

the price of pepsin from rising unduly as it undoubtedly would have done under the demand which was created if this check had not existed. A large quantity of pepsin was used by the factories from 1916 to 1919 and had it not been for this emergency supply of coagulant, the consequences would have been serious to the cheese industry.

A large number of different preparations of pepsin were put on the market, but cheesemakers were cautioned not to use any coagulant which had not been thoroughly tested by some competent authority. It was announced that the Finch Dairy Station was prepared to make thorough practical tests of all the different coagulants offered for sale. The results were published as soon as the information was available. A number of preparations were offered for sale which were unsuitable for the purpose and had it not been for this precaution, serious losses might have occurred in the cheese factories.

The supply of rennet is now nearly, if not quite, sufficient for all purposes, and as cheesemakers prefer to use rennet, the pepsin will probably go out of use. Full particulars regarding the use of pepsin will be found in Circulars 18, 19 and 21 of the Dairy and Cold Storage Series.

The establishment of the Finch Dairy Station was justified by this one piece of work alone.

#### PAYING FOR MILK ACCORDING TO QUALITY.

In view of the large number of cheese factories which still continue to receive milk on the "pooling" system and distribute the proceeds of the sale of cheese according to the weight of milk only, this question should still be a very live one in this country.

A large amount of experimental work bearing on the subject has been carried out by this Branch and at various Agricultural Colleges and Experimental Stations in the United States and Canada, since "paying by test" was first proposed in 1891, but it seemed to be advisable to emphasize the importance of the question by conducting some further tests with milk containing different percentages of fat at the Finch Station.

In 1913 and 1914 a great many samples of milk were tested with the Hart Casein Tester, but it was found very hard to get reliable results under ordinary factory systems. The Walker Casein Test was tried with somewhat better success in 1914 and 1915.

By selecting milk from various suppliers, quantities varying from 350 to 800 pounds were made up separately with a range of fat in the milk which averaged from 3.4 to 4.1 per cent. The yield of cheese from 100 pounds of milk averaged from 8.29 pounds to 10.75 pounds, or nearly  $2\frac{1}{2}$  pounds more cheese from 100 pounds of 4 per cent milk than from 100 pounds of 3.1 milk.

The yield of cheese per pound of fat varied from 2.55 pounds to 2.81 pounds.

The yield of cheese per pound casein varied from 3.47 pounds to 4.68 pounds.

The yield of cheese per pound of fat and casein combined varied from 1.47 to 1.73 pounds, or exactly the same variation as in the pounds of cheese per pound of fat.

The cheese were weighed to secure these figures when they were taken from the press.

With cheese selling at 15 cents per pound, milk testing 3.4 would return \$1.41 on the pooling basis for milks of different quality.

Divided on the basis of the percentage of fat in the milk, 3.4 milk had a value of \$1.31, or 3 cents per hundred under the actual cheese value, and the 4.1 milk yielded \$1.58 per hundred or 6 cents above that of the actual cheese value.