

movement, with counterbalance weight, and several ingenious appliances for enabling the quadrant to be easily raised from its initial position, and to be brought home towards the wheel. Steam power is necessary, and the wheel is driven at 300 revolutions a minute. The material to be dealt with is dropped between the journal and the wheel, and its outer end fastened by a double-shaped toothed catch, at the same end of the machine. When it is dressed, so far as it has been within the action of the machine, it is lifted out and reversed, the catch being now turned up, so that its handle becomes a bolt, round which the dressed portion is twisted, and held until the dressing is complete. The appliance shown in the engraving at the upper edge of the end of the machine, is not now used. The quality of the work done by this machine depends upon the regulation (by the treadle motion) of the position of the quadrant. It is admitted, of course, that it is easy to bring the quadrant up so sharply and closely that the scrapers become cutters, and would instantly cut through any fibre-yielding leaf but it is said that practically the regulation of the quadrant, so as to produce good work, is easy and (with the slightest care) certain. The quantity of dressed fibre which the machine will turn out, a man and a boy being required, is stated at 300 lbs. per day. The cost is \$350, and the machine, as boxed for shipment, necessarily makes at least two bulky and heavy packages.

The samples of fibre, A, B, O, C, sent herewith, were dressed by this machine. A, is the product of the leaf sent with the fibre, and which is believed to be *Agave Sisilana*. The fibre, it is stated, has not been washed or otherwise dealt with since it left the machine. B is also accompanied by a sample of the raw material—*Agave Mexicana*; and C is the product of a great flabby fleshy leaf, believed to be of *Agave Virginica*.

The separate parcel of fibres forwarded was supplied by a gentleman named Brown, of the firm of H. A. Kruger and Co., of this city. He has taken, and is taking, very great interest in the question of utilizing the fibrous productions of Central America. It appears there are a great variety of fibrous plants and woods there, and a very large interest is taken in giving them commercial value. I gathered from Mr. Brown that these fibres were not so strong as our New Zealand flax; and that no machine yet employed has been sufficiently successful, although a considerable quantity of fibre still finds its way to market. In the case of Central America, as in New Zealand, the best fibre is produced by the Natives. Mr. Brown appears to be devoting both time and expenditure in investigating the subject, and I think it would be worth while for us to endeavour to arrange for a regular correspondence between him and the Commissioners.

In conclusion, I must express the opinion that it is an unfortunate error that we should have adopted the habit of speaking of the *Phormium tenax* fibre as “flax.” The term is apt to create misapprehension; and as regards America, the term tends to excite the opposition of flax-growers to a reduction of the duty.

8th March, 1871.

JULIUS VOGEL.

White Rope.

Several large makers of rope have been asked respecting the manufacture of “White Rope.” In every case, the reply has been that probably what was meant was untarred rope of Russian hemp; and in every case, also, it has been stated that there are not any peculiarities in the manufacture of that rope. “We turn it all off the same machines, whether tarred afterwards or not;” “There is nothing to tell you—rope-making is pretty much the same all the world over;” and “Its made like any other rope,” substantially represent the answers to questions as to the manufacture. Each manufacturer consulted said that whale oil was used—“just enough to make the hemp lay well.”

J. VOGEL.

(No. 45.)—The Hon. Colonel HAULTAIN to the Hon. Mr. VOGEL.—2nd March, 1871.

Dr. Hector requests me to answer your letter of 26th January, written at Honolulu, as he would not reach Wellington in time to do so himself. . . . As you offer to assist the Flax Commissioners in obtaining information on any matters that they think desirable, I would suggest that you should obtain from machine-makers, both in England and America, specifications and cost of machinery and plant for manufacturing rope, scrim-cloth, wool-packs, sacks, &c., and printing and packing paper; also statements of the number of hands required to keep each machine at full work, and of the quantity of the manufactured articles that can be produced within a given time.

It is also desirable that we should ascertain the nature of the “sea-damage” to which so many of our flax shipments are subject. Is it discoloration from steam or contact with dirt or iron, or from want of proper covering? What effect has it on the value of the flax? How can it best be avoided? What would be the best size and weight of our bales?

What are the maximum and minimum lengths of fibre used for rope-making and spinning purposes?

The opinion of a professional “sorter” would be useful on some of these points. We shall be glad to get as soon as possible copies of the reports of the competition for the prizes offered by the East Indian Government for the best machines to prepare the Rhea fibre, and of any publications you may obtain that refer to the dressing of Manilla hemp. It is the intention of the Commissioners to have some of the flax they send home made up into fabrics, but they have not been able to get any ready for shipment yet. You would be able to procure “fair average samples” of flax from any of the agents who receive it from New Zealand, and fresh leaves can be obtained from Kew.

We shall not be able to get any quantity (not even a ton) of the fine Native-dressed fibre of which you took home samples. It can only be procured from the young and unblemished leaves of the finer varieties of the plant, and the time expended in separating every particle of “scull” is so