

to a certain margin allowed over their calculated requirements, the actual consumption might have been considerably increased.

A Scottish investigator<sup>5</sup> states that the stomach capacity of a cow is fairly constant, and that an animal weighing 1,232 pounds can not consume and digest efficiently more than 32 pounds of dry matter per day, and one weighing between 896 to 1,008 pounds can not consume and digest efficiently more than 26 pounds of dry matter per day.

#### Average Weight of the Cows

The Holstein cows in this study averaged 1,226 pounds in weight and consumed an average of 38.2 pounds of dry matter per day throughout the year, which is 6 pounds of dry matter per day more than the maximum amount claimed by Boutflour. The Jersey cows had an average weight of 910 pounds and consumed an average of 30.88 pounds dry matter per day, an average of almost 5 pounds of dry matter per day more than the maximum amount stated by Boutflour for animals of this size.

The maximum consumption of dry matter per day occurred in the case of a Holstein cow that consumed an average of 66.7 pounds of dry matter per day for a period of 30 days. Her average consumption of dry matter per day for the entire year was 55.7 pounds. This cow had an average weight of 1,409 pounds.

The amount of dry matter that a cow may consume depends on the proportion of grain and roughage fed in the ration. A pound of dry matter in hay or silage would be more bulky than a pound of dry matter in grain. At the Huntley, Mont., station of the Bureau of Dairy Industry, a number of Holstein cows have been on a feeding experiment in which they received only hay, silage, and roots. On this bulky ration they were able to consume an average of 32.8 pounds of dry matter per day for the year.

It is apparent that lack of capacity to consume sufficient feed is not a limiting factor in producing ability to the extent that it was formerly thought to be.

DUNCAN STUART.

**D**AIRY Export Control Plan of New Zealand Affects U. S. Producer New Zealand, which was comparatively unimportant 20 years ago as an exporter of dairy products, has come to be the most important single supplier of these products to Great Britain. It is second only to Denmark in the total value of its surplus. Since the number of people in New Zealand is 1,380,000, while the number of dairy cows is 1,303,000, that small agricultural country maintains practically one dairy cow per capita. Accordingly, its highly developed dairy industry is now predominantly dependent upon foreign markets. In the seasonal year ended July 31, 1927, the exports amounted to 148,000,000 pounds of butter and 172,000,000 pounds of cheese. The quantities retained for home consumption probably did not exceed 40,000,000 pounds of butter and 7,000,000 pounds of cheese.

A further condition entering into the New Zealand dairyman's problem is the highly seasonal nature of his production. Somewhat

<sup>5</sup> R. Boutflour, *Scottish Jour. of Agr.*, Vol. IX, No. 1, pp 70-75.

more than three-fourths of New Zealand's yearly production of butter and cheese falls within the six months, October to March, inclusive. The seasonal trend is complementary to that of the United States and other competing regions of the Northern Hemisphere. If the supplies were spread more evenly throughout the year, demand could be better maintained in British markets and the same output could be made more profitable to producers.

An experiment in the extension of cooperative organization to marketing on a national scale has recently been made to promote a more orderly marketing of the surplus of butter and cheese from New Zealand. Fully 90 per cent of the dairy factories were already owned, financed, and controlled by the farmers themselves, but no centralized control existed for marketing. In 1923 the dairy produce export control act was passed establishing a control board whose duties, broadly defined, were to control the export and sale of butter and cheese in the interests of the producers. The act was approved through a referendum vote by a majority of the dairy producers of the Dominion.

The board consists of 2 Government nominees, 9 representatives of suppliers to dairy factories, and 1 person who represents manufacturers of dairy produce. Funds for the administrative expenses of the board are provided by levies on all butter and cheese exported, amounting at present to the equivalent of about 6 cents per 100 pounds on butter and 3 cents on cheese.

#### Board's Functions Modified

The functions of the board have been modified since its formation. The enactment of the control measure in 1923 gave the board authority to market the produce in any way deemed fit by its members, but absolute control involving the pooling of the produce was not assumed until August 1, 1926, and price fixing has been actually exercised during little more than four months from November 4, 1926, to March 14, 1927. During this period, in order to meet a situation growing out of a complication of abnormal market developments, the board adopted a policy of meeting from time to time through its London agency with a committee of importers of New Zealand butter and cheese for the purpose of naming prices which should be the minimum selling prices for a time. An official statement published by the board made it clear that it had "no intention of interfering with the ordinary process by which economic factors determine the market level of price," but, notwithstanding this declared policy, the opposition to absolute control was successful in forcing its abandonment by the board. On July 23, 1927, the resolution passed in 1926, adopting absolute control over all produce graded as from August 1, 1926, was rescinded.

#### Orderly Marketing Plan Retained

But the New Zealand control board has not abandoned all plans for orderly marketing. The importance of many of the original activities still carried on by the board is not to be minimized or overshadowed by the defeat of the board's policy with reference to absolute control of marketing. At the annual meeting of the board on July 13, 1927, it was unanimously resolved that its future policy

should comprise the following main planks: (1) Regulation of shipments of produce overseas by adjustments of quantities throughout the season; (2) supervision of loading, unloading, and handling of produce; (3) continuation of collective insurance of all produce; (4) supervision of the cold storage of produce after its arrival in Great Britain; (5) advertising New Zealand produce; (6) aiding in research work affecting the dairy industry; and (7) continued effort toward quality improvement generally.

The activities of the export control board may have an important bearing upon the competitive position of the New Zealand dairy industry. From the point of view of the dairy interests of North America, the regulation of shipments, particularly, will have weight because shipments can be diverted from Great Britain to other outlets to relieve that main outlet from depressing supplies. Aside from the demonstrated saving in the various marketing costs through collective bargaining, the activities under limited control may be expected to improve the quality of the product, to keep a supply continuously available in the markets of Great Britain, and to advertise effectively the relative value of the New Zealand product.

P. F. BROOKENS.

**D**AIRY Herds Improve With Good Selection, Feeding, and Breeding

In the majority of cases the dairyman himself is responsible for the improvement or decline of his herd. It is true that conditions such as disease and accidents, which are sometimes beyond the dairyman's control, temporarily affect production. In the long run, however, the dairyman can expect a steady improvement in his herd year after year if he follows the simple A B C's of dairying, which are as follows: (1) Careful selection, based on accurate records of production and feed consumption; (2) proper methods of feeding; and (3) better breeding. These are fundamental rules easily applied. If the dairyman is a member of the dairy-herd-improvement association he will have the advice of the tester regarding the application of these practices. Whether or not they are applied, however, depends upon the dairyman himself.

Dairy farmers may be divided into four classes: (1) The deep-thinking group with initiative and determination who study their problems and acquire knowledge of proper practices through reading material and contact with successful dairymen; (2) those who acquire proper practices more or less blindly and are not concerned with the reasons for such practices but follow them because some neighbor has been successful by doing so; (3) those who follow certain practices because they have been the custom of their family or their locality for many years; and (4) those who follow the easiest method without giving any thought as to whether or not it is the best.

#### The Test of Improvement

The first group, because of the careful study given to the fundamental rules of dairying, and because of the proper application of these rules, bring about a steady improvement in their herds. The test of improvement, in so far as the individual dairyman is concerned, is whether or not his herd is increasing in production with a corre-