PRELIMINARY REPORT ON DISCOVERY OF NESTING SITE OF HUTTON'S SHEARWATER

By G. HARROW

Last January a Kaikoura deerstalker, Mr. I. Hislop, mentioned to me that he had seen muttonbird burrows with an odd dead bird nearby, at the headwaters of the Kowhai River at an altitude of about 6000 feet above sea level, in January 13 years ago.

The thought of muttonbirds nesting at such great heights in the Seaward Kaikoura mountains seemed unbelievable, although Mr. Hislop's description of the burrow area was so typical of a shearwater nesting site, I could not dismiss it altogether. I discussed this report with Dr. M. F. Soper, who stated that he knew of no seabirds that nested at such a great height, and he raised the possibility that it could be the solution of the baffling problem of the nest site of *Puffinus huttoni*. With this possibility in mind I searched the literature, and began an intensive campaign of contacting Kaikoura people who knew the adjacent high country well.

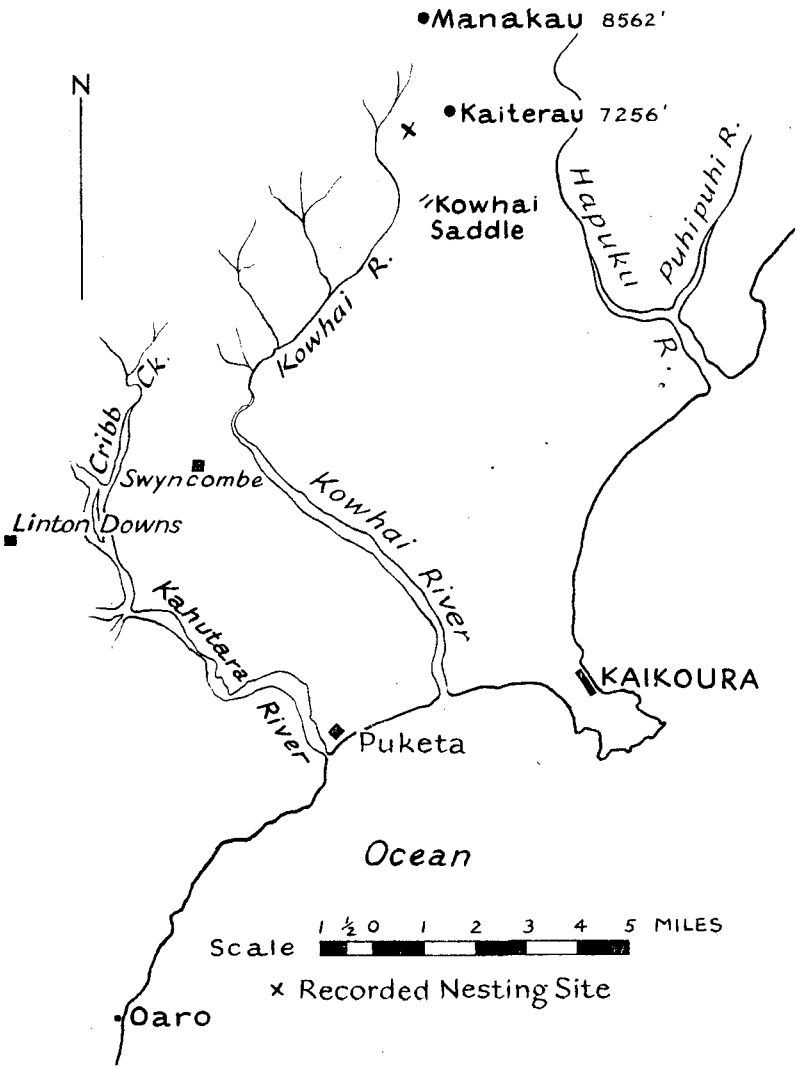
In this task I was greatly assisted by Dr. and Mrs. A. L. Johnston, of Kaikoura, and it soon became evident that many local people had heard about muttonbirds nesting in burrows high in the Kaikoura mountains; and that young birds, both alive and dead, whose description could fit Hutton's Shearwater, had been picked up in several areas near Kaikoura. All this was exciting and encouraging, but as the only eye witnesses I had were Mr. Ivan Hislop and his brother, Archie, I must admit my excitement was somewhat tempered by the fact that their report was thirteen years old.

On 20th February last, armed with a very provisional Lands and Survey map of the Seaward Kaikoura mountains, and what later proved to be excellent directions from the Hislop brothers, I set off alone up the Kowhai River in rather foggy conditions. I travelled up this river until opposite the Kowhai Saddle, when I was forced to climb a steep face on the true right bank of the river to avoid a quite impassable gorge in the upper Kowhai River. This steep face led on to a narrow ridge, mostly tussock-covered, that gradually rose to 5500 feet above sea level.

I had a major problem of navigating the rough alpine country which was unknown to me, with the added handicap of a heavy fog. I had planned to camp right at the site of the burrows, but at 6 p.m., after eight hours of heavy swagging with several false leads, I decided to camp in some snow grass near the first water I had encountered for some hours. I hoped that I was not too far from the reported burrows and therefore kept a careful check in case I could hear birds flying in the evening, but I was unrewarded. The fog cleared away about 10 p.m. that evening and I was able to see that I was only about half a mile from my objective. I left my camp among the tussocks at 5 a.m. next morning, 21/2/65, and within a quarter of an hour, while descending a steep deer track on the true right bank of the upper Kowhai Gorge, I found the remains of a shearwater minus the head. This specimen appeared to have been mutilated by a rat, stoat, or falcon. I could

find no burrows adjacent to this bird, but only a quarter of a mile away, just where the Hislops had described, right under Mount Kaiterau, I found quite an extensive burrow area (see map and Plate 1).

The height above sea level was certainly not 6000 feet, but I estimate the colony to be near enough to 4800 feet. On my first visit I guessed that there were several thousand burrows, but as described below, this later proved to be an overestimate. The aspect of the colony faced due south, and the slope was moderately steep at about 25 degrees.



The vegetative cover (Plate 2) of the nesting area included two groups of mountain ribbonwood *(Hoheria lyallii).* The big snow tussock *Chimochloa flavescens* and a smaller grass, probably a *Notodanthonia,* were the predominant low cover which the shearwaters tended to use as a veranda to their burrow entrances. *Aciphylla colensoi* appeared to form a boundary to the lower extent of the burrows, possibly because its spiny habit would be a landing hazard at night for shearwaters. The soil was friable, sandy loam, which would not be difficult for the birds to excavate. Two burrows that had fresh droppings at the entrance were excavated but had been abandoned, though a *Puffinus* skull, egg fragments, and a quantity of snow grass stems and root fibres, in the nest chamber were recovered.

The measurements of the burrows (Plate 3) were five inches wide by four inches high, while the first burrow was five foot nine inches long and the second burrow was seven foot six inches long with the nest chamber one foot back from the end of the burrow. A typical burrow would have a small entrance platform, made no doubt, from earth excavated from the burrow. From the platform the burrow went

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X (1) — Upper Kowhai river-gorge, with Mt. Manukau (8562 ft.) on left skyline, and Mt. Kaiterau on the right.

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XI (2) — Site of Hutton's Shearwater nesting colong at c. 5000 ft. a.s.l. under Mt. Kaiterau.

straight into the hillside for 18 inches, then made either a sharp right or left hand turn, and then continued usually another five feet across the slope, often the floor of the burrow rising gradually to a slightly enlarged nest chamber. Very few of the burrows were at any stage more than 18 inches from the surface, although if a large stone formed an obstruction, the birds would burrow a little further inwards to circumvent the obstacle. The area has a high deer and goat population and I noticed that the animals had collapsed the odd burrow with their hooves. I systematically traversed the colony at every 20 -foot contour, and recovered a complete shearwater not too decomposed for identification, a further pair of wings and many isolated feathers.

At this stage I was hopeful, and suspected that the birds were *Puffinus huttoni,* but I was by no means certain. With the aid of Mr. R. Scarlett at the Canterbury Museum, I checked my specimens with the one skin they had labelled as "doubtful *P. g. huttoni,*" but this was not very helpful, as I have since clearly established that this skin is in fact *Puffinus gavia.* Mr. D. H. Brathwaite was also asked for an opinion, and together with Mr. Scarlett and myself, felt that the measurements were well in the *huttoni* range and too large for *gavia,* and the colouration seemed to correspond to this race. The matter of confirmation was so important, that it was decided to seek a second opinion from Dr. R. A. Falla regarding identification. I now quote from Dr. Falla's reply to my inquiry, "Your specimens are all *Puffinus huttoni.* The underwing coverts of your birds are all in the

huttoni range, i.e. they are more smudged with grey brown than any *gavia*. Axillaries are of the narrow dark *huttoni* type. Lastly the undertail coverts of your No. 1 are definitely *huttoni*. The outermost are flecked on their otuer webs with brown, a character invariable in all our dozen or so skins of *huttoni* and not noted in any of our 50 - 60 *gavia*." It was now quite certain that the first nesting area of *P. huttoni* had been revealed, and because of a suggestion from Dr. Falla that young birds might still be in the burrows until late March, I returned to the colony exactly a month later with Messrs. J. Chambers and M. Harrison on 21/3/65, armed with long flexible probes. Remoteness and fog once again foiled attempts to camp right at the colony overnight. The second visit did enable an accurate burrow count to be made, and a sample of one hundred burrows were probed without finding a single bird. There was a total of 11,000 square feet in the main colony, and a representative sample of 20 x 20 feet gave a burrow count of 25, making a total of only approximately 700 burrows, to which could be added another 150 burrows in scattered areas nearby. There were many signs of great activity in the colony since my first

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XII (3) — Excavated burrow of Hutton's Shearwater; 7ft. 6 in. long, 5 in. wide and 4 in. high; nest chamber in front of left hand.

visit a month earlier, with several more partial remains of *huttoni* scattered about the area, that I had definitely not missed before, and most of the burrows had many very fresh dropping around the entrances. I now feel that had I dug out a burrow without excreta at the entrance, I would have found young birds on the February visit. The March visit did enable us to find a complete but fractured egg, which when reconstructed gave this description, ovoid, white, 59.5 x 40.7 mm.

I have definite reports from the following Kaikoura districts, of bird calls answering to the decription of shearwaters flying inland after dark, but the dates have been difficult to establish: Puketa, Linton Downs Station, Swincombe Station, north end of Kaikoura township, Hapuku Valley, and the Puhi Puhi Valley. Birds which would fit the description of *P. huttoni* have been picked up during February and March of different years, in the middle reaches of the Kowhai River and the Hapuku River, and Dr. A. L. Johnston reports that he has seen many live and dead birds every March, in Beach Road, Kaikoura, which he is now certain were *huttoni*. Some of the young birds still had a collar of chick down, and he tells me he has released many of these young birds successfully from Kaikoura beaches.

He recalled that it was on foggy, wet March nights that he has seen most of the birds, which seemed to be confused by the fog and attracted to car lights or street lamps. He said the street lamp outside the Kaikoura camping ground in Beach Road was a spot that he had

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XIII (4) — Hutton's Shearwater found alive under a street lamp in Kaikoura by Dr. A. L. Thompson on 19/3/65.

picked up most of the living and dead specimens. Dr. Johnston has a theory based on the fact that as the birds he has picked up are all healthy, and are invariably taken on a wet bitumen road at night, under a street lamp, he believes they mistake the reflection from the road surface to be their first sight of the sea on their route from the burrows and make a landing. This autumn he found a beautiful adult *huttoni* in excellent condition which had been killed by a car in Beach Road on the evening of 18/3/65. On 19/3/65 he captured a live bird (Plate 4) under a street lamp and on 23/3/65 he sent me a further dead young specimen taken in the same road. The live bird had its call recorded and was released at Shag Rock, Sumner, Christchurch, on the evening of 22/3/65 after being banded. The vent was examined by D.H.B. and the cloacal opening found to be in the form of a pronounced transverse slit though not noticeably distended, and it seems likely that the bird was an adult female (Serventy, 1956). Falla received a live young *huttoni* 12/3/65 from Island Bay, Wellington, and he mentions young *huttoni* regularly landing on the inter-island steamer express off Kaikoura between 15 - 25th March in several different years.

I have just received from Mr. A. Y. Haywood of Christchurch, a report that on 14th - 16th October, 1964, when a member of a party searching for the body of D. Winter, who was blown off the summit ridge of Mount Kaiterau, July 1964, he traversed most of the steep faces downstream on the same side of the valley adjacent to the colony I have described, and he reports a whole series of burrows, some much more extensive than I have recorded. This is obviously a downstream continuation of the one colony and should increase the population count tremendously. Mr. Haywood records that he saw a hawk fly up with an egg in its talons, which was promptly dropped and slightly broken. He describes the egg as being fresh and about the size of a pullet's, but less pointed and creamy white. They put their arms down many burrows and were able to pull out very fresh nesting straw but discovered no eggs or birds. Two freshly dead adult shearwaters were noted lower than the burrows on this date. I intend to carry out an intensive study of the breeding habits next season and hope to publish the results in due course.

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