

comm.) — and this might provide an explanation for the mortality observed near Greymouth. Certainly the hypothesis is worth testing if fresh materials can be obtained. It is possible that the mortality was increased by a failure of the food supply, and in this connection it is of interest to report that 1955-56 was an unsuccessful breeding season for certain other sea-birds in the district.

In colonies of White-fronted Terns (*Sterna striata*) on a Twelve Mile Island and at the Pancake Rocks, Punakaiki, the eggs were all deserted, and Spotted Shags at Perpendicular Point appeared to raise fewer young than usual.

The disappearance of all birds early in the season and their reappearance later parallels what has been found in Australia where a pair establishes a burrow as its territory, leaves it for a fortnight and returns to lay and to incubate.

I have to thank Mr P. C. Bull for help in the preparation of this paper.

WHITE-FACED HERONS BREEDING IN NORTH AUCKLAND

By F. P. HUDSON

A big dead kauri tree stands on a point of the Kaitoto Creek (Lower Kourawhero) near my house. This tree seems to be a resting place for various strange birds on a flight route from coast to coast — up the Mahurangi River, across the low watershed and down the Hoteo River. In the early autumn of 1956 I saw five herons in this tree and with the aid of binoculars I was able to identify them. They were the first I had seen and were definitely the White-faced Heron (*Notophox novaehollandiae*). They lived up and down the creek and could be seen in open paddocks feeding. Sometimes they roosted in the heads of large totara trees, after a scuffle with the local bunch of magpies. When flying high and purposefully they often gave three loud long croaks, but when flying and playing about the roost tree they gave frequent short croaks.

About the middle of June two would roost here and the other three would continue down the creek. The two broke away from the others in a peculiar manner. Directly over the perch one would turn left, the other right, and each would make a perfect circle about ten chains in diameter and land simultaneously. On June 29 at about 7.45 a.m. I noticed one carrying sticks up into a tall pine tree while the other bird stood in the beginnings of a nest. The height was 47 feet from the ground. The gathering of each load consisted of a glide down of two chains, a minute spent looking for worms, a quick run to pick up a stick, and a slow climb, with neck outstretched, to a limb near the nest, a pause, then a short flight to the base of the long sloping limb, up which the bird flapped with considerable effort to its mate. This went on for one to two hours every morning for about a week. During the day they were away.

On 6 July I noticed one was sitting, and the flimsy nest was never left unattended from then. The other bird would leave about 8 a.m. and return just after sunset with three loud hoarse croaks and then stand on the nest. After two or three minutes one would fly down and hunt worms till dark. I expect that this would be the cock bird relieving the hen to let her get some food. I felt sure she had eggs. The first few days when she stood up to stretch and turn round she was very interested in something between her feet. She was very quiet and did not mind my being under the tree. On 21 July the nest was left for the first time and for all day. The next morning she was back and she sat closely until 4 August, when she flew away and did not return. A. G. Gorbey came from Wellsford and made the difficult climb to the nest. There he found only a few bits of eggshell. On the ground below the nest was more shell and a small dead chick. The eyes of the chick had been open, but it looked pretty helpless. There was some down on it, but the skin was thin. I would think that this nest was a natural failure. There was no sign of interference.

On Sunday 22 July two other White-faced Herons, one considerably faded, sat all day on a limb directly above the nest of the first pair and 16 feet further up. They showed little alarm when I passed the foot of the tree. All day they make a 'Quock-quock-quock' sound to each other like an owl when shifting from foot to foot. It was the only time I heard that particular call.

On Monday morning they spent several hours building a nest. This process was similar to the first except that the carrier would appear to tire after three or four trips and would stand around until the builder came down to hurry him up. They worked each morning and fed during the afternoon for four days, but had by then not built much of a structure. At times work would stop in favour of a general fly around, when they often settled in the dead kauri tree. A third bird would join in these games of 'chase and croak' and enjoy the excitement. In the building of each nest the bird gathering material collected all of it from a small area about a chain long by half a chain wide in line with the nest site and two to three chains from it. The material in the first nest consisted entirely of dry totara twigs from 6 to 18 inches long. The second pair chose a mixture of totara twigs and dead *paspalum* stalks about a foot in length. These herons vary considerably in colour and normally have pink legs, but when the faded-looking pale one flew low over me I saw it had yellow legs, the colour of buttercup flowers. It was the male bird.

The third bird I think by its darker colouring was one of the first pair. It was clearly seen while sitting on a pine branch about 45 feet up. The legs were a pink or mud colour, depending on the light, while the beak was black in the shade and fawn in the sunlight. It had the ability to fluff out the purplish down-like feathers on the sides of the neck from half-way up to three-quarters up. There were none noticeable on the front and I could not see the back. This had the effect of almost doubling the size of that part of the neck. After a few minutes of this (bad temper?) its head sank to the position of a kingfisher's and it waited until I went away.

The nest was finished on 2 August and when we were examining the first one on 5 August our noise did not scare her off, except that she got out of the nest for a while and stood a few inches away where she could see us better.

On 29 August at 10 p.m. there was an unexplained commotion at or near the nest. Next morning I found a hatched eggshell on the ground. There were two more in the next few days. The hen still sat tightly, no doubt brooding small chicks. On 13 September I found a dead chick about one and a half chains up the pine row. It had been dead for some days but appeared to be intact and was in a crouching position as though it fell out and walked until overcome by cold.

On 22 September the hen bird was away for the first time and two small downy heads poked over the side of the nest. I did not see the hen on the nest again except during the continuous thunder on the 24th, the day of a cloudburst. These two small heads were always side by side and always moved as one with perfect timing regardless of what position they happened to be in. By 7 October they had grown very quickly to about the size of a magpie, minus the tail. They seldom sat in the nest now, but walked all over the limb from the trunk to the tip. Every few minutes they stood erect and flapped their wings, which looked to be about full-sized. Often they would jump from twig to twig and sway most dangerously. Sitting still, they were hard to tell from a Kookaburra except for a thinner bill, which was then about half the length of that of the adults. Breast on, with the head tucked in, they were marked very like a native pigeon, the belly being creamy fawn instead of white and the breast and neck olive green with a pinkish tinge in the sun. The wings were perhaps a little more blue than those of the parents, the sides of the neck and head cream with ragged tufts of wind-ruffled down which sometimes blew forward over their faces in a quaint manner. The bills were black and legs dirty-white. They were not fed during the day or evening. I waited from 5.30 to 6.50 p.m. at a safe distance, but the hen was feeding up the flat and never came near. The parrakeets roosted, then the magpies

and an owl awoke, but the hen continued to feed as she did all day. The young were evidently fed before 7.30 a.m. The old hen was becoming tamer. She allowed me within a chain sometimes and I have seen her walk under a cow. Whenever I put her up she flew past the nest for a look and settled elsewhere. The magpies sometimes chased her, but she took little notice and they gave up in disgust. They also had a look at the chicks, who, thinking it was mother with a worm, advanced so readily that they scared the intruders off. While the hen was on the nest the cock could usually be found up the gully looking for worms or some of the multitude of small eels, but after she stopped sitting I did not see a sign of him.

The two young birds reached the ground on 14 October. One worked his way down, a limb at a time, over two days, and the other must have jumped. Their nest was 63 feet up in a rather sparsely branched *Pinus radiata*, one in a single row along a ditch. I did not see the young herons make their first flights, but was in time to see them flapping slowly around in chain-wide circles a few feet up. Landings were generally intended to be on stumps, posts or trees, but mostly they finished on the grass or in the creek. Quite often one would try to settle on a post already occupied by its fellow.

The old bird spent the day on a spur of a nearby hill, flying down now and then for a close look and then going back to her vantage point. That night, the first away from the nest tree, they slept together in a small scrubby willow. They spent several days about the flat feeding on worms and roosting on a low shady totara limb during the heat of the day. They allowed me within 20 feet and if frightened away returned soon after I had gone. By 7 November they kept company less closely, often being chains apart. They had now thinned down and were hard to tell from the old birds except that there was less white on their faces and the blue was a shade darker. Their bills had grown to full length. They spent the days hunting frogs in a lagoon. An old bird visited occasionally, but never stayed long.

At this time there were three other herons working up and down the Kaitoto Creek and sometimes they could be seen resting on the dead kauri. The young birds remained on the farm until the end of November, when they and the older ones disappeared as the ground dried up.

NEW MEMBERS

NEW MEMBERS who have joined since the list published at end of Vol. 6 was compiled:

- E Abernethy F., 40 Overton Tce, Wellington E2.
- Anderson B. A. Gordon, Pupepapa Rd, Bulls R.D.
- Atkinson Miss M., 11 Onehunga Rd, Karaka Bay, Wellington.
- Axbey H. W., Dept. Int. Affairs, Rotorua.
- Balkwill Miss S., c/o St Cuthbert's College, Auckland.
- Bate Mrs C. I., 25 Carlton Gore Rd, Auckland.
- Beale Dr G., Public Hosp., Box 946, Dunedin.
- Beatson R. G. S., 58 Hurstmere Rd, Takapuna.
- Bell Colin, Nat. Airways, Gisborne.
- Binney D. H., Kohimarama Rd, Auckland E1.
- J Bestic Miss Jill, 95 St Stephens Ave, Parnell, Auckland C4.
- Black Mrs M., 1 Tarewa Rd, Rotorua.
- Bowie Dr Elizabeth, Public Hosp., Auckland.
- Bowyer S. B., Mill Rd, Otaki.
- E Broun W. J., Box 2138, Wellington.
- Bruce Maurice D., Box 3, Moerewa, Bay of Islands.
- J Buchanan John, Tech. Hostel, Greymouth.
- Cairns Keith, 37 Waltons Ave, Masterton.
- Caithness T. A., 144 Karori Rd, Wellington W3.
- Cavanagh R. S., Dept. Int. Affairs, Rotorua.
- Challenger S., Cant. Agr. College, Christchurch.
- J Chamberlain Simon, Box 34, Warkworth.
- Child P., Campbell St, Geraldine.
- Collis Mrs R. W., 18 Matipo St, Mt Eden, Auckland S2.
- Cleland R. W., Arthur Pass.
- E Creswell R. A., 5 Matthew Rd, Gisborne.
- E Dean Miss I., 16 Fitzroy St, Feilding.
- Delaney F. O., Spring Creek, Blenheim.
- Dodson Peter, Spring Creek, Blenheim.
- Elder N. L., 42 McHardy St, Havelock North.