

38. *Janella bitentaculata*, Quoy and Gaimard.  
 39. *Elæa coresia*, Gray. In dead trees.  
 40. *E. jeffreysiana*, Pfeiffer.  
 41. *Rhytida greenwoodi*, Gray. Under damp leaves, near the roots of pukapuka or pukatea.  
 42. *Leptopoma*, sp. Under dead leaves in forest ranges.

## II. FRESHWATER MOLLUSCA.

43. *Limnæa arguta*, Hutton. On leaves in swamps.  
 44. *Bulinus variabilis*, Gray. In running streams.  
 45. *Planorbis corinna*, Gray. On leaves of swamp plants.  
 46. *Melanopsis trifasciata*, Reeve. In the Kaueranga River.  
 47. *Potamopyrgus cumingiana*, Fischer. On cress in rivulets.  
 48. *P. corolla*, Gould.  
 49. *P. antipodum*.  
 50. *P. pupoides*.  
 51. *Pisidium neozelanica*. At the roots of swamp plants.  
 52. *Mytilus ater*? In the Kaueranga River.

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ART. XXI.—Description of the Little Barrier or Hauturu Island, the Birds which inhabit it, and the Locality as a Protection to them.

BY A. REISCHEK, F.L.S.

[Read before the Auckland Institute, 14th November, 1886.]

HAVING heard the practical and beneficial proposals to science and agriculture made by Judge Fenton at the last meeting of this Institute, I thought it might be useful to give a brief and general description of Hauturu Island, which I have visited five times, spending in all about ten months, searching and cutting tracks in various directions. Hauturu Island is situated 12 miles in a north-easterly direction from Rodney Point. The island is, in a straight line from north to south,  $4\frac{1}{4}$  miles, from east to west  $3\frac{1}{2}$  miles, in extent, and rises about 2,383 feet above sea-level. It is very broken, except on the south-eastern portion, where there is a small flat, and a few slopes grown over with grass, ferns, and small ti-tree; these places were cleared by cutting firewood. A main range runs across the island from west to east, which in places is very narrow and steep. The Island is well timbered, and there are some very fine kauris in the interior.

The general bush consists of—

Manuka	Rewarewa	Rata
Puriri	Nikau	Taridi
Tawa	Maire	Punga
Rimu	Miro	Pohutukawa

The Pohutukawa about Christmas-time gives this island the appearance of a large rose garden, when these trees are covered with their red blossoms, on which the honey-eaters delight themselves from early morn till late in the evening, climbing about from one blossom to another to suck the honey. The korimoko may also sometimes be seen chasing a tui, making various evolutions in the air, and, on returning, making the place ring with their powerful whistle. On the heights are numerous shrubs similar to the vegetation on the New Zealand Alps. Some of the gullies are very dense with creepers, such as supplejack, "lawyers," and a large variety of ferns and moss. There are several creeks: four have their outflow north, one north-east, two south, three west. There are some minor ones, but in summer most of them get dry, except one north, one south, and one west, which always have water, especially the one in the centre of the island. There are some large and deep water-holes, and in some places the creeks are narrow. The mountains are nearly perpendicular and of various shapes and forms, some bare, others grown over with low vegetation; the scenery is wild, but very romantic: some places are so broken that I was obliged to use a rope for pulling up and letting down my provisions and dog. In one locality, I could not find a place to camp without the risk of rolling over the cliffs, and had to tie myself to a tree. The formation is mostly conglomerate, and dark rock similar to basalt.

Having described the island, I will now bring before you the advantages Hauturu Island possesses over others for protecting and preserving the birds. Firstly, there are only three landing-places; two are known to the coasting vessels: one on the south-western side, where the Maori settlement is, the other is half-a-mile west, where I had my camp; but even these places have boulder shores, and the landing is dangerous, as a heavy surf rolls in constantly, except when the weather is north or north-east and there is no swell on. On the south-western side, on top of the hill, one can overlook both landing-places. Here the land is not so broken, and could be cultivated. The third landing-place, a boulder beach on the eastern portion of the island, is very rough. I had a boat smashed into fragments by the surf at this place. There is no fresh water near it in summer. One good man, who took a delight in his duty, could act as overseer on the whole island.

The high slopes would be a favourable resort for kakapo (*Stringops*), crow (*Glaucopis*), saddle-back (*Creadion*), New Zealand titmouse (*Orthonyx ochrocephala*), creeper, and *Certhiparus novæ-zealandiæ*. The lower ridges would be suitable for kiwi (*Apteryx*), the deep gullies for wrens (*Xenicus*), thrushes (*Turnagra*), robins (*Petroica*), etc. The above-mentioned localities are well suited for all the specimens named, by my own observations in various places.

Appended is a list of the birds which inhabit Hauturu Island, viz. :—

<i>Hieracidea ferow</i>	<i>Eudynamis taitensis</i>
<i>Circus gouldi</i>	<i>Chrysococcyx lucidus</i>
<i>Athene novæ-zealandiæ</i>	<i>Carpophaga novæ-zealandiæ</i>
<i>Halcyon vagans</i>	<i>Apteryx mantelli</i>
<i>Pogonornis cincta</i>	<i>Hæmatopus unicolor</i>
<i>Prothemadera novæ-zealandiæ</i>	<i>Larus dominicanus</i>
<i>Anthornis melanura</i>	<i>L. scopulinus</i>
<i>Zosterops lateralis</i>	<i>Sterna frontalis</i>
<i>Acanthisitta chloris</i>	<i>Puffinus gavius</i>
<i>Orthonyx albicilla</i>	<i>P. assimilis</i>
<i>Gerygone flaviventris</i>	<i>P. tristis</i>
<i>Petroica toi-toi</i>	<i>Procellaria cookii</i>
<i>P. longipes</i>	<i>P. parkinsoni</i>
<i>Anthus novæ-zealandiæ</i>	<i>P. gouldi</i>
<i>Rhipidura flabellifera</i>	<i>Prion turtur</i>
<i>Creadion carunculatus</i>	<i>Haladroma urinatrix</i>
<i>Platycercus novæ-zealandiæ</i>	<i>Dysporus serrator</i>
<i>P. auriceps</i>	<i>Phalacrocorax brevirostris</i>
<i>P. alpinus</i>	<i>P. varius</i>
<i>Nestor meridionalis</i>	<i>Eudypsula minor.</i>

The following are foreign birds which have migrated to Hauturu Island :—

<i>Coturnix pectoralis</i>	<i>Fringilla chloris</i>
<i>Turnix varius</i>	<i>Turdus merula</i>
<i>Passer domesticus</i>	<i>T. musicus.</i>

The Natives assured me that these last-named birds were not brought there.

The above list of 40 different specimens of New Zealand birds will show that the locality is more favourable than the mainland. There also exist several specimens which are nearly extinct, or very rare, on the mainland. I agree with Judge Fenton that bees are destructive to birds, from my personal observations—viz., to the honey-eaters (*Nectarinea*) and *Psittacide*, which breed in hollow trees. Honey-eaters are deprived of their food by the bees at a time when they most need it—when they have young—and, being insectivorous, they catch the bees and

sometimes get stung and die. Furthermore, the bees occupy the breeding resorts of *Psittacidae*. Settlers and Natives told me they found kaka eggs, and young parakeets, in the honey-comb of wild bees on the mainland.

On Hauturu Island there are no bees: the chief, Tenetahi, would not allow them to be landed, as he wished to protect the birds. There is one drawback—viz., wild pigs and cats, which are very destructive. The former root all the ground-birds out, and devour them; the latter watch night and day for their prey. But these two pests a good marksman with well-trained dogs could soon put a stop to. If the members of this Institute are in favour of obtaining Hauturu Island for preserving and protecting the Native birds, from my knowledge, and after many years studying the habits of New Zealand birds, I could not recommend a more favourable place. It would be of great benefit to science and agriculture to have such a means of preventing the extinction of these remarkable birds, which, as they multiplied, could easily be transferred to the mainland for the purpose of checking the insect pests; and if my aid in the project is of any use, I will be most happy to procure (*gratis*) live specimens of both sexes of *Apteryx* (kiwi) and *Stringops* (kakapo), if the Committee will provide me with cages and arrange for the transport, before or when I am again on the West Coast, about December next. The insectivorous birds and honey-eaters could be fed during transport on mashed potatoes, and common biscuits soaked in water, with sugar, and a few meal-worms or ant-eggs. As I expect to be away on another expedition, I have asked Professor Thomas if he would kindly read this paper for me; and if members wish to ask any questions in reference to these observations, I will be most happy to reply.

The above is written from my personal observations and facts.

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ART. XXII.—*Notes on Ornithology.*

BY A. REISCHEK, F.L.S.

[Read before the Auckland Institute, 18th October, 1886.]

PETROICA TOI-TOI—Pie-tit (*Miro-miro*).

This beautiful little bird is a native of the North Island, but on the mainland is becoming scarce. I found a few pairs in the Tangahuaia Ranges in 1879, in the Tokatea and Waitakerei Ranges in 1880, and in Pirongia, Rangitoto and Mokau Ranges in 1882. They are more plentiful, however, on certain islands