

with that colour it discolours the fibre when stripping: discoloured fibre is graded lower than a good white fibre.

The present method of cutting was adopted owing to its cheapness. The effect upon the plant was never considered. Why the present method of cutting is so detrimental to the plant's growth is because cutting all the leaf low to the root causes a large injured surface—a severe wound shock—and deprives the plant of all its green leaves, without which it cannot assimilate carbonic-acid gas and convert it into starch-sugar. When the growth of such a low-cut plant is observed one notices a creamy white centre leaf coming up in the stump of the fan. After a day or two the first day's growth becomes greenish and subsequently quite green, but for a considerable time after cutting one can count by the day's growth (which is green) and the night's growth (which is white) how long a time the phormium has been cut. The markings are quite distinct, and I have by this means counted as many as twenty-six days' growth in summer-time. The plant can produce the green colouring-matter called "chlorophyll" in light only, and hence the green and white markings in the new leaves. As the plant has to obtain from the root-system all the nourishment necessary for its growth until sufficient green leaves have grown to obtain adequate nourishment from the air, the root-system is weakened, and yellow-leaf being a root-disease this method of cutting encourages it greatly.

Cutting away all the leaf not only makes the root-system subject to disease, but also encourages all possible leaf-diseases on the new pale-green leaves. These have no bloom (the waxy matter on the epidermis) to protect them, as old leaves have. Altogether the present method of cutting is very detrimental to the growth of the plant, and the sooner it is abolished the better it will be for the fibre industry.

*Grazing of Cattle.*—The grazing of cattle among phormium is also detrimental to the plant's growth, because the cattle chew the leaves and pull out the centre leaf, which delays the growth of new leaves from three to four months. The constant jerking of the leaf while the animal is chewing tends to injure the tips of the embryo fans in the sheath, and in consequence they become affected by diseases and never come up. The function of the gum in the plant is to lubricate the sheath, but that does not protect all the embryo fans from being wounded by the constant jerking. It is known to all experienced workers that phormium does not thicken up where cattle are grazed, although they usually are not aware of the cause of this.

*Weed-growth.*—A growth of weeds among phormium crowds the plant and absorbs the light and air which it would utilize for its better development. I have compared the fibre-content of plants grown close to a fly-line\* in the open with that of plants of the same variety grown in the shade of willow-trees. The plants which grew in the open produced over 16 per cent. of finished fibre, while those which grew in the shade produced only 12 per cent. Moreover, weeds interfere with the cutting of the leaf, and so increase the cost of that operation, and they also occupy land where phormium could grow.

\* Fly-lines are 6-ft.-wide cleared tracks through the phormium, upon which tram-lines are laid to carry out the cut leaf.