1894.

NEW ZEALAND.

TARIFF AND INDUSTRIES COMMITTEE

(REPORTS OF THE, TOGETHER WITH MINUTES OF EVIDENCE ON A METHOD FOR THE TREATMENT OF IRONSAND).

Reports brought up Session 1894, and ordered to be printed.

ORDERS OF REFERENCE.

Extracts from the Journals of the House of Representatives.

TUESDAY, THE 26TH DAY OF JUNE, 1894.

Ordered, "That a Select Committee be appointed to consider how the manufactures and industries of the colony may be encouraged; three to be a quorum. The Committee to consist of Mr. Carnell, Mr. Crowther, Mr. Earnshaw, Mr. Graham, Mr. W. Hutchison, Hon. Mr. Mitchelson, Mr. R. McKenzie, Mr. E. M. Smith, Mr. G. J. Smith, and the mover.—(Hon. Mr. WARD).

TUESDAY, THE 24TH DAY OF JULY, 1894.

Ordered, "That a Select Committee be appointed to take into consideration the existing duties of Customs and excise, with a view of ascertaining whether any changes are necessary or expedient; five to form a quorum. The Committee to consist of Mr. Allen, Mr. Duncan, Mr. Duthie, Mr. Graham, Mr. Hall-Jones, Mr. W. Hutchison, Mr. J. W. Kelly, Mr. Maslin, Hon. Mr. Mitchelson, Mr. Morrison, Mr. McGuire, Captain Russell, Mr. E. M. Smith, Mr. Tanner, and the mover. The Committee to report within one month.—(Hon. Mr. WARD.)

THURSDAY, THE 2ND DAY OF AUGUST, 1894.

Ordered, "That the Manufactures and Industries and the Tariff Committees be amalgamated, and sit together as one Committee."—(Hon. Mr. WARD.)

TUESDAY, THE 21ST DAY OF AUGUST, 1894.

Ordered, "That the Tariff and Industries Committee have leave to postpone bringing up their report for fourteen days."—(Mr. W. HUTCHISON.)

THURSDAY, THE 6TH DAY OF SEPTEMBER, 1894.

Ordered, "That the Tariff and Industries Committee have leave to postpone bringing up their report for one week."—(Mr. W. HUTCHISON.)

REPORT RELATIVE TO TREATMENT OF IRONSAND.

I HAVE the honour to report that, with reference to the evidence given before this Committee by Mr. E. Purser, of Blenheim, relative to his mode of treating New Zealand ironsand, this Committee is of opinion that the attached evidence should be referred to the Government, with a view to making a technical inquiry into the matter.

WILLIAM HUTCHISON,
Chairman.

10th August, 1894.

MINUTES of EVIDENCE on a METHOD for the TREATMENT of IRONSAND.

THURSDAY, 26TH JUNE, 1894.—(Mr. W. HUTCHISON, Chairman.)

Mr. E. PURSER, of Blenheim, examined.

1. *The Chairman.*] Upon what branch of manufactures and industries do you wish to give evidence before the Committee? You will be as brief as possible, as our time is valuable?—I desire to give some information upon the magnetized process of treating ironsand. I first conceived the idea of separating the foreign matter from the ironsand by the magnetized process, feeling assured that it would be of great importance in producing iron from it. I accomplished the process in the first instance by passing the ironsand, in conjunction with magnetized drums,——this plan [Exhibit A] shows the sections of the electric magnet. [Witness described the sections.] I find it necessary, to avoid titanium or other foreign matter, to be very careful in having the electric drums far apart, otherwise each grain of sand becomes a magnet itself, and the attraction, if too abrupt, would draw the foreign matter to the drums. [Witness exhibited a specimen of briquette made from the pure ironsand.] There is no difficulty in smelting the ironsand.

2. When you have got that length, what do you propose doing with it?—[Witness produced a quantity of ironsand from Onehunga, which contained a large percentage of foreign matter, and made an experiment upon it, showing a certain amount of residue. He also exhibited a piece of iron made from the separated sand.]

3. What do you propose doing with that material?—The next thing I want to do is to make a commercial success of it by forming a company with sufficient capital to make a thorough commercial business of the thing. I have made myself acquainted with the costs of the different courses that this material would have to go through before it comes to the final stage. I find it can be made with very great profit in New Zealand—in fact, with extraordinary profit. I think I am right in right in saying that, under this process, you could manufacture pig-iron in New Zealand for £1 2s. 10d. a ton.

4. *Mr. Earnshaw.*] At Onehunga?—No, I could not go to Onehunga; I should have to go to Taranaki.

5. *The Chairman.*] That is the estimate per ton?—Yes, delivered at the works.

6. *Mr. G. J. Smith.*] What is the ordinary cost of pig-iron?—£4 7s. 6d. per ton.

7. *The Chairman.*] Is that the net profit?—I allow 9d. per ton for carting the sand off the beach to the works. I separate it for 1s. a ton by passing it over the drums, which feed themselves. The briquettes cost 1s. 6d. per ton; fuel, 9s.; flux, 4s.; labour, 6s. 7d. These figures were supplied me by the manager at the Onehunga works. That is what they estimate the cost per ton for puddling pig-iron. At Onehunga a shift of one man would produce 10 tons a day. One man is put down at 16s. a day; coal, £1 5s.; shingle, 2s. 9d; roller, 3s.; bulldogger, 1s. 9d.; cropping, 1s. 9d.; driver, 1s. 6d.; oil, &c., 1s. 6d.; incidental expenses, 2s.: total, £2 15s. 3d. That is for puddling. Now we come to the actual cost for finishing the iron. The one man's product would be 10 tons per day, at £1 2s. 10d. per ton, which amounts to £11 8s. 4d. Add to that the £2 15s. 3d., and the finishing would cost £28; and the total cost for 10 tons of pig-iron would be £43 3s. 7d., or £4 4s. 5d. per ton for finished iron, as against £7 15s. for imported material, which would not be of such good quality.

8. *Mr. Earnshaw.*] What amount of capital would you require?—£25,000 to start with.

9. What would be the interest?—6 per cent. 2s. 6d. per ton would be ample interest on the capital. That would represent £1 5s. a day for one set of hands. This includes wear-and-tear. I think that would be a fair allowance to make.

10. Is the 2s. 6d. to cover loss by deterioration of plant, or is it only for the interest?—I include the deterioration as well. A plant costing £25,000 ought to produce 60 or 70 tons a day.

11. What do you put down per ton as interest and deterioration on £25,000 for plant and wear-and-tear?—Well, I thought 2s. 6d. per ton would cover the whole.

12. *Mr. Graham.*] What would be the maximum production?—I am not quite in a position to say; but I calculate that with two shifts they would turn out probably 120 tons a day.

13. *Mr. G. J. Smith.*] You must know what the interest per ton on £25,000 capital for plant would be?—No; I do not.

14. *Mr. Earnshaw.*] It would take 32 tons a day to pay interest on capital?—Yes. Now, I have to ask the Committee to extend to me some reasonable amount of help; and if I were to put in print everything I have said to you, and demonstrate, which I am prepared to do more fully than I have now, I do not care whose name was at the bottom of the prospectus, people would doubt whether it could possibly be done. Therefore, it becomes necessary for me to travel round, and demonstrate practically as I go along the process in which I thoroughly believe. That, of course, entails larger expenditure, and, I being a poor man, I think, with the prospects of an industry such as we ought to establish in Taranaki with a process of this kind, I deserve some little help from the country. In order to give me a start to thoroughly establish the works, I was going to ask the Committee if they would recommend a vote of £200 towards my expenses in floating the company. That becomes necessary. Nobody would believe, unless I showed them practical illustrations, that the Taranaki ironsand can be treated in the way described. At Onehunga, where there is the best talent in the business, they are of opinion that this sand will not require even the cupola process. It is of such a kindly nature they can smelt it in the ordinary furnace.

15. You cannot get pure ironsand, there is some admixture of foreign matter?—There is some foreign substance in it. The sand will not stand up in the furnace. At Blenheim, with a small cupola furnace, the metal can be produced at 7s. 6d. a ton for smelting to pig.

16. *Mr. E. M. Smith.*] Do you firmly believe this electric-magnet machine is required for separating the sand, and that it does so?—Yes.

17. Are you aware that Edison and other electricians have patented the same process?—No.

18. And that it is to be seen in any work on electrical engineering?—No, I have not seen it. On the 19th October there appeared a report in the *Marlborough Daily Times* to the effect that Edison was about completing an invention for treating magnetic ironsand, by which he expected to manufacture iron. I understand that Edison has no patent at present. I say so distinctly.

19. Are you aware that in the New Zealand Patents Office there are more than a dozen patents of the same process?—No.

20. Are you aware that foreign matter, such as silica, can be separated by passing through a sieve of 2,500 meshes to the inch?—Certainly not, for the simple reason that if you put the sand under a microscope you will find each grain equal in proportion; there is no difference in the size of the grains of the foreign matter than of the pure iron portion.

21. Did you ever try it?—No, I did not. I cannot see the possibility of it.

22. Would you be convinced if you saw the process to prove it?—Yes.

23. In regard to the solution, you are aware that a solution of glue has been used with the sand to make emery paper and puffsticks?—You could not make emery paper or puffsticks without it. It does not matter to me whether it has been used or not.

24. Are you aware that, according to all scientific teaching, one great defect of ironsand in smelting is its purity?—I am aware of this: that in its virgin state you get a very hard material, which is neither iron nor steel, suitable for many purposes, but such as you can overstock the market with. I am also aware that it would be almost impossible to overstock the market with malleable iron made under this process of mine.

25. Would the sample of iron you have exhibited do for casting?—I think it would be fit for anything.

26. You told the Committee that if foreign matter was mixed with iron it would be too hard and brittle for manufacturing purposes: is that true?—It would be very suitable in its virgin state for some purposes, but it would overstock the market with a hard kind of metal.

27. *Mr. Earnshaw.*] Have you got a model of the machine for testing?—Yes, I have one in Wellington.

28. One you are working under the exact conditions in which you apply it in the manufacture?—Yes.

29. Has the ironsand been tested as to whether scheelite or titanium is in the product?—I sent the residue of the sand you have seen to Dr. Hector. I merely asked him to tell me what were the contents of the packet. He replied, "Titanium, of no commercial value."

30. That is indirectly answering my question. I want to know if the ironsand product from the machine has been tested, and if any titanium has been found in it?—No, I have not been in a position to bear the expenses of a trial in a large way.

SECOND REPORT RELATIVE TO TREATMENT OF IRONSAND.

I HAVE the honour to report that the Committee has received the annexed letter from the Eureka Ironsand Reduction Syndicate, Auckland, with reference to Mr. Purser's method of treating ironsand, and that this Committee is of opinion that the said letter should be referred to Government, in order that it may be considered together with Mr. Purser's evidence.

WILLIAM HUTCHISON,
Chairman.

31st August, 1894.

APPENDIX to above REPORT.

Temporary Office, Corner of Vulcan Lane and High Street,
Auckland, 16th August, 1894.

SIR,—

Having noticed in our local papers that a Mr. Purser, of Blenheim, is reputed to have solved the difficulty of dealing with the ironsand of this colony, and having had an opportunity of fully discussing with that gentleman the merits or demerits of his process of bricks, we take the liberty of submitting to you samples of iron made from the Taranaki ironsand by the fluxing process, patented by Messrs. Muriett and Jones. And for our own interest we feel in duty bound to place under your notice the leading features of our treatment, and also to point out to the uninitiated what appears to us to be the unsurmountable obstacle in the way of success of Mr. Purser's patent.

We are of opinion that this industry is of vastly too great importance, not to ourselves only, but to the colony at large, to have, following on the heels of so many failures, any further attempt to treat the ironsand placed before the public, unless the scheme proposed be based upon practical and certain lines; consequently we feel that you will absolve us from any appearance of jealousy or antagonism to Mr. Purser in our criticism of that gentleman's mode of treatment. We are in a position to prove conclusively that our artificial ore contains all the essential ingredients of the best argillaceous ores of Scotland, and, as such, the correct treatment of the ore must be identical with the manipulation of the other, and the cost of both will therefore be alike, assuming that both are worked in the same country or district.

Since, however, the field of operation in connection with the New Zealand ironsand must of necessity be New Zealand, the cost of labour and transit of material will be proportionately greater than that which obtains in the Old Country; but against this extra cost of production we maintain that we have a sufficient margin in the excess and quality of the metal product obtainable from our ore as against the production from the Scotch ore—*vide* tabulated analysis by Dr. Hector and Dr. Colquhoun in the case of samples which we hope to forward per next boat.

With regard to Mr. Purser's patent and its possibilities, all we desire to state is simply this: That, until some means can be devised of deoxidizing the oxides of iron without the aid of any fluxing substances, we unhesitatingly affirm that, both scientifically and commercially, Mr. Purser's blocking the sand into bricks or lumps is absolutely valueless. Please note that we are not, nor do we intend, to fall back upon the too-oft-repeated practice of some enthusiasts, of harassing your Government by soliciting monetary assistance. All we ask is that, before your Committee formulate any recommendation to the Government to favour any particular scheme or patented process for the reduction of the sand, a fair, full, and impartial inquiry into the merits of our process shall be made by them; and, in the event of any special reason being noticeable why assistance should be rendered to either, that it be given to foster the one which, when submitted to the best known scientific and practical tests, proves of the most commercial value.

With regard to the merits of his machine for separation of the magnetic oxides, we have no comment to make, our contention being as above—that, when separated, the magnetic oxide is not in the requisite form for smelting, nor for treatment by any known process.

I have, &c.,
F. J. STUBBINS,
For Eureka Ironsand Reduction Syndicate of New Zealand.

The Chairman, Tariff and Industries Committee.

Report relative to an Import Duty on Stock.

In connection with a document (a copy of which is annexed), signed by 1,152 farmers in Southland, asking for the imposition of a duty on live-stock imported from the Colony of Victoria, in consequence of that colony having placed a duty of £2 10s. each on horses, this Committee is of opinion that the time has arrived when, at the earliest possible opportunity, a representative intercolonial conference should be held to discuss the question of intercolonial reciprocity—a reform which this Committee considers highly desirable in the interests of the whole of Australasia. In the meantime, and until such reciprocity be obtained, the Committee recommends that a Customs tariff equal to that levied by the other Australasian Colonies be at once imposed upon horses, cattle, sheep, and goods imported to New Zealand from those colonies. And the Committee request the Chairman to bring this matter before the House of Representatives.

William Hutchison,
14th August, 1894. Chairman.

Appendix to above Report.

Sir,—

We, the undersigned settlers and others interested in the breeding of live-stock, while desirous of having intercolonial free-trade, beg respectfully to draw your attention (in terms of a resolution passed at a public meeting held in Invercargill, on 14th instant) to the expediency of imposing a stock-tax on all live-stock (particularly horses) imported to New Zealand from the Colony of Victoria, equivalent to that imposed by that colony on New Zealand stock landed at her ports.

During the past twelve months large importations of Victorian horses have been landed in New Zealand, and we submit that it is unfair to breeders, as well as to the taxpayers of the colony, that their stock should have free entrance to our ports while we have to pay a heavy duty on our shipments to that colony.

We have, therefore, to urge that you will give this matter your earnest and favourable consideration, and impress upon your Government the necessity of placing us on fair trade terms with our neighbours across the sea.

The Hon. John McKenzie,
Minister of Agriculture, Wellington.

Report relative to Customs Tariff.

I have the honour to report that this Committee have deliberated upon the Customs tariff, which they have gone through item by item, and now forward to the Government their suggestions upon the same. The Committee, while going into the subject as exhaustively as the time at their disposal has allowed, desire to express their strong opinion that any revision of the Customs tariff must be imperfect unless the opportunity be given of acquiring requisite information at the various centres of the colony, in order that a reliable and comprehensive report may be furnished to guide the Government in suitably amending the tariff; and for this purpose the Committee are of opinion that, in the interests of the colony, a Royal Commission should be set up forthwith to take evidence and go exhaustively into the whole question, and to report thereon.

Your Committee have already reported upon a certain phase of the tariff, arising out of a duty imposed upon New Zealand horses exported to Victoria. A copy* of that report is appended hereto, and the attention of the House is respectfully requested to its recommendation of a reciprocity of Australasian tariffs.

William Hutchison,
September 14th, 1894. Chairman.

* See report of 14th August.

Report on the Petition of Joe Ward.

Petitioner prays for the remission of the duty on a woodworking machine which he desires to import and use in making butter-boxes and in the dairy industry.

I am directed to report that this Committee is of opinion that this petition should be referred to the Government for favourable consideration.

20th September, 1894. William Hutchison, Chairman.

Report on the Application of Mr. E. M. Smith, M.H.R.

Mr. Smith asked the Committee to recommend the Government to grant a subsidy of £1 for £1, up to £250, to the people in the District of Taranaki who are desirous of sending one or more persons to England with 10 tons of samples of iron, to endeavour to form a company to work coal and other mineral products in the colony. Mr. Smith appeared in support of his application, which is attached hereto.

I have the honour to report that this Committee is of opinion that Mr. Smith's application should be referred to the Government for their most favourable consideration.

21st September, 1894. William Hutchison, Chairman.

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