

The oil and albuminoids in the above analysis are transferred from the analysis of similar fibres, Nos. 10 and 11 respectively.

§ 11.—ANALYSIS OF THE FRESH PLANT OF PHORMIUM TENAX.

The plant operated upon was received from the Royal Gardens at Kew, in May. One half of two leaves (65 and 68 inches in length respectively) was operated upon, being carefully cut up, mixed and sampled for the experiments now to be related.

The plant analysed contained:—

71·95 per cent. of water.
28·05 „ dry matter.

100·00

This dry matter contained in 100 parts—

Fixed oil and fat (soluble in ether) ...	2·55
Resin and chlorophyll (soluble in alcohol) ...	3·24
Gum and matters (soluble in cold water) ...	17·29
Starch and matters (soluble in hot water) ...	4·28
Albuminoids ...	5·05
Ash, or mineral matters ...	5·56
Cellulose and fibre, by process I. (See § 4) ...	44·47
Other substances not specially determined ...	18·56

100·00

These results are not given as by any means complete, though it is hoped that they will serve to indicate the proper direction for further inquiry into the best treatment for the preparation of the fibre from the plant. To this point another series of experiments tended; in these the nature of the 44·47 per cent. of cellulose, above given, was tested. It was found that it lost 8·71 parts by treatment with acid and alkali in process II., leaving 35·76 per cent. This residue, treated by process III, left a final residue amounting to 11·37 per cent. of the dry plant. Comparing this result with that obtained in the similar treatment of the prepared fibre (See § 10) it is clear that much hard and corky substance in the original plant is rejected in the processes of manufacture.

The analysis of the *fresh* plant will be represented by the following numbers:—

	Per cent.
Water ...	71·95
Fixed oil or fat ...	·72
Resin and chlorophyll ...	·91
Gum and matters (soluble in cold water) ...	4·97
Starch and matters (soluble in hot water) ...	1·20
Albuminoids ...	1·51
Ash or mineral matters ...	1·59
Cellulose and fibre, by method I. ...	12·47
Undetermined ..	4·68

100·00

In considering the nature and proportion of the various ingredients of the *Phormium* leaf enumerated above it must not be forgotten that nearly all of them are present, to some extent, in the best prepared fibre derived from this plant. This matter has been already discussed in §§ 2 to 7, and in § 10.

(No. 180.)—J. S. RICKETTS, H.B.M. Consul, Manila, to His Excellency Sir G. F. BOWEN, G.C.M.G.—
20th July, 1871.

SIR,—

In accordance with the instructions communicated to be by the Earl of Granville, I have the honor to transmit to you, herewith enclosed, a copy of a despatch addressed by me to H.M.'s Foreign Office on the culture and preparation of Manila hemp.

I have, &c.,
J. S. RICKETTS.

•MY LORD,—

Manila, 20th July, 1871.

I have the honor to acknowledge the receipt of a despatch of the 17th of March last, No. 2, signed by Mr. Odo Russell, transmitting to me a copy of a despatch from His Excellency the Governor of New Zealand, requesting information on the culture and preparation of Manila hemp.

There is no official publication to be found imparting any information on this subject.

The following information will, however, I trust enable the Flax Commission to form some idea of the properties of the Manila hemp, its method of preparation, and its value.

CULTURE.

The Manila hemp is made from a fibre of a species of musa called *Musa Trogloditarium Textoria*. It gives a large quantity of seed, and its leaves are more pointed and of a somewhat darker color than the common Plantain tree. It is mostly propagated by transplanting its offshoots, which are numerous.

In some places the fruit of this tree is bitter and not edible, in other places it is eaten by the natives; there would, therefore, appear to be more than one sort of musa from which the hemp is