

by Messrs. McLandress, Hepburn & Co., of Dunedin, and from which tables A and B have been compiled (App. p.p. 99 and 100.).

One of the first duties the Commissioners were directed to undertake was to visit the chief districts where *Phormium* fibre is prepared, and to enquire into the different processes of manufacture. Returns were obtained at the time when the Census was taken in March last for the purpose of ascertaining the extent and importance of the fibre industry, and in anticipation of the published tables, the approximate results given in Table F of the Appendix, have been furnished by the Registrar-General. From this table it appears that during the year 1870 there were 161 mills in operation, with an aggregate of 342 stripping machines, employing 1,450 horse-power, 1,766 persons, the produce being 4,457 tons of fibre. Towards the close of the year, however, the fall in the value of the fibre had so discouraged the proprietors, that a large number of the mills were closed. It was therefore determined that only such mills should be visited as were easily accessible, and where the manufacture was still being persevered in. Colonel Haultain accordingly inspected the mills that were in operation on the West Coast of the Wellington Province, and in the immediate vicinity of the chief towns, and his separate report is given in the Appendix (p. 61), whilst the most prominent points of the information obtained are as follows :—

Throughout the Colony there is one almost universal method of manufacture, having for its object the production of fibre for rope-making. The green leaves are stripped by revolving rollers, with projecting beaters, travelling at a high rate of speed, which crush the epidermis against a fixed plate so set as to allow room for the fibre to remain intact. The fibre thus freed from the leaf of the plant, is washed by various methods, put on the ground or on lines to dry and bleach, finished by an arm or barrel-scutch, and when baled, is ready for the market. Although it appears that there have been no material alterations in the various processes of manufacture as they were detailed by the late Flax Commissioners, yet, as labour has become more skilled, and experience has suggested modifications in the machinery employed, there has been a marked improvement in the general quality of the fibre produced. This may be readily observed by comparing samples from parcels which were sold last year in London with others from bales that have been recently exported; and there can be no doubt that if all manufacturers could take advantage of every minor improvement that has been effected in different districts, they would still further improve the fibre, and diminish the cost of its production.

The only important improvement recently introduced which requires description, is wet scutching; the effect of which in cleaning and softening the fibre is so marked that no part of the process of manufacture deserves more attention in order to perfect its application; for there appears to be nothing contained in the *Phormium* leaf, which, for the purpose of rope manufacture requires to be removed, that cannot be got rid of by washing, provided the fibre is never allowed to dry till the process is completed. Unfortunately, the mode of wet scutching usual in the Northern district, has not been effected so as to be commercially successful. The fibre, immediately after passing through the stripping machine, was submitted to the action of an ordinary barrel-scutch, whilst a flow of water passed over the hank that was being operated on. Although the fibre was by this means so much improved that local purchasers were ready to give £3 extra for the flax, yet the loss of fibre by the formation of an excessive amount of tow and the additional expense for labour, (which together caused an extra cost variously estimated at from £6 to £10 per ton) rendered the process an unprofitable one, so that manufacturers were compelled to abandon it. The advantage of wet scutching is, however, so great, particularly in reducing the time required for bleaching, which is a point of the utmost importance in seasons when the weather is unsettled, that we strongly recommend it for further trial. We may mention that Messrs Benn & Walker, of Canterbury, by modifying the process, are still able to adopt it with profit. They employ scutching machines with rounded wooden beaters, instead of the usual iron plates, and by reducing the rate of speed are able to secure all the advantage of thoroughly cleansing the fibre