convertible into this substance, but in one instance I received a specimen, consisting, with other parts of the body, of the shank bone of a sheep, which had been completely converted into adipocire, and exhibited, when cut through with a knife, a perfectly homogeneous soft substance, resembling cheese, and showing to the naked eye no trace of bony structure. The whole of it afterwards melted down into wax as readily as the rest of the adipocire.

I greatly regret that I did not preserve part of this specimen in its original state, as I have not since found any so completely converted from bone into adipocire. It was found in a creek below Timaru, and I do not know the date of its immersion. In general the bone is found friable and yellowish. The brain, however, as far as I have observed, has not been converted into this substance; at least in one case, in which a sheep's head had been placed in water by my son eight or nine months previously, in which the whole of the skin, muscles, and tongue, were turned into adipocire, the brain remained quite soft, and ran out from the interior of the skull of the consistency of thick cream.

I have also found that the fat on the body is the *last*, not the *first* or *only*, substance which undergoes conversion into adipocire. If, however, the process is sufficiently protracted, the whole of it is changed into that substance.

To answer your questions *seriatim*:—

1st. The raw material employed is any fresh animal matter, such as the bodies of sheep, cattle, &c.; any "crawlers," useless for boiling down, will answer the purpose.

2nd. Skilled labour is hardly required, other than in the construction of the apparatus for immersion; the requirements being immersion in a slow-running stream of water, care being taken so to weight the bodies that the gases generated by putrefaction shall not raise them to the surface of the water, and that they should be protected from the teeth of rats and eels.

3rd. The business is capable of great extension, limited only by the supply of otherwise useless sheep.

The process, as used by me, is briefly as follows:—I take sheep, and, having killed them and removed the skin, if worth keeping, immerse them in a tank constructed for the purpose, through which a small stream is kept *slowly* flowing. (This is important, as I lost the whole results of an experiment through a hole being made below a dam behind which I had immersed a considerable number of sheep. The increased rapidity of the current washed off all the adipocire, and left only bare skeletons.) Above the bodies of the sheep I place wire-netting, so weighted as to secure the complete and continuous immersion of the sheep. After remaining there a sufficient number of months to complete their conversion, which varies according to the time of year, but the longer the better, I take the bodies out, and separate the adipocire from the bones—which may then be returned to the water—and dry it in the open air, out of reach of animals, some of which will eat it. If it is proposed to sell it for the use of the candle and soap manufacturer, it is boiled in hot water, strained, and run into cakes for exportation. If, however, it is to be used for washing purposes, it has to be broken up and mixed with a sufficient quantity of alkali (either ammonia or potash is best) to permit of its saponification in water, when it is at once used either for washing wool, or cleaning flax, or any similar purpose.

Should the Committee wish it, and you will inform me how I can best do so, I will forward specimens of the substance for your inspection. I have only to add that, as soon as I have got a proper apparatus in order, I can produce an article which will prove a valuable addition to our list of exports.

I have, &c.,

ALFRED CHARLES BARKER.

The Chairman of Joint Committee on Colonial Industries.

No. 4.

SIR,— Dunedin, 30th August, 1870.

I regret to say that your communication, owing to it being directed "*G.* McGlashan," did not reach me until to-day, notwithstanding there is not another of the name in Dunedin.

I have now the honor to state, in reply to your queries, that the manufacture of paper from flax and other indigenous plants ought to be successfully carried out, and to large profit, in New Zealand. The capital, however, required to purchase and erect the necessary plant is considerable. Grocery, printing, and writing paper could all be manufactured to profit, particularly wrapping paper, which requires no bleaching material.

I have erected a breaking machine for making what is termed half-stuff, but have not, as yet, shipped any to the home country. I have forwarded samples to a number of paper-makers, both in England and Scotland, and expect, by the next mail, to receive information and quoting prices. The Melbourne paper Mr. Ramsden did not offer a paying price for. I enclose samples of half-stuff, bleached and unbleached.

Some years ago I forwarded to the home country a quantity of flax in its natural state, and had it manufactured into paper at some considerable cost to myself. The manufacturer could not report favourably, owing to the state of the flax when it reached there. I enclose a sample, also a specimen of the paper made from it. I also enclose a specimen of pulp made by myself from the tussock grass, and which does not require so much working up for paper as the flax.

I forward also three plans of paper-making machines. The cost of the smaller machine, for grocery papers, with the necessary engines, &c., &c., will cost about £2,400 in the home country; the larger one, for news, about £4,000; and for the largest of all I have no quoted price. In addition to the above outlay there is the necessary buildings, water-power, &c., and an expert would require to be sent from the home country to erect the machinery.

In the manufacture of paper I consider a bonus for a few years, at so much per cent., might induce parties to establish mills.

I have been endeavouring to get the necessary capital to erect a mill in Otago, but have not succeeded. In my own case, were I assisted by a loan from the Government, a mill could be in operation within eighteen months.