

remunerative employment to the large number of immigrants now being introduced into the Colony under the Government scheme.

The Committee of Colonial Industries.

I have, &c.,

J. W. TATTON.

Mr. J. W. TATTON, to the CHAIRMAN, Colonial Industries Committee.

GENTLEMEN,—

Wellington, 10th October, 1872.

At the request of one of your members, I give my ideas relative to the working of iron. Hitherto I have not ventured beyond what I considered necessary to introduce to your notice local industries and the development of our mineral resources, leaving the question of the best mode of working in your hands.

I immediately applied to the Patent Office for copies of my papers submitted to you, showing that I opposed the patent of Mr. Charles Martin for the monopoly of working iron sands throughout New Zealand, wherein you will see I prove my working iron sands from our different localities, by analysis, precisely the same as those of Taranaki. Two of the names appended as witnesses are residents of Taranaki, and one was the first who worked the iron sand, and brought it before notice of the public. I had worked them before the dates of my papers, and given considerable attention since, and in combination with other irons, such as grey, specular, black band, and hæmatite.

The heavy expense attending the working of iron sand, precludes the utilization by itself, except for fine purposes. Besides considerable labour, it requires from fifteen to eighteen tons of coal to produce one ton of iron. I have worked it many ways—by different constructions of furnaces, plain, in compost, and by cementation; and, with all, there are difficulties to surmount. As the matter is now under your consideration, I will suggest that the hæmatitic iron is the most practical to work; for general purposes, equal to Swedish iron, and well suited for railway purposes. I refer you to the quotation in my paper from the *Engineer*. If a superior quality be required for fine work, the hæmatite, with a percentage of iron sand, could be worked. The latter we have in Collingwood and elsewhere, as is shown in my paper; the former we have extending from the coal measure, through the Para Para, a distance of several miles. We have it at the Croixelles, Dun Mountain, Aniseed Valley, Wangapeka, and along the line to the Western Coast. I recommend Collingwood, it being a settled district, for manufacture, with the following advantages:—

- 1st. Having abundance of raw material, and facilities for shipment of the manufactured material.
- 2nd. Fuel being on the ground in abundance.
- 3rd. Having good fire-clay, sand, and lime, which would materially lessen the working expenses in furnaces.
- 4th. Its central position.

I suggest that the Government should place on the estimates the sum of £500 for the purpose of erecting a furnace, and examining extent of ground in that locality, and reporting upon the same; also for the smelting of some, for the purpose of proving its value in the market, such trial furnace to be erected in Nelson and to be the property of Government, and would be available for practical tests for New Zealand. If the Government require my services to report on the locality, and attend to the working of the furnace, I should not object to undertake the duties. I also recommend that a reverberatory hearth be erected at the same time, for general tests of minerals, so that they might be worked practically, beyond the laboratory tests, for the whole of New Zealand. One reason I propose the latter is, to encourage the immediate development of our resources practically, as they present themselves when the ground is taken up by private Companies. A scale of charges should be made, according to the tests required, towards supporting expenses of plant and working thereof. I would further suggest having a laboratory for practical tests. That charges be allowed to be made, under the cognizance of Government, as should be the case under the Geological Department, for private parties only.

I instance, as an example, the Perseverance Mine, Collingwood, having struck and proved to a considerable extent a leader or lode of galena, silver, and zinc blende. The laboratory tests have been made at the Government Geological Department and by myself (some of the specimens which I laid before you). The Company, when applied to by its shareholders, were afraid to venture on account of the long delay that would ensue, and the indefinite expense attached thereto. This is one instance of many. A shareholder, in this case, agreed with the Company to raise a certain number of tons on his own account to forward to England for practical tests. This is an exceptional case in mining interests generally. Now the delay suspends the working, whereas, if there had been furnaces erected, I have not the slightest doubt the Company would have paid for the tests, and would have been working at the present time to profit; and many similar cases have collapsed in consequence.

By having the furnaces at command, with the use of my laboratory and a few extras, if permitted, I might establish the basis of a School of Mines similar to those of Germany, in the Hartz Mountains, Saxony, in Silesia, and in England. This would tend to give permanence to what is at present an ephemeral branch of industry, besides aiding those who are desirous of investing capital, by the speedy determination of the value of mines *in situ*.

If a sum be granted for working minerals and their compounds, Government should select the most useful, such as iron, chrome, silver, copper, lead, zinc, antimony. Each should have a separate subsidy for a given time, extending over five or six years. If several works commence within a specified time, the amount should be divided in proportion to seniority. If only one should be in operation, the whole amount allotted to that branch should be given to it at the termination of a specified period. Apart from Nelson's central position in New Zealand, I consider that her future depends entirely upon her minerals. Nelson may be termed the Cornwall and Staffordshire of the Southern Hemisphere; and as the interior of the country is opened up by roads or railways, we may anticipate extensive preparations throughout the country for utilizing what nature has given us, all