Assuming therefore, that the arrangements with Mr. Buller will be made through your Department, I beg that you will recommend to the Government that the Flax Agency should be included amongst other matters remitted to him.

(No. 40.)—The UNDER SECRETARY to Dr. HECTOR.—8th April, 1871.

I have the honor to acknowledge the receipt of your letter No. 64, of the 23rd ultimo, addressed to Dr. Featherston, Agent-General, in reference to obtaining the services of Mr. Buller in England, in connection with the Flax Commission, and, in reply, am directed by Mr. Gisborne to inform you that he has arranged with Dr. Featherston for the employment of Mr. Buller for the purpose indicated in your letter.

II.—INSTRUCTIONS TO AND REPORTS FROM AGENTS IN ENGLAND, &c.

(No. 35.)—CHAIRMAN to Dr. HOOKER, C.B., F.R.S.—27th December, 1870.

A commission, of which I enclose a copy, has been issued by His Excellency the Governor for the investigation of the New Zealand flax manufacture; and I have been requested to solicit the favour of your valuable assistance towards obtaining the information mentioned in paragraphs 2nd (2, 3, 4).

The manner in which you can be of special service is in the selection of a person competent to make the required microscopic and chemical examination, and to report thereon, and by procuring for him such fresh leaves as he may require for the purpose mentioned in these paragraphs. The samples of prepared fibres will be furnished to the person you select through the Government Agent in London, John Morrison, Esq., who is also instructed to defray all fees and charges, the amount of which the Commissioners have left to your discretion.

I beg to enclose you the following documents:—

"Report of the Flax Commissioners on the means employed in the preparation of New Zealand Flax."

"Report of the Joint Committee on Colonial Industries."

"A Lecture on the Manufacture of New Zealand Flax, by Captain Hutton, F.G.S."

"Report from the New Zealand Commissioners relative to the Manufacture of New Zealand Flax."

"Progress Report of Flax Commission, 1870."

Some of these will be, and others may be, required by the person selected to conduct the examination, in order that he may understand the points on which information is chiefly wanted; and his attention should be specially directed to those passages which I have marked, and also to those subjects which I have indicated in the memorandum accompanying these papers.

It would be hardly possible for me to exaggerate the importance to New Zealand of a satisfactory solution of the difficulties which now prevent the full development of this Colonial industry. Extensive fields of the raw material exist; we know that it contains a fibre of great beauty, strength, and value; abundance of coal and water power favour the manufacturer; very large sums of money have been embarked in the construction of mills and machinery, and hundreds of settlers have devoted their entire energies and attention to the subject;—and yet, hitherto, from want of sufficiently authoritative guidance, they have failed to derive those benefits which might reasonably have been expected. Under these circumstances, the Commissioners feel that they need offer no apology for applying to you for aid and co-operation.

(No. 38.)—MEMORANDUM, with Printed Papers, forwarded to Dr. HOOKER.

The accompanying printed papers contain almost everything that is known relative to the *Phormium tenax*, and the various opinions which are held as to the best means for preparing its fibre are sufficiently stated to guide any one taking up the inquiry afresh.

There is no doubt of the high value of the fibre as prepared by the Natives; and if a mechanical apparatus were contrived, by which their method of preparing the fibre could be inexpensively performed, the chief difficulty would be removed.

The objection to the Native method is its expensiveness, due to great amount of manual labour required, and the loss of raw material.

The essential feature of the method is—that portions of the fibrous bundles are torn from the parenchyma in which they are imbedded, together with the adherent gummy cuticle that covers the inner surface of the blade of the leaf. The Natives in some cases remove this cuticle by steeping, in other cases they merely let it dry, and then brush it off mechanically. The result of both methods of treatment on the fibre is the same—leaving it in a white lustrous condition, possessed of great strength and lasting properties.

The ultimate fibres in good Native-dressed flax are free and comparatively non-adherent laterally, which is the chief distinction between it and fibre dressed by machines that have been invented by Europeans, in which the ultimate fibres are firmly bound together in bundles which break with a short cross fracture.

The reason for this difference is not yet determined, and is in fact the chief point to which it is desirable that the attention of the chemist and microscopist should be directed.

Captain Hutton, in his lecture (p. 8), states that a peculiar cement exists which binds together the ultimate fibres, and argues for the necessity of preparing the fibre by a method that will not injure