

TRANSACTIONS  
OF THE  
NEW ZEALAND INSTITUTE.

1870.

I.—ZOOLOGY.

ART. I.—*On the New Zealand Rat.* By WALTER BULLER, F.L.S., F.G.S.

(With Illustrations.)

[Read before the Wellington Philosophical Society, June 25, 1870.]

ACCORDING to native tradition and the accounts of the early colonists, there formerly abounded in New Zealand a small frugivorous rat, which has, within the last quarter of a century, become almost extinct. The extermination of this apparently indigenous species is generally attributed to the introduced brown rat (*Mus decumanus*), which now infests the country and devours everything that comes in its way; and the Maoris are accustomed to speculate, by comparison, on their own ultimate extinction in like manner before the stronger Anglo-Saxon race, which is fast gaining the ascendancy. "As the pakeha rat has eaten up the Maori rat, so will the pakeha kill the Maori," has already passed into a proverb.

Whether the so-called New Zealand rat was indigenous to the country, or whether it came with the first Maori immigrants, it is impossible now to determine. But one thing is certain, namely, that within the memory of the present generation of Maoris it abounded in such numbers as to constitute a staple article of animal food. Certain wooded districts were renowned for rats, and at particular seasons of the year, hunting parties, often a hundred strong, were formed, and trapping carried on in a systematic manner. On these occasions thousands of rats were captured and eaten, or potted down in their own fat for future use.

Even at the present day, in the investigation of title before the Native Lands Court, the trapping of rats in former times is often brought forward by the claimants, as one of the recognized acts of ownership on the part of the tribe so claiming, and in support of the original native title.

Considering these facts, and particularly the extreme scarcity of the New Zealand rat, the discovery of a genuine specimen is an interesting event in our > local natural history. A small rat recently caught on Mr. Owen's estate, at Wangaeahu, and forwarded to me "in the flesh," has been identified by the Maoris of this district (where it was formerly very abundant) as the veritable *Kiore Maori*. I have accordingly preserved the animal entire, in spirits, and it is now deposited in the Colonial Museum. If (as seems highly probable) this rat should prove to be new to science, I propose to distinguish it as *Mus Novæ Zelandiæ*; and in order to place on record a description available for reference and comparison, I beg to offer the following notes, being the result of my examination of the fresh specimen.

Fur above bluish black; sides of nose, chin, throat, and underside of body and inner sides of limbs uniform bluish grey; ears, feet and tail dark brown; soles flesh brown. The ears are large, rounded and naked, and the fur covering the body is soft and glossy. The tail is elongate, scaly, and covered with minute spinous hairs. The upper side of both fore and hind feet covered with minute soft hairs, lengthening at the extremity of the toes, and curving over the claws, which are short, arched, sharp, brown in their basal portion and horn coloured at the tip. The fur of the back and sides with abundant lengthened hairs, but scarcely more rigid than the under fur; no long hairs on the under parts. Whiskers numerous, slender, flexible, the longest measuring two inches. Eyes moderate. The cutting teeth are yellow and perfectly smooth in front, the lower ones narrow, somewhat compressed and rounded in front. In certain lights the fur of the back has a purplish metallic lustre.

Adult female: six lateral ventral teats (three on each side); no pectoral teats.

Length, snout to base of tail.	. . . . .	$6\frac{1}{2}$ inches.
" tail . . . . .	. . . . .	$7\frac{3}{4}$ "
" head . . . . .	. . . . .	$1\frac{5}{8}$ "
" forefoot . . . . .	. . . . .	$\frac{3}{4}$ "
" hindfoot . . . . .	. . . . .	$1\frac{3}{8}$ "

Unlike the common rat, this animal is perfectly free from odour or smell of any kind, which is probably due to the nature of its food, this consisting almost entirely of fruits and berries. At first glance it has more the appearance of a gigantic mouse than of a true rat; and on closer examination it presents a marked resemblance to the black rat (*Mus rattus*), which was formerly abundant in Britain, a phytophagous animal, feeding chiefly on herbs and seeds. As all naturalists are aware, this species has, in like manner to the New Zealand rat, become almost extinct in the British Isles, where it once abounded in great numbers. "Whether," writes Macgillivray, "the destruction of this animal has been effected by the larger and more ferocious brown rat, or like that of many tribes of the human species, has resulted from



*MUS NOVAE ZELANDIAE, Buller.*

*J. Buchanan del. et sculp.*



*MUS* — *Auckland Museum.*

*W. P. Burton del. et sculp.*

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the diminution of food, caused by the overwhelming increase of an unfriendly race, it is impossible to determine. It has, indeed, been alleged by many naturalists, that the brown rat has actually worried to death its less powerful relative; and, although this is mere conjecture, it is by no means improbable if we consider the character of that audacious animal, which has been known, when hard pressed, to attack even one of the lords of creation, when unusually hungry to gnaw the flesh of his defenceless offspring, and, when famished, to kill and devour its own kind.”\*

[This rat resembles *Mus fuscipes* of Waterhouse and Darwin (*Zool. of Voyage of H. M. S. "Beagle,"* Vol. i., p. 66), which inhabits the southern part of the Australian continent. This rat is said to be not uncommon on board steamers trading between New Zealand and that country, and maintains its position against the brown Norway rat (*M. decumanus*); the two species have been known to occupy different parts of the same ship.

An ochreous-coloured rat (a drawing of which, from a specimen in the Auckland Museum, has been forwarded by Captain Hutton), was obtained in New Zealand by Mr. J. Thorpe, in January, 1853, and appears to represent, in this country, a species introduced from Australia (*M. Gouldi*), from the Sydney district. (See Illustration.)

The illustration of the rat described by Mr. Buller is taken from a specimen preserved in spirits. The drawing supplied by Captain Hutton is taken from a stuffed specimen, and the following descriptive notes were sent with it:—

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\* Some discussion having taken place at the meeting of the Society, on the 25th June, when the above paper was read, as to “whether any native be now living who could really identify the native rat,” (See *Proceedings W. P. Society*, p. 24,) I beg to add the following extract from a letter which I received from the Rev. T. Chapman, of Maketu, fifteen years ago:—“Relative to the New Zealand rat: I never possessed but one, and it hung up till it rotted away. I have neither seen nor heard of one for these ten years. The only description I can give you of it is that, as far as I remember, it was a true rat, only that *the ears were larger and rounded at the end.* As far as I know, their habits are the same as those of the Norway rat. \* \* \* I was assured by a chief, of Tauranga, that previous to the introduction of the cat there was a rat, of a species larger than the Norway rat, in New Zealand, but that it was always very scarce.” (November 5, 1855.)

Dr. Dieffenbach, writing in 1843, states,—“The indigenous rat has now become so scarce, owing to the extermination carried on against it by the European rat, that I could never obtain one. A few, however, are still found in the interior, viz., at Rotorua, where they have been seen by the Rev. Mr. Chapman, who described them as being much smaller than the Norway rat.” (*App. Dieff. N. Z.*, p. 185.)

My friend, Major Nixon, informs me that when travelling in the interior of this province about sixteen years ago, the native who accompanied him killed a “Maori rat,” which was feasting on the ripe fruit of the kiekie (*Freyjcinetia Banksii*). His description of this rat, from memory, accords exactly with the specimen which I have brought under the notice of the Society.

"Length, from snout to root of tail. . . . .	5·2 inches.
"    of tail . . . . .	3·3 "
"    of head . . . . .	1·38 "

Front feet 4-toed, hind feet 5-toed; thumb with a claw. Teeth yellow. Tail scaly and covered with short stiff white hairs to the end. Nose sharp pointed. Ears long (0·6 inch), rather pointed, yellowish brown, covered with minute hairs. Back and sides light reddish brown, inclining more to yellow on the shoulders and head. Snout, throat, cheeks, belly and feet dirty white. Fur below the hair slate blue.

"This specimen was presented to the Auckland Museum by Mr. J. Thorpe, in January, 1853."

Two skins of the same species of rat as that described by Mr. Buller have since been received from Mr. Moore, who obtained them on the East Coast of the Wellington Province.—Ed.]

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ART. II.—*A List of the Lizards inhabiting New Zealand, with Descriptions.*

By WALTER BULLER, F.L.S., F.G.S.

(With Illustrations.)

[Read before the Wellington Philosophical Society, October 22, 1870.]

As some confusion has hitherto existed in the nomenclature and classification of the New Zealand lizards, I beg to lay before the Society a list of those already known to science, with a short description of each species for the purpose of identification. I am, however, of opinion that in some instances the differences which have been accepted by Dr. Gray and others as sufficient to mark distinct species, are due either to sex or age, and are not of any definite value as specific characters. There is, moreover, among this section, a great tendency to individual variation, and mere differences of colour, unless well marked and constant, are therefore a somewhat unsafe guide in the determination of species.

Further information on this branch of our local zoology is much to be desired. The Kawekawean, a beautiful striped lizard, sometimes attaining a length of two feet, is still undescribed. It was formerly abundant in the forests north of Auckland, and is still occasionally met with. Mr. F. E. Maning, of Hokianga, recently obtained possession of a pair of live ones, but unfortunately for science, one of them was devoured by a cat and the other made its escape. A black lizard, described by Mr. Thomas Kirk as having been seen by him on the cluster of rocky islets off the west coast of the Great Barrier, known as Grey's Archipelago, will probably prove to be a new form. Descriptions of three new species, which I have ventured to name *Himulia variegata*, *Mocoa striata*, and *Naultinus sulphureus*, are included in the following paper.