

flavour in butter and cheese to a great extent. Thus it might be seen how important the work is which these minute organisms perform. They have also the power of growing within themselves a little spot which grows until it nearly fills the whole cell, and then the outer portion of the cell seems to be destroyed, and this interior cell will remain quiescent. That is to say, it does not grow, and does not affect the sugar or the albumen, and is, what is spoken of in dairy matters, a germ. The germs of this bacillus lay in a resting condition, and are most difficult to kill. The milk may be boiled and they will not be killed, and it is in this condition that they pervade every dairy. They are similar to many other vegetable organisms, some of which are destructive to milk and produce bad flavours, and some of which are beneficial and produce good flavours. But if the germs of any organism destructive to milk get into a dairy it is almost impossible to get rid of them, and the dairies have to be given up. It is impossible to wash out these organisms he had referred to in the butter; but by the exercise of great care that portion of the milk can be washed out that they feed upon—namely, the nitrogenous matter. By carefully washing butter this nitrogenous matter and caseine can be washed out, and then these organisms having no food cannot grow, and the butter keeps. The washing-out of the caseine depends upon the skill exercised, and varies in its effects to an enormous extent."

EXTRACT from LETTER from THOS. BRYDONE, Colonial Manager, New Zealand and Australian Land Company.

MR. W. S. DAVIDSON, general manager, New Zealand and Australian Land Company, Edinburgh (writing to Mr. T. Brydone, the colonial manager, dated 23rd June, 1890), is of opinion that the New Zealand Government should put £1,000 or £2,000 on the estimates for the encouragement of cheese- and butter-making; and says, further, that "There should certainly be a first-rate cheese and as good a butter-expert in the colony, who knows the details of cheese- and butter-making sufficiently well to correct all faults and failings in our factories. The feeding and treatment of the cows, and the treatment of the milk immediately it is taken from the cows, is of great consequence. All these matters have much more to do with the success of our dairying business than one is apt at first to give credit for. I do hope you will stir up the question, as I do feel quite keen about our dairy-farming opportunities after having seen what can be made of the business under much more difficult circumstances than exist in New Zealand. The fact is, New Zealand should be equal to any place in the world for butter and cheese. There are several firms in London who make ammonia cooling-rooms, and I fancy it would pay to send you an apparatus to fit up a chamber at Edendale."

NOTE.—Mr. Davidson was fifteen or sixteen years in Canterbury, and during the last ten years has taken a great interest in dairying. The letter above referred to was written after visiting Denmark to engage a butter expert for the company at Edendale.—THOS. BRYDONE.

MESSRS. CUMMINS, SHARP, and Co., of Wanganui, write, through the Chairman of the Chamber of Commerce, under date 26th July, 1890, that as large shippers of butter they are of opinion that qualified experts should be appointed at the principal shipping centres to examine all butter for export, and put an official mark on it according to the grade. Also, that dairy-schools and travelling dairies should be established on similar lines to those in Australia.

EXTRACT from LETTER from Mr. JOHN RENNIE, of Doyleston, dated 27th July, 1890, addressed to Sir John Hall.

Assistance can be given to the dairying industry by following the example of Victoria. When I was over during the Exhibition year they had, besides the dairy-plant in the Exhibition buildings, a competent teacher, with a small dairy-plant, travelling from district to district, giving instructions to the farmers' wives and daughters, which was highly appreciated; and I am sure it has done much to improve the butter. We have a few good makers, but on the average the quality of the butter sent from New Zealand is very low, and I am satisfied that if such a plan was adopted here it would improve the value of our dairy-exports at least one-third. I have lately seen some returns for butter shipped to London that barely paid for the kegs, which, if it had been properly made, would have fetched from £1 to £5 per hundredweight. This is a great loss to the country as well as to the sender, and I am pleased you are taking the matter in hand. We have the finest climate in the world for dairying, and if the produce is properly handled, and shipped at the right season, we have the best market; but, so long as the bulk of our shipments are sold as grease, there will be a loss to all concerned. It is the same with fruit: we can grow all kinds to perfection, but for the want of proper instruction in planting, cultivating, and the destroying of insect-pests, hundreds of trees are allowed to go to waste every year. It is very easy to keep fruit-trees clean if the people are only shown the way, which I think the Government could do at a trifling expense. Much information may be got from California, where they have a Horticultural Department, with regulations and restrictions something like we have in the Sheep Department. Government should also see that nothing but clean trees are planted, and that all the latest information—scientific and practical—is made available to all. . . . —JOHN RENNIE.

EXTRACT from LETTER of Mr. JAMES SCLANDERS, Chairman, Chamber of Commerce, Nelson, dated 29th July, 1890.

The last year's experience of shipping to England both butter and cheese, but more particularly the former, has been most puzzling. The year before last any good butter that was sent Home fetched quite a remunerative price, and I happened to be in England myself at the time that butter was arriving, and many good samples fetched over £5 per hundredweight, a price that will pay any New Zealand dairy-farmers for any amount they choose to make. This last