

treatment was beneficial it was not sufficiently so to enable the animals to be kept healthy for more than a year on untreated land; while in (b) and (c), which were conducted under conditions parallel to each other, it was obvious that that in which iron phosphate was used in the drinking-water was the more successful.

2. Experiments with two lots each of six yearling heifers, placed in October, 1915, on (a) untreated pasture, with a lick provided, and (b) on pasture topdressed with a phosphatic manure, also with a lick. These resulted as follows:—

(a.) The heifers after some months began to lose condition, and at the expiration of a year their loss of condition was sufficiently marked to necessitate their removal from the bush-sick area. (b.) Of the six heifers, three are still perfectly healthy, and have grown and developed normally after the expiration of eighteen months. Two others accidentally got in calf, and, together with another, went off in condition. Two of the last-mentioned three had to be sent away, but the third remains, and though it is not in good condition appears to be holding its own. (N.B.—In June, 1917, the three healthy animals are still doing well.) It is shown by experiment (b) that there is considerable hope of success along this line of research, and further experiments are being made with an improved lick.

3. Experiments in calf-rearing: The calves mentioned in the last annual report under paragraph 4 all died, and a modified treatment is being instituted this year, in which a powder containing phosphates, iron, and sugar is dissolved in the skim-milk on which they are fed. This treatment has proved successful up to a certain stage, but the season this year is acknowledged to be one of the worst on record as regards bush sickness, and owing to the continuous spring rains and consequent rank pasture it is considered an achievement to have reared any calves at all, most of those in the district having succumbed at very early date. At present there are nine healthy calves remaining out of the original twelve.

4. Sheep experiments: Of the twelve ewes put on the iron (spent oxide) paddock in May, 1915 (see report of 1916), four proved to be in lamb and two died. The lambs died by February. The second season the surviving ewes were not put to the ram. At the end of the second year on this paddock only three remained healthy. This experiment is notable as showing the efficacy of iron dressings in keeping grown sheep healthy for a much longer time on affected country than otherwise would be possible.

Profit-making Operations.—Grazing operations have been continued successfully. For instance, in March, 1916, fifty-one steers were bought at a cost of £481, and in June these were sold for £590. In October forty-two dry cows were bought at an average price of £7 17s. 4d. per head. Of these twenty were sold in March at £10 17s. per head. Of the remaining twenty-two some proved to be in calf and are now rearing their calves, while six others are fat and ready for the butcher. Other animals which had to be off the farm were sold at a profit. Thus six heifers (bought October, 1915, for £4 10s. per head) were sent to Ruakura for a short time in October, 1916, and improved and were sold at £9 16s. 8d. Other experimental animals which proved refractory to medicinal treatment were sold at a profit after being grazed outside for some time.

Milking.—Thirteen cows were successfully milked throughout the past season. Of these, two mature cows purchased in the spring of 1915 have been milking for two seasons without drenching, but having access to a lick and to phosphate-dressed pasture. Two others (reared on the farm and now nearly four years old) had similar treatment excepting that one had a short treatment of drenching with syrup of iron phosphate. Both are healthy and well. The remaining nine were mature cows purchased at the beginning of the season. These had no lick, but were run on phosphate-dressed pasture. All these cows are now (June, 1917) perfectly healthy. In cases where stock was purchased it has always been from an area outside that considered bush-sick.

INSPECTION OF MEAT.

The matter of maintaining the meat-inspection staff at sufficient strength has been a difficult one, as, in addition to its strength having been seriously depleted through previous enlistments in the Expeditionary Forces, the completion of a number of new meat-export slaughterhouses which commenced operations during the year increased the difficulty of the position in these abnormal times. Further additions to the staff were therefore necessary, a number of those taken on being returned soldiers; and I am pleased to say that the year's work has been satisfactory, reflecting credit on the staff engaged on it. Following are the new meat-export slaughterhouses:—

Westfield Freezing Company (Limited), Auckland.

Feilding Farmers' Freezing Company (Limited), Feilding.

Wairoa Farmers' Co-operative Meat Company (Limited), Wairoa.

New Zealand Refrigerating Company (Limited), Imlay, Wanganui.

Taranaki Farmers' Freezing Company (Limited), New Plymouth.

North Canterbury Farmers' Co-operative Freezing Company (Limited), Kaiapoi.

Thomas Borthwick and Sons (Australasia) (Limited), Belfast.

The undermentioned works are in course of construction:—

East Coast Co-operative Freezing Company (Limited), Tauranga.

Wellington Meat Export Company (Limited), Kakariki, Marton.

The following are the numbers of each class of stock slaughtered under direct inspection during the year, 1st April, 1916, to the 31st March, 1917: Cattle, 328,708; calves, 19,396; sheep, 3,341,910; lambs, 3,411,621; swine, 153,444. With the exception of cattle, which show an increase of 20,403, these figures show a decrease in the number slaughtered of each class compared with the corresponding figures for the previous year, the decreases being—sheep, 389,733; lambs, 653,479; calves, 14,374; and swine, 16,271. Assuming that the decrease in the number of lambs slaughtered is due to a greater number of ewe lambs being carried over, this will be of advantage to the Dominion rather than otherwise.