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978-1-108-04002-0 - The Animals of New Zealand: An Account of the Dominion's  
Air-Breathing Vertebrates

Frederick Wollaston Hutton and James Drummond

Excerpt

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# THE Animals of New Zealand

## INTRODUCTION

New Zealand contains a remnant of the population of a continent that existed long before mammals overspread the earth. That population was added to as the ages passed, fresh colonists dropping in from time to time, mostly from Australia.

At last, not many hundreds of years ago, there came Man. The coming of the Maori was as the shadow of death to a large section of the original inhabitants; but it was only a prelude to the great transformation wrought, as the Europeans, who followed, swept the land with the besom of destruction. The dramatic events of that time are dealt with a few pages further on; we wish to point out here some of the effects of the dominion's long isolation, and to deal with a few of the peculiarities that have made New Zealand famous.

Our animal life is full of contrasts and surprises. The manifold eccentricities of our fauna are so striking that some naturalists would like to see New Zealand constituted one of the great Zoological Regions of the globe. Although Dr. A. R. Wallace refused to grant it this honour in his *Geographical Distribution of Animals*, and made it a sub-region of Australia, everybody admits that it has many claims to distinction, on account of those things it lacks, as much as on account of those it possesses.

Our birds are noted for flightlessness and songlessness and dullness of plumage. Yet some of them remain on the wing during extraordinary flights over vast stretches of water and

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some are classed amongst the best songsters on earth. Sir Joseph Banks has described with enthusiasm the day-break chorus of the bell-birds and the tuis and their smaller companions, together with the flute-like notes of the saddle-back. Many of the early settlers also were delighted with this Song of Dawn, which, however, can be heard now only in places far removed from settlement.

Some of our birds, besides being peculiar to New Zealand, possess characteristics that single them out for attention. Among these is the wry-billed plover, which is the only known bird with a bill bent to one side.

We are entirely devoid of four-footed beasts that divide the hoof or chew the cud. Our only land mammals, with the exception of the seals, are two bats, and one of them is found in no other country. Our "creeping things of the earth" consist almost entirely of lizards, there being absolutely no snakes here. Even lizards are represented by only fifteen species. But among the reptiles is the famous tuatara. It is not a true lizard, as, in structure, it shows an affinity to the crocodile, and its ribs have bird-like characteristics. It stands apart from all the rest of its class, and if ancient lineage, combined with unchanged habits, mark the aristocrat, it is the most aristocratic animal in the world. We are even worse off for amphibians than for land mammals and reptiles.

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#### THE BEGINNING.

Towards the close of the age in the world's history called the Cretaceous Period, New Zealand was a small group of islands, with a very scanty flora and fauna; but later on, very early in the Tertiary Era, it was gradually elevated until it attained almost continental dimensions, stretching away north through New Caledonia and Fiji, and joining the mainland at New Guinea. The land was covered with such vegetation as ferns and forest-trees. So far as animal life was concerned, however, it was the abomination of desolation, as the forests contained

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no birds, and the fern-lands no lizards except the ancient tuatara.

Birds had only lately come into existence in the Northern Hemisphere, but now that New Zealand was joined to the mainland, they moved south and colonised it. There were kiwis, crows, thrushes, starlings, robins, wrens, parrots, rails, ducks, penguins, and other birds, as well as the lizards and the frog. Towards the close of the Eocene Period, the northern land sank. New Zealand was then isolated, and it has remained so ever since.

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COMMUNICATION WITH THE OUTSIDE WORLD.

Yet it was visited every year by migratory birds from the north. Cuckoos, plovers, and sandpipers crossed the waters, and returned again to the place from which they had come. They brought no news of what was passing in the outside world, or, at any rate, they imparted none to the inhabitants of this country. More colonists dropped in occasionally, and took up their permanent residence here. There were the quail and the hawk, and, later on, the harrier, the grey duck and the shoveller, the white heron and the blue heron, and the black-footed shags, all from the north, while the gulls, the terns, the albatrosses, and the pink-footed shags came from the south.

The migratory birds still maintain their visits, coming regularly at the appointed time, and departing again to other countries. It is hard to say what attractions we offer to them, and harder still to define the faculty that directs them on their long and weary flights, sometimes from Siberia, as in the case of the godwit and the knot.

Bird migrations also take place in the Northern Hemisphere, where, obviously, migrants pass from one country to another on account of food supplies, which, for insect-eating birds, differ much in the summer and the winter. But this is not the cause of all the migrations. Swifts migrate in Central America, while swallows remain there all through the year. Ducks do

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not leave their winter quarters for want of food; and our godwit would find just as much food on our shores in the winter after it has left, as in summer, when it first comes. Our bronze and long-tailed cuckoos migrate from New Guinea. In that country three or four species of bronze cuckoos are resident. They evidently find food there all the year round, and what they could do in this respect could also be done by the migrating species, which visit New Zealand and Tasmania. With us, the cuckoos are harbingers of summer, and, even in summer, insects are much less plentiful here than in New Guinea or Australia. It is clear therefore, that the cuckoos are not attracted to us by an abundance of insect food.

Their migrations may probably be explained by the theory that a habit has been formed by resorting each year to the same breeding place. The birds do not like to break away from the old-time custom, and it may be that they are attacked by home-sickness. Perhaps the cuckoos, after living for some months in a distant land, cherish the sentiment expressed by the coloured man, whose heart longed for the old folks at home, and the cabin on the Mississippi shore.

In respect to the *Limicolae*, or shore birds, such as the plover, the godwit, and the sandpiper, it is likely that they return annually to the old feeding ground of their forefathers, and that this habit also has become an instinct.

In the Northern Hemisphere, migratory birds, as a rule, follow the land. Some of them, however, have to cross the Mediterranean Sea, others the North Sea, and others the English Channel; and many shore birds pass from island to island in the Malay Archipelago. But the boldest flight on record is to New Zealand and the Chatham Islands, probably from New Caledonia, a distance of a thousand miles or more. The question may be asked, "How do birds know that they will find land at the end of their long voyage?" They do not fly at random; they go voluntarily; they must know there is land ahead. The information is not given by "stragglers," which have been lost from a migrating flock, and have gone to some other country, as these do not return to start new lines

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of migration, but either establish themselves as residents in the strange country, or perish. Nor do wanderers leave behind them traditions of new routes. The only possible explanation seems to be that the migrants are following old land lines, which were quite clear at one time, but have now disappeared. The shore-birds follow the old shore-lines, and the land-birds the old land-line. Migration must have commenced when the two lands, which are now separated, were contiguous, or nearly so. In no part of the course would an island be so far off at first as to be invisible from an adjacent one. Then the land must have gradually sunk. But the force of habit, handed down from generation to generation, probably maintained the migration, until it became an instinct. During the life of each bird, the changes would be too small to be perceptible, and only after many years had passed would the migrants find that they were flying over a trackless ocean.

The faculty of returning home, whatever the nature of it may be, is not uncommon in the Animal Kingdom. Bees and ants and many other insects possess it to a small degree. Sea-snakes and turtles return to the same place to breed, although, during their absence from land, they must have swum many miles in many different directions. The faculty is also possessed by penguins, petrels, and other birds. Several seals undertake long oceanic migrations. As is well known, some domesticated animals return to their homes after having been taken long distances away; and, finally, savages, after having followed their quarry for several days, find their way home again through dense forests. The faculty, however, is not unerring, even with migratory birds. In the course of migrations, large numbers of "stragglers" lose their way; many perish at sea, and perhaps none regain the route after having lost it.

Before passing on to other questions, it may be asked, "Why should some of the shore birds and the two cuckoos migrate to New Zealand, while the swallows, which are certainly quite as capable of undertaking the journey, do not come?" Possibly the answer may be found in the geological history of birds.

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The evidence is of a negative palæontological character, and it must be used with great caution; but it seems probable that the godwit and the cuckoo migrated to New Zealand at a time when there were no swallows in existence, and that the original land bridge had been completely broken down before the first of the swallows arrived in Australia from Asia. We may therefore suppose that migration to and from New Zealand commenced in the Eocene Period, when the land stretched away north-west to New Guinea, a time when all New Zealand was joined to the mainland.

#### A HAPPY FAMILY.

All along the line the effects of isolation are very marked. The absence of land mammals has been already touched upon. The presence of a great many species of birds peculiar to the country is another feature. As time passed, the birds that had come down to these parts found they possessed a land of surpassing goodness. It was free from drought and other disasters with which the faunas of many countries are beset; and abundance of food was easily obtained. Moreover, there were practically no natural enemies. The birds, as a whole, were a happy family. They had their petty quarrels and bickerings, but there was no common foe greatly to reduce their numbers. Life was too easy for them; so many first neglected, and then lost, the power of flight, and dropped into an indolent way of doing things, which became their undoing.

Excluding the birds from the Chatham and the Auckland Islands, we possess, of the first six orders of land-birds, only forty-five species, and no fewer than about thirty-eight of these are endemic. These forty-five species have been referred to thirty-one genera, nineteen of which are found nowhere else, and these thirty-one genera belong to twenty families, two of which, *Stringopidae*, represented by the kakapo, and *Xenicidae*, represented by the wrens, are peculiar to New Zealand. Our two owls are also peculiar, and one of them, the laughing owl, belongs to a genus found in no other country; these facts are specially notable, seeing that owls are very widely spread.

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Our parrakeets, although belonging to a genus also found in Polynesia, differ much from those of Australia. It is remarkable that we have no representatives of the cockatoos or the grass-parrakeets, which are common in Australia and Tasmania, although our climate is quite suitable for them. This shows that the Eocene continent was very poorly off for land-birds.

Waders are more widely spread than the birds of any other order, and some of them are almost cosmopolitan; but even here the isolated character of our fauna is noticeable; for of thirty-two species, belonging to twenty-four genera, ten species and four genera are found nowhere else. The most marked feature in respect to the order is the presence of the wood hen, a genus of rails quite unable to fly. Species of closely related genera are also found in Lord Howe Island and New Caledonia. *Notornis hochstetteri*, which resembles both our own swamp hen and the *Tribonyx* of Tasmania and Australia, is another notable endemic rail. New Zealand is the only country in the world inhabited by two species of stilt-plover, neither of which is found elsewhere. Among the water-birds, cormorants are largely developed, as we possess fifteen species, twelve of which are endemic. No other country in the world possesses so many of these birds. We have two species of gulls found nowhere else, and this is a peculiarity of which few countries can boast. The most remarkable circumstance connected with our ducks is the presence of a species of *Fuligula*, a genus found in neither Australia nor Africa, but belonging properly to the northern parts of America, Europe and Asia, although one species occurs in South America.

New Zealand, together with the neighbouring islands, may be looked upon as the headquarters of the penguins, as all the genera except one are found here. Besides this, the oldest penguin known is from the rocks of New Zealand; and this country is probably the centre from which these birds dispersed.

Taking our fauna as a whole, we find that the elements represented are Australian, Melanesian, European, Antarctic,

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and South American, the last being the weakest. But our birds show only three elements, namely, Antarctic, Melanesian, and Australian.

During isolation, some of the animals, notably the short-tailed bat, the huia, the thrush, the kakapo, the rails, and the extinct moas, altered a great deal, while others, such as the fern bird, the warbler, the tits, and the swamp hen, altered very slowly; but there was a tendency in all towards losing their powers of flight. Albinism is noticeable among the land-birds, but it does not remain constant. Melanism, or dark-coloured plumage, is very pronounced. Many of the birds during the long isolation have gradually changed until some of them have taken on almost a jet black plumage. There are the huia, the tui, two robins, a fantail, the red-bill, the black stilt, and a black penguin. This is a long list of black or dark-coloured birds, considering the smallness of the total number in the fauna. We merely point out this fact in passing, and offer no theory as to the cause.

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#### THE CHANGE.

So the fauna, retaining its peculiarities, and developing its wonderful specialisations, grew up side by side with the flora, which is hardly less remarkable. They walked hand-in-hand, and were indivisible. The trees and shrubs yielded their fruits, and the birds rested in peaceful valleys and filled the land from end to end.

About 500 years ago, the Maoris came as the heralds of the change. They may have exterminated the moas, hunting and killing the great birds and eating the eggs. The white heron nearly succumbed in the North Island. A dog and a rat were introduced by the Maoris, but the former was excessively lazy and the latter timid and harmless, so neither had much effect on the fauna. The dog has disappeared entirely, but the rat is still with us. Though different kinds of birds were caught and snared by the Maoris, very little damage, on the whole, was done by them.



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It was with the advent of Europeans that destruction began in earnest. It seemed as if they had been commanded to destroy the ancient inhabitants. Men went forth with slaughtering weapons in their hands, and the overflowing scourge of devouring fire was sent throughout the country, till a great part of the flora was consumed, and the birds had to seek food in remote places.

The first European animals were introduced by Captain Cook. On his second voyage, in 1773, he let loose three pigs in Queen Charlotte Sound. His motive was purely philanthropic. He made the Maori to whom he gave the pigs promise not to kill them. "If he keeps his word, and proper care is taken," the navigator wrote in his diary, "there are enough to stock the whole island in due time." The Maori did keep his word, and it was not long before the country was completely stocked with "Captain Cooks," as they were called by the settlers. They afforded food and sport for the Maoris, and also for the adventurous Europeans who lived in the colony in its early civilised days. They also took part in the war of extermination, and it was probably owing to their depredations that the tuatara was banished from the mainland. Less than a hundred years after the first liberation, the settlers in many parts looked upon the pigs as a scourge, as they killed the lambs. Cook's prediction was fulfilled too well. The pigs, becoming quite wild, retreated from the sites of civilisation, but in uninhabited valleys they congregated in vast numbers. Dr. Hochstetter, writing in 1862, after a visit to the colony, states that experienced pig-hunters sometimes took contracts for the suppression of the pigs, and that in twenty months three men, on an area of 250,000 acres, killed no fewer than 25,000, and pledged themselves to kill 15,000 more.

An inkling of the full effects that were to follow the advent of civilisation was given when the whalers visited these waters and established stations on the shores. Their special mission was the destruction of the whales, but they made their presence felt in other ways, notably by the introduction of dogs, cats, and rats, before which many of the flightless birds fell easy victims.

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Then the settlers arrived with fresh supplies of domestic animals and deadly fire-arms. By shooting, the numbers of the avocet, the white heron in the south, and the pigeons, ducks, swamp hens, quail, and other birds were greatly reduced. In some favoured spots, the slaughter was terrible. In the early days of Otago, the pigeons, which congregated in the fuchsia trees and scrub about Dunedin, suffered severely. A common recipe for soup among the settlers there was: "One kaka parrot and fourteen pigeons." Burning grass, scrub, and bush wrought further havoc, and very soon the quail was almost destroyed, while no crows were left on the eastern side of the South Island. Dogs killed the wood hens in large numbers. Lands were cleared of timber, swamps were drained, the native flora was largely supplanted by crops, hedgerows, and gardens, and by Old World shrubs and trees. The land-birds retreated in diminished numbers, mostly to the mountains, where the ancient forests, still standing, offer them a place of refuge.

In many sanctuaries and forest reserves the birds are holding their own, and some species are increasing in numbers.

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#### THE NEW FAUNA.

New animals were introduced systematically. These greedy invaders soon overcame any feeble resistance that may have been offered, and speedily established themselves.

Some of the new animals were brought in by Europeans for food, and some for purely sentimental reasons. There were few natural food supplies in New Zealand when colonists first came. The Maoris lived mostly on fish, several kinds of birds, fern-root, and three vegetables which they had introduced. It became obvious that if the colony was to be the abode of a large population of civilised beings, acclimatisation must take place on a large scale. Food supplies were, therefore, the first consideration. Sheep and cattle and other animals found a climate resembling that of their native country, and pastures which could not be surpassed. Like their predecessors, the "Captain Cooks," they thrive very well and grew fat. Large