half of March, 1952 (as if making for the known Atlantic wintering grounds).

In Antarctic seas south of Australia and south-west of New Zealand as many as 5000 *Puffinus griseus* an 8-hour day were seen, all migrating westward, in February and March, 1952, just as they were first described by Falla (1937) in the same area and season in 1931. Routh's (1949) record of *P. tenuirostris* in Indian Ocean pack-ice (not credited by the reviewer and other Australasian students) is plausibly attributed to misidentification of *griseus*. Large-scale late-summer westward migration of sooty shearwaters in the Australian and part of the Indian sector of the Antarctic Ocean is thus postulated. Whether they were about to winter in the Atlantic or would double back around the west coast of Australia to the Pacific the authors could not decide. They suppose that *griseus* leaves its N.Z. breeding grounds in a westerly direction without first spreading in different directions over southern seas and that "a large percentage of the New Zealand population of sooty shearwaters winters in the Atlantic." (These conclusions may apply to some non-breeding members of the N.Z. *griseus* population, but they are incompatible with the fact that *griseus* has not completed nesting by February. Adults and newly fledged young have been observed streaming regularly north along N.Z. coasts in mid-May, a few weeks after the first young leave the nest burrows. Perhaps the earlier, Antarctic, migrants are drawn from the "apparently large population of unemployed birds" that Richdale has written about.)

Bierman's (1950) reports of *Puffinus diomedea* in Cape seas were not accepted by R. C. Murphy, who thought they applied to *Procellaria cinerea*, but van Oordt and Kruijt are convinced that they and Bierman correctly identified the species. They quote Murphy's opinion that "no member of the species has any association with Kerguelen Island" (whence British Museum skins were reported by Sharpe) and the breeding place of the birds from Cape seas (including the specimen Gould named *flavirostris*) remains unknown. (So, incidentally, does the origin of the bird that reached Foxton, N.Z., in January, 1934.)

Falla (1937) first suggested that mottled petrels (*Pterodroma inexpectata*) were plentiful in midsummer in the pack-ice south of Australia, and the "Barendrecht" observers found them abundant in February at the entrance to the Ross Sea, becoming rarer to the east, but not confined to the pack. The white-headed petrel (*P. lessoni*) was recorded in two separate Antarctic areas, one from Ross Sea west to 130°E, the other between 20° and 90°E., that may correspond with the late-summer feeding grounds of the subspecies *australis* and *lessoni* respectively (but these are as yet inadequately defined in respect to morphology).

Diomedea cauta logged in coastal Cape seas, where it has generally been considered scarce, is attributed to *D. c. salvini* (without supporting description). The observed *D. melanophris* (black-browed mollymawk) fall into two separated populations, one in Cape seas, the other from 133°E. to the Ross Sea, apparently corresponding to the two subspecies *melanophris* and *impavida*, and the "Barendrecht" observers claimed to detect differences between them in the field. "The western population (*melanophris*) have the under side of the wing white with a broad dark margin at the anterior and a narrow margin at the posterior border. Adult eastern birds (*impavida*) have an underwing pattern with little white, both dark margins being distinctly broader." The observations thus point to the validity of *impavida* (breeding Campbell and Macquarie islands, but not Auckland Islands as wrongly recorded in the B.O.U. Check-list and in this paper. The O.S.N.Z. Check-list recognizes *impavida*, which was suppressed by Peters and by Murphy, because Campbell Island breeders and adults in N.Z. seas have darker underwings than Atlantic-Indian ocean birds exemplified by Murphy's flight photograph—published in Alexander's "Birds of the Ocean," pl. 6—and are more intensely pigmented on back and eyebrow. In addition, Campbell Island breeding adults observed by the reviewer on February 14, 1943, have light honey-coloured eyes contrasting with the dark brown eyes of *D. chrysostoma* and other species. Judged by Harrison Matthew's colour notes from South Georgia, the western populations of *D. melanophris* are dark-brown eyed like other albatrosses and this may be another subspecific difference between the races.)

All told, van Oordt and Kruijt have published a worthy successor to the report of Falla (1937), Routh (1949) and Bierman and Voous (1950) on the distribution of birds at sea in this sector of Antarctica.—C. A. Fleming.

The Question of Ten-day Incubation Periods, by M. M. Nice. The Wilson Bulletin, vol. 65, No. 2, June, 1953, pp. 81-93.

Mrs. Nice has investigated reports in ornithological literature that some birds have an incubation period as short as ten, or even nine, days. First she defines incubation period as "the time from the laying of the last egg to its hatching," and finds that use of other definitions is the reason for some short periods recorded.

Audubon first assigned a ten-day incubation period to a bird. Many such assertions have since been made but authenticated periods less than 11 days prove to be rare. The myth that cowbird eggs hatch in ten days was started by a guess and was accepted for 60 years in spite of abundant records of hatching in 11 to 12 (not 10) days.

The silvereye (*Zosterops*) attained world-wide fame for the shortest period of any bird—nine to ten days—because T. H. Potts was reported by Buller as having observed that in one nest "the birds commenced incubation on October 16, the young were hatched on October 25, and left the nest on November 4." The supposed nine-day period was quoted all over the world, and supposed ten-day periods were recorded by other writers on *Zosterops*, including Potts himself, Mrs. A. S. Wilkinson, and Fleming (the last due to faulty calculation from correct data!). Analysing the original data supplied by contemporary New Zealand ornithologists (including observations by Potts, Wilkinson and Fleming) Mrs. Nice finds that in four nests of the New Zealand silvereye carefully recorded between 1870 and 1943, incubation lasted at least 11 days. This bird's fame for the shortest period of any bird thus started in careless observation in the 1880's and the unquestioned acceptance of such blunders "shows that we need greater care in observation and less reliance on the printed word."

The silvereye is about the commonest New Zealand bird. Will the next generation of observers do better than the last three—four sets of observations in 75 years?—C.A.F.

[Fisher in "The Fulmar," has stated that the incubation period of the blackbird ranges from 9 days to 18 days. If this is correct, it would not be surprising if *Zosterops* sometimes had a similar period.—Ed.]