

ART. LX.—*Thermal Springs in Lake Waikare, Waikato.*

By H. D. M. HASZARD.

[*Read before the Auckland Institute, 3rd November, 1890.*]

Plate XLIV.

THE existence of hot springs arising from the bottom of Lake Waikare has been known to a limited number of people for a considerable time; but, so far as I am aware, the fact has not been recorded in any way, nor their position marked on any map.

Whilst surveying recently in the neighbourhood, I therefore took the opportunity to fix their locality, for future reference, as shown on accompanying plan (Pl. XLIV.), and I also append a few notes that may prove of interest.

The springs are situated about four miles south-east of the Rangiriri railway-station and fifty miles south-south-east of Auckland, being, I believe, the nearest thermal springs, in active existence, to the latter place on its southern side. As shown on the plan, they all rise to the west and south-west of Motukanae (Mullet Island), from the bottom of the lake; the most powerful one, which I have named Koropupu, being about $3\frac{1}{2}$ chains distant, and innumerable small ones bubble up immediately surrounding the western half of the island.

Koropupu rises from a muddy bottom through 8ft. of water, and on a calm day bubbles 3in. to 4in. above the surface of the lake. Should the lake be at all rough, however, the position of the spring can easily be found by the strong sulphurous odour that pervades the air near it. At this season of the year (September) the temperature of the water when it reaches the surface is very slightly higher than that surrounding; but the natives tell me that this is owing to the amount of flood-water now in the lake, and that in summer, when it has only a thin stratum to force its way through, it is quite hot.

Motukanae, which is only about 45ft. long by 30ft. broad, is composed of a friable chocolate-coloured sandstone, through and upon which silica and other residuary matter from mineral waters have been deposited. The island is in places like a huge honeycomb, from the numberless steam-holes through the rock, though these are all quiescent now. The surface is fairly level, and is about 3ft. above the present water-line of the lake. A little mould has formed on the rock, and a few shrubs and grasses are growing upon it.

I have made a collection of the different minerals to be found, including the roots of a tree that had been silicified *in situ*, also the casts of some leaves, and forward them herewith for inspection.

The fact of volcanic agency having been at work in this part of the country is interesting, in connection with the supposed changes in the course of the Waikato River, and would probably go a long way towards accounting for such changes.

I am informed that during the spawning season the mullet swarm round the island, hence I suppose the name; but I have also been told that they acquire such a disagreeable flavour that they are scarcely eatable. At the time of my visit a flock of geese had established their nests on the island.

In crossing and re-crossing Waikare in different directions I have taken soundings, and find that the bottom is of a very uniform level at a depth of from 6ft. to 8ft., and is composed of deep mud, the ever-increasing sediment which is being deposited by flood-water. The swamps on the south and west appear to be encroaching rapidly on the lake, and it is only a question of time for this grand sheet of water to be turned into a huge morass.

I also send with this a specimen of iron-sand from the eastern shore of the lake.

ART. LXI.—*On Vine-growing in Hawke's Bay.*

By the Rev. Father YARDIN.

[*Read before the Hawke's Bay Philosophical Institute, 11th August, 1890.*]

WHEN I had the honour to be admitted into your society I begged exemption from any literary or scientific contribution, having been condemned by sickness to suspend my favourite studies, and to avoid all serious mental exertion. It is then with hesitation that, yielding to kind solicitations, I have been persuaded, perhaps not wisely, to record a few remarks on a question of some interest to this province—namely, vine-growing in Hawke's Bay. The following remarks, written by fits and starts, are not a treatise on the matter, but simply the results of personal practical observations. Incomplete as they are, they may, perhaps, induce some industrious person to attempt the experiment.

My remarks do not refer either to vineries in hothouses, or to vines planted outside, along a wall, but to real vineyards, in the open air. These already exist in Hawke's Bay: some have been in full produce for many years past; some have been planted recently; and I am convinced that a great many more could be planted, even on a large scale, anywhere, under certain conditions. The principal points to which I shall refer are: a proper soil, a dry temperature, and a sunny exposure.