

Making twenty-seven of pure Moriori descent, and five half-breeds. The Maoris on the islands number about two hundred and fifty souls, and there is roughly about the same number of a white population.

The island (Rekohu) is an exceedingly pleasant place of residence. The sea surrounding it equalises the temperature very much, and prevents extremes of heat and cold. The island in many places is extremely fertile, and I never saw more beautiful soil than the land at Owhenga, on the eastern side, near the large Moriori Reserve.

It would be desirable, if possible, for the society to acquire the large collection of axes, clubs, &c., of stone now in the possession of Mr. Clough. They could be obtained, I believe, for a very moderate price, and it would be a pity for such a collection (which could never be replaced) to find its way into the possession of private persons and tourists. Among other curiosities is a bone dagger, about 9in. long, the blade being about 4½in. in length, with a double edge. I do not know of any other Polynesian people having used the dagger except the Hawaiians (of course I do not refer to the common bamboo knife of the South Seas), but Tapu assured me that the weapon was known and used by the ancient Moriori.

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ART. VIII.—*Notes on the Great Barrier Island.*

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EARLY in July, 1885, I was sent to the Great Barrier Island to execute some surveys for the Government; and, although it was supposed at the time that the work would occupy only about two or three months, yet, owing to the rough nature of the island and to additional surveys being required, we remained there within a few days of a year, leaving it on the 11th June, 1886, the day after the memorable Tarawera eruption, which we distinctly heard, but, of course, did not know what it was.

Although the Barrier lies only about fifty-two miles from Auckland in a north-east direction, very little seems to be known even by old Aucklanders as to its extent, formation, and capabilities—so little, indeed, that I have heard more than one person speak of it as only a rock, and wonder what we could possibly find to do there for a whole year; and I have been asked whether in that time we surveyed the whole island, to which I was compelled to confess that we had surveyed—or, rather, resurveyed—only a very small portion of it.

As I believe that in some future time it will become the Isle of Wight of New Zealand, owing to the salubrity of its climate, its very picturesque and excellent harbours, and its hot springs, perhaps a short description of it may prove interesting.

Its length is about twenty-two miles in a north-and-south direction, its greatest width about twelve miles, and its least about two miles and a half, comprising in all an area of about 74,000 acres, 30,732 of which were acquired by the Barrier Company, 3,514 are still in the hands of the natives as reserves, and of the balance of 39,754 acres about half is freehold and half Crown land.

The whole of the island is broken and rocky, the central portion particularly so. The highest hill is Hirakimata, or Mount Hobson, situate about the centre of the island, at an elevation of 2,038ft. above the sea. A few hundred feet lower down, and clustering round Mount Hobson, there are several bold and picturesque peaks, some of which are composed of uplifted palæozoic slates, in some instances standing completely on end, and, covered as they are from their bases nearly to their summits with dense forest, containing a large proportion of excellent kauri, they form very striking objects to the artistic eye.

For a distance of about three miles north and south of Mount Hobson the palæozoic pink slates extend, forming a zone six miles in breadth almost across the island in its widest part, and broken up into many peaks and precipices. At the eastern margin of this zone there is a fringe of breccia, yellow sandstone, and blue slate; and its western shore is fringed almost entirely by "puddingstone," or breccia, forming between Whangaparapara Harbour and Port Fitzroy bold overhanging cliffs.

The southern part of the island—that is, from Whangaparapara southwards—is chiefly volcanic formation, and, although very broken, is much less so than the central portion. It was cut up by the Government some twenty years ago into farm-sections ranging from 50 to 200 acres in area. Several of these were taken up, but at present there are only some twenty settlers with their families living on them. The soil is good, and takes grass very readily.

North of Blind Bay, and about two miles distant in a northerly direction, there is an extinct crater named Ahumata—probably from the large quantities of obsidian to be found on it—the highest portion of which is 1,292ft. above the sea. The eastern side forms a perpendicular cliff for some distance, called the White Cliffs, which, when lit up by the morning sun, appears of a dazzling white, the rock being, I believe, a trachytic felstone. Professor Hutton, in his geological report.

on the island, says, I think, that this crater must originally have been nearly a mile in diameter, although it is hard to realise this at present, as it is very much worn down on its southern and western sides. Large masses of the rock, several tons in weight, and in some cases a pure white, have become detached and have rolled down on to the spurs below, and at a distance present a very peculiar appearance, some of the larger ones looking like tents spotted about, and others like mobs of white cattle.

About a mile and a half from the summit of Ahumata, and in a direct line with Rakitu, or Arid Island, there is a hot spring, which appears in a small stream running into the Kaitoke Creek; and about the same distance further on, and in the same line, more hot springs are found, on the main branch of the Kaitoke. As before mentioned, these springs are in a direct line between Ahumata volcanic hill and Rakitu Island, which lies about one mile and three-quarters in a north-easterly direction from the Barrier, and which is also an extinct volcano. Why named Arid Island is not known, since what soil there is on it is very fertile. The only piece of flat land on the Barrier of any extent is situate on the east coast and about midway, at a place named Owena. The flat is about 200 acres in extent, and is bounded on the north by the Owena River. One settler and his family live there. From there to Harautanga Bay, where one or two settlers live, is about three miles in a northerly direction; and about three miles and a half in a straight line, but nearly double that distance by the track, the Whangapoua River joins the sea. Here two more settlers live. I believe there is another north of this, at a place called Tapuwai, but I did not go there. Then, on the western side, in Fitzroy Harbour and Port Abercrombie, there are ten more families scattered about the shore, making in all on the island about thirty-six *bonâ fide* settlers, all of whom, owing to the rough nature of the island, live close to the sea. The whole population by the last census amounted to about two hundred and twenty.

Of the portion of the island lying north of a line running from Karaka Bay, in Port Abercrombie, to Whangapoua, I regret to say I know nothing personally, my duties not having taken me there; but I believe the formation, like that south of Whangaparapara Harbour, to be of volcanic origin, overlying the palæozoic slates which form the central zone before mentioned.

On the western corner of the northern end of the island a copper-mine was worked many years ago by an English company, but was abandoned, like many others, before it had made anybody's fortune. There is, I believe, some talk of the mine being reworked.

Besides the *bonâ fide* settlers there are on an average about forty or fifty gum-diggers, who find the gum in the central portion of the island where the ground is not too rocky for their operations. A curious feature of gum-digging at the Barrier is that they get what is termed "old gum" in the forest as well as in the "open;" and a still more curious feature is that it is found on the crater of Ahumata, on which, to judge from its arid appearance, one would conclude that no trees, save a few stray pohutukawas, had grown since the eruption. And, moreover, the gum is said to be obtained from different layers of clay. Mr. John Blair, jun., to whom I am indebted for the statistics as to population, industries, &c., says that "they are now getting gum in the third layer of clay—that is, they dig through the surface and get gum in the clay; then they go through that clay, and get it on the next layer, a different crust-formation; and some are going through that clay to the rock, and still getting gum; showing gum in three different formations: but the lowest gum is so old and 'rusty' that half of it has to be scraped away before it is marketable."

A great deal of kauri timber has been taken from the island, and a large quantity still remains; but, as it is confined almost exclusively to the slate formation, which is the most broken and precipitous part of the island, it is very difficult of access. When I was there a "bush" was being worked on the eastern side of the island, and the timber shipped in scows at Harautanga Bay to Auckland. During the last thirty years hundreds of thousands of tons of excellent firewood have been taken from the island, but at present it is believed that not more than 150 or 200 tons a week are exported.

Some of the settlers go in extensively for bee-keeping, and one, I believe, last year extracted 12,000lb. of honey from his hives, and another 8,000lb.

Of minerals, gold, silver, and antimony are said to have been found on the east coast, near Harautanga; but, as far as I know, payable fields have not yet been discovered. Professor Hutton, in his geological report, says something like these words: "From the general absence of iron-pyrites I am compelled to think that gold will not be found." Let us hope that he may prove to be a false prophet.

To the artist, geologist, and botanist the Great Barrier presents many objects of interest. A climb to the top of Mount Hobson on a clear day well repays the necessary exertion, as the whole island appears to lie at your feet, and there is very little of it which is invisible. Rangitoto and Auckland are easily seen, as well as a long trend of coast-line northwards; also a splendid view is obtained of Cape Colville and the Mercury and Cuvier Islands southwards.

From the broken nature of the island agriculture on a large scale is out of the question ; but cattle- and sheep-farming and fruit-growing should flourish. Oranges, and perhaps bananas, might be grown in large quantities, while the climate is all that can be desired—extremely healthy, and milder than that of the mainland.

Unfortunately, there are not any harbours on the eastern side ; but those on the western—Katherine Bay, Ports Abercrombie and Fitzroy, Whangaparapara, Blind Bay, and Tryphena—all afford excellent anchorage and shelter for shipping.

There are evidences in several places that the island must have at one time been inhabited by large numbers of the Maori race, for, apart from the remains of several pas—some of which in the rockiest places are built up of loose rocks, instead of being entrenched by digging as usual—there are places in the forest, notably at Korotiti, on the east coast, which mark the site of their old habitations and cultivations, the slopes of the hills being terraced, and the ground supported by stone facing ; while in other places enclosures are fenced in by stone walls, which are as straight and well built as those constructed by Europeans. Out of these enclosures large trees are growing, more than a foot in diameter. In and about these enclosures I looked in vain several times for some relic of Maori workmanship. This is the first instance, as far as I am aware, of the Maori race—if they were Maoris—having terraced the hillsides and built stone walls. There are also, in places now likewise covered by forest, large heaps of stones, which had evidently been collected from the surface prior to cultivating the land.

Almost in a direct line between Mount Hobson and the principal hot springs there are several very remarkable-looking peaks, known as the Pinnacles, which tower up above the kauri forest, and form a bit of scenery which in its way is quite unique. The lowest of these Pinnacles I christened General Gordon, because looked at from some positions it resembles the figure of a colossal man, standing with his arms behind him, looking out over the sea, and, as my visit took place shortly after the fall of Khartoum, this rock suggested to my mind the lonely figure of Gordon, as one might imagine him looking out from the palace-roof for the relief-expedition which never came. There is another peculiar dome-shaped rock named Maungapiko, close to the track leading from Whangaparapara to the Waiarihi Creek, which I take to be an outcrop of serpentine, although Professor Hutton does not, I think, mention it in his report.

I had heard before going to the island that the late Mr. Theophilus Heale, who at different times had lived there, and

had travelled over every portion of it, was of opinion that in the neighbourhood of the Black Rocks, situate at the head of the Kaitoke Stream, there are remains of terraces similar in formation to the far-famed Pink and White of Rotomahana, only on a far grander scale. Having had little or no time for exploration where my duties did not take me, I was unable to determine their site; moreover, not being an expert in the matter, I might not have been able to recognise them.

Not being anything of a botanist, I cannot describe the forest technically, but I think most of the trees found on the mainland grow on the island, and there are one or two peculiar to it—namely, the Barrier pine, which, when young, resembles very closely in appearance the *macrocarpa*, but when it grows up it loses this resemblance.

Of birds, the tui and pigeon are the most numerous, and it is a curious fact, which perhaps has been noticed elsewhere, that the note of the former differs to a certain extent in different parts of the island. The sound of many tuis acting in concert in the dense forest on a bright morning has a very charming effect. We saw and heard a pair of bell-birds at the head of Whangaparapara Harbour, but they seemed to be very scarce. The pukeko also is heard, but very seldom seen, in the swamp at the northern base of Ahumata. This bird, which is apparently very weak on the wing, and flies with its legs dangling, is the most ubiquitous of all birds, as it is, I believe, found throughout Australasia; and its means of transit are as much a puzzle as that of the wingless waterfowl which inhabit most of our small lakes.

My party found some bones on the beach at Owena which turned out to be those of a small species of moa, but how they came there it is impossible to say. This is interesting, as having been the first instance known of moa-remains being found off the mainland.

To conclude, with all the advantages of climate, scenery, hot springs, and picturesque harbours, I cannot but think that in the future this island must become a sanatorium for over-worked Aucklanders. At present there are not any roads, and the tracks are of the very roughest description; but all this will be remedied with an increasing population.

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