

## BULLETIN XCV.

### EXPERIMENTS IN CHEESE-MAKING.

By H. H. DEAN, B. S. A., PROFESSOR OF DAIRYING.

The question, which is better, to pay patrons of cheese factories according to the percentage of fat in their milk, or to pay them according to weight of milk? having been very much discussed at dairy conventions, farmers' institutes, and in the press, it was decided to conduct, at the dairy department of the College, during the present year, a series of experiments bearing on the point at issue. Besides this, we have asked about 75 cheese-makers in different parts of the Province to co-operate with us in the work. The plan of the experiment is to make cheese at the dairy here for one week of each month throughout the season, beginning with May. The cheese-makers have been asked to make one experiment each month and send in the report on blank forms furnished by the Experimental Union in connection with the College.

We select normal milk with as wide a variation in the percentage of fat as we can get. Most of the milk used here has been supplied by our Dairy and Farm herds. In addition, we bought about 150 pounds per day from neighboring farmers. In all, five herds have contributed the milk used in the May and June experiments, which are here reported. Most of our cows give milk of good quality. We test each cow weekly by composite tests, and put the milk from all the cows testing over 3.6 per cent. into one can, and the milk testing under this into another can. To supplement this, a quantity sufficient to make up 600 pounds per day has been bought—chiefly poor milk. The chemical analyses of milk, whey, green cheese, and cured cheese are made from month to month in the chemical laboratory.

The quantity of milk in each vat was 300 pounds. Two such vats of milk were made into cheese each day, under the same conditions as far as possible. The percentage of fat in milk and whey was determined by the Babcock method at the Dairy. One ounce of rennet, diluted in 4 ounces of water, was used for each 300 pounds of milk in both May and June. No coloring was used in the milk. A rennet test was made of each vat every day. In making the test we added 1 dram of Hansen's Rennet Extract to 8 ounces of milk at a temperature of 86°F., and noted the time required for coagulation. During the month of May the rennet test varied from 9 to 18 seconds, with an average of 14 when set. In June the tests varied from 14 to 18 seconds—average 16.

The temperature at which the milk was set varied from 85° to 90°, but nearly all the vats were set in both months at 86°. The time required for coagulation varied from 11 to 28 minutes—average 19 minutes in May; in June the variation was from 20 to 30 min-