

M. Ex 'Halcione,' from Wellington. Sold 27th March, 1872, at £33 10s.

WS & G with D underneath. Ex 'Queen of the South,' from Lyttelton. Sold 24th April, at £33. Also, for comparison, samples of the following :—

Quilot hemp, from Manilla. Sold April, 1872, at £67.

Sisal hemp, from Mexico. Sold April, 1872, at £51.

As previously reported, the specimen bale from the Cape Egmont Company's works (wet scutched and the ends hackled), which was sent home by Dr. Hector for submission to the brokers, was valued at £45. I return a sample of this bale (marked CEC) for comparison with those on price list. With Dr. Featherston's approval, I have arranged to have this sample bale (ex 'Halcione') carefully repacked and exhibited at the ensuing International Exhibition.

From all the information I can gather, it will not, under any circumstances pay to send the tow home. Occasionally there is a brisk demand for small stocks, up to £16, but, as a rule, it is quite unsaleable at anything like a profitable figure.

Messrs. White, Binnie, and Co., who have taken much interest in the introduction of the New Zealand hemp into the English market, have given me a report on the subject, which I beg to forward herewith (Appendix I.)

I beg to furnish also (Appendix II) a letter from Messrs. Manning, Collyer, and Co., of 141, Fenchurch Street, and a memorandum by Messrs. Devitt and Hett, (Appendix III); the opinion of both these firms on the subject in question being entitled to the utmost weight.

I come now to the question of the adaptability of the New Zealand hemp for textile fabrics. Mr. C. Thorne, of 16 Mark Lane, has been for a long time past most persevering in his efforts to bring this article into use among the weavers and spinners of his acquaintance, and the results of some of the interesting experiments, which have been made through his influence, have already been communicated to the Colony. The great difficulty is to get any of the manufacturers to undertake the necessary trouble with small parcels. The extracts from Mr. Forbes's letters to Mr. Thorne, previously communicated through the Agent-General, will afford sufficient proof of this.

Dr. Featherston has, however, after considerable delay, and much personal urging, induced some houses to give it a trial on a small scale, the fibre being supplied gratis from this office; and it is only by continued individual effort of this kind that we can hope to have any thing done, till the fibre has sufficiently made its way to command attention on its own account.

The best qualities of *Phormium* fibre, as imported, are fit only for fine roping purposes, and they require to undergo a certain amount of skilful preparation before they are available for the cloth mills. The chief objection, at present, to Steart's Patent (for which Mr. Thorne is assignee), as applied to the hemp obtained in the market, is the expense of thus preparing it for manufacturing purposes; but Mr. Thorne assures me that the process can be applied to the green leaf with equal or even greater success, and without any additional expense, thus saving on the ultimate cost of the required article the whole of the preliminary labour of dressing the hemp; and in support of the statement as to the quality of his production direct from the green leaf, he has sent me a sample, which I have marked CT, and now forward with the rest.

Mr. Thorne has addressed to me a letter (copy of which I furnish, Appendix IV), expressive of his full confidence that with perseverance on the part of importers and a regular supply of fine soft fibre, the New Zealand *Phormium* will eventually be as freely taken by weavers and spinners as those fibres now in general use.

Mr. A. K. Forbes, of Hatton Mills, Arbroath, Spinner, writes under date of April 28th :—

"I think I can add little to what I have already said about New Zealand fibre—in fact, nothing has transpired to alter my opinion of its adaptability for textile fabrics. Worked alone it is too expensive, both in spinning and weaving, but for mixing purposes, if it can be brought in at a fair price, it would be a great boon."

He also forwards a small piece of cloth, respecting which he writes to Mr. Thorne as follows :—

"By this post I send you sample of cloth made from your flax and finest tows. The cloth has not been cropped. I shall get the web about Tuesday and will have it cropped before washing out the starch. This cloth I think would do well for corn sacks and towels. A sample of the coal bags (cloth) I am to get about the end of next week, and will forward to you as soon as I can."

I am forwarding this sample of cloth by post with this report, because, as Mr. Thorne justly remarks in the note covering it, "It is different to any yet sent to the Colony, and makes further progress, proving still more strongly the adaptability of *Phormium* fibre for textile fabrics."

In addition to the various samples of hemp enumerated above (to be forwarded to the Colony by first opportunity) I send also some excellent specimens in bulk, of string and small cordage made of pure New Zealand *Phormium*.

I may here state that the practice of mixing New Zealand hemp with Manilla in rope-making is now universally condemned, and, so far as the legitimate trade is concerned, has been discontinued; for it has been ascertained by experience that the difference in the elastic properties of the two fibres has a most injurious effect on the wearing qualities of the rope.

In compliance with Dr. Hector's request, I have arranged to have a quantity of machine-dressed *Phormium* made up into rope, with paraffine oil, in the manner suggested by Drs. Church and McNab in their Report on the Chemistry of *Phormium tenax*.

Professor Church has recommended me to try a mixture of one part of oil to two of tar, and another of two of oil to one of tar, and also to try the experiment with oil alone. He states in one of his letters to me :—

"I found that wood tar, owing to its proneness to oxidation, set up an injurious change in the fibres of *Phormium*. This change was much reduced when that kind of paraffine oil, called lubricating or machinery oil, was used, mixed with Stockholm or other wood tar, and it appeared to be *nil* when the oil was used alone. The oil I prefer has a specific gravity of not less than .890, and in cold weather has much crystallized paraffine in it."