

NOTES ON THE GADFLY PETRELS *Pterodroma externa* & *P. e. cervicalis*

By R. A. FALLA

Mrs Sylvia Reed's note in this issue confirming a New Zealand record of *Pterodroma externa externa* and correcting an earlier identification (Reed 1972) of the bird as *P. e. cervicalis* prompts some comment on the status and distribution of these forms generally known as the Juan Fernandez Petrel and the White-necked Petrel in the Pacific. All breeding records to date of *P. e. externa* are from Juan Fernandez only. Distribution at sea throughout the year is not so precisely defined though data from specimens collected (Loomis 1918: 95) confirm substantial movement to the northern hemisphere. Sight records are handicapped by the difficulty of distinguishing this form from *P. e. cervicalis*, the White-necked Petrel breeding at the Kermadec Islands, except under very favourable viewing conditions. King (1967: 13) recorded Juan Fernandez Petrels east to the Marquesas Islands and both forms abundant in the Central Pacific at least north to Hawaii between May and November. Elaborating on this pattern King (1970: 10) gave data based on positive sightings of White-necked Petrels which indicate that they formed a small percentage, from 2 to 16% of total sightings, and were not represented at that time in specimens actually collected. Information is lacking on any further range north of either sub-species except for the bird recorded by Kuroda (1962) from Honshiu and identified by him as *P. e. cervicalis*. While this could well be a correct identification, there is no mention in his paper of *P. externa externa*, nor any reason given for eliminating it. Kuroda's figures, especially of the under wing, do not all conform to the average characters of the Kermadec population of *P. e. cervicalis*. On the other hand his figure of the tail appears to do so.

Some features by which the two can be distinguished have been recorded by a number of authors, but each mentioned only one or two characters and not always the same ones. Salvin (1875, 1891, 1896), who originally described both forms and had at the time only one adult specimen of each, distinguished *cervicalis* thus — "the under wing-coverts are less white, those of the edges of the wing being mingled black and white, the primaries have less white at the base of the inner web, the white portion being almost covered by the longest white coverts." This is confirmed by the larger series now available in collections. Other characters used by Salvin prove to be more variable, dependent on age and state of moult. Godman (1910), still with only one adult *externa* but several more *cervicalis*, pointed out that the tail of the latter is distinctive, "the two outer rectrices being for the most part white."

Loomis (1918: 96) was the first to tabulate differential characters, here quoted in slightly condensed form:

<i>P. externa</i>	<i>P. cervicalis</i>
Cap dark brownish grey.	Cap brownish black.
No definite cervical collar.	Definite cervical collar, white
First (= outer) primary extensively white on inner web.	flocked with grey.
Only indications of dark band on edge of underwing.	First primary with little or no white on inner web.
Dark colour of upper surface of tail brown, greyish bloom in fresh plumage.	Dark band, varied with white, on edge of wing.
Shafts terminally black or dark brown in all tail feathers.	Dark colour of tail grey, fading to dull brown.
	Shafts not terminally black or dark brown in all tail feathers.

Though Loomis omitted to mention the difference in the pattern of outer tail feathers, he did refer to the effects of wear and of moult, pointing out that in several specimens of *externa* a temporary white collar has been developed where loose feathers have fallen out, exposing the basal white of others. His material was all from areas away from the breeding grounds and north of the equator.

In more recent literature, dealing mainly with distribution, and observations at sea, authors have been more concerned with characters to assist sight identification. Hence, King (1967: 13), confirmed that because the nape may become whitish with feather wear, "it is safe to distinguish between these forms on the basis of nape colour only when it approaches one extreme or the other." As an exception to the all-white underwing he mentioned a small black patch at the wrist joint in the Juan Fernandez Petrel, whereas the White-necked has a thin but noticeable dark margin between the wrist and the leading primary. As his accompanying figure shows the black patch at the wrist occurs in both forms. Harper & Kinsky (1974: 40) referred to it as extending from the carpal joint diagonally for a short distance over the white inner underwing coverts. It is correctly illustrated in both the papers cited, though Harper & Kinsky figure the underwing of *P. e. cervicalis* only.

It seems that sight identification must remain doubtful, except under very good conditions or near known breeding grounds. Apart from the variable effects of plumage wear is the fact that birds of both forms are much the same size. Of Salvin's original two specimens his *cervicalis* was larger than *externa*. However, of specimens in the National Museum of New Zealand, the ranges and averages (in mm) are:

	<i>P. externa externa</i> (5 spec.)	<i>P. e. cervicalis</i> (14 spec.)
Wing	315 - 324 (319.5)	301 - 322.5 (312)
Tail	144 - 148 (146)	132 - 142 (136)
Tarsus	42.5 - 47.4 (44)	40 - 46 (42)
Toe	53.5 - 56.3 (55)	50.4 - 55.2 (52)
Bill	37.7 - 41.1 (36.4)	34.5 - 38.5 (36.4)

These figures indicate that on average *P. e. cervicalis* is a slightly smaller bird in most dimensions. It does, however, have a relatively more robust bill, the latericorn showing slightly swollen convexity when viewed from above.

Although available specimens of *cervicalis* from Kermadec Islands have dimensions which fall within the range given above, there are six Whitney Expedition specimens in the American Museum of Natural History, collected at sea about 48 km east of Banks Island, New Hebrides, on 29 January 1927, which are uniformly smaller. Their registration numbers are 24555-6, 24571, and 24575-7. Number 24571, a male, which is typical of the series has dimensions — wing 275 mm; tail 125; tarsus 36; toe 45; bill 33 x 14 x 14. They all have the plumage characters of *cervicalis* but do not fall within the range of any of the material collected over many years at the Kermadec Islands.

Kuroda's specimen from Honshiu can be confirmed as *cervicalis*, and of the larger form, on the basis of his figure of the tail, which seems diagnostic, though the other characters figured are not positively so, particularly the underwing which shows an abnormal amount of white webbing on the primaries exposed beyond the coverts. The one stray record from New Zealand (Kinsky 1971: 216) is also of the larger form, so that evidence of its extreme range north and south is still tenuous. Apart from the useful Smithsonian mid-Pacific records of both *externa* and *cervicalis* given by King, their extension into more temperate northern hemisphere is so far better documented for the former than the latter.

Assistance in the preparation of this note is acknowledged to the several museums in which specimens were examined, and perhaps should be also to Dr W. R. P. Bourne who has for years been urging me to record and comment on the anomalous series of White-necked Petrels in the American Museum of Natural History.

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