

The extended application of douches, and the introduction of the massage system, will require a large increase in the supply of mineral waters. With that in view, I would strongly and respectfully recommend, to provide for the future extensions of the bathing establishment, that the southern shore of Lake Rotorua from the present Sanatorium Reserve to the Puaranga Stream, also the Kuirau and Arikikapakapa groups of springs, be added to the Sanatorium Reserve, and proclaimed so as to have some control over them.

Sanatorium Reserve.

Under this head, in addition to keeping the grounds and gardens in good order, and the reclearing of avenues previously formed which had become overgrown, several new avenues have been opened through the manuka scrub, varying from 1 to 2 chains in width, equal in area to about twelve acres. Lawns and arbours have been formed here and there, and a large number of willows have been planted along the shores of the lake. Three hundred deciduous trees have also been carefully planted, experience having shown that, unless this work is very carefully done, the young trees linger for years until the roots strike a substratum (which is evidently an ancient surface), lying at a depth of from 2ft. to 3ft. below present surface.

Fresh-water Supply.

The number of services now being provided from the main is forty-five, namely,—

	£	s.	d.
4 hotels, at £8 a year	32	0	0
1 boarding-house, at £5 a year	5	0	0
4 boarding-houses, at £3 a year	12	0	0
12 private places or residences, at £1 10s. a year	18	0	0
7 public fountains, free
2 bath-houses, free
15 public buildings or residences, free
Total	£67	0	0

The works are now in good order, but, as there is a considerable and increasing demand for water, the present tank at the head of the pipes (10ft. × 6ft. × 3ft.) is totally inadequate to allow the sand, silt, &c., to settle and deposit, and they find their way into the pipes. To obviate this, I would recommend the construction of a concrete catch-pit, as described in my report of last year.

General Remarks.

The number of visitors (as collected by me) to the hotels, boarding-houses, &c., during the year ending 31st March, 1893, is 2,560, rather less than the number recorded the previous year. This decrease is unaccountable, as I am informed by the coach proprietors that they have had a considerable increase in their traffic return. I suspect, therefore, that there is, for trade reasons, a disinclination to keep and give full returns.

The cost of board and residence varies from £2 2s. to £3 10s. per week in hotels, and from £1 5s. to £2 2s. per week in boarding-houses, whilst the actual cost of living in cottages or tents would be from 10s. to 15s. per week.

There is nothing extraordinary to note in regard to volcanic or thermal action, except the fact that the Rotomahana Lake is filling up very fast. It is now about 50ft. or 60ft. above its original level previous to the eruption of 1886; and, as there is but a narrow strip of land separating the lake from the lower end of the Tarawera Rift, I apprehend that, in the event of a large body of water breaking into the rift, it might cause some disturbances. As an illustration of what may occur, I relate the following personal experience: My residence is situated in a place where there is a good deal of broken hot ground. One evening, having watered the garden freely, I allowed the garden-hose to run all night. In the morning I found the whole of the water disappearing into a fissure, and I turned the water off without the slightest apprehension of danger. At noon, however, the household was alarmed with repeated thuds under the house. This thudding lasted for over two hours, when it gave an extra heavy thud, shaking the house, and then ceased altogether. We never experienced anything of the kind either before or since, but we have been careful not to turn the garden-hose on at night. The theory is that the water found its way into hot ground below the house, and, being transformed into superheated steam, it caused the disturbances herebefore related, in its endeavour to find an escape. If such a small quantity of water produced the disturbance described in this case, what would be the result of a large quantity of water suddenly finding its way into the Tarawera Rift?—where there is a large area of hot ground, with places in it so hot that if a stick be thrust into the hot rubble it will burst into flames in a few seconds. I would recommend the careful watching of that particular place in Rotomahana; and, if practicable, at a small outlay, have an outflow made from Rotomahana into Tarawera Lake, and thus prevent the water reaching the height at which it might become a source of danger.

In conclusion, I may say that I have made some very interesting experiments with geysers in the locality, and have caused them to become active so as to bring about eruptions at the request of eminent visitors and at a few hours' notice, after they had been quiescent for considerable times, varying from a few weeks to several months.

The artificial geysers in the Sanatorium garden, constructed in 1890, are still as active as ever, and the terrace formation round the Waikite geyser is increasing very rapidly.