

(No. 128.)—H. C. FIELD Esq., to CHAIRMAN.—Wanganui, 11th August, 1871.

It has struck me that the following notes as to the results of experiments in growing the native flax in this part of the Colony, and other matters connected with its growth, might not be uninteresting to one whose attention, like your own, was directed to the subject of the manufacture of the fibre.

Two years ago, in consequence of seeing in our local papers some statements, copied I believe from Auckland prints, as to the rapid growth of flax, which from my own experience I thought were exaggerated, I planted out a number of fans of a good variety on different soils to test the result. The present condition of the plants is as follows:—

- No. 1. Twenty fans planted in pumice sand: One has now five fans, three have four, four have three, seven have two, four have still only one. The whole grew, but one, which had increased to three fans, had its roots exposed by the wind during the early part of last summer, and was uprooted and destroyed by the salt gale in February.
- No. 2. Ten fans planted on strong clayey alluvium, which however had been some years under cultivation: Two have now two fans each, four have one, and four never grew.
- No. 3. Twenty fans planted on a piece of boggy ground undrained: Two have now 2 fans each, seven have one, nine were killed by some sharp night frosts in the spring after they were planted, and two were buried under a slip of the neighbouring bank.

I also planted twenty fans on a piece of drained swamp, and they all grew and were doing well, but some cattle, which broke in in the summer during my absence from home, dragged the whole of them out of the ground.

At the same time as I planted the above, a neighbour who was embarking in the flax trade, planted 30 acres of flax, partly on shallow-drained swampy soil, resting on white clay, and partly on a slight rise (old manuka ground) where the soil consisted of vegetable mould, resting on yellow sandy clay. The whole area planted had been some years in cultivation, and in order to ensure the proper preparation of the ground, the superintendence of the work was entrusted to a professional nurseryman. The fans were planted 4 feet asunder, in rows alternately 4 feet and 10 feet apart. A very large proportion of the sets (in one paddock I should say nearly half) failed to grow, and those which are still living have certainly not more on the average than three fans to each plant; indeed I think it doubtful if the few which have more may not have been double fans when planted. In both the above cases no pains have been taken to keep the ground around the plants stirred or weeded; my own object having been to see how the plants would thrive with no more attention than similar ones put out by settlers would ordinarily receive, and my neighbour having been disappointed, and given up the business. In both cases the plants would not at the present time yield more than two or three leaves each without weakening them, and I observe that those which have not increased the number of their fans would yield the largest leaves, and nearly or quite as many as the others. There seems in fact an equal amount of vigour in the plants, though its development has taken a different direction. My own plants on the pumice soil are considerably smaller than the others, but I think this arises partly from their being close to the house, and consequently having often had leaves cut from them by my children.

At the St. John's Bush nursery, where the soil is of the richest possible description, well drained swamp, which was evidently formerly forest, and the mould of which is exactly like rotten tan, and from 2 feet to 4 feet deep, and of course highly cultivated, there are some bushes of variegated flax, planted four years ago. There were several fans in each set when planted, and at the present time each bush contains from twelve to twenty. In a part of the same nursery, which is irrigated occasionally in hot weather, some seed of reputed good flax was sown about 16 months ago. The plants are of course as yet only single fans of four or five leaves each, and these leaves average only about 2 feet long, by $\frac{3}{4}$ -inch in width. In fact it is evident that they would require several years more to grow into a bush which would bear cutting for fibre.

A considerable breadth of land was planted early last spring by a flax company at Patea, but beyond the facts that the plants generally grew, and have not as yet apparently produced many new fans, I cannot get any very definite information as to the results of the experiment. The situation chosen was a moist flat among, or adjacent to, sandhills; the very sort of site which, as well as sandy alluvium, and pumice along the border of a swamp, I have observed always produces the rankest growth of flax; better even than cleared bush, in which last the plant always seemed to thrive better in places where the Natives had mixed a considerable proportion of sand with the soil, in order to grow kumeras. On stronger soils, flax does not seem to do well, except in spots where water lies in winter, and in these cases I have noticed that the roots spread laterally only just below the surface, and do not appear to penetrate to any depth. Drained swamp, particularly if the vegetable soil is deep, is no doubt the best suited to flax, as well as to most other soft-rooted plants, and next to this sandy soils, particularly if manured. On stronger soils the ground should, I am convinced, be often and deeply stirred, and it would probably be desirable to pay attention to drainage and weeding, if the increased production should, on trial, be found sufficient to compensate for the outlay. Many people seem to have an idea that it would pay to plant rows of flax at intervals across grass paddocks. My own impression is that this would result in failure, as I have seen large flats of flax utterly destroyed either by the bushes being choked by the clover, or by the cattle grazing on the latter, tearing the hearts out of the young fans when other feed was scarce. Horses and sheep also gnaw the ends of the leaves in such a way that it does not appear desirable to let them graze among cultivated flax. I do not know whether saline particles in the air are beneficial to the growth of flax, but it appears likely that this is the case, because while all the coast country along the north shore of Cook Strait, from the Tararua to Mount Egmont, contains abundance of good flax for manufacturing purposes, directly one gets among the hills a few miles inland, the only plants which will yield any appreciable amount of fibre are those growing in native cultivations. During the last two years I have traversed a very large extent of the country inland of this district, and have found everywhere only the most