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## SHORT NOTE

### NOTES AND MEASUREMENTS OF HUTTON'S AND FLUTTERING SHEARWATERS FOUND DROWNED AT KAIKOURA PENINSULA

On 28 August 1980, an 11-cm mesh nylon fishing net, which had been set in about 4 metres of water for 22 hours, was lifted. Besides fish, the net contained 38 small shearwaters, which I later retrieved from the local tip.

Nine of the birds were Hutton's Shearwaters (*Puffinus huttoni*) and 29 were Fluttering Shearwaters (*P. gavia*). This ratio is interesting in that beach patrols in the area over four years have produced 11 *huttoni* and no *gavia* (G. Harrow, 1976. Some observations of Hutton's Shearwater. *Notornis* 23: 286). More recent beach patrols (1976-1978) in North Canterbury have found 18 *gavia* and 5 *huttoni*, which may indicate a southward extension of *gavia* in recent years.

One *gavia* had smudgy underwings, but its outer undertail coverts were part grey and the axillars were white tipped. One bird had white-tipped axillars but smudgy underwings, bicoloured undertail coverts, and large measurements, clearly indicating it to be *huttoni*.

Of the *gavia*, 9 were female and 17 male. Three could not be sexed — two because sea-lice had eaten the gonads and most other internal organs. Ovaries were enlarged, most around 12 mm, range 8-20 mm. Two to four ova were enlarged in each. Three ova measured 3.5 mm diameter. Testes ranged 6-12 mm in length.

Female measurements were wing 218 (211-221) mm, SD 4.1; culmen 33.2 (31.9-34.4) mm, SD 0.9; wing span 723 (706-731) mm, SD 8.8; mid-toe and claw 50 (48.3-52.0) mm, SD 1.5; tail 69 (66-75) mm, SD 2.7; length 360 (349-373) mm, SD 8.3.

The measurement of one wing was not included because the last primary was shorter than the second last. No other moult was observed in any of the 38 birds.

Male measurements were wing 218 (211-226) mm, SD 3.9; culmen 34.7 (31.5-37) mm, SD 1.5; wing span 725 (715-743) mm, SD 9.8; mid-toe and claw 50.7 (48.3-53.0) mm, SD 1.2; tail 71 (64-76) mm, SD 3.5; length 362 (351-377) mm, SD 7.

Five *huttoni* were female and four male. Female measurements were wing 226 (223-233) mm, SD 3.4; culmen 36.4 (31.9-37.4) mm, SD 0.9; wing span 759 (732-778) mm, SD 18; mid-toe and claw 50.8 (47.9-53.7) mm, SD 2.4; tail 73 (68-75) mm, SD 2.7; length 369 (357-378) mm, SD 8.6. Ovaries were enlarged, ranging 8-15 mm with the largest ova 2 mm diameter, correlating well with their breeding later than *gavia*. Male measurements were wing 227 (221-232) mm, SD 4.4; culmen 36.4 (35.4-38.0) mm, SD 1.1; wing span 756 (736-767) mm, SD 13.6; mid-toe and claw 51.3 (50.2-53.0) mm, SD 1.2; tail 72 (68-79) mm, SD 4.7; length 367 (366-369) mm, SD 1.5.

These data show that, except in extremes, measurements are not satisfactory in distinguishing *gavia* and *huttoni*. Variation between sexes is greater in *gavia* than *huttoni*, but this could be used as a guide only where extreme measurements are concerned.

All birds except one of the *gavia* had huge subcutaneous and internal fat deposits. All had crops full of small fish, which in one *gavia* consisted of 5-cm "fingerling" fish weighing 75 grams. Its total weight was 457.2 g. One *huttoni* had deeper "whitebait" fish 5-8 cm long besides the thinner "fingerlings." Its crop contents weighed 42.5 g and total weight was 466.5 g.

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