

The Commissioners wish also to have samples sent out to the Colony of all articles that are prepared from the particular samples of flax.

Enclosed I beg to hand you copy of letter addressed to Messrs R. Christie and Co., of 4, Sermon Lane, E.C., on 29th December, 1870 (and of which I made mention in my letter to you of same date), in order that you may be exactly informed of the assistance we have requested at the hands of these gentlemen; and you will observe from it that a portion of the flax sent home by the Commissioners was promised to these gentlemen, to enable them to assist in furthering the objects which the Commissioners have in view.

I was in hopes that we would be able to send along with the machine-dressed fibre a large sample of the finest Native-prepared fibre, but it has only been received from the Natives since the "England" sailed, and must await another opportunity.

P.S.—I have the pleasure to inform you that the "Edinburgh Castle" arrived safely at this port on the 2nd instant, but is not yet unloaded. However, I hope by next mail to be able to state that the nine sample bales of fibre have come to hand in good order and condition.

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(No. 42.)—CHAIRMAN to the Hon. Mr. VOGEL.—2nd January, 1871.

Three sets of printed papers accompany this, as there may be an opportunity of interesting some one in America on this subject, as well as in England.

The persons who have been communicated with in England are—

1. Mr. John Morrison: he has been asked to send out the samples of competing fibres mentioned in 3c. of Resolutions of the House of Representatives; £250 has been remitted to him for this purpose, and to defray the expense of chemical and microscopic examination. A colonial-made flax machine (by Fraser and Tinne, Auckland,) has been ordered to go to Mr. Morrison, to be submitted to machine makers at home.

2. Dr. Hooker has been asked to select an analyst, &c. (see letter, page 18 of Progress Report), also to furnish leaves. It would be desirable that he should be seen on this subject. Also, as to whether his opinion is favourable to offering a first and second prize (say £50 and £30), to be competed for by graduates in science for the year 1870-71 at the Universities that grant the degree of D.Sc., for essays founded on experimental researches and comparison of the *Phormium tenax* fibre with other textile fibres.

3. Messrs. Robert Christie and Co., 4, Sermon Lane, St. Paul's, E.C., who are the chief producers and dealers in bags and heavy fibre stuffs, have been asked to undertake the duty of seeing that the samples sent home for experimental manufacture are put into proper hands. They have been chosen because they show a great interest in the subject and sent out much useful information to the Colony. It would be desirable to see Mr. Christie, as he would be the best man to select some one to make the investigation in the industrial and manufacturing branches of the subject, and report to the Commissioners in the Colony.

They might suggest some simple machinery that could be sent out to the Colony for the manufacture of scrim-cloth, gunny bags, and the coarser kinds of sacking. They would also be the best persons to get a report on the recently invented machinery for working the Rhea and other fibres. (A prospectus of such machines is attached.)

In conclusion, it would be very desirable to get reports on any such machine used in America; also, to make inquiries as to the exact steps in the manufacture of white rope as followed in America, and how far the New Zealand machine-dressed flax suits that process. Particularly, do they use any oil, petroleum, or other stuff in making up the rope?

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The Hon. Mr. VOGEL to Dr. HECTOR.—Washington, 23th February, 1871.

I have not as yet been able to do anything for you in respect to flax. In San Francisco they have no analogous manufactures, and I found there, as well as elsewhere, that it was a great mistake not bringing with me samples of the ordinary prepared flax. If you remember, I suggested to you to get me such samples, but that you thought I should be able to obtain them anywhere in the United States. The flax prepared by hand by the Natives I have with me, but that, of course, is not a fair sample of what the fibre of the plant is. Besides samples of ordinarily prepared flax, I think it most important that there should also be samples of the plant itself in its natural condition. If, as I expect, cut leaves would wither and shrivel up, I question whether it would not be well that you should send, both to the United States and to England, roots of the plant, with the leaves preserved as far as is possible.

At Chicago I was told, "If you will only show us the stuff to be dealt with, and tell us what is wanted to be done, there will be no difficulty in procuring or in making the necessary machinery for preparing the fibre."

I intend to have a search made through the Patent Office here for any machines which might possibly be of use. In New York, I hope I shall be able to obtain some information about the manufacture of white rope. There are no rope factories in Chicago, and in San Francisco there are none of any importance. But in San Francisco I was told, in reply to an inquiry you asked me to make, that a little whale oil is generally used in making the white rope, and that, as a rule, a very little cocoanut oil is used in making cords, &c.

I have promised to two gentlemen who have very nice country seats, and who take great interest in the introduction of foreign plants, that I will endeavour to obtain for them some roots of the flax plant. Those gentlemen desire to try whether the plant will grow well in California; and you will oblige me if you will send to Mr. Ralston, Bank of California, San Francisco, a dozen or two of the plants, with directions for dealing with them, and a statement that you have sent them at my request. I will prepare and will send by this mail an official minute, embodying such information as I have been able to obtain about flax while passing through the country.