

1893.  
NEW ZEALAND.

## HOT SPRINGS AT HENDE'S FERRY, WANGANUI RIVER, SOUTH WESTLAND.

*Presented to both Houses of the General Assembly by Command of His Excellency.*

Mr. C. MALFROY to the Hon. the PREMIER.

SIR,—

Rotorua, 30th May, 1893.

*Re* hot springs at Hende's Ferry, Wanganui River, South Westland, I have the honour to report that, upon receipt of your telegram dated the 28th February last, being then at Ross, I at once made arrangements to visit the springs referred to.

I started on the 3rd March. On my way down I inspected what I shall call "Spring No. 1," which is situated in a small creek emptying itself into Lake Ianthe, on the eastern side of the South Road. It flows out of a well-defined source close to the bridge, and about 5ft. from the edge of the creek. The quantity of water discharged is from 12 to 15 gallons per minute; temperature, 54° Fahr.; whilst the water of the creek was 56° Fahr. It smells strongly of sulphuretted hydrogen, deposits a white filament of what is usually called "baragene," and does not affect the ordinary blue litmus paper. The result of the analysis is that it contains only 6.21gr. of fixed matter per gallon, and therefore considered of no notable value for medicinal purposes; but it has not been quantitatively analysed. I was, however, informed by the roadmen employed in the vicinity that if taken in small quantities it acts as a purgative. Such being the case, and the fact of its being cold, therefore not liable to degenerate or undergo chemical changes by exposure, it might be worth looking into more closely, as it may prove a valuable water for exportation.

"Spring No. 2" is situated on the north-west or left-hand bank of the Wanganui River, about a mile above Hende's Ferry, and is easily accessible from the main road. The water oozes out a foot or so above the level of the river from a perpendicular bank or terrace of comparatively recent river-drift gravel formation 15ft. to 20ft. high, and at a distance of about half a mile from the foot of a rather high range. The hot water can be traced for a distance of about 5 chains along the river-bank, increasing in temperature towards the centre, where, after doing some excavation, I obtained the sample of water sent for analysis. The quantity of water discharged is estimated at 50 to 60 gallons per minute. The temperature was from 50° Fahr. to 104° Fahr., whilst the river-water was only 47° Fahr. Ordinary blue litmus paper is slightly affected by it.

The sample of water analysed is, however, of necessity, diluted with a certain quantity of ordinary drainage-water. This must greatly interfere with the analysis, which in this case is 26.47gr. of fixed matter per gallon, and being quantitatively analysed places it under the category of chlorinated saline water (or *chlorurée sodique* of Dr. Duran-Fardel), and is, according to the same authority, suitable for internal and external use, and would prove valuable in scrofula, lymphatism, rheumatism, paralysis, surgical affections, hæmorrhoids, dermatose syphilis, dyspepsia, &c.

"Spring No. 3."—This spring is situated in a low island, in the middle of a rather large creek (named Hot Spring Creek), on the south-eastern or right-hand side of the Wanganui River, about six miles up the river from Hende's Ferry, and under present circumstances is quite inaccessible to any one having any kind of ailments, as the only road to it is along the river-bank, travelling on foot, jumping from boulder to boulder, besides having two rather large creeks to cross. The water oozes out in several places through the river drift of quite recent formation. The principal spring is in a hole under a large stone, where the temperature of the water was only 64° Fahr. when we arrived, but by turning the creek-water off, and cutting a drain so as to drain the hole, the temperature rose to 130° Fahr. in about two hours, and by thrusting the thermometer in the sand at the bottom it rose to 134° Fahr. This would lead one to believe that this spot is not very far from the actual spring. The quantity of water discharged is about 30 gallons per minute. Globules of gas (probably carbonic-acid gas) were continually rising through the water, which emits a strong smell of sulphuretted hydrogen and deposits white and green filaments of "baragene." It did not affect the ordinary blue litmus paper, but a shilling placed in the sand at the spring was thoroughly discoloured by the action of the sulphur. The analysis of this sample gives 9.62 grains of fixed matter per gallon. It also has not been quantitatively analysed, but, judging from the geological formation of the surrounding country, I am of opinion that if Nos. 2 and 3 springs were traced to their respective sources these waters would be found of the same chemical composition, and therefore identical in their use and applications, as both of them seem to rise at the junction of a huge moraine and lacustrine formation with the schist formation of the main range, but, as I said before, with regard to No. 2, it is difficult to say how much genuine hot mineral water there was in the sample analysed.

*General Remarks.*—Considering the unfavourable analysis (report hereunto attached) of the samples of waters analysed, it would only be waste of time to go into details as to what can be done to bring these springs into use. There can, however, be but one opinion that it would be highly desirable to have some small thermal establishment easily accessible to the population of the West Coast, and, as there is a well laid-out and graded road, fit for coach-traffic in ordinary fair weather, now being made by co-operative labour from Ross to Hende's Ferry, I would recommend the local authorities and persons interested to spend a few pounds in sinking shafts, cutting drains, &c., so as to discover the actual sources of Springs Nos. 2 and 3, and to have some of the undiluted mineral water analysed again, and if the result is satisfactory some suggestions could then be made as to the best means of utilising them.

In conclusion, I would say that I feel confident that valuable mineral waters will yet be found in that locality, as well as in others of the South Westland rivers. And in reply to your second telegram, requesting me to visit the spring at the Waiho River, which I could not undertake at the time, I would say that some twelve years ago, when visiting the St. Francis Glacier, I enjoyed a hot mineral water bath taken in a hole dug in the gravel at the edge of the Waiho River, the particulars of which was that by extending the arm into the flowing river one could catch lumps of ice floating down. One of these lumps so caught I wrapped up in flannel, and actually brought a piece of it into Ross (fifty-five miles on horseback), and in the evening our party had the unique pleasure of drinking sparkling Jura wine iced with it.

I have, &c.,

The Hon. the Premier.

C. MALFROY.

P.S.—During my stay at Mr. P. Hende's my attention was forcibly drawn to the great inconvenience in communicating with the ferryman. A traveller arrived in the evening saying that he was an hour and a half on the opposite side of the river before he could attract the attention of the ferryman, and I was informed that some travellers have had to stay all night in the cold wind and rain through being unable to make themselves heard. It occurs to me that an easy and cheap way to remedy this would be to fix an ordinary electric house-bell in every ferryman's house, with double wire connection to a post and button on the opposite side of the river, with notice to press the button once for a man on foot, twice for man and horse, and thrice for man with horse and cart. I mentioned this to you when passing through Wellington, but for fear that, in the multitude of things you have to think of, it might slip your memory, I thought to mention it here.

C. MALFROY.

#### ANALYSIS.

##### *Three Samples of Supposed Mineral Waters.*

All these waters, as received, were clear and sparkling. Their contents of mixed saline matters is small for mineral waters. Evaporated down each yields an alkaline residuum. Sulphuretted hydrogen was easily found in Nos. 1 and 3, but no indication of iodine in any of them. The following schedule of results proves that Nos. 1 and 3 contain a greater proportion of fixed matter than river-waters generally. No. 2, however, contains somewhat over the quantity usual for river- or common spring-water, so it has been quantitatively analysed:—

##### *Schedule of Contents of Fixed Matter.*

					Grains per Gallon.	Temperature at Spring.
No. 1	...	...	...	...	6.21	54° Fahr.
No. 2	...	...	...	...	26.47	96° to 100° "
No. 3	...	...	...	...	9.92	120° to 134° "

##### *Analysis of Solid Contents of No. 2.*

Chloride of sodium, with traces of chloride of potassium	...	...	...	...	18.76
Sulphate of lime	...	...	...	...	1.71
Carbonate of soda	...	...	...	...	1.09
"        magnesia	...	...	...	...	0.39
"        lime	...	...	...	...	0.46
Silica	...	...	...	...	4.06

26.47

From these results it appears that even the most saline water of the series is not likely to prove of any notable value for medicinal purposes.

WILLIAM SKEY.

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