

an enthusiast by the trade and others. The present owner has no interest in the specimens, except as curios; he received them from his father, who was one of Donaldson's employés. The samples were examined recently, with the documents, by the *Advocate*, and an article published in refutation to the assertion of the Agent-General that New Zealand flax was not suitable for fabrics. There is one particular specimen which resembles raw silk for fineness.

From my own experience both here and at Home in the producing of fibres, I feel certain that, if all the natural virtues were developed that exist in *Phormium tenax*, it is at least equal to manila in every way; the Taranaki flax is pre-eminent for fabric purposes. But there is not a practical machine or process in use capable of bringing out these qualities. They are all extremely crude; in fact, more or less an adaptation of the original principle of Messrs. Price, of the Thames—that is, the mechanical portion. We cannot compete with sisal for want of a uniform colour and freedom from straws; nor with manila, as the fibres are not sufficiently defined from end to end without maceration, and a percentage of the chemical components of the original leaf is lost; but Bull's machine is a step in this direction.

I notice Mr. Gardner asserts that the hemp now produced is uniform in colour. It is totally a mistake; it is anything but that (see salesmen's and buyers' reports). We can never attain to a uniform colour as long as the process requires outdoor exposure for the purpose of bleaching. The reasons are obvious.

I should be very glad to make a few suggestions as to what we desire the future process to attain, &c., if you thought them worth your consideration.

In conclusion, I may say my reason for bringing forward the fact of the existence of samples of fabrics manufactured from *Phormium tenax* is to establish the fact that it is suitable; and the Government would not be taking a leap in the dark by offering a valuable bonus for developing *Phormium tenax*. What has been done surely can be repeated again.

The Chairman,
Flax and other Industries Committee, Wellington.

Yours faithfully,
ALFRED HARRIS.

DEAR SIR,—

Brandon Hall Hemp-mill, Bull's, 7th August, 1890.

Re flax: It is acknowledged by manufacturers that there are three objections now existing to placing New Zealand hemp in the market as equal to sisal or manila. First, uniformity in colour or shade. I feel assured from observation this can be attained by a complete mechanical separation of the fibres from the vegetable and liquid matter of which the original leaf is composed. The profitable result would be untold. It would not require washing (a work which breaks down the most robust constitution when followed for any long period). It would save paddocking for the purpose of bleaching, at a cost from £1 10s. to £2 per ton. The quantity of green leaf to the ton of fibre would be reduced at least one-fifth. The exposure to bad weather, with all its attendant risk of being totally destroyed, would be overcome, and the durability of the fibre would be largely enhanced. There are machines that can be set up so as to foreshadow all this, but at the expense of severe maceration of fibres. Second, we desire a process that will make the separation of the fibre in a defined manner from end to end without maceration, a thing impossible where there is percussion in process of separation, as we have now. Third, it is most desirable to produce fibre perfectly free of selvaige or straws. Now, Bull's machine, when here, produced a sample containing beautifully-defined fibres and lustrous, but very strawy; of course, this may be encompassed in attaining the uniform colour. An embodiment of the results would also reduce the amount of classifying now desired.

I hope you will recommend that a bonus be offered for a better method of producing fibre, open to the world; and I would suggest that it should be advertised in such papers as the *Scientific American*, *Builder* and *Engineer*, of London, &c. Small parcels of the green leaf could be sent to applicants, but, as there may be a large number who would apply just for curios, a small charge should be made just to defray postage. A competitive trial of processes entered for the bonus should be made at a suitable place in this country. The best result would no doubt be arrived at by classifying the details desired, allotting points to each object; and, as there may be chemical and mechanical processes offered, competitors should not be hedged in this direction. There should be two separate bonuses—one for twine and rope fibre, the other for fabric purposes—as it seems impossible for the one treatment to answer for both, the fibre so required as well as the species of green leaf differing so much in different districts.

A general feeling of uncertainty exists amongst flax-millers, as they know it cannot with present treatment be produced any cheaper, and, in addition to a fluctuating market, they have great risk, such as fire (there being no means of insuring), bad weather (for it is practically making hay in midwinter), and heavy wear-and-tear. The velocity of machines now worked is 2,000 revolutions per minute, and with the sudden and variable nature of the work nothing more can be safely done to increase the quantity put through per day, with a view to lessen the cost of production.

Whenever the flax industry can be established by the previous suggestions or other means the settlers will take steps to cultivate *Phormium tenax*, through which the market-value would be still increased.

The Chairman,
Flax and other Industries Committee, Wellington.

I am, &c.,
ALFRED HARRIS.

MR. BARLEYMAN, of Blenheim, writes, under date 12th August, suggesting that more information should be circulated as to the relative quality, quantity, and prices realised of all fibres competing with New Zealand hemp, so that hemp-millers may regulate their annual production.