

Reference to Frith (1969, *Birds in the Australian High Country*, Sydney: Reed), Slater (1970, *Field Guide to Australian Birds. Non-Passerines*, Adelaide: Rigby) and MacDonald (1973, *Birds of Australia*, Sydney: Reed), as well as consultation with Mr F. C. Kinsky of the National Museum (who, with Mr B. D. Bell, of the Wildlife Service, confirmed the identifications of the two subsequent reports), indicate that the strange podiceps was a Hoary-headed Grebe (*Podiceps poliocephalus*), a resident of Australia and Tasmania.

The second sighting of a Hoary-headed Grebe, in winter plumage, was made by Mr E. B. Jones at Horowhenua Lake on 17 June 1975, and 5 July 1975. The last reported sighting of the new grebe was made of two birds by Stuart Sutherland, of the Southland Acclimatisation Society, and J. M. Neilson, of the Department of Internal Affairs, while inspecting a flood retention dam at Lagoon Creek, Southland (map reference NZMS 1, S150 1902 3120) on 18 November 1975. The nesting of these birds has since been followed by Mrs Maida Barlow, of Invercargill, and her report appears elsewhere in this issue of *Notornis*.

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BREEDING OF HOARY-HEADED GREBE IN SOUTHLAND

On 18 November 1975 Messrs. Stuart Sutherland (Southland Acclimatisation Society) and J. M. Neilson (Department of Internal Affairs) saw two small grebes on the Lagoon Creek detention dam in the Te Anau area, 15 km from Te Anau and 130 km from Invercargill. They identified the birds provisionally as Hoary-headed Grebes (*Podiceps poliocephalus*). Messrs Sutherland and R. R. Sutton revisited the area on 19 December without finding the birds. They investigated other possible habitats in the district and eventually located the birds on the Dawson detention dam, a 3-hectare dam which has been in existence for about four years. The two dams are 4.6 km apart.

On 3 January 1976, Messrs Sutton, Grant Allan, Mervyn Jukes and the writer made the trip to the Dawson dam. In the shimmering heat the dam and adjacent marsh seemed alive with water birds, including about 750 Paradise Ducks (*Tadorna variegata*), nearly half of them in flightless moult. They spent the day cruising in flotillas, a spangled backdrop to cur day. Mallards (*Anas platyrhynchos*) and Shoveler (*Anas rhynchos*), 30+ Pied Stilts (*Himantopus himantopus*), 50+ South Island Pied Oystercatchers (*Haematopus ostralegus*) and 55+ Spurwinged Plovers (*Lobibyx novaehollandiae*) added colour and cacaphony. A flock of about 100 Black-billed Gulls (*Larus bulleri*),

hovering in the air and buoyant on water, lent a skittish ingredient to the scene. Black-backed Gulls (*Larus dominicanus*) had large young on the marsh, there were a few Pukekos (*Porphyrio porphyrio*) with one juvenile, and we flushed two Marsh Crakes (*Porzana pusilla*). We spent an hour and a half surveying and exploring this area but saw no sign of grebes, and were on the point of moving on to investigate other places when MJ spotted a single small grebe about 40 metres out in the water. We watched this bird for an hour during which it was apparently feeding, continually diving and surfacing. On twelve timed dives the bird spent 5-8 seconds on the surface, and 16-24 under water.

Description; &c:

A small dabchick-sized grebe. Upper parts brownish grey. Crown dark with brown/black sheen, this sheeny area widening behind the crown then narrowing and extending in a dark streak down back of neck; faint pale longitudinal streaks within dark area. Bill short, dark with pale tip. Eye dark, not prominent; eye level with border of dark crown. Area below eye-level and between dark crown and throat silvery-grey with dark striations extending from bill in a fan-like pattern; this pale grey area contrasted markedly with the dark crown, nape and throat which bordered it. Throat had a dark smudge, narrow under bill, extending and widening around neck but not meeting the dark streak down the back of the neck; upper breast had a faintly buffy wash. Underparts were very pale to undertail coverts. The bird rolled over and wing-stretched as it preened, showing pale underparts and a wide white wing-bar. It was generally nondescript, the dark sheeny crown and neck stripe and the under-chin smudge being the most noticeable features. It was feeding among Black-billed Gulls; when 400+ Paradise Ducks came near, the grebe stopped feeding and swam unmolested among the ducks.

We watched the bird for an hour from the bank with various binoculars and 20x telescope, at distances of 25-180 metres in bright sunlight complicated by glare. By 1400 hours it had worked its way down towards the south end of the dam and we also moved in that direction. We then saw a second bird, which "appeared from nowhere," and both birds continued the diving-surfacing pattern.

The second bird was more definitely coloured with brighter buff breast. Its head and facial feathering was less sleek, a little bristly, giving the impression of a slightly plumper head than the No. 1 bird.

At 1410 hours both birds were diving, coming up with material in their bills and carrying it to a *Carex secta* (niggerhead) clump 25 metres from the dam edge. Sometimes one bird remained in the carex while the other seemed to pass the material in. The nest was built between two carex clumps, occupying most of the area between. The drooping carex gave a complete overhead canopy, but from one direction the nest was visible at water level from at least 45 metres

away. It was possible to wade at knee-depth from shore to the nest-site. At close quarters the nest looked like a compact mound of decomposing vegetation, and at first sight it seemed that this was a nest under construction. Further examination revealed that there was a single egg, completely covered with nesting material. The outside diameter of the nest platform measured 250 mm and the cup measured 110 mm. The nest protruded about 60-70 mm above water level.

The egg was elliptical in shape, basically pale or white but very stained. The shell texture looked rough. It measured 40.3 x 28.1 mm.

While we were at the nest the No. 1 bird came to within 35 metres while the brighter bird remained more distant. At one time the No. 1 bird reared up in the water and flapped its wings, showing a pale underwing. At no time did we see the birds fly. Any possible calls were masked by the various other species.

We were at the nest for approximately ten minutes and covered the egg before leaving. From the bank we watched the birds return to the nest. One remained there and the other (the No. 1 bird again) continued feeding in the dam. We considered that the disturbance we caused had been well tolerated.

On the night of 5-6 January strong near gale-force winds hit the district. RRS returned to the dam on the afternoon of 6 January equipped with photographic hide and a small boat. Conditions were still unpleasant and a strong gusty south-westerly wind was blowing. He saw no grebes and the nest had disappeared entirely. The two carex clumps extended vertically underwater about 600 mm to the dam bottom. There was no sign of nest remnants or of the egg.

While our investigation on 3 January undoubtedly caused some disturbance, it is also worth noting that the place on shore from which the nest could be seen was approximately south-west of the nest, which would have had no protection from high wind from that direction. The columnar nature of the carex would provide no firm base. The 60-70 mm freeboard of the nest would give little insurance against choppy waves. It should be noted that detention dams are designed to accommodate substantial fluctuations of water level. With a rapid rise in water level this nest was vulnerable.

Incubation:

From the behaviour observed by RRS and SS on 19 December when two birds were seen initially, but one lost sight of and not seen again, it could be assumed that the pair may have been incubating at that time. The staining on the eggshell supports this theory, but the rough texture may counter it.

Campbell (1900, *Nests and Eggs of Australian Birds*, Part II, Sheffield) said of the Hoary-headed Grebe's eggs: "Clutch 4 to 5 occasionally 6; elliptical in shape; texture of shell fine; surface glossy,

and frequently rough with limy nodules; colour, a thin dull white coating obscures a greenish white shell. As is usually the case with Grebes' eggs, they become darker and more polished as incubation proceeds."

Further Nesting:

On 1 February 1976, SS located the birds back on Lagoon Creek Dam. They were taking particular interest in a dead bog-pine clump which protruded about 300 mm above water level. He suspected a further nest but decided against disturbing the birds at that time. He and RRS returned on 10 February and found the grebes with two small chicks. When the chicks were carried on the adults' backs the wing-position of the adults caused the white wing bar to become a bold feature. Eggshell fragments were collected from the nest which was in the bog-pine clump. On this day Ph reading of the water was 8, dissolved oxygen 11, temperature 22°C and there was a very abundant population of water animals with water boatmen and mosquito larvae predominating.

MJ and Mr & Mrs Harry Jukes found the pair with only one chick on 16 February. On 21 February RRS, GA and MLB found the family doing well, the live chick being about half the size of the adults. The decomposing corpse of the dead chick was found on the shore above water level.

The adults' plumage showed some changes. The black throat markings were now a very distinctive feature. The lower breast of the No. 1 (? female) bird had deepened in colour to a reddish buff. This bird remained close to the chick and was the only one of the two adults seen feeding the chick, which still climbed on its back at times. The No. 2 bird was close to the other two at times, but more often several metres distant.

Feeding pattern:

The adult dived, emerged, swam to chick. There was a quick food pass with bills barely touching, and adult dived again. In four timed minutes there were 7, 8, 6, 7 dives and food-passes. The chick itself dived several times.

Nests:

The successful nest was a packed mass of roots and mud, wedged well down into branchlets of the dead bog-pine clump, the top of which was about 500 mm above the mud, the water level having receded. The top of the nest platform was level with the top of the pine sticks. Investigation of other similar dead pine clumps revealed two other trial or abandoned nests, 10 and 15 metres from the ultimately successful nest. From the chain of events as known it seems likely that these two nests were constructed before 19 December, the birds moved to Dawson Dam, attempted to nest there as described, then returned to Lagoon Creek and nested successfully.

Rainfall:

Between 6 January and 21 February rainfall was minimal and water levels fell. The three nests, packed and firmly fixed in the dead bog pines, would have had no chance of surviving higher water levels. Steady or falling levels would be essential to successful breeding in this situation.

Later Notes:

On 14 March 1976, MLB and C. E. Barlow found the three birds still on Lagoon Creek Dam. The juvenile, now 4-5 weeks old, was the same size as the adults, but easily distinguishable by its pale throat and nondescript head colouring. The crown had irregular pale blotches on a greyish ground. The adults were in bright immaculate plumage. The birds' behaviour was interesting. The adults were seldom far apart, diving, emerging, swimming and preening almost synchronously, as though in tandem. The juvenile was in the same general area of the lagoon, but was more often 50-80 metres from the adults than close to them. It made frequent approaches to the adults, but was chivvied and chased, or rebuffed by a threat posture of lowered head from one or both adults. The juvenile fed independently. We watched the three birds for 2½ hours. There was no sign of further nesting.

Protection:

Ballots are held for shooting stands in these dams in the game-bird shooting season. If the Grebes are still in the area in April RRS intends to ensure that no ballot is held and shooting prohibited in the dams this season.

FOOTNOTE:

In May 1975, Mr Paul Gay, Nature Adviser to the Southland Education Department, saw and photographed a strange small grebe on a backwater of Monowai River, 41 km from the Lagoon Creek Dam. Unfortunately, a positive identification cannot be made from his description or photograph, but it is possible that this may be one of the pair described. It is worth noting that these sightings have occurred in a year notable for its influx of Australian vagrants.

Sightings of the Hoary-headed Grebe in New Zealand are documented by Best elsewhere in this issue of *Notornis*.

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