

pepsin and rennet at 86 and 90 degrees showed that the higher setting temperature produced more cheese, but the quality was not quite so good as when the vats were set at the standard temperature of 86 degrees. A number of rennet substitutes were compared with pure rennet and mixtures of rennet and pepsin. Substitutes lose their strength more quickly than rennet under similar conditions, and rennet alone gave better results in yields and quality than did any of the substitutes. Acidity should be .01 per cent. higher with pepsin than with rennet. A single test was made to show the effect of neutralizing sour milk for cheesemaking. Milk containing .23 per cent. acid was divided equally between two vats, one of which was neutralized to .19 per cent. acid by adding milk lime. The losses and yield of cheese were similar in both lots, but the neutralized vat produced cheese that scored one point higher for flavor than the other. Rennet was used to coagulate both vats.

NEUTRALIZING SOUR CREAM.

At the afternoon session on Thursday, W. H. Sproule, O. A. C., Guelph, discussed the effect of reducing acidity in cream for the manufacture of butter. "In this country," said Mr. Sproule, "creamery butter is made almost entirely by three different classes of manufacturers. First, by the large centralizing creamery, where cream is shipped to a central point from over a wide range of territory and there manufactured into butter; second, by the small individual creamery where cream is delivered locally; and third, by the co-operative creamery which manufactures the raw material produced by its own members and others. Butter has always been made from some cream that is more or less sour, in which case if the acidity is high and is not reduced it will make a butter that appears cheesy, or with high curd content, or perhaps it possesses a scorched flavor, in addition to a high loss in the butter-milk. Sour cream, therefore, makes the flavor undesirable and reduces the keeping qualities." The speaker gave the results of some tests conducted in a Lambton County creamery during June, July and August, 1919. Twenty-seven tests were made under ordinary creamery conditions, each churning ranging in size from 1,300 to 1,500 pounds, using cream in which the acidity ranged from .3 to .9 per cent. Each lot of cream having the same amount of acidity was divided into two lots, in one of which the acidity was reduced to approximately .4 per cent., and both lots afterwards pasteurized. It was found advisable not to reduce the acidity lower than .4, or .45 per cent., owing to any later reaction of the lime and also to the natural decrease in acidity due to pasteurization. The cream was pasteurized at 170 degrees F. for ten minutes, and the average difference in loss in the butter-milk in favor of the neutralized cream was .15 per cent. The butter was stored and scored twice, the fresh neutralized butter scoring 39.5, and after storage 38.6, while the non-neutralized when fresh scored 38.4 and after storage 37.1. "I would strongly emphasize," said the speaker, "that in the case of very sour cream it is not advisable to reduce the acidity much below .4 or .5 per cent., because there is a danger of imparting a lime flavor to the butter. Also, when cream has been reduced too low, it has been found to curdle, which would prolong the period of churning and probably result in a high curd content in the butter. One of the main advantages of reducing acidity is that it eliminates to a marked extent the development of metallic flavor in butter, which is so often the case in the pasteurizing of very sour cream, and it is undoubtedly one explanation for the resultant better keeping quality of the butter."

POOLING MUST GO.

George A. Putnam, Superintendent of Dairying, Toronto, thought there should be more out at the annual conventions of the Association. He thought there should be special meetings of members of all branches of the industry that would have the effect of stimulating action, and thus tend toward the improvement of quality in our dairy produce. He thought that cheese and butter should be put on an international basis, but that it is necessary for us to improve the quality of our raw material. Pasteurization and grading are most useful only when the raw material is sound and clean. Reference was made to herd development, and the campaign which is being put on to eliminate the scrub bull. With regard to factory production, the speaker thought that makers should be more highly paid, and that milk should be paid for on the quality basis. The pooling system must go. Regarding the grading of butter, the speaker said that the Wholesale Produce Association had recently waited on the Minister of Agriculture and that an endeavor would be made to secure co-operation between the produce merchants and the butter manufacturers in order to bring about the marketing of butter on the basis of grade.

WORLD CONDITIONS REGARDING FOOD.

Dr. James W. Robertson, so well known for many years to Canadian agriculture, spoke in his usual vigorous and pleasing manner with reference to the part Canada had played in supplying food to Europe during the great war. He depicted the gravity of the food situation in Europe, both now and during the war, and pointed out that Canada had incurred a debt equal to a mortgage of \$5,000 one very \$17,000 of wealth in Canada. The speaker stated that at the present price of wheat, we get 75 cents per bushel more than the British Government receives from the consumer, and that this amount per bushel must be borne by the British tax payer. In addition to such enormous food subsidies as this which European Governments are providing, there were last fall 15,000,000 families in Europe drawing unemployment allowances, or the equivalent of a population of 75,000,000 people. The speaker praised the treatment

which Canada had received at the hands of the British Ministry of Food, and Herbert Hoover, Chairman of the Inter-Allied Food Commission. Due to a combination of circumstances, United States was supplying Great Britain with five pounds of pork for every pound supplied by Canada, during 1918 but at the end of the war Canada had 10,000 tons of bacon on her hands for which she must find a market if the bacon industry was to continue. It was his duty, said the speaker, to market this bacon, and he was able to get the sanction of Mr. Hoover to substitute this bacon for an equal quantity of American bacon. Until last December, France was paying \$40,000,000 per month in order to subsidize the wheat supply for her people. Great Britain has guaranteed a price of 17 cents per pound for home-grown beef in September, 1919, and this price is to gradually raise to 20 cents by July, 1920. For the seven winter months, milk will bring the British producer \$6.80 per hundred, but the average retail price is 21 cents per quart. The British cheese producer is guaranteed 50 cents per pound, but the maximum retail price is 36 cents. The productivity of Central Europe has been reduced by at least 25 per cent. for a period of from one to three years, and there is nothing surer than that Canadian farmers will get the top of the world's prices, although no one can tell what this level will be. "It will take," said the speaker, "two full, good harvests to get the world's bread basket in shape to carry on from one year to another without a scarcity of food products."

WORK OF THE O. A. C.

At the evening session on Wednesday, Dr. G. C. Creelman, President of the O. A. C., spoke in his usual entertaining style on the relation between the O. A. C. and the average farmer. The speaker said he had fifteen years' experience as President of the Agricultural College, and that in that length of time he had had an opportunity of coming to certain conclusions regarding college work. Reference was made to the fact that farmers are dissatisfied with present conditions, and that this was emphasized by the results of the recent Provincial election. Criticism of all things is in the air, so that it is not surprising that the O. A. C. is coming in for its share. "Our staff for a long time has been underpaid," said the President, "Graduates of the O. A. C. have Toronto University standing, but our professors have not had the benefit of Toronto University pay. The result has been that we have lost many good men." These conditions of underpayment apply with regard to farming, when the farmer and the whole of his family receive no more, and even less, than workmen in unskilled trades. The duties of the College were outlined by Dr. Creelman as follows and served along with various College activities as the main theme of his address. The first object of the College is to give a liberal education to all students, and it was stated that 20,000 students have enrolled in the courses at Guelph since the College has been established. The farm boy who comes to the College and means business receives a particularly warm welcome, because most of the professors have been farm boys themselves. He finds out that he is engaged in a good business, if he only knew more about it. The object of the College is to give the boys an inspiration to do good work in agriculture, as well as to give them an education. The second duty of the College is to send out the members of the staff to give instructions or assistance to farmers who cannot take advantage of college courses. Farm drainage was mentioned as an example of this kind of work, by means of which assistance 200,000 acres have been surveyed for farmers since this work was started.

AN ATTRACTIVE DAIRY SHOW.

The dairy exhibit in connection with the annual convention was worthy of the dairymen of Western Ontario. In addition to some commercial exhibits of dairy utensils, the Bacteriological Department, O. A. C., Guelph, had a very interesting and instructive exhibit in connection with the relation of bacteria to moldy butter. Charts and bacterial cultures were shown, as well as samples of butter to illustrate the effect of molds on the quality of the product. The Dairy Department, O. A. C., had on exhibit also several different kinds of soft cheese, while the commercial milk products companies also made small displays of different products. The exhibits of creamery butter were very creditable indeed, especially the attractive exhibit of twenty pound-prints. The arrangement was splendid and the general excellence of the exhibit was worthy of the most favorable comment. Cheese and butter positions, so far as quantity is concerned, were completely reversed at London as compared with Brockville the week previously, the cheese exhibit

at London being comparatively small while the butter exhibit at Brockville was extremely small. The foregoing small table shows the number of entries making different scores in both cheese and butter, and we give this as an indication of the general quality of the exhibit.

The awards of prizes follow: **SEPTEMBER WHITE CHEESE.**—1, C. J. Donnelly, Lambeth, 97.99; 2, J. E. Stedelbauer, Vienna, 97.47; 3, H. E. Donnelly, Stratfordville, 97.24; 4, H. J. Neeb, Tavistock, 97.06; 5, Wm. Boyes, Springfield, 96.74; 6, J. T. Donnelly, St. Thomas, 96.66; 7, W. Hargraves, Atwood, 95.82; 8, Jos. Skelton, Kintore, 95.81; 9, Martin Calder, Stratford, 95.73. **SEPTEMBER COLORED CHEESE.**—1, H. J. Neeb, 97.73; 2, H. E. Donnelly, 97.65; 3, C. J. Donnelly, 97.57; 4, J. T. Donnelly, 97.40; 5, J. E. Stedelbauer, 97.15; 6, W. Hargraves, 97.07; 7, Jos. Skelton, 96.65; 8, W. J. Murphy, Thorndale, 96.49; 9, B. F. Howes, West Monkton, 96.48. **OCTOBER WHITE CHEESE.**—1, F. C. Eastman, Arkona, 98.32; 2, C. J. Donnelly, 97.99; 3, J. E. Stedelbauer, 97.83; 4, H. E. Donnelly, 97.66; 5, H. J. Neeb, 97.57; 6, J. T. Donnelly (won on flavor), 96.66; 7, W. Hargraves, 96.66; 8, W. C. Loughin, Thamesford, 96.58; 9, Frank Norman, Wellesley. **OCTOBER COLORED CHEESE.**—1, H. E. Donnelly, 97.32; 2, J. E. Stedelbauer, 96.81; 3 and 4, W. J. Murphy, and W. C. Loughin, 96.65 (tie); 5, W. Hargraves, 96.57; 6, Jos. Skelton, 96.48; 7, C. J. Donnelly, 96.40; 8, Frank Norman, 95.99; 9, J. T. Donnelly, 95.98. **TWO FLAT CHEESE.**—1, H. J. Neeb, 98.15; 2, J. T. Donnelly, 98.07; 3, W. Hargraves, 97.91; 4, C. J. Donnelly, 97.83; 5, H. E. Donnelly, 97.57; 6, Jos. Skelton, 97.40; 7, F. C. Eastman, 96.99; 8, J. E. Stedelbauer, 96.83. **THREE STILTON CHEESE.**—1, C. J. Donnelly, 97.48; 2, J. T. Donnelly, 97.23 (won on flavor); 3, W. C. Loughin, 97.23; 4, Jos. Skelton, 96.82 (won on flavor); 5, H. E. Donnelly, 96.82; 6, Leo Wallis, Petrolia, 96.40.

BUTTER.—56-LB. BOX, WINTER MAKE: 1, J. R. Almont, Silverdale, 96.10; 2, H. McGinn, Belmont, 94.77; 3, Ontario Creameries Ltd., London, 94.73; 4, E. D. Armstrong, Exeter, 94.27; 5, Jas. E. Wilson, Forest, 93.26; 6, Harry Frey, Woodham, 93.10; 7, C. A. Davies, Guelph, 93.08; 8, John Main, Warwick, 93.07; 9, H. F. Newman, Cambridge, 92.90. **56-LB. BOX OCTOBER BUTTER:** 1, Ontario Creameries Ltd., 95.57; 2, Whyte Packing Co., Brockville, 94.49; 3, John Borland, Simcoe, 94.41; 4, T. J. Newman, Lorneville, 94.05; 6, C. A. Davies, 93.79; 6, H. F. Newman, 93.57; 7, Strathroy Creamery, Strathroy, 93.47; 8, John R. Almont, 93.15; 9, M. J. Lewis, London, 92.72. **1-LB. PRINTS:** 1, H. McGinn, 95.60; 2, John R. Almont, 94.92; 3, C. A. Davies, 94.90; 4, Harry Frey, 94.72; 5, Ontario Creameries Ltd., 94.65; 6, Whyte Packing Co., 94.42; 7, M. J. Lewis, 94.16; 8, S. E. Rozell, Clinton, 94.14. **WHEY BUTTER:** 1, C. J. Donnelly, 90.10; 2, Whyte Packing Co., 89.83.

RESOLUTIONS.

"That this Association is in sympathy with the plan for the butter grading service put into effect by the Dairy Branch of the Ontario Department of Agriculture and believe, if continued, this will stimulate and encourage a permanent grading system for creamery products."

"That as dairymen we are under great obligations to both the Provincial and Federal Departments of Agriculture for assistance rendered the dairy industry and we wish to tender our sincere thanks and express our appreciation of the work done by these Agricultural Departments in promoting the Agricultural interests of the Province and of the Dominion."

"This Association wishes to offer every encouragement to the Dominion Butter Scoring Contest and to the various Dominion and Provincial Officials and the judges who assisted in making the work of special educational value and we are pleased to know that this Contest will be continued this year with additional special features which no doubt will increase the interest taken in the Contest."

"We wish to express appreciation of the action of the Dairy and Cold Storage Commissioner through the Market Branch in sending out regular market letters and telegrams; and respectfully suggest that this plan be continued and that the news letter also be included."

"This Association wishes to go on record as approving the formation of the National Dairy Council of Canada and desires to assist in any way possible the educational policy outlined by the Council. In this connection we respectfully recommend the co-operation of the various Provincial and Dominion Dairy Departments."

Other resolutions passed by the Association bore reference to the elimination of the scrub bull, the inadvisability of using second-hand butter boxes, or, at least, using boxes from which all previous marks had not been removed, while a third one not enumerated above, recommended that work be done to determine the lowest temperature at which cream could be treated and still be called pasteurized cream.

OFFICERS.

The officers of the Association are as follows: President, W. G. Medd, Exeter; First Vice-President, J. Scott, Woodstock; Second Vice-President, George Taylor, Guelph; Third Vice-President, J. N. Allan, Canboro. Directors: Thos. Ballantyne, Stratford; Jas. Donaldson, Atwood; R. Myrick, Springfield; H. Mannell, Woodstock; R. Johnston, Bright, and George Kenny, Ettrick; Secretary-Treasurer, Frank Hens, London. Auditors: J. A. Nelles, London, and J. C. Hegler, Ingersoll. The instructors operating in Western Ontario are: Frank Hens, London, Chief Instructor; George Travis, Courtland; A. E. Gracey, Woodstock; George N. McKenzie, Ingersoll; T. Fred Boyes, Lambeth; D. McMillan, Stratford; R. A. Thompson, Atwood; J. B. Smith, Brampton; G. Rickwood, Essex. The official butter grader is J. H. Scott, Toronto.

Class	Under 92	92 to 93	93 to 94	94 to 95	95 to 96	96 to 97	97 to 98	98 to 99
Cheese, September White	—	1	1	2	3	2	4	—
Cheese, October White	—	—	1	2	2	5	4	1
Cheese, September Colored	—	1	—	—	2	6	6	—
Cheese, October Colored	—	—	1	1	8	6	1	—
Cheese, Flat	—	2	—	—	1	2	4	2
Cheese, Stilton	—	1	—	—	—	4	3	—
Butter, Winter make	7	5	4	3	—	—	—	—
Butter, October make	2	4	4	3	1	—	—	—
Butter, 20 prints	7	2	2	2	1	—	—	—