A WEDGE-TAILED SHEARWATER IN NEW ZEALAND

By R. A. FALLA

In the course of a short beach patrol at Makara on the morning of 26/1/62, Mrs. D. McGrath, of Wellington, picked up remains of many petrels. The annual wreckage of newly fledged *Pachyptila turtur* was represented by 25 of these. There were in addition three *Puffinus griseus,* one *Puffinus bulleri* and a similar but smaller shearwater which was just fresh enough to preserve as a skin specimen (D.M. 9661). It is identifiable as a sub-adult male of the white-breasted phase of the wedge-tailed shearwaters which have a breeding range in the tropical north Pacific from the Pescadores to Mexico, and in the tropical belt of the south Indian Ocean.

Systematic. In a series of reviews by several authors of Indo-Pacific shearwaters nomenclature has been proposed which reflects broad relationships, and in the latest of these Murphy (1951) refers to *Puffinus pacificus chlororhynchus* (Lesson) all the wedge-tailed shearwaters except the larger all-brown birds of the Kermadecs, Norfolk Island and Kandavu. The widely distributed subspecies thus defined is dimorphic at some points in its range.

An initial postulation that the Makara specimen is a representative of north Pacific stock and an unusual stray has been rightly challenged *(in litt.)* by Dr. W. R. P. Bourne, who points out that the occurrence of white-breasted birds breeding at Shark Bay, Western Australia, has been documented by Serventy and Whittell (1951). He also suggests that other South Pacific populations nearer New Zealand may yet prove to have a few white-breasted individuals. This suggestion has already been advanced by Murphy (1951, p. 11) who also considers that the only white-breasted specimen known from Canton Island is indistinguishable from examples from the wholly white-breasted Bonin Island population. It is therefore clearly necessary to define all the diagnostic characters of any doubtful specimen and to make as many comparisons as possible.

There appear to be in the literature no suggestion that the first juvenal plumage is in any way different from the normal adult, few references to tail-wing indices or degree of graduation of the tail, and often comparative tables in which the length of the tail is omitted altogether. These characters may be so variable that they become meaningless in a comparison involving hundreds of specimens, but this has not been demonstrated in respect of these particular characters, and it seems legitimate to use them in an attempt to allocate a straggler to its probable natal stock. For the initial comparison I have had only three white-breasted specimens from the Hawaiian area, but into this small series the New Zealand specimen fits very neatly in plumage pattern and dimensions.

No.	Sex & Age	Locality	Date	Wing	Tail	Tarsus	Toe	Culmen	Tail-wing Index
D.M. 8876	ad.	Midway	6/5/49	283	130	48	53	38.5	45.9
D.M. 9577	ad.	Honolulu	14/7/58	288	142	47	56	37.5	49.3
D.M. 9578	immat.	Hawaii	30/12/58	283	126	45	50	34.5	44.5
D.M. 9661	sub-adult	Makara	26/1/62	290	131	50	55	40	44.9

The specimens from Midway (May) and Honolulu (July) are in the normal adult plumage as defined in standard descriptions of this form. The young bird from Honolulu (December) differs in having softer plumage, peppery vermiculation at the sides of the throat, white feather-edging conspicuous on the mantle and strong on the scapulars, and having the median secondary wing coverts frosted grey and broadly edged with white. All this dorsal white seems to disappear in adult plumage except for faded edges to the scapulars. It is, however, still residually apparent in the Makara bird, which if not a bird of the year is probably not more than a year old. The testes were minute, and dark grey. Bill purplish brown, feet fleshy white, only faintly stained brown on the outer sides.

Since making the above comparisons I have received through the courtesy of Dr. W. A. Ride, Director of the Western Australian Museum, Perth, the white-breasted specimen which was the basis of the first record of this phase in the south Indian Ocean by Serventy and Whittell (1951).

Dr. Serventy has kindly sent additional notes indicating the regular occurrence of this phase. Particulars of the specimen are:—

> A1493 adult male, breeding; Shark Bay, W.A., 15 November 1916, collected by T. Carter. Wing 280, tail 120, tarsus 47, toe 54, culmen 37, width of bill 14.5, depth of bill 12mm. " Irides hazel, bill bluish horn, tip darker; legs and feet bright coral pink; mouth and tongue pale fleshy " (from label).

Compared with the series tabulated above, and including the Makara specimen, the Shark Bay bird has a bill stouter at the base in relation to its length, under wing coverts grey and not white in the central series as the others are, with axillaries more uniformly grey, though this is likely to be variable. Although an adult bird in full plumage it has a shorter tail (120mm) than any of the adults or immature birds listed above, and this is reflected in the tail-wing index which is 42.8, lower than the figure for even the immature north Pacific birds listed above, and the New Zealand straggler. On the evidence of specimen comparison as distinct from theoretical possibilities the Makara specimen appears to be from a north Pacific stock.

Adjustments to nomenclature are hardly warranted by a review of so little material, but it is pertinent to remark that the study of wedge-tailed shearwaters would be simplified if there could be agreement to restrict the specific name *pacificus* Gmelin to the large dark birds of the Kermadecs (and perhaps Norfolk and Kandavu) in which the intensity and fixity of plumage pigmentation seems to be of a different order from that of the dark phase smaller birds found elsewhere. Lesson's *chlororhynchus* would then be restored to specific status and North Pacific birds with white underwing coverts in the pale phase and relatively longer tails in both phases should if these characters prove constant and trinomials are not to be discarded have tentative status as *P. chlororhynchus cuneatus* (Salvin). In terms of strict binominal treatment *chlororhynchus* provides a manageable concept, but *pacificus* as at present conceived is unwieldy.

LITERATURE CITED

Murphy, R. C., 1951 — The populations of the Wedge-tailed Shearwater (Puffinus pacificus). Am. Mus. Novit., 1512.

Serventy, D. L., and Whittell, H. M., 1951 — Birds of Western Australia, Perth, 2nd Ed.