

## SELECTION AND BREEDING-WORK.

Besides studying the factors which are detrimental to the growth of the phormium-plant I also selected in the Miranui and Whitaunui Swamps over eight hundred apparently healthy plants for the purpose of observing their growth and disease-resistance, also to obtain seed from the healthiest-looking individuals in the most diseased areas. For this work a nursery area of about 4 acres was measured and fenced off. About an acre of this is on a fairly high terrace; the remainder of the area comprises the terrace slope and a low-lying swampy area. The nursery is situated close to the main road between Palmerston North and Wellington, about two miles north of Shannon. The portion on the top of the terrace is subdivided into twenty plots. Some of the plots were manured with different fertilizers or a mixture of fertilizers, and some were left without any manure, as checks.

The phormium-seed was sown at intervals of a month, in order to ascertain the best time for sowing. As the land was not ready



FIG. 1. THE NURSERY AREA AT MIRANUI.

[Photo by H. A. Seifert.]

in March a small plot was sown below the Miranui mill. In the nursery, plots 1 to 4 inclusive were sown on 9th June; plots 5 to 8 on 10th and 21st July; plots 9 to 12 in September; plots 13 and 16 early in October; and plots 17 to 20 on 19th October.

I selected seventeen varieties of phormium in the Miranui and Whitaunui Swamps. As these varieties are not yet thoroughly studied and compared, they have been given tentatively numbers for distinguishing purposes. I also obtained from Mr. Pickett, Whitaunui, a variety of mountain-phormium; from Mr. P. Rikihana, Otaki, two varieties—*aho* and *whenu*; from Mrs. John Field, Paraparaumu, one variety—*tihore*; and from Mrs. W. Simcox, Otaki, seed from a "bronze" variety, and plants from three different varieties, which are not yet compared and identified. As the plants were not seen, examined, and compared when in flower, the identification and description are not complete, and there may be two or three similar varieties.