

home from school there to do the work at a certain period of the year. I cannot make the statement of my own knowledge that the alleged Tobacco Trust has been responsible for the strangling of the young industry.

*Mr. Hornsby:* Mr. Chairman, I wish to read a cable bearing on this tobacco question that appeared in this morning's newspaper. It is as follows: "London, February 9.—The Press urges on the Government in all strikes henceforth a prompt detailed publication of the facts on both sides where the general public is affected. Even the Conservative papers suggest a franker disclosure on the basis of prices and profit. The workers increasingly challenge the huge business returns, and quoted as an example the Imperial Tobacco Company's report, showing the year's trading profit to be £3,825,000, while the poor man's smoke has doubled in price and declined in quality.—United Service."

WEDNESDAY, 12TH FEBRUARY, 1919.

D. CUDDIE, Director of Dairy Division, Department of Agriculture, examined. (No. 23.)

*The Chairman:* The Committee desire to obtain some information from you in regard to the possibility of increasing the production of butter-fat throughout New Zealand, with a view, of course, to increasing the value of the product exported, and generally to hear from you any suggestions you may have to make in regard to improving all branches of the business under your control. We desire to stimulate the industry in some way if it can be done, and assist it if it is necessary.

*Mr. Cuddie:* As regards improving the dairy stock for the purpose of increasing the production of butter, cheese, and other products, there appears to be only one proper course to adopt—namely, for the farmers to undertake the testing the cows of their herds for milk and butter-fat production on a systematic basis; also to follow that up by the essential breeding from purebred sires and from dams whose records have been kept officially by the Department. It seems to me that there is an immense field for expansion along those lines; but our difficulty is in persuading the farmers to undertake the testing of their cows generally. It is being carried on at the present time, but only to a very limited extent. In addition to that we can increase the number of small holdings. That will come naturally, I take it, with the development of the country. A great deal of land that is now being used for other purposes is eminently suitable for dairying, and if that land can be made available for closer settlement our exports in butter and cheese would naturally expand.

1. *To the Chairman.*] The average yield of butter-fat per cow is very difficult to arrive at. My assistant, Mr. Singleton, could give the Committee more information in regard to this matter than I can, because he has given more attention to that special branch of the work. An estimate was made by him just about a year ago, and it was found that the approximate average quantity of butter-fat per cow produced in New Zealand was 161 lb.—that is, taking the average of all cows, in milk and dry. We have no information as to how that average compares with other countries, but it is very low indeed. It is understood to be considerably above the Australian production, but it is far too low. It has to be remembered that in New Zealand the yield of some cows goes up to 200 lb. and 250 lb.; some go as high as 300 lb., and in a few instances up to 400 lb. of butter-fat per cow. According to the last returns there were in New Zealand 777,000 dairy cows. The figures compiled by Mr. Singleton for the year 1910–11 indicated that the butter-fat production per cow came to only 142 lb. That was when we started our herd-testing movement. At the end of the 1916–17 season it had risen to 161 lb., as I have previously stated, which is really an increased production per cow of about 13 per cent. in that time. We are satisfied that that result was due to the fact that some of the farmers have gone in for herd-testing. The cost of production per pound of butter-fat depends altogether on the class of cows the farmers keep. The question of the average cost of 161 lb. butter-fat per cow has been gone into fairly well, and it is estimated that it costs about £13 12s. 6d. to keep the average cow per annum—that is, cows supplying butter-factories. If you take a cow as producing 161 lb., or, say, for convenience, 160 lb., of butter-fat, the cost of butter-fat per pound works out at 1s. 7½d. As to how much butter-fat it takes to make a pound of butter, generally speaking you can get an increase of about 18 per cent.—that is called the overrun. The cost of the manufacture depends upon the size of the output of the factory. In the case of a factory of moderate size the overrun just about pays the cost of the manufacture or a little more. The overrun reaches 20 per cent. in some cases. Roughly speaking, the factory pays a little more for a pound of butter-fat in some cases where the working-expenses are low. I might mention that if you take 180 lb. of butter-fat as the average production the cost of butter-fat is cut down to 1s. 5½d. per pound. With a herd producing 250 lb. per annum the cost of butter-fat works out at about 1s. 0½d. per pound. If the production is 300 lb. it amounts to 10¾d.; that is basing it on the cost of £13 for keeping each cow. In regard to culling dairy herds, the usual practice is to send the discarded animals to the saleyards, but in some cases they are fattened off and sold to the butcher. A wise farmer does not usually buy cows in the saleyard. There are few cows being culled out at the present time. In regard to other farmers buying discarded or culled cows, I think you can leave that to the farmer. The buyer has usually some idea of the value of the animal he buys, or he gets some one who has the knowledge to act on his behalf. In regard to the question of encouraging increased production of butter-fat, I may say that for ten years past we have continued to send out circulars and pamphlets to farmers in respect to the testing of dairy herds, and the question has been constantly discussed at meetings of dairymen. At the present time our testing officers are carrying on that work as time permits, but, unfortunately,