

(b) **Banding and Study of White-eyes at Auckland.**

Large volume of field observations have accumulated with reference to the Remuera property in which the fantail's observations were made. Only a few aspects here summarised.

Banding.—38 adults were banded between August 25 and November 31st, 1939, with numbered aluminium bands and coloured celluloid bands for sight identification. Wings were measured; of 31 measurements, there was one of 68 mm., two of 65 mm., 4 of 64 mm., 3 of 63 mm., 12 of 62mm., 4 of 61 mm., none of 60 mm., 2 of 59 mm., 2 of 58 mm., 1 of 57 mm., though it is probable that males are in general larger than females, yet the matings known show overlapping. Matings known: 65 & 58, 61 & 62, 61 & 61, 61 & 57, 65 & 62, 64 & 62.

General Cycle.—Flocking in winter. Breaking into pairs in early spring—1st in song heard on 28th June on territory (eggs for this pair laid about 23rd Oct. in this territory). Such early signs of territory and pairing seen early morning and evening. Not until Oct. could garden be mapped into territories. From middle of Oct. some adjustment of territories noted—(change of singing tree by male and replacement at former place by another male, etc.). Building by some pairs in early Oct.—2 nests found but eggs not laid, due to storm blowing down one and desertion of other and subsequent change of territory.

Late Oct.—most pairs building. Eggs laid in last week and from then on to Dec. Clutch 3, of which all chicks usually leave the nest successfully but only two survive first few days (invariable experience with five pairs). Incubation period about 10 days (no accurate dates available). Young in nest for 10 days (eggs hatched in one case on 14th Nov., young flew on 24th).

Returns from Banding: 20 of 36 birds banded have been recorded subsequent to capture; some frequently; some retrapped. Probably most of the birds trapped subsequent to Aug. were local breeding birds. In April, 1940, trapping recommenced and 3 of the 1939 birds (all adults) were retrapped before the 20th.

Movement of Individuals: A pair banded on 26th Aug. were found nesting 400 yards away on 1st Nov. (in a distant garden). Individuals with known nests or territory have not been seen further away from them than about 50 yards.

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Banding of Young.—The short time spent by the young in the nest has been responsible for my failure to band more than half of the broods found—only 9 were banded although 5 broods were recorded.

Density of Population: The accompanying sketch map of the area shows the territories mapped on Oct. 16th, mainly on the basis of singing birds, most of which were banded. The numbers of the banded birds are included within the circles which are not to be considered the exact limits of territory. When underlined, the nest of the pair was found later or the young were banded after flying.

Second Broods? No definite case recorded. Possible in view of early and late nests recorded. A brood still being fed by parents on 20/12/40 is in this category.

2. PENGUINS.

As many penguins of at least seven different species appear frequently on our coasts, especially in the autumn, it seems desirable that some effort should be made to record these occurrences. It is, however, a matter of some difficulty to recognise the species, particularly of the crested birds. If a member finds a penguin and is not certain of its identity the following procedure is recommended if possible:—

- i. Photograph the under-flipper pattern of the bird.

- ii. Photograph the whole bird or the head, **only side on**, so that the position of the markings on the head can be clearly seen.
- iii. Note the colour of the eye.
- iv. If the bird is moulting note whether the moult is beginning or finishing on the head, but do not take into account the crest feathers of the crested birds.
(N.B. Photograph the bird in the shade or on a dull day.)
- v. If it is not possible to photograph the bird, make sketches to show the above points as clearly as possible.
- vi. Examine the legs of the bird to see if it is ringed. If the bird is alive make a careful note of the numbers and letters on the ring, if it is dead remove the ring and return it to Mr. L. E. Richdale, Zoology Department, Otago Museum, Dunedin, to whom all communications on the subject of penguins should be addressed.

3. BROWN DUCK (*Elasmonetta chlorotis*).

The steady decline in numbers of this duck, once so widely distributed in the three main islands, makes all observations relating to it important. Reports indicate a concentration of the remnant in the Far North from the Whangarei district northward, and at Stewart Island.

The most southern of the Auckland district records are from Waipu Cove and Langs Beach in 1931 (M.E.F.) but in these localities none were present in 1936-1937 or 1939 (C.A.F.). Mr. C. A. Fleming's notes of a week's study from 12th August, 1937, on the streams of the Waipu River watershed mention that in mobs of from 20 to 50 birds many drakes were in full plumage but others were showing traces of eclipse. Some mated pairs had not begun to nest, but in other cases the females were sitting. The well-made nests of grass, with a varying amount of down, were in a variety of situations—in long grass, dead manuka, roadside ditches. When near the streams they were usually, but not always, above

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normal flood level. The usual clutch was from 5-7 eggs, and at the time of observation some had hatched. That there is some later breeding is shown by the fact that in December, 1936, at Ruakaka 6 ducklings under a week old were seen. Another family of six had reached maturity by the same date and the plumage of the parents still in attendance was by that time practically the same in both sexes.

Decline in numbers over six years until none were present in 1939 is reported from Maungaturoto (M.E.F.). A fair breeding population under strict protection on the property of Mr. D. Wood, Kara (10 miles west of Whangarei), has also shown some decline. Non-breeding mobs alone in the height of the nesting season numbered upwards of 168 birds in August 1937, but in August 1939 the corresponding mob was only 45 birds strong, all drakes in eclipse except one duck in moult.

Mr. Fleming's summary is as follows:

"The brown duck appears to be confined to its own watershed—once they have disappeared from a river system they fail to reappear though they may be present a few miles away. Within the watershed appear to breed in higher reaches, and move down with families to tidal areas (if any) where flocks of non-breeding birds occur. Nest on ground and appear to approach nests by walking—contrast grey duck. Drakes, alone or several, await sitting ducks in rivers below nests. Laying in July-August and later (note young ducklings in December). Clutch 5—7 usually reduced as ducklings age, and with the journey downstream to the flocks—often to two birds.

Predators: Weka ?—No sign of any but deserted and flood destroyed eggs found eaten by weka. Note that weka had gone from some areas in 1939.

Harrier.—No evidence.