

hemp, at a price of from £20 to £25 per ton. For corn sacks it would compete with common flax tow, at a price from £23 to £28 per ton. I have no doubt there will be a great difficulty to get the fibre introduced here; but I put most value on it from the fact of its easy and large production in the Colony, and the ease with which it can be put into packing fabrics. It is of the utmost importance to a Colony, which requires so large supplies of packing, that the colonists should have now been shown that they have a fibre growing in their Colony quite adapted for these packs—wanting only enterprise to put up a mill and factory for the purpose of making them. * * * I should imagine that once the colonists have a first-rate process they can send their lines here to sell at a high figure for roping, and retain the tows to make into woolpacks and sackings, which will be a means of realising a handsome profit to the growers.”

“8th June, 1872.

“By this post I send you two samples of towels for Dr. Featherston, * * * also towelling, and made from warp of Dr. Featherston's Native-dressed and your own 5lb. flax line. I almost think yours looks the prettier of the two, although the full-bleached looks very nice. The pattern comes out very well. These samples have not been cropped. When the web is sent it will look cleaner, and have a better finish. I hope you will be pleased with them. I shall despatch some more webs and samples to you next week, about Wednesday or Thursday, and, if possible, a web or two to Dr. Featherston. * * * I am most anxious your Irish friend should be successful in his experiments; the Irish have more “gush” than the Scotch, and if the spinning and weaving succeeds there they will be more ready to take it up than Scotchmen; and I have no doubt, were your process adopted in New Zealand, a line could be sent there fit for anything.”

III.—REPORTS RESPECTING PHORMIUM CULTIVATIONS.

I. WELLINGTON.

REPORT on the Growth of ROOTED PLANTS and SEEDLINGS of *Phormium tenax* in the Botanical Gardens, Wellington, by Dr. HECTOR.

The experiments to which this report refers were undertaken for the purpose of ascertaining by practical experience the rate of growth of *Phormium* plants, and whether the different varieties can be propagated with certainty from seed.

Fourteen varieties were selected, with the assistance of the Natives at Taranaki, by Mr. Hulke, and seeds of each carefully collected and forwarded to the Commissioners, the Native names being verified by reference to the list furnished by Mr. T. Kelly, who has devoted much attention to this subject. Six of these varieties were subjected to experiment.

1. *Raumoa*.—Light green leaf, reddish brown keel and edge, narrower underneath.
2. *Parekoritawa*.—Leaf very bright green, longitudinal stripe, of sulphur colour; fibre very good; edge and keel orange colour.
3. *Huhirua*.—Good fibre; easily separated from gum; leaf bluish green, narrow edge, black or very dark brown; keel reddish chocolate; leaf gradually narrows to a point.
4. *Takaitapu*.—Fibre very strong; leaf erect, brown edge.
5. *Korako*.—Dark green leaf; edge, a narrow line of dark brown; keel, a pale yellow.
6. *Atiraukawa*.—Best and most abundant fibre, not large, but a quick grower; leaf bronze when mature, light olive green, when young, rather pointed; edge, dull dark brown, lighter in inner margin, sometimes brown, relieved by a bright red line.

The seeds were sown in boxes on 10th December, 1870, and came up freely in from eighteen to twenty-one days.

They were allowed to remain in the boxes till the month of June following, when they had attained a height of five to six inches. They were then planted out in rows in rich well trenched land in the bottom of a gully, the land having been carefully drained, and arrangements made for thorough irrigation when necessary.

At the same time some of the seedlings were placed on hill slopes, but also in well tilled ground.

The rooted plants of the same varieties, each consisting of a single fan root, rootlets, and three or five leaves, were planted out in rows in a sloping gully where there is deep rich moist soil. The leaves, except the central shoot, died down in nearly every case, and three months, from March to June, elapsed before they began to show any signs of growth.

The period to which the following notes of growth refer, both as regards the seedlings and the rooted plants, is from June, 1871, to July, 1872.

Seedlings.

The determination of the varieties which the seedlings most resembled was made by Mr. Kelly, who originally named the plants from which the seeds were collected.

1. *Raumoa*.—On the slope this variety had made hardly any progress during the year, having only five or seven narrow lax leaves, eight to twelve inches in length. On the rich land they had about doubled their size; but very few plants resembled the original variety of this name, most of them being like *Oue*.

2. *Parekoritawa*.—Variegated flax. On the slope this variety had made no progress; but in the bottom land it showed greater vigour than any of the others, having made in some cases fifteen fans, with leaves thirty inches in length. The seedlings were not true to the plant, none of them showing variegation, but most reverting to the character of *Oue*, with one or two having the characteristic black edge of *Taihore*.