

distributed, containing full and detailed information on the subject. The pamphlet contains itemized lists of apparatus and utensils for a cheese-factory and a butter-factory of four hundred cows capacity, and also a cheese-factory and creamery of two hundred and fifty and three hundred cows capacity respectively. Itemized and approximate estimates of cost of plant and buildings are also given; likewise full information concerning location, site, and drainage, hints on construction and equipment of factories, creameries, and their application to dairying, by-laws specifying conditions of milk-purchase, &c.; also care of skim-milk at factories and creameries. The issue of this pamphlet has been the means of enabling me to supply inquirers with information more fully than I would otherwise have been able to do, and in this direction has supplied a much-felt want.

Full and working plans of three cheese-factories, two butter-factories, and one creamery, together with forms of memorandum of agreement, general conditions of contract, specifications, and detailed lists of quantities and sizes of material required for each building, have also been printed.

The object in having these plans prepared was not only to meet the expressed need of dairying throughout the colony, but to assist in diffusing a better understanding of the requirements of factory buildings. Already two hundred of these plans have been forwarded to persons applying for them. It is intended, if time permits, to issue, during the ensuing year, bulletins on the following dairy subjects: "Practical Cheese-making," "Practical Butter-making," "Milk-testing, and the Payment of Milk according to its Productive Character," and the "Feeding and Care of Calves."

CORRESPONDENCE.

This part of my work has increased very much, and the time taken in replying to requests for information is considerable. During the year under report 217 letters on various subjects connected with the dairying industry were written by me; and, as many of them were of a technical and lengthy description, this branch of the work is not attended to without some considerable time and trouble. The following are samples of the more significant letters:—

From Mr. JOHN SAWERS, Chief Dairy Instructor and Inspector, to Mr. JOHN KELLY, Chairman, Lepperton Dairy Company (Limited), Lepperton, Taranaki.

"DEAR SIR,—

"Dunedin, 23rd January, 1893.

"Surely an unnecessary delay has taken place in erection of factory. It is somewhat unfortunate, as the best of the season, so far as an abundance of milk is concerned, will now be lost; but better for the settlers to be late than have no factory at all. I trust everything is satisfactory so far, and hope same may characterize its operations hereafter. I have much faith in its future, and believe the settlers have much profit to gain from the inauguration of a well-organized system of dairying.

"I am glad you have seen fit to consult me regarding the payment of milk according to its productive character, and so save the company much trouble and annoyance. It is to be regretted more do not follow your example in this respect. The question is of such great importance to the company, and dairy interests generally, that I deem it necessary to here treat the matter somewhat minutely. There can be no doubt that the effect of the present general method of paying for milk in factories according to the number of pounds of milk a man may bring, has been to create a feeling of suspicion in the minds of farmers regarding the honesty of their neighbours and the justice of the management of factories. While such a feeling is allowed to prevail, the superstructure of the business is always in danger of disaster, for the foundation is wrong. It is not fair to pay A for more than comes in his can, or B for less than comes in his. If we can devise some method by which it is possible to make a fair and equitable division of profits, we can then expect to eliminate suspicion from the minds of the milk-suppliers. Nay, more, we shall thus put the buying and selling of milk on a business basis, and this will in its turn act as a whip to arouse farmers in the performance of their duty—to breed and feed for a special purpose. The principle which underlies this whole question is simply the payment of money for value received. The principle is a sound one, and it is one that underlies, and should underlie, all business transactions. Once admit this principle, and you have gone a long way towards the payment for milk according to the true value, for you will be ready to adopt any reliable and practical method to carry it out. So long as we pay for rich and poor alike, depend upon it we shall 'have the poor with us always.'

"It is claimed by many to be useless to put scientific instruments into the hands of farmers and factory-men, who have had no scientific training in the chemistry and testing of milk. Doubtless, if it is a question of carrying out a systematic course of experiments where scientific exactness is demanded, this claim is right, but for the payment for milk at factories according to its productive character, 'scientific exactness' is not an absolute essential, for we have now milk-tests so simple and yet of sufficient exactness as to be of the utmost value for the object in view, and can be worked by any person having a fair knowledge of milk, coupled with care, intelligence, and willingness.

"You ask my opinion concerning the advisability and suitability of the lactoerite for the purpose. Well, I say, without hesitation, I cannot recommend the company to use it, and especially as there are better and simpler 'testers' in the market. The lactoerite is used in a few creameries and butter-factories where the milk is paid for according to productive value for butter-making, but it has not been used to any great extent. At the same time, I must say it is perfectly reliable, but is rather too complicated and elaborate for everyday use. It requires the use of two chemicals—acetic acid and sulphuric acid—and the milk, in combination with the chemicals, requires to be boiled. All this work increases the percentage of error in getting a reliable test. In short, it requires to be in the hands of a good experienced milk-tester. For these reasons I cannot recommend its use, but only in factories where a person properly trained for the work is employed.

"A simpler, if not a better, 'tester' for your purpose would be 'Professor Fjord's Centrifugal Milk-controller.' In Denmark this tester is used for the payment of milk at the butter-factories very