

the ice is removed during the summer, to throw out from time to time the driest of the sawdust where it will be under cover and continue to dry out and thus be in better condition to be used again the following year. The ice should be cut in blocks of uniform size and packed as closely together as possible.

"If it is necessary to erect a special ice house the roughest kind of a shed that will keep out the weather is all that is necessary. Poles may be driven into the ground and lined up on the inside with rough lumber,

or slabs, leaving a space of about one-half inch between each board, and the whole covered with a roof to keep out the rain. Of course, the ice house may be built with a regular frame, lined inside with rough lumber, and, if a more finished appearance is desired, it can be covered on the outside with clapboards or other siding. There should be plenty of ventilation above the ice. The same procedure should be followed in storing the ice and covering it with sawdust as advised in the preceding paragraph.

"If sawdust cannot be obtained, planer mill shavings may be used for packing the ice, or in cases where neither is available hay may be used as a packing or covering material.

"Marsh or 'slough' hay or any fine wild hay which grows in low places gives the best results. If hay is used, the space around the ice or between the ice and the walls instead of being only 1 foot, should be at least 2 feet, into which the hay must be well packed. The ice should also be covered with about 2 feet of the hay."

Stormy Weather Affects Attendance at Western Ontario Dairy-men's Convention.

In spite of unfavorable weather for the first day the fifty-third annual convention of the Dairymen's Association of Western Ontario was successfully held in London, on Wednesday and Thursday, January 14 and 15. The meetings were held in the Masonic Temple, as was the case last year, and, although Wednesday was very stormy, satisfactory attendance was secured on both days. The Convention was opened at eleven o'clock Wednesday morning by the President, Frank Boyes, Dorchester.

The Presidential address contained an interesting review of the various agencies which have combined to bring about the present extent of the dairy industry in Western Ontario. It was recalled that in the year 1867 the first meeting of the Association was held in the town of Ingersoll, when those present saw the possibilities of Ontario and Canada for a wonderful growth of the dairy business. Every country in the world laying claim to progressive civilization, said Mr. Boyes, has adopted to a greater or less extent the fundamental principles of dairying in some form, as a basis for maintaining soil fertility and thus assisting productive agricultural operations. Continuing, the President said: "In this connection it might be interesting to point out that the two Provinces of Ontario and Quebec produced in 1918 97 per cent. of the cheese, 70 per cent. of the total creamery butter, and probably 85 per cent. of the total amount of condensed and powdered milk produced in the Dominion of Canada. The scarcity of dairy products throughout the world, and the consequent great demand has advanced prices to a point never before realized, but while prices of dairy products are high the producer is certainly not receiving too high a price for his dairy products when we consider the high cost of feed, labor, and other items which enter into the cost of production. The population of our cities and towns is growing and requires greater quantities of milk and cream. The milk condensery, milk powder factory, and city milk supply plants are branching out and securing control of some of the cheese factories in certain localities, where they are paying good prices for milk." Referring to the National Dairy Council, the speaker said: "I am fully in accord with the program laid down, and recommend all to give it their support and financial assistance."

NO WESTERN ONTARIO CHEESE SOLD FOR 25 CENTS.

The directors' report dealt with seasonal conditions during the past year, and reviewed briefly the cheese and butter prices, as well as prizes won at exhibitions by makers in Western Ontario. In connection with the cheese price the statement was made that: "So far as we know all Western Ontario cheese were sold at a higher price than that offered by the British Ministry of Food, f.o.b., Montreal." The directors believe that consumption of dairy products will certainly increase as the economic food value of these foods as compared with other foods becomes better known. We quote as follows: "Studying the situation as it develops from year to year it would seem that when the demand for one type of dairy product creates an advance in price over some other product, the time arrives when the particular demand is met, with a corresponding rise in price for the other dairy product, the output of which was decreased. In the last analysis the summer price for dairy products in Canada is for some years to come likely to be controlled to a certain extent by the price of our exportable surplus although at certain seasons of the year local demand controls the situation." A plea was entered for still further co-operation in building up the dairy exhibition in connection with the convention, in order that the educational value of the exhibits might be enhanced to both producers and manufacturers. The directors' report also endorsed the progressive program outlined by the National Dairy Council, and voiced a willingness to offer any possible assistance.

The financial statement shows total receipts of \$6,833.31, including a legislative grant of \$2,000 and cash on hand of \$185.80. The present balance on hand is \$85.78. One hundred and eighty dollars was paid in to funds of the National Dairy Council during the year. It cost \$255 for prosecutions.

CHEESE REPORT.

F. Hens, Chief Dairy Instructor for Western Ontario, submitted his thirteenth annual report, giving a brief summary of the instruction carried on in creameries and cheese factories. There are 10,712 patrons of which 8,041 were strictly cheese patrons supplying 138 factories, 8 of which made butter and 10 made other milk products. The estimated average loss of fat in the whey was .226 per cent., or .014 per cent. less than in 1918, while the estimated average per cent. fat in the milk for the season was 3.33 per cent., or .02 per cent. less than 1918. Cheese manufactured in Western Ontario in 1918 was 19,038,788 lbs., the number of pounds of milk required per pound of cheese being 11.33, and the average price per pound of cheese being 22½ cents, as compared with 21½ in 1917. The output of cheese in June, 1919, was 3,692,924 lbs., or 52,240 lbs. less than in June, 1918.

The general quality of cheese, especially during the fall, was well maintained. The instruction service was in more constant demand than usual owing to the long period of warm weather and an unusual quantity of milk was diverted into other channels so that the fall make was short. It is becoming increasingly difficult to maintain the quality at all factories owing to the difficulty of securing experienced cheesemakers. Twelve factories have ice-cooled curing rooms; 17 have septic tanks; 28 pay for milk by test; 46 pasteurize the whey; 71 turn the cheese in the hoops; 74 skim the whey; 22 made whey butter, and 54 sold whey cream. Skimming the whey was declared by Mr. Hens to be an economic advantage, but it was urged that a rich cream should be skimmed, pasteurizing if practicable, and in any case cooling to a low temperature immediately so that the cream could be shipped with low acidity. Comparatively few old, rusty, unsanitary milk cans are now in use, 640 new cans having been purchased by producers during the year. Prosecutions for milk deterioration numbered 18, and 62 meetings with a total attendance of 3,485 were attended by Mr. Hens and his instructors. Two new cheese factories were built at a cost of \$10,000. Whey butter plants installed during the year cost \$32,400, and \$39,445 was expended in general improvements.

CREAMERY INSTRUCTION.

On hundred and thirty-two creameries were visited, 11 of which are located in Toronto. Butter quality was difficult to maintain because of the shortage of ice and a number of creameries installed mechanical refrigeration. The manufacture of creamery butter in 1918 amounted to 24,419,782 lbs., of which 661,086 lbs. was made at cheese factories. The total manufacture is greater than that of 1917 by 1,330,474 lbs. The number of patrons was 46,927, and the average per cent. of fat in the cream was 29 per cent. The moisture content of 436 samples of butter was 14.98 per cent., but 67 samples from 35 creameries contained over 16 per cent. of moisture. An average of 498 tests indicated that 5.29 per cent. of salt was used and that 3.25 per cent. was retained in the butter. One hundred and two creameries used the metric scale for weighing cream samples, 70 creameries used the cream-cooler, 28 creameries pasteurized the cream, 7 creameries used the pure culture, 4 graded the cream for churning, 1 paid patrons according to grade, 29 have mechanical refrigeration, 79 collect the cream on routes and 44 have cream shipped to them. The loss of fat in butter-milk after 170 tests was estimated to be .2 per cent. Six new creameries were built costing \$64,000, and \$145,515 was expended in general improvements.

There were over 200 cream-buying stations in operation during the past season, but no inspection or instruction was given. We quote further as follows: "It would seem that there should be some systematic supervision of these buying stations with the object of protecting producers in the cream test and also to make reasonably sure that every person testing cream commercially is competent. With the intense competition for cream and so many different plans of purchasing and handling cream it is a very difficult matter to suggest any uniform method for grading and paying for cream by grade in so far as these buying places are concerned. May I again point out in this connection that we are gradually turning towards an export trade in creamery butter, and it cannot be too strongly urged upon everyone engaged in the industry the absolute necessity for a concerted effort towards quality improvement and this applies equally well to our home market."

THE SCRUB SIRE A LOSING PROPOSITION.

At the afternoon session on Wednesday, Professor Wade Toole, O. A. C., gave an interesting and practical paper on "The Scrub Dairy Sire." It was pointed out that the percentage of inferior sires is no doubt larger than actual figures show. The speaker considered it just as important that the scrub pure-bred bull be eliminated as that the grade sire be done away with. Individuals that are culls are not safe for breeding, whether pure-bred or grade; neither is type alone, without good blood lines, to be recommended. A census of thirty-eight counties in Ontario showed 18,638 farmers keeping 19,947 bulls, of which 9,293, or 46.6 per cent., were grades or scrubs. Of the three dairy breeds alone, 58 per cent. of a total of 10,252 bulls are grades. Out of 330 Jerseys, only 78 are grades; 435 out of 758 Ayrshires are grades; while 5,440 out of 9,164 Holsteins are grades. The higher percentage of scrubs among dairy breeds is due to the fact that dairymen largely maintain cows only for the milk secured, and that a bull need only be sure. Many of the reasons given for the use of grade sires are largely imaginative. It was argued that the milk producer would find it easier to raise a few good heifers than it is now to go out and buy a high-producing cow, because these can rarely be bought except at high prices. Breeding-up is the safest policy

for the greater number of dairy farmers. At the Central Experimental Farm, where grading-up has been practiced, heifers from pure-bred bulls and grade cows have produced as much milk as two-year-olds as their dams did at maturity, and at three years old they produced a third more milk than did their dams at maturity. The figures from the farm management survey both in Western and Eastern Ontario show conclusively that the pure-bred sire used continuously will at least more than double the profit over feed per cow, as compared with the use of a grade sire over a period of years. Four illustrations were given of men who had started at the bottom with grade bulls and gone to the top after using pure-bred sires. We quote as follows regarding one illustration given which is typical of the others: "A Waterloo County farmer commenced with low grades which gave 3,600 lbs. of milk per year. This test did not suit him. He sold the cows and purchased others by pure-bred bulls and secured an average production of 7,500 lbs. of milk per cow per year. Daughters of these cows at two years gave more milk than their dams at maturity and in a few years the average production of this herd ran up to 11,000 lbs. The poorest cow this man ever owned gave 2,600 lbs. of milk in one year, while the best one, the result of the use of the pure-bred sire and better feeding, made nearly as much in one month as a three-year-old. And the sire that did a great deal of this good was bought as a calf for \$65. Not a very big outlay, but he had the milk blood behind him. In fact, he had a fancy pedigree."

ALL BRANCHES OF THE INDUSTRY MUST HARMONIZE.

E. H. Stonehouse, President of the Ontario Milk and Cream Producers' Association, and President of the National Dairy Council, discussed "Some Problems of the Milk Producer," on Wednesday afternoon. "Markets, domestic and foreign," said the speaker, "are demanding more and more dairy products and it is ours to see that this demand is fully met, not only by a quantity that will meet every requirement but of a quality equal to or surpassing that produced by any other great dairy country. The food value of dairy products is being recognized to a greater extent than ever before and as comparative values are better understood the price which city and town dwellers now think so high will be seen to be below that paid for any other article of food. Up until a very recent date very little has been done in the way of advertising. The extent and thoroughness with which milk and its products is advertised in some American cities, and the results that have been obtained thereby is an object lesson which we should keep constantly in mind, and profit by. "I would like to emphasize in passing that if the industry is to be brought to its highest degree of perfection, all branches must work in harmony. The day is past when the producer, his difficulties and his problems can be ignored by the distributor or manufacturer. The producer who realizes that he is getting a fair share of the profits is the man who is going to increase his output and see that his product is of a quality that will meet the most exacting requirements of the manufacturing and distributing end of the business. On the other hand, the farmer should recognize the fact that the manufacturing and distributing agencies are the market for his milk and on their ability to find outlets for his product his business largely depends."

PURPOSE OF PRODUCERS' ASSOCIATIONS.

Referring to the recent farm surveys in dairy districts, the speaker said: "The conclusions arrived at in Oxford County have been confirmed by other surveys, and I believe it is the intention of the Ontario Department of Agriculture to continue this work until sufficient data shall have been secured to approximately fix the cost of production in the various dairy sections of the Province." The speaker said that as between an improved and an unimproved herd the figures showed a saving of one dollar per hundred in the cost of producing milk, and he thought that the influence of a carefully selected sire over a term of years is so pronounced that the scrub bull among progressive dairymen should soon be as extinct as the Dodo. The purposes of the Ontario Milk and Cream Producers' Associations were stated as follows: "To promote the interests of the producer, consumer, distributor and manufacturer of milk, cream, and other dairy products by improving the conditions under which milk is produced, by improving marketing methods and conditions, by standardizing the product and, generally, by doing such other things as are necessary with respect to the quality, cost of production and distribution of milk, and the return to the producer, as well as the cost of the consumer, as will promote the interests of both. Concluding his address, the speaker said: "It has been increasingly apparent for years that organization was necessary if the interests of our great industry were to be conserved. We now have the machinery in the various Provincial Dairy Associations, and the work that has been and is now being done will be carried along still further by the National Dairy Council of Canada, which is in a position to bring the