

Although the authors of this first paper on the stomach contents of New Zealand Shags could not, for several reasons, comply with all the requirements of such an investigation, the paper should be widely perused by the members of the O.S.N.Z. It is actually the first paper to deal with the important subject of the cormorant's place in the ecology of New Zealand fresh waters; it also brings valuable data with regard to the distribution and biology of the shags. It is sincerely hoped that the authors will soon be able to complete their work in the way shown by Wetmore and Serventy on American and Australian cormorants respectively.—K. A. W.

"*The South Australian Ornithologist*," Vol. XVII, Parts 1-8.

"*The Elepaio*," Journal of the Honolulu Audubon Society, Vol. XIII, Nos. 8-12; Vol. IV, Nos. 1-9.

"Birds of Hawaii," by G. C. Munro, Honolulu, 1944; 189 pages, 20 plates. It is interesting, in view of the situation in New Zealand, to see that 94 species are included in the section dealing with introduced birds, though many of these did not establish themselves.

"The Problem of Partial Migration," by D. Lack. "*British Birds*," Vol. XXXVII.

"Report On the Bird Song Inquiry," by H. G. Alexander. "*British Birds*," Vol. XXXVI.

"The Migration of the Sandwich Tern," by A. L. Thomson. "*British Birds*," Vol. XXXVII.

"The Index of Heron Population, 1942," by W. B. Alexander. "*British Birds*," Vol. XXXVI.

"The Age of the Blackbird," by D. Lack. "*British Birds*," Vol. XXXVI.

"The Age of Some More British Birds," by D. Lack. "*British Birds*," Vol. XXXVI.

"Birds Collected During the Whitney South Sea Expedition. Fifty-three Northern Shore Birds in the Pacific," by E. H. Stickney. *American Museum Novitates*, No. 1248, 1943.

"Results of the Archbold Expeditions, No. 50: A Preliminary Life History Study of the Florida Jay," by D. Amadon. *American Museum Novitates*, No. 1252, 1944.

"Bird Weights As An Aid In Taxonomy," by D. Amadon. *Wilson Bulletin*, Vol. LV, 1943.

WHITE PHASE OF THE REEF HERON OR MATUKU-MOANA *Demigretta sacra* (Gmelin) AT WAIRAU BAR.

By K. A. WODZICKI and JAS. R. EYLES.

The first occurrence of the white phase of the reef heron at Wairau Bar, in April, 1944, was one of the highlights of bird observation in New Zealand during the last year. A detailed description of the Wairau bird and a record of observations made up to the end of November, 1944, have been given elsewhere (Wodzicki and Eyles, 1945), as well as a discussion on the origin of the white phase bird. As stated by Oliver (1930) the New Zealand population of the reef heron consists

of individuals of the grey phase, while according to Mayr and Amadon (1941) the white phase is common in the Islands north of New Zealand, where it forms up to 50 per cent. of the reef heron population. There are two possibilities: the appearance of a white mutant among the normal grey phase of the New Zealand population or that the Wairau bird was blown south by favourable northerly winds to the eastern shores of New Zealand. The fact that never before has such a mutant been observed, though it seems very unlikely that it could be unnoticed, even by the casual observers, speaks for the second alternative, which is supported by some meteorological evidence which, for security reasons, cannot be published. The question must remain unanswered for the time being, but according to Mayr and other students of Pacific ornithology several species of birds have been spread almost all over the Pacific by favourable winds. A recent instance of this—almost overlooked—is the establishment and spreading throughout the South Island of New Zealand of the Australian white faced heron (*Notophoxyx novae-hollandiae*).

Nevertheless it seemed of considerable interest to follow the activities of the white phase heron at Wairau Bar as closely as possible. The white colour and relative tameness of the Wairau bird have helped considerably in allowing observation of its habits and behaviour. During late September, 1945, it moulted; subsequently on the head and breast slightly longer lancet-shaped feathers appeared.

From the beginning of December up to the time of writing—i.e., the end of October, 1945, the bird has been observed nearly every week, in different parts of the Wairau River estuary and surrounding lagoons, which extend five to six miles south of the mouth. Some of the recent observations as compiled by one of us (J. R. E.) are tabled below; they give an interesting account of our bird's activities. It seems likely that the Wairau bird has not left that area for more than a year, though it has changed its place of abode every few weeks; once it disappeared for nearly two weeks but was observed visiting the Opawa River a few miles inland. It is also interesting to note that unlike the normal New Zealand variety it has never been sighted on the Boulder Bank nor on the beach.

TABLE.

Date.	Place Where Observed.	Date.	Place Where Observed.
1945.		1945.	
1/5	4 p.m., Breakwater.	23/5	Flying from Breakwater to Te Aropipi.
2/5	12 a.m., Breakwater.		
3/5	Big Lagoon.	24/5	Feeding in Big Lagoon.
4/5	Flying to Breakwater.	29/5	Opawa River estuary.
6/5	"Peel's Point."	8/6	Big Lagoon.
7/5	7 a.m., Breakwater; 1 p.m., Te Aropipi.	18/6	"Wahanga Atangaroa" Lagoon.
8/5	"Wahanga Atangaroa" Lagoon.	29/6	Flying over Te Aropipi.
10/5	Te Aropipi.	3/7 and 4/7	Motucka Island.
12/5	Motucka Island; feeding.	10/7	Berg's Lagoon and Breakwater.
13/5	South-east corner of Big Lagoon.		
14/5	3 p.m., Te Aropipi.	11/7	Te Aropipi.
22/5	North-east corner of Big Lagoon.	16/7 and 18/7	Breakwater.

Its ways of feeding are similar to those of normal grey birds: wading knee-deep in shallow water, it has been observed agitating water with its legs. It may also be pointed out that the Wairau bird is much less shy than birds of the grey phase usually are: it can easily be approached and observed at a distance of 20 to 25 yards. At night it is accustomed to roost on the breakwater at the river mouth or on sticks or logs.

The Wairau Bar is not frequently visited by birds of the normal grey variety, though these birds are common at Port Underwood, some ten miles north from the bar. However, a normal reef heron was present in the Wairau Bar area during the whole month of December, 1944, but the two phases did not associate at any time during their joint presence at the bar. In May, 1945, a Kotuku, or white egret (*Egretta alba*) appeared for the first time in the last few years at the bar, and both birds have been observed feeding together in the same lagoons; it was then that the difference between the two species could be clearly noted.

To conclude, though the observations recorded so far do not allow any definite conclusions to be drawn, the behaviour of the Wairau bird seems to support its suggested overseas origin. It is needless for us to add that any further records of the pure white phase in New Zealand would be greatly appreciated.

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OLIVER, W. R. B., "New Zealand Birds." Wellington, 1930.
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THE NESTING ACTIVITIES OF A PAIR OF BLACKBIRDS.

By I. TILY.

Nest 1. On September 21, 1940, the first nest of this pair of blackbirds was found. All morning my husband had been working under an overhanging branch of a macrocarpa hedge, little thinking that on this branch, seven feet six inches from the ground and about two feet above his head a female blackbird was sitting on her nest incubating her eggs. Towards noon he accidentally struck the nest with a piece of timber. The startled bird flew off; two eggs fell from the nest and were broken at his feet. Four eggs remained, and the bird resumed her brooding. Eighteen days later, on October 9, the bird was no longer incubating, and the nest was found to contain an unhatched egg and a dead chick on which no apparent injury could be found.

Nest 2. Three days later, on October 12, the female was again carrying building material, and her nest was discovered well under