NOTORNIS

is the journal of the Ornithological Society of New Zealand (Inc.)

Editor: E. W. Dawson,
P.O. Box 41-002,
EASTBOURNE

VOLUME 21 PART 4 DECEMBER, 1974

SIGHTINGS AND RECORDS OF THE TAKAHE (Notornis mantelli) PRIOR TO ITS "OFFICIAL REDISCOVERY" BY DR G. B. ORBELL IN 1948

By BRIAN REID

ABSTRACT

Subfossil and midden remains show the species was once distributed throughout the entire length of New Zealand and there seems little doubt that Takahe were scattered throughout a much larger area of South Island during the latter half of the nineteenth century and in the early decades of this century than is generally known.

INTRODUCTION

Owen (1848) established the genus *Notornis* on sub-fossil bones found by W. B. Mantell in a midden at Waingongoro on the North Island west coast during 1847. The first 'living' Takahe to be described by Europeans was obtained by Mantell two years later — it was taken in Dusky Sound on the west coast of the South Island.

Knowledge of the early distribution of Takahe is based on the continuing exploration of a limited number of localities having suitable sites of preservation (caves, sink-holes, middens, etc.) and must, therefore, remain fragmentary. Furthermore, some caution is required when interpreting subfossil records from middens as food was often carried considerable distances. Notwithstanding these limitations, a fairly comprehensive record of the early distribution of the species is available. Excluding the south-west of South Island (i.e. Fiordland) where Takahe are found today, subfossil material has now been recorded from 45 different localities throughout New Zealand (Hamilton 1893; Gurr 1952; Yaldwyn 1956; Williams 1960; Trotter 1965; Medway 1967 and pers. comm.; R. J. Scarlett, pers. comm.). These localities extend from the northernmost tip of North Island to the most southern headlands of South Island (Fig. 1).

NORTH ISLAND

Subfossil remains are known from 19 areas and show the species was once widely distributed throughout the island. Half of the records come from sink-holes or caves which, with two possible exceptions, are located in areas that were extensively forested in pre-European times (Holloway 1960). It seems that the North Island Takahe often inhabited localities well removed from the limited areas of tussock-grassland and was more a bird of the forest than of the more open scrub and fernlands. Yaldwyn (1956) mentions that one of several caves at Martinborough, which previously were in forested land, was a sink-hole. It acted as a pit-trap for flightless birds and contained seven *Notornis* crania.

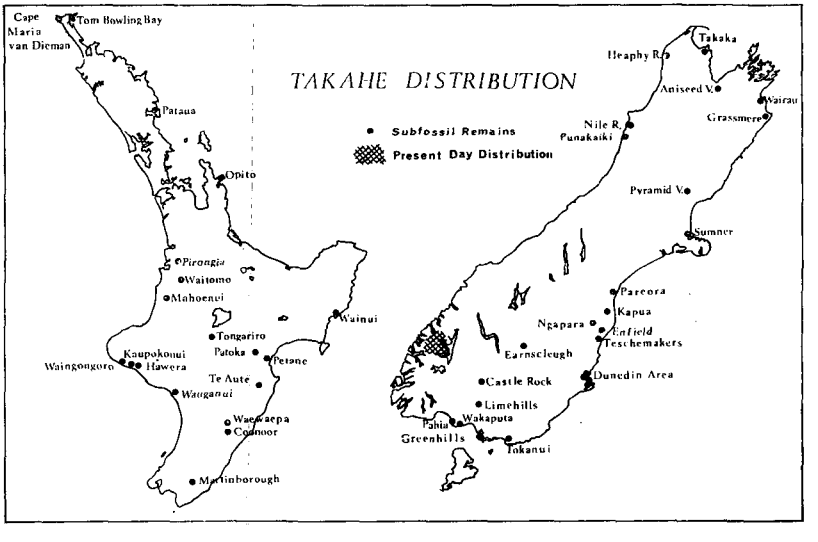

FIGURE 1 — Distribution of subfossil remains. Since 1960 (see Williams 1960, Fig. 1) Takahe remains have been found in a further 14 localities. These include nine sites in the North Island and five in the South Island.

It is not known when Takahe disappeared from North Island. While bones from early middens indicate the species was used for food, legends of the North Island Maoris give no clear reference to the bird (Williams 1960) and this suggests the North Island form either became extinct shortly following Maori colonisation or survived in low numbers during more recent centuries. Phillips (1959) presents quite convincing evidence of their existence in the Ruahine (and possibly the Tararua) ranges late last century. The Ruahines in the 1870s perhaps parallel Fiordland today as there are no obvious reasons why isolated, remnant populations should not have lingered among

the extensive undulating tussock tops and forested slopes of these mountains long after the species had disappeared from other parts of the island.

SOUTH ISLAND

Knowledge of Takahe distribution in South Island includes three categories of factual data — subfossil records, early sightings and recent surveys — along with Maori traditions and an accumulation of unconfirmed reports covering the latter half of the nineteenth century and the first half of this century. Many of these are dismissed, perhaps unfairly, as either fallacy or fantasy and only those accepted as being true or plausible are mentioned in this account.

Skeletal remains are known from 26 localities throughout South Island. Most records come from the eastern side of the island. These have not been accurately dated but are generally believed to be very old and Williams (1960) considers Takahe have long been extinct or very rare east of the Southern Alps. Midden material at Wairau Bar and Lake Grassmere was assigned by Duff (1956) to the Moa-hunter culture of 950-1550 A.D. while bones from Pyramid Valley and from some caves (i.e. Earnscleugh and Castle Rock) further south are associated with those of the large moas which Duff believes became extinct before 1450 A.D.

The foregoing suggests the species generally disappeared from this part of the island about 1100-1400 A.D.; or at a time when it is thought that large areas in this part of their range were reverting from forest to tussock-grasslands (Raeside 1948; Holloway 1954; Deevey 1955) which should have been advantageous to and perhaps led to an increase in the number of Takahe. This apparent anomaly may be explained if the climatic changes that favoured the spread of tussock also created conditions too arid for this graminivorous but water-loving rail.

Alternatively, populations may have survived in suitable areas of the Marlborough, Canterbury and Otago tussock lands until more recently than is believed by Williams, and Duff (1949) suggested Takahe once grazed throughout this extensive tussock zone.

The five records from the north-west of the island (Nelson Province) come from caves situated in, or on the coast backed by extensive forested areas which, perhaps, suggest a forest-dwelling species. However, in all instances these deposits were within 20-30 km of the nearest alpine tussock-lands and such distances could readily be covered by birds during their wintertime wanderings.

The patterns of shrinkage displayed by various extinct, near-extinct and rare native birds have been documented and discussed by Archey 1941; Oliver 1949; Williams 1956 and 1962; and Williams & Harrison 1972. Williams (1962) points out that all (including *Notornis*) follow a generally similar sequence, *viz.* extinction in North Island followed by diminution in the south with final stands being

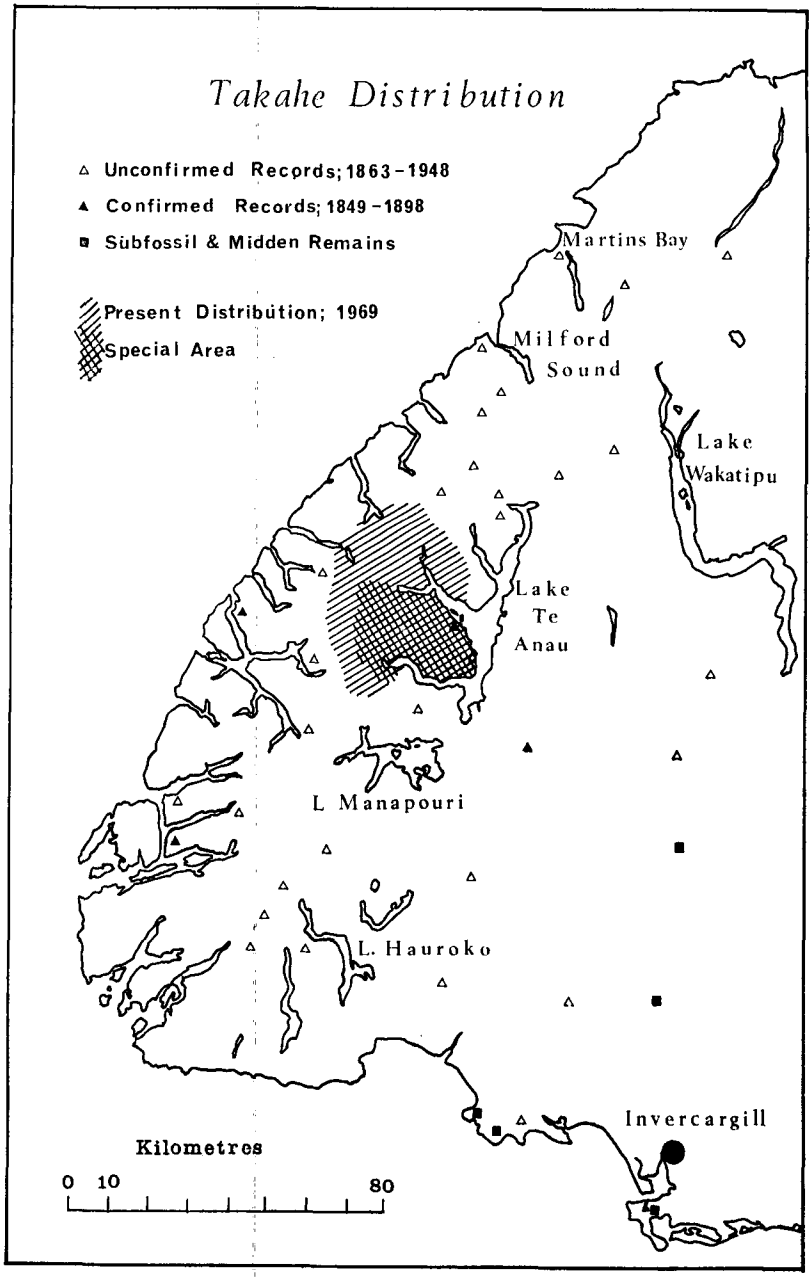

FIGURE 2 — South-west area of the South Island showing the present distribution of Takahe and also the locations of unconfirmed sightings, early captures and subfossil remains.

made in Fiordland — and his view that the decline in *Notornis* range and numbers during pre-European times has resulted primarily from climatic changes remains undisputed.

A few Takahe may have survived in the Nelson district during European times. In 1866 a Mr Gibson described a bird seen near Motupipi to Sir James Hector which the latter had no doubt was a Takahe (Turbott 1967) and 95 years later D. S. Allison found undated Takahe bones in a cave at Motupipi. Gordon Craig claimed seeing Takahe in the Nelson hills during 1934 and the same claim was made by two others in the same locality the following year. Although R. A. Falla (pers. comm.), who was familiar with the details, sought support for Craig in 1937 when the latter notified of his intentions to confirm the species presence, the official attitude of the day prevented this. Perhaps Takahe, like New Zealand's other very rare ground bird, the Kakapo *(Strigops habroptilus)*, survived for longer and in greater numbers in Nelson than in any other part of the country with the exception of Fiordland.

There can be little doubt that the number of Takahe living in Fiordland has progressively declined during this century. Although only four living specimens were recorded (Oliver 1930) prior to the rediscovery in 1948 (Orbell 1949), it seems that Takahe were still widely distributed throughout Fiordland in the early nineteenth century. These four records (Dusky Sound, 1849; Deas Cove in Thompson Sound, 1851; ' the Wilderness ' 5.5 km east of the Whitestone River, 1879; and on the shore of the Middle Fiord of Lake Te Anau about one km south of the mouth of the Snag Burn in 1898 (Drummond 1910)) show that during the latter half of last century the species still occurred east of Fiordland and probably inhabited an area in excess of 3850 sq. km or 1500 sq. miles (Reid 1969) as it is unlikely that four random records would denote extreme margins of the birds distribution. Unconfirmed reports from the middle and late nineteenth century suggest, in fact, that Takahe were then spread somewhat irregularly and discontinuously throughout about 15,000-16,000 sq. km (6,000 sq. miles): from Preservation Inlet in the south-east to north of Milford Sound; and to Mossburn and the Irthing River in the east.

There were no confirmed records between 1898 and 1948, and the species was considered to be ' officially ' extinct although occasional sightings of Takahe were reported from Preservation Inlet to Milford Sound and from as far east as the Waiau River during this 50 year period. These three localities form the apices of a triangle some 11,500 sq. km (4,500 sq. miles) in area in which the Murchison Mountains occupy a more or less central position.

In addition to the reports from within this roughly triangular block, other unconfirmed sightings were reported from further north. These include:

Arawata River. In June 1950 L. Pracey (pers. comm.) was informed by an elderly ex-employee of the Ministry of Works at Jacksons

Bay that Takahe had been seen occasionally on the tussock slopes above the junction of the Joe and Arawata Rivers and below the Snowball Glaciers on the eastern side of the Arawata Valley earlier this century. Close questioning by Mr Pacey did not shake the old man's story.

Hunter Valley, Lake Hawea. " During Government deer control operations in 1943 my brother Norman shot what he thought was a stray pukeko in the head waters of Lake Stream. The area is not suitable habitat for pukeko and on recovering the bird he found it to be a takahe. I questioned him again about this incident after Notornis were rediscovered in the Murchison Mountains but he remained emphatic that the bird in Lake Stream was a Takahe." (T. Thomson, pers. comm.).

These and several other ' records,' along with the sightings in Nelson by Gibson and by Craig, suggest an irregular pattern of shrinkage with small pockets of Takahe persisting for longer in some isolated areas than in the surrounding country. Although this possibility was suggested by G. R. Williams (unpubl. rept, Dept Internal Affairs 1950), his thinking was somewhat contrary to established attitudes. Even following rediscovery in 1948, it was widely accepted that Takahe had been absent from all areas for a long time with the recently proven exception that a few birds still survived in a restricted area of the Murchison Mountains. This belief was in accord with a tradition of pessimism dating back to 1851 when the second living specimen was caught and Dr G. A. Mantell's *Fossils of the British Museum* was published. This book contains as its frontispiece an illustration of *Notornis* and in its text — " . . . it is unlikely that any further living specimens will ever be found . ." In official circles this attitude prevailed through time and reports from trampers or hunters were usually regarded with either scepticism or outright disbelief. Some who reported the presence of Takahe were discouraged, or even obstructed, from following up their clues. Reports were often hushed up and then ignored because — " . . in the interests of conservation . . . if there are any species generally believed to be extinct, the best course is not to disclose any different information . . . (and thus ensure) . . the birds are not interferred with " (W. E. Parry, Minister of Internal Affairs, 26 November 1937). In retrospect these attitudes are hard to comprehend but the limited resources of the nation during the early decades of this century precluded the implementation of more positive policies, and secrecy does ensure a certain protection.

During the early days members of exploration and survey parties watched for Takahe. The surveyor, E. H. Wilmot, while working between Manapouri and Dusky Sound in 1897, remarked on the paucity of birdlife and wrote — " . . . of course we all kept a lookout for Takahe, but saw no signs of this rare bird " and John Hay (District Surveyor, Southland), who explored country between

the mouth of the Waiau and Preservation Inlet in 1883, commented — " . . . Kiwis are not very numerous, . . . Kakapos are very plentiful in most places . . . (but) . . . no signs of Takahe." Although Maori tradition and folklore inferred, if not openly stated, that Takahe lived above the bushline, Europeans were more influenced by the fact that the four living specimens taken last century came from sea level or low altitudes and generally confined their searches to these areas. Smith (1888) probably reflected the opinion of the majority (including Charles Douglas; Pascoe 1957), and also accounted for the small number of reported sightings, when he wrote — " . . . . After examining some of the secluded habitats of *Notornis* . . . . . (I consider) . . . it would be found in swampy parts of the bush, or on sedgy lagoons some distance inland on the southern rivers of Westland."

While Buller (1882) who thought " it possible that many yet survive " and Benham (*Otago Daily Times* 23 August 1898) both stated the Takahe lived at higher altitudes than suggested by Smith — neither endorsed the Maori belief that it lived above the forest line. Following the capture of the third specimen, Buller wrote — " the weather had been exceptionally severe . . . (and the bird) . . . had been driven down from high country." After the fourth specimen was taken, Benham wrote — " all four were caught during winter . . . . on low lying ground, but there is little doubt that *Notornis* usually lives in higher and rougher bush, and was driven down by stress of weather."

The Doon block, a popular hunting ground since the early 1920s, has been traversed by many since " P. Q. Caples and W. Dalton searched the rivers at the head of the Middle Fiord in 1863 . . . . . (and) . . . Quintin MacKinnon and George Tucker followed the Doon River and Large Burn in 1887 " (Hall-Jones 1968); and yet it was not until 1956 that sign of Takahe was first reported in this locality (P. W. Maurice, pers. comm.). This and subsequent reports were confirmed by Wildlife Service Officers in 1967.

Unconfirmed sightings of Takahe made prior to 1948 in the south-west of South Island are grouped according to locality and the region is divided into four zones —

South Zone:

South of Lake Manapouri — Breaksea Sound, and west of the Waiau River.

Mid Zone:

The area north of Manapouri and Breaksea, but south of Clinton River and Sutherland Sound — and west of Lake Te Anau.

North Zone:

From Sutherland Sound to Martins Bay and west of the Hollyford and Pyke Rivers.

East Zone:

Includes all reports east of the Waiau and Lake Te Anau.

SOUTH ZONE

In January 1887, 38 years after the first living Takahe known to Europeans was caught by sealer's dogs in Dusky Sound, Reischek (1888) unsuccessfully searched for Takahe. He " . . . explored about 20 sq. miles (50 sq. km) of good grass country . . . capable of pasturing 1600 head of cattle . . . on table land about 1400 feet (430 m) above sea level . . ." between Chalky and Dusky Sounds.

In 1888 Park (1889) reported hearing Takahe calling from three or more different localities in Dusky Sound. These, along with his records of Takahe in the Matukituki River in 1881 were strongly disputed by Melland (1890) who considered Park's descriptions of the calls better fitted those of Kakapo. Park (1891) replied with feeling and while Gurr's (1952) — " own experience of the habits of *Notornis* and its unmistakable ' booming ' note — (make him) — reasonably certain that Park's records are correct ", Williams (1956) considers that — " in general the honours seem to be solidly with Melland." The differences appear more significant than the similarities between Park's Dusky Sound and Matukituki records and while I am inclined to agree with Park's interpretation of the former, I believe he encountered only Kakapo in the Matukituki. The surprising point in this wrangle over the identity of the anonymous bird calls is that neither participant compared or contrasted these with the calls of the Weka (*Gallirallus* spp.) as the range and variety of Takahe calls are somewhat similar to those of the Weka — but tend to be deeper, louder, more resonant and more percussive.

While on a moose-hunting trip in Dusky Sound during 1921-22 Charles Evans (a ranger for the Southland Acclimatisation Society who had previously located " large straw stools " now known to be characteristic of Takahe) found footprints which he considered were made by *Notornis* in Beach Harbour and the launch crew saw a strange bird " large as a goose, and with the appearance of a swamp-hen." Evans later examined the feet of the specimen at Otago Museum and these corresponded with the prints he had seen (*Southland News* 25 November 1948).

There have been several reports of Takahe in the country south of Dusky Sound. An old Maori client described Takahe to Bathgate (1899), compared them with the Pukeko *(Porphyrio p. melanotus)* and said he had been told by the Aparima Maoris some 50 years previously that these birds were plentiful, but " went in patches," between Preservation Inlet and Lake Hauroko.

While Sir George Grey was at Preservation Inlet in 1868 some Maoris indicated a valley at the head of the Inlet where *Notornis* were said to be plentiful (Turbott 1967).

Two reports on the files of the Department of Lands & Survey and the Department of Internal Affairs are of interest. William Campbell (in a report dated 20 December 1948) stated that during the depression years (1928-1934) he and a companion spent most

of their time goldmining at Wilson River, south of Puysegur Point. To supplement their meat supply they would, from time to time, boat to Cascade Basin at the head of Long Sound and then tramp east to the tussock tops around the head of Lake Poteriteri where they saw birds which they described as " Grandfather Pukaki " (i.e. Pukeko) on many occasions.

The second report came from Cuthbert, a Government deer culler, who claimed seeing a bird " half larger than a pukeko — but with short legs " on a river flat between Long Sound and Lake Hauroko during 1937. The Forest and Bird Protection Society was opposed to Cuthbert's plan to return to the area in case the bird was caught and sold, and at their suggestion he was transferred from the district — and his story was discredited.

In November 1932, Mr E. Guthrie and his truck driver cornered, but failed to catch, a bird " 18-20 inches high, beak and legs decidedly red, feathers green — and flecked with blue " at his timber mill on the Alton Burn, four km north-west of Tuatapere. When chased, this bird scrambled and hopped over logs — it could not fly. Although Guthrie had his belief that the bird was a *Notornis* reinforced the following month when he visited Wellington to discuss the sighting with Dr W. R. B. Oliver, he — " . . . was no publicity hunter, most reliable . . and wished to remain anonymous " (F. G. Hall-Jones pers. comm.). The press, however, obtained the details from a third party five years later (*Evening Post* 1 December 1937).

A National Forest Survey party traversing the forests of Western Southland during 1946-47 was advised by an old prospector to watch for " Giant Pukakis " which were " good eating " on the tussock tops in the Hauroko - Poteriteri district (W. J. Wendelken pers. comm.).

MID ZONE

Maori tradition indicates that Takahe were well known in the country to the west of Lakes Te Anau and Manapouri. In his report of 1863, and later in a letter to Buller (Turbott 1967) Hector wrote — " I heard from the Maoris that these birds are, as yet, tolerably plentiful on the west side of Te Anau Lake . . . (particularly) . . . at the head of the North-West Arm near a small lake in a valley that leads to Bligh Sound. When feeding they are in the habit of cutting the grass . . . and laying it in a heap." The last statement suggests that at least one Maori informant was quite familiar with the habits of *Notornis,* while the preceding statement could refer to Lake Hankinson which was later mentioned by James Richardson in a series of historical articles on Fiordland written for the *Otago Daily Times* in 1891 — i.e. " The takahe is a species of large pukaki, much esteemed as a food by the natives who journeyed even as far as Lake Hankinson . . . specially to hunt them."

Following the capture of the fourth Takahe in 1898 an article in the *Western Star* stated — " There died at Colac Bay about 30 years ago an old Maori, Abraham . . . . . who (with others) used to make

periodic trips . . . crossing Te Anau on Korari rafts . . . to a valley at the back of this lake . . . . (which) . . . . they averred, was the only place they saw and killed the bird, since called *Notornis* . . . for food." (Beattie 1949).

Cowan (1906) writes — " In former times, according to Te Paina and Kupa Haereroa of Colac Bay, takahe were plentiful around the shores of Te Anau and Manapouri. They were driven down from the mountains by winter snows . . . . . One of the spots much frequented by the bird was a lagoon . . . Te Wai-o-pani on the south-west shore of Te Anau. This lagoon is backed by a high cliff. Here the takahe . . . was hunted with dogs. The white man . . . has not yet discovered this well hidden spot." Cowan, along with John Hay (1883, Lands & Survey Fieldbooks, Invercargill), Richard Henry (1900), and John Moffett (*Southland News* 28 September 1909) expressed the belief that a few Takahe still existed west of Te Anau and Park (1889) stated that " much time has been spent searching for them " in that locality. Richard Henry who " was always on the look out for takahe " (Hall-Jones 1968) spent considerable periods in the mountains west of Te Anau " hunting for the unknown bird . . . . responsible for the powerful and alarming . . . booming note " (Melland 1890) and, with " Quintin MacKinnon, followed the Tunnel Burn to above the bushline (i.e. the start of Takahe Valley) where they came on some old deserted tussock whares used by the Maoris when hunting takahea " (Beattie 1949).

Hall-Jones (1972, " Te Wai-o-pani," unpubl. mss) states that while there is no mention of these tussock huts in the written reports of either MacKinnon or Henry, other evidence (*in* Hall-Jones 1945) convincingly demonstrates that Te Wai-o-pani of the early Maoris is, indeed, the vale (since named Takahe Valley) where Dr G. B. Orbell rediscovered *Notornis* in 1948 — and where K. H. Miers found signs of Maori habitation under rock shelters one year later (Duff 1952). Duff thought the shelters were occupied by a small party of Maoris some time after the beginning of the eighteenth century, and his opinion was endorsed by the subsequent carbon-dating of some of the material at 1720 A.D. plus or minus 60 years (Fergusson & Rafter 1957).

According to E. S. Dollimore (" Takahe, Historical Notes," unpubl. 1956), Beattie had long identified Takahe Valley as Kohaka-Takahea — the legendary " nesting place of the takahe." He did not, however, publish this information until the year following Orbell's rediscovery (Beattie 1949). Beattie (1945) mentions that the Kepler Mountains, to the old Maoris, were the Takahe Mountains and access for hunting parties was up the Wai-Takahea Stream (now Forest Burn) which drains into the Waiau between Te Anau and Manapouri.

Within days of Orbell announcing the rediscovery, Mr Les Murrell — who opened up the route from Manapouri to Bradshaw Sound by placing a series of camps along the Freeman Burn and Tuaraki Stream in 1933 (Hall-Jones 1968) — informed Wildlife Service

staff at Te Anau that he had known of Takahe in the upper Freeman Burn for at least 20 years (K. H. Miers pers. comm.). Murrell had remained silent about his sightings and was perturbed because now the species' existence was well known.

The Murchison Mountains were a popular area for shooters from the 1920s to the 1940s. In the early twenties the late General Sir Norman William McDonald Weir (a Councillor of the Southland Acclimatisation Society) and T. F. Gilkinson saw " Pukeko through binoculars while scanning the floor and slopes of Takahe Valley for deer (F. G. Hall-Jones pers. comm.) and the *Auckland Weekly News* of 17 May 1933 contained a photo of Takahe Valley over the caption " . . . . successful stalkers . . . this year were the Nitz brothers of Masterton . . . the valley is a splendid feeding ground."

Trevor Thomson and his brother (pers. comm.) did not see Takahe " or any evidence of them " during a day's shooting on the tussock tops above the Ettrick Burn (Dana Peaks area) in November 1946; but the following year C. Drysdale, after returning from a shooting trip in the neighbouring Chester Burn, informed C. E. McIvor (pers. comm.) of the presence of " pukeko " on the high tussock slopes of that head basin. A party shooting red deer and wapiti hybrids during April 1948 reported hearing strange ' kerlonk ' bird calls in the Snag Burn (K. H. Miers pers. comm.) and there were several other reports which indicate the Takahe were either seen or heard, but not recognised, in the Murchison and other Mountains west of Te Anau during the years preceding their " official rediscovery."

These reports include one of " unknown bird calls and strange tracks in the Mid Burn " by Ken Sutherland (Orbell, letter of 18 January 1949); and another stating solitary specimens had been seen at various unspecified dates in the Glaisnock River (Beattie 1949). Both Les and Guy Murrell independently, and at different times, stated a belief that Takahe were in the Billy Burn (Vercoe, memorandum 7 March 1950; J. A. McIntosh pers. comm.). Guy Murrell's belief was based on the observations of Bain who spent considerable periods in this river during (or about 1940) and saw " funny swampies (i.e. pukeko) that could not fly " on the first clearing (J. A. Anderson pers. comm.).

Birds, since believed to be Takahe, were seen on at least three occasions in the Worsley Stream — first by R. Shearing in the South Branch (Waterfall Creek) during 1928 (Orbell, letter dated 18 January 1949) and then twice by T. H. Galbraith. Shearing later communicated his observation to R. A. Falla and Galbraith, in a letter to C. A. Fleming (dated November 1952), wrote — " In January 1932 . . . . while fishing about a mile up the river with Mr Cheriton (manager of the Milford Track) we saw what we took to be two pukeko . . . but they appeared to be larger . . . and their colour different. The birds were in an open forest glade . . . a strange locality for pukeko as there was no swamp country in the vicinity. In January 1933 we returned to the Worsley and I saw . . . . the same pukeko in

almost the same locality . . . I walked to within 100 yards of them and they disappeared into some scrub. I was convinced these were not the ordinary pukeko as I had seen these at close range a few weeks previously. Neither of us had . . . heard of the *Notornis* . . . . I next visited the Worsley in January 1951, . . . after the rediscovery . . . and searched all over the open glade, but saw nothing of the birds." That these 'pukeko' did not fly, but moved into scrub, is of interest; and Vercoe, after checking on a different sighting, stated (memorandum, 1950) — " . . . There is no doubt that some takahe were in the Worsley about 15 years ago."

In addition to the two captures at Dusky and Thompson Sounds, there were several unconfirmed reports of Takahe west of the main range, including two from the latter Sound. Hector (1863) reported finding Takahe footprints on a swampy flat at the head of Deas Cove (where one specimen was captured 12 years earlier) on 5 August 1863 and Cumming (1953) saw a bird 17-18 miles (28 km) further up Thompson Sound at Gaer Arm in January 1910. This bird, which was — " . . . an outsize in pukekos, at least twice the size and more colourful . . . like a Black Orpington rooster but more streamlined" walked out of the bush onto a sandy spit and stood in full view of the cutter's racing crew (resting 50 feet off-shore) for about three or four minutes before taking fright and scuttling back into the bush when a sailor splashed with his oar. Although January is an unlikely month for Takahe to be at low altitudes Cumming's account is, nevertheless, most convincing.

Beattie (1945) records a sighting by Charles Port and James Richardson of " five overgrown swamphens on a piece of semi-cleared land " while returning down the Irene River to Emelius Arm (Charles Sound). At a later date Port viewed the mounted Takahe at Otago Museum and thought it looked smaller than the living birds he had seen. " Port had informed Robert McNab and Dr Young of his find but neither believed the story. He was very hurt over this. He kept a diary and notebooks, and having received much historical information from him, I had no difficulty in believing him when he told me at Riverton some time about 1910 " (Beattie pers. comm.). In support of Beattie's defence of Port — the specimen at Dunedin does look smaller than birds in the wild and even today a few Takahe still inhabit the upper reaches of the Irene River.

An anonymous sighting of Takahe in Doubtful Sound some time prior to the rediscovery was reported by A. E. Hanan in the *Christchurch Press* on 4 October 1949.

NORTH ZONE

An early probable reference to *Notornis* which is mentioned in the cruise journal of HMS *Acheron* is cited by Beattie (1950). While anchored in Milford Sound during March 1851 Stevens (the pilot) saw a mysterious bird with " . . . intense magnificence of plumage . . . . (and) . . . of all colours." Later a shore party,

including Dr Lyall, fancied seeing the same bird while collecting ducks, kakapo and kiwi. Hall-Jones (1968) points out that the narrative of this cruise — " . . . contains a very complete list of birds, including all those likely to be confused with *Notornis* . . .(and therefore) . . . there can be little doubt this is one of the earliest recordings of the species."

Between 1920 and 1950 there were several reports of Takahe in Milford Sound — but some of these sightings were undoubtedly of Pukeko. In November 1923, R. A. Waitiri, the launch master at Milford, approached to within 10 feet of a " strange bird, like a pukeko, only larger." Mr A. Leigh-Hunt requested further details and Waitiri, who was unfamiliar with Takahe, obliged by drawing and describing this species very accurately.

In April 1925 a visitor to Otago Museum, after inspecting the mounted specimen, was positive in his assertions to W. Goodlet (the Custodian) that he had recently seen such a bird at Milford Sound (*Otago Daily Times,* 16 April 1925). During the same year workers on the Milford Track also reported seeing Takahe. Although their claim was greeted generally with scepticism, Mr Dan Greaney vouched for the integrity of these observers in a letter to R. A. Falla (pers. comm.).

Don Matheson, an honorary ranger for the Southland Acclimatisation Society, in a letter to Internal Affairs dated May 1940 wrote — " . . . A friend, C. Rogers, who worked on the Milford Track during the summer of 1939-40,claimed there were a pair of *Notornis* where the Arthur River flows into Lake Ada. Rogers was certain they were not pukeko, although somewhat similar. He said the birds had been seen by many tourists, one of whom informed him they were worth 1000 pound (i.e. 2000 dollars) to anyone who could get them to a museum . . . ." Mr Long (manager of the hostel at Milford) stated that Pukeko had previously been reported from Lake Ada and while he personally was inclined to think Rogers saw Pukeko he " knew for sure that a takahe had been heard and chased further down the Sound at Anita Bay some years earlier by Guy Murrell and Mr McKenzie of Martins Bay."

Williams (1954) mentions that an old friend of his, when guiding on the Milford Track, saw Takahe on two separate occasions and heard them call more frequently.

Daniel McKenzie, the pioneer settler of Martins Bay (Jamestown) found bird prints six inches long on a sand ridge while travelling along the coast to the Kaipo River. He had seen such tracks before and stated they were made by a " fairly tall bird with bright blue plumage " which he concluded was a Takahe (E. S. Dollimore 1956; unpubl. notes). His daughter Alice saw a large blue bird which she took to be a *Notornis* in 1880 and again in 1889. She records that her brother independently saw the same bird and that over a period of several years its prints were often seen during winter in the sand at Martins Bay (McKenzie 1947).

In 1863, three years before Daniel McKenzie settled in Martins Bay, Captain Alabaster sailed up the Hollyford past Lake McKerrow and up the Pyke River to discover the lake that now bears his name. " During the trip, . . . according to Vincent Pyke, . . . Alabaster is reported to have encountered a party of Maoris whose diet commonly included the takahe." (Bennett 1952).

EAST ZONE

The third Takahe captured last century was injured by a dog on Hankinson's property, some 13 km ESE of Te Anau township in 1879. It is unlikely that this one confirmed record was the only bird seen; and it seems quite probable that the species, although rare, was fairly widespread east of Te Anau and the Waiau River 50-100 years ago. The old Maori who mentioned that Takahe were to be found in the Lake Hauroko area (Bathgate 1899) also stated that he had seen a dead bird while visiting Aparima some time before 1850. The account implies that the bird was feathered and in good condition; and this suggests it had been caught locally — and not carried for several days across at least 72 km (45 miles) of rough travelling that lies between these two localities. With the possible exception of species which were of ceremonial importance, game was usually 'dressed' before being carried over the considerable distances that sometimes separated hunting ground from village. There are no records, however, that indicate Takahe were of special significance and furthermore, food items could only outlast long journeys if the original supply was abundant, or if the intervening country provided the needs of the party while en route.

During the early days of European settlement there were one or two vague stories of large Pukeko on the lower slopes of the Takitimu Mountains, and these include a now anonymous report of " an extra large breed in the Blackmount area that could have been takahe " (G. Molloy, pers. comm.).

Two nearly complete subfossil *Notornis* skeletons were found at Castle Rock in 1892 (Hamilton 1892) — and two years later W. Malone (pers. comm.) saw a freshly killed bird about 8 km further up the Oreti Valley near the Irthing River. He writes — " . . . About 1875 my parents took over a farm at Lowther . . . . to the west was a large cattle run — the Five Fingers Estate. The vegetation was predominantly a large red tussock three to four feet high; on the streams bullrush and flax grew. There were no trees. The area teamed with wildlife . . . . Pukeko invaded our oat and turnip fields and strolled around our house. Three miles away at Round Hill was a cattlemen's camp. Two men from this camp, wishing to catch a train, cut across country and waited at our place. They carried a strange bird which their dog had caught and killed a mile-and-a-half back. A discussion followed. I was an interested listener. These men had no previous knowledge of the bird which was of strong build, larger than a domestic fowl, with blue feathers and a beak formation similar

to the pukekos. My father, after 20 years residence in the area, had neither seen nor heard of this species. When the train arrived the men departed, taking the bird with them. At the time I was about eight years of age. During the years that have passed I have often thought of this mystery bird and think it could be one of the species recently rediscovered west of Lake Te Anau."

Although Lowther lies approximately 48 km (30 miles) east of 'the wilderness' (Hankinson's), the Mararoa and Oreti River catchments formed a continuous zone of more or less suitable habitat. Two unconfirmed reports relate to the mountains north of, and in part drained by, these rivers. John Moffett and a companion (*Southland News* 28 September 1909) reported seeing a Takahe by a swamp at the head of the Mataura River in the Eyre Mountains — and birds were seen in the Ailsa Mountains by T. L. N. Johnston and 'Jock' Edgar (guide on the overland track from Queenstown to Glade House) during the summer of 1921-22. This sighting was — "on the open tops east of Lake McKellar, in an area known as The Keys which contains several small tarns and lies between the heads of the Caples and Greenstone Rivers — the place is reached by the old track from the Howden hut to the tops, then turning due south — at the time we took the birds to be pukeko but I now believe, with certainty, that they were takahe" (T. L. N. Johnston, letter to F. L. Newcombe, 1952).

In 1910 one of Edgar's assistant guides reported having seen an "over-sized, brightly plumaged pukeko" on the Te Anau side of, and just below Birling Pass in the Earl Mountains. The guide was surprised "because pukeko do not occur at such high altitudes" and Sir George Fenwick, after obtaining full details, was convinced the bird was a *Notornis* (*Otago Daily Times* 17 March 1950).

It may seem surprising that the Malone family along with several others who reported 'strange birds' were unaware of their probable identity until the austere conditions and poor communication of those days are taken into account. The pioneer farmers were totally involved 'breaking-in' their land and — "it is said that after the *Notornis* was caught in 1898 and sent to the Otago Museum, an old settler from Te Anau went to Dunedin to see it, expecting to find a great novelty. He looked at it for a moment and exclaimed — 'Why them's the birds we lived on all last winter. Our dogs used to catch 'em in the swamp'" (*Southland News* 25 November 1948). Although this report probably greatly exaggerates the number of captures, it has credence in that the birds were taken during winter.

Drummond (1910), paraphrasing a letter from J. Connor (Hankinson's manager in 1879), states that Robert Scott, the rabbiter whose dog caught the Takahe in 'the Wilderness,' was unaware of its identity or value. Scott had removed the bird from his tent pole and thrown it into a bush when preparing to shift camp site because even the "Keeping of a few feathers from . . . this somewhat large pukeko . . . . was hardly worthwhile." Connor, who visited Scott

as the latter was packing, was casually shown the discarded specimen and he recognised " it as a stranger which he guessed was probably a *Notornis.*" Drummond ends his article thus — " The incident gives rise to some reflections in regard to the number of specimens which may have been found, but which, through sheer ignorance, have been lost to the world."

During February 1949 I was led, by an octogenerian store-keeper at Rotokawau, into discussing the recent rediscovery. He grew up on a farm east of Te Anau and stated that a few specimens, which were 'good eating — but all drum-stick,' had been taken in the back country behind his home during the period 1875-1885. Recent dissections of Takahe have made his statement abundantly clear — each leg and thigh contains nearly five times as much flesh as the breasts in this flightless species.

OTHER SIGHTINGS AND COMMENTS

A contributor to the *Lyttelton Times* (Anon. 1886) wrote — " . . . . not more than a year ago a Maori shearer assured me that there were still plenty of Notornis in certain localities in the Te Anau district " and Potts (1873), who had recently met a man whose diet probably included Takahe, regretted that reports of rare species were not forthcoming because — " the men who seek a living in the wilds of the S.W. coast of the South Island are not given, as a class, to the study of natural history." Concern was felt that while those who could encounter *Notornis* in their day-to-day living may be willing to eat the bird, they were seldom inclined to make their encounters public and, as a consequence, science could not " fully elucidate on the problems of this species " (Buller 1899). Buller continued — " . . . we should escape the reproach of posterity by doing all in our power to preserve the species . . . . (or failing this, to at least obtain) . . . . a full life history of this and other expiring species " and A. Hamilton considered that the authorities, as a logical start, should organise an expedition to locate Takahe (Bathgate 1899). Government had higher priorities for its limited exchequer so the visiting Bishop of Salisbury, in a sermon given at St Pauls in Wellington — " hoped that in this centre of activity in the Colony, there would be found gentlemen of leisure who would consecrate their lives to the study of the rare and vanishing fauna " (Buller 1899).

The Bishop's plea remained unheeded and, over the decades, reports of Takahe were infrequent. Two, reported by the Custodian of Otago Museum (W. Goodlet) in 1925, are of interest. " During 1924 a visitor from Te Anau asked to see the takahe exhibit. He satisfied me that he knew the haunt of *Notornis,* and mentioned that he had seen the bird three times within the previous three months. Another visitor during March 1925 definitely identified the mounted specimen as being the same as a bird he had seen and carefully noted particulars of in the Te Anau district. This person was convinced enough to also report his observations to Prof. W. B. Benham." The Custodian, unfortunately, did not record whether the sightings were made on the east or west side of the lake.

Takahe have even been reported on off-shore islands. A Mrs Cameron of Centre Island in Foveaux Strait stated that two birds "resembling pukeko, but of the size of a turkey" were killed and eaten by Maoris in 1878. She subsequently offered twenty pounds (equivalent to about $400 in 1974) for a specimen, but without success (Chapman 1882). These birds presumably came from the mainland — the headland of Colac Bay lies 8 km to the north and it was at Lake George, near Colac, where an old Maori claimed seeing three or four Takahe when a small boy. Beattie (1949), who interviewed the old man before 1910, quotes him thus — "It is a big species of pakura (swamphen), but is more forcible, and would barge its way through growth and swamp."

Oliver (1930) never even hinted that Takahe might be extinct although more than 30 years had passed since the last specimen was obtained, nor can I find any other pre-rediscovery reference that states such a belief. Both Herries Beattie (pers. comm.) and F. G. Hall-Jones (pers. comm.) believed the circumstantial evidence and hearsay that came their way prior to 1948 was sufficient to nullify any pessimism. The latter wrote — "No one who gave any thought to *Notornis* believed the bird to be extinct" — and labelling it such at the time of Dr Orbell's rediscovery — "was newspaper sensationalism to dramatise what was (in any event) a very exciting occurrence."

ACKNOWLEDGEMENTS

My sincere thanks to Sir Robert Falla and Messrs John A. Anderson, Herries Beattie, F. G. Hall-Jones and Ron Scarlett — all of whom made valuable suggestions and supplied information additional to that available in the literature. I also thank officers of the New Zealand Forest Service and Department of Lands for providing material from their records; and Drs J. Hall-Jones and G. R. Williams for comments on the text.

LITERATURE CITED

ANON. 1886. The Notornis in New Zealand. N.Z. Farmer, 6 (12). Dec.: 360.

ARCHEY, G. 1941. The Moa: a study of the Dinornithiformes. Auckland; Unity Press. Auckland Institute and Museum, Bulletin 1: 140 pp.

BATHGATE, A. 1899. Minutes; Meeting of Otago Institute, 13 Sept. 1898. Transactions and proceedings of the N.Z. Institute 31 (1898): 739-740.

BEATTIE, HERRIES. 1945. Maori lore of lake, alp and fiord. 150 pp. Dunedin: Otago Daily Times.

BEATTIE, HERRIES. 1949. The Maoris and fiordland. 104 pp. Dunedin: Otago Daily Times.

BEATTIE, HERRIES. 1950. Far famed Fiordland. 141 pp. Dunedin: Otago Daily Times.

BENNETT, W. J. 1952. Pathfinders in the land of the Notornis in the series "Threads of History." Otago Daily Times, 7 June 1952.

BULLER, W. L. 1882. On the Notornis. Transactions and Proceedings of the N.Z. Institute 14 (1881): 238-244.

BULLER, W. L. 1899. On the ornithology of New Zealand. Transactions and Proceedings of the N.Z. Institute 31 (1898): 1-37.

CHAPMAN, F. 1882. Minutes; Meeting of Otago Institute, 6 April 1881. Transactions and Proceedings of the N.Z. Institute 14 (1881): 561.

COWAN, J. 1906. Notes on some South Island birds, and Maori associations connected therewith. Transactions and Proceedings of the N.Z. Institute 38 (1905): 337-341.

CUMMING, W. A. 1953. *Notornis* reported seen in 1910. Notornis 5 (3): 83-84.

DEEVEY, E. S. 1955. Paleolimnology of the upper swamp deposit, Pyramid Valley. Records of the Canterbury Museum 6 (4): 291-344.

DRUMMOND, JAMES. 1910. The Story of the *Notornis* and How the Ross brothers found the fourth *Notornis*. Two articles citing letters by Dr Young, Donald Ross and J. Connor in the 1910 series of Nature Notes, Auckland, N.Z. Herald.

DUFF, R. S. 1949. Pyramid Valley. 47 pp. Christchurch. Canterbury Museum publ.

DUFF, R. S. 1952. Recent Maori occupation of Notornis Valley, Te Anau. Journal of the Polynesian Society 61 (1-2): 90-119.

DUFF, R. S. 1956. The moa-hunter period of Maori culture. 400 pp. 2nd ed. Wellington: Whitcombe and Tombs.

FERGUSSON, G. T.; RAFTER T. A. 1957. New Zealand ^{14}C age measurements. N.Z. Journal of Science and Technology 38B: 732-749.

GURR, L. 1952. A skeleton of Notornis from Waitati, Otago. Transactions of the Royal Society of N.Z., 80: 19-21.

HALL-JONES, F. G. 1945. Historical Southland. 212 pp. Invercargill: H. and J. Smith.

HALL-JONES, JOHN. 1968. Early Fiordland. 199 pp. Wellington: A. H. and A. W. Reed.

HAMILTON, A. 1893. On the fissures and caves at the Castle Rocks, Southland — and the birds found in them. Transactions and Proceedings of the N.Z. Institute 25 (1892): 88-106.

HECTOR, J. 1863. Geological expedition to the West Coast of Otago. Otago Provincial Government Gazette 6: 435-468.

HENRY, R. 1900. On the probable origin of *Notornis* and its extinction in New Zealand. Transactions and Proceedings of the N.Z. Institute 32 (1899): 53-54.

HOLLOWAY, J. T. 1954. Forests and climate in the South Island of New Zealand. Transactions of the Royal Society of N.Z. 82: 329-410.

HOLLOWAY, J. T. 1960. Pre-European vegetation of New Zealand: *in:* A descriptive atlas of N.Z. (ed. A. H. McLintock). Wellington: Government Printer.

McKENZIE, ALICE. 1947. Pioneers of Martins Bay. 129 pp. Christchurch: Whitcombe and Tombs.

MEDWAY, D. G. 1967. Avian remains from new caves in the Tauma-Tamaire District. Notornis 14 (3): 158-160.

MELLAND, E. 1890. Notes on a paper entitled 'The Takahe in Western Otago' by James Park. Transactions and Proceedings of the N.Z. Institute 22 (1889): 295-300.

OLIVER, W. R. B. 1930. New Zealand Birds. 541 pp. Wellington: Fine Arts (N.Z.) Ltd.
OLIVER, W. R. B. 1949. The Moas of New Zealand and Australia. Dominion Museum Bulletin 15. 205 pp.
ORBELL, G. B. 1949. Notornis Valley. The Illustrated London News, 26 Feb.: 275-277.
OWEN, R. 1848. On the remains of the gigantic and presumed extinct birds of New Zealand. Proceedings of the Zoological Society of London: 1-11.
PARK, J. 1889. The Takahe *(Notornis mantelli)* in Western Otago. Transactions and Proceedings of the N.Z. Institute 21 (1888): 226-230.
PARK, J. 1891. Takahe versus Kakapo. Transactions and Proceedings of the N.Z. Institute 23. (1890): 112-119.
PASCOE, J. 1957. Mr Explorer Douglas. 331 pp. Wellington: A. H. and A. W. Reed.
PHILLIPS, W. J. 1959. The last occurrence of *Notornis* in the North Island. Notornis 8 (4): 93-94.
POTTS, T. H. 1873. On the birds of New Zealand. Transactions and Proceedings of the N.Z. Institute 5 (1872): 171-205.
RAESIDE, J. D. 1948. Some post-glacial climatic changes in Canterbury and their effect on soil formation. Transactions of the Royal Society of N.Z. 77: 153-171.
REID, BRIAN. 1969. Survival status of the Takahe, *Notornis mantelli,* of New Zealand. Biological Conservation 1 (3): 237-240.
REISCHEK, A. 1888. Recent exploration north of Chalky Sound. Transactions and Proceedings of the N.Z. Institute 20 (1887): 441-443.
SMITH, W. W. 1889. On the birds of Lake Brunner district. Transactions and Proceedings of the N.Z. Institute 21 (1888): 205-224.
TROTTER, M. M. 1965. Avian remains from north Otago archaeological sites. Notornis 12 (3): 176-178.
TURBOTT, E. G. 1967. Buller's birds of New Zealand. 261 pp. Wellington: Whitcombe and Tombs.
WILLIAMS, G. R. 1956. The Kakapo *(Strigops habroptilus)* — A review and re-appraisal of a near-extinct species. Notornis 7 (2): 29-56.
WILLIAMS, G. R. 1960. The Takahe *(Notornis mantelli):* a general survey. Transactions of the Royal Society of N.Z. 88 (2): 235-258.
WILLIAMS, G. R. 1962. Extinction and the land and freshwater-inhabiting birds of New Zealand. Notornis 10 (1): 15-32.
WILLIAMS, G. R.; HARRISON, M. 1972. The Laughing Owl *(Sceloglaux albifacies)* — a general survey of a near-extinct species. Notornis 19 (1): 4-19.
WILLIAMS, REG. 1954. Early reports of *Notornis* were disbelieved. Article in series 'Nature Spotlight.' Wanganui Herald, 8th May.
YALDWYN, J. C. 1956. A preliminary account of the sub-fossil avifauna of the Martinborough caves. Records of the Dominion Museum 3 (1): 1-7.

Brian Reid,
Wildlife Service,
Department of Internal Affairs,
Wellington