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advised. The value of Ontario's crops is much greater this year than in the past, and it was pointed out that there was a tendency for certain varieties of the different classes of grain to lead in crop competitions and at exhibitions. This resulted in these particular varieties being more extensively grown with beneficial results to agriculturists. Canada's place in food production was outlined by Dr. Zavitz, and it was to the effect that the Dominion was tenth in crop production in the world; was second in number of acres per individual, and first in yield per acre per capita. Canada exports about six times as much wheat as does the United States, owing largely to the increased production per capita.

Dr. Zavitz sounded a note of warning regarding the 1918 supply of corn and root seeds. The supply is limited and the price is high. Growing root seed on the farm was advised, as mangel seed in particular can be grown successfully in Ontario. Turnip seed is slightly more difficult to grow. Attention should also be given to the germination and quality of seed to be sown.

When planning a rotation, one crop should be a preparation for the crop which is to follow. For instance, when seeding down a good nurse crop should be used in order to give the young seeds a chance. The cultivating crop cleans the land. Planning and preparation for spring planting are necessary in order that the largest possible crops may be grown under existing conditions.

Why the Price of Dairy Produce Has Advanced.

Prof. Dean, of the Ontario Agricultural College, gave a number of very plausible reasons why dairy produce has advanced in price since the war began. Plain as are the causes, some of the consumers severely criticize dairymen because butter, cheese and milk cost them more now than they did in pre-war days. The speaker claimed that the producer must justify the increase in price by laying the facts before the consumer. Every effect has a cause, and the present situation has caused the dollar to decrease in its purchasing power, or, as the speaker stated, "Dollars are more plentiful than food in the form of milk, butter and cheese." It was pointed out that practically all food comes out of the soil through the agency of plants and animals, and in order that these may work to the best advantage in food production it is necessary that men apply labor to the soil in the growing of the plants, and afterwards in the feeding of these plants to animals. Prof. Dean quoted an American writer as saying: "There is but a single method of procedure by means of which we can be certain that the nutrition of our people will be safeguarded; that is to maintain our dairy industry at its present extent of development. Actually it should be considerably increased, but it must not be permitted to decline. If it does the United States will not long maintain its position of supremacy in the fields of human endeavor, requiring both physical and intellectual vigor." The same might be applied to Canada, but the speaker asked, "How can this be done unless our dairy industry be supplied with plenty of skilled labor on the farm and in the factory?" If dairying is not profitable for milk producer, manufacturer and distributor, they will go out of the business and go into other lines of business which are more profitable. The difficulty of securing suitable labor and the increased cost of all kinds of labor were given as the first causes of the increased price of dairy products.

Advancing prices of feed, cows, capital and overhead expenses are also factors which must be considered. In the last three years, oats have advanced from about 40 cents a bushel to double that price. Other concentrates used in feeding dairy cows have advanced in about the same proportion. Pasture, hay and silage have not advanced so much, but it requires labor to produce the last two. The price of dairy stock has by no means remained stationary. Machinery, needed more now than ever before in the growing and harvesting of crops, has not failed to advance in price; in fact, every operation on the farm has advanced out of all proportion to the advance in price received for dairy products.

The cheese and butter manufacturers have had to contend with advanced prices the same as has the producer. All utensils used in the factories are expensive at any time, and are difficult to secure at present. Cheese coloring, rennet, cotton used in cheese-making, cheese caps, sulphuric acid for testing, have all gone up in price anywhere from one hundred to three hundred per cent.

Stringent regulations by the Board of Health in producing and distributing milk were also factors which brought the price of milk to the consumer a little higher. To have cleaner cows, cleaner stables and pasteurization of milk costs money and the consumer must pay, but Prof. Dean considered that it was worth the extra price as these things tended to protect the public health, and nothing is so important as good health.

The method of distribution of milk was one of the unnecessary causes of increased cost to the consumer. Prof. Dean said, "The city milk business must find some better method of distributing milk than in having ten or twelve milk wagons passing over a street which can so well be served by one wagon at one-half the expense. Municipal control of the milk supply similar to the plan followed for supplying water, gas, electric light, etc., would seem to be the best solution. Failing this, the milk sellers might divide the city into districts and have one distributor only for each district. With a standardized product and a watchful Board of Health there is no reason why this system should not result in a lessened cost of at least one cent per quart to the consumer, and a similar supply of good milk to all. Dairy farming and the manufacture of dairy products are among the foundations of national prosperity; milk

and its products are among the cheapest foods which can be purchased at the present time. Milk at twelve cents per quart represents 699 calories, while steak at 55 cents per pound represents 290 calories." Instead of finding fault with the price of milk, consumers should encourage the dairy farmer by paying cheerfully the additional prices asked for milk, butter and cheese, which would tend to ensure a supply of these important food products.

Cow Testing Pays.

"To-day cows are appealed to as Empire necessities," said C. F. Whitley, in his address dealing with cow-testing work. It is true that there is no substitute for milk, and it is believed that the nation requires every drop that can be produced. One way of increasing the milk supply without necessarily increasing the labor is to keep better herds. Undoubtedly, cow testing has enabled the producer to cull out the unprofitable cows and to feed the good ones according to production. In answer to the question, does it pay to keep records, the speaker cited a case of an auction sale where two herds of equally well-bred cows were disposed of. The one with no records averaged \$145, while the other herd which had made good records, averaged \$303. This is an indication that it pays to consider weighing and testing of milk as part of the daily work. Mr. Whitley suggested that owing to the fact that some dairymen were over-stocked and others could feed more cattle, that a dairy-cow exchange might be established so that the useful cow could be placed with some farmer who wants her instead of being sent to the slaughterhouse. An exchange of this nature might also prevent many good pure-bred sires from being sent to the shambles. The speaker considered that it was good policy to save rather than kill these sires before their real value was known. He mentioned a case of where \$1,000 was offered for a fine prepotent sire whose worth was undiscovered till he was simmered down for beef extract. "Is the modern dairyman to risk any kind of pure-bred sire before time discriminates dairy merit, or, worse still, should he use a grade?" asked the speaker. "You remember" he said "we have an Ontario law against the grade stallion; it is but a step now towards regulating scrub, dairy sires. Let us remember we cannot expect improvement from the grade; we rightly demand it from the pure-bred. Our recorders in thirty-five districts report that out of a total of 5,620 sires in use, 47 per cent. are grades, and out of the remaining pure-breds one-third are poor and undesirable. We all know that the richly-bred sire presenting finest individuality, combined with extreme dairy capacity, a triumph for the Canadian breeder, is worth big money when records show that he has forty or fifty daughters that have given over 2,500 pounds of milk in a month, or, when mated with grade cows, he has more than doubled their yield of fat in two generations." Undoubtedly, dairymen should bend their energies towards increasing the production of their herds as it has been proven that it can be done through the use of the right kind of sire. The speaker pointed out that record work enables the dairyman to make useful comparisons between animals in his herd, and points out the cows that do not respond to increased feed and care. It has been proven that a little extra feed and better care have given returns worth twice the original cost. In one of the record centres extra feed in the form of clover hay and meal, which was valued at \$605, for 100 cows produced over \$1,670 worth more milk, or the investment made about 170 per cent. The keeping of dairy records tends to eliminate the poor cows from the herd, thus preventing putting in time working for the unprofitable animal.

Mr. Whitley cited one group of 180 cows which gave a million and a half pounds of milk, and claimed that according to their records there were some cows that were earning from \$200 to \$250. There is a great difference in the milk yield of different herds; for instance, in one district 250 cows gave 170,206 pounds of milk more than the same number of cows in another district. Another comparison showed that if 500 cows in one locality had done as well as 500 cows in another, there would have been an extra yield of 48,015 pounds of fat. True, it would require more feed for the latter herd, but we doubt if the labor would be increased very much. Cow testing has been gradually increasing and is bound to spread, because it is one means of ascertaining definitely what each member of the herd is doing, and it enables the feeder to study his animals and feed according to production. On many farms the low-producing cow still has a place. The aim should be to breed and feed so that the average production will gradually increase. As time goes on we have every reason to believe that fewer of the poor milkers will find a place on Ontario farms.

Butter Grading.

The question of grading butter received considerable attention at the convention. The work is new as yet, it having been inaugurated only a year ago. John H. Scott, of Toronto, who was the official butter grader last year, gave an address which dealt with the work which had been done during the past season. The scores of the butter from the different creameries showed a considerable variation, which might naturally be expected. However, 82.16 per cent. of the samples graded scored over 92 points, which put them in first grade. Mr. Scott gave practically the same address as he did at the Eastern Ontario Dairymen's Convention, a report of which appeared in the January 17 issue of "The Farmer's Advocate." Mr. Scott considered that marketing on a quality basis is the only fair way for butter to be bought and sold. Ontario has been rather slow in getting started at the grading system, but now that it has been introduced it is expected that the movement

will go forward quite rapidly. There have been criticisms of the system which tend to point out mistakes and suggest new ideas that may be of benefit in the future. It is believed that creameries making an inferior quality of butter will find it more difficult as time goes on to compete with creameries that are taking advantage of progressive methods. While 26 creameries took advantage of the grading system last year, there should be double or treble that number next year.

Butter Grading From a Creamery Owner's Standpoint.

Holding cream for too long a period under improper conditions was given by W. Waddell, of Kerwood, as possibly the chief reason for the quality of Ontario butter being lower than it should be for the greatest success of the butter industry. It is not uncommon for cream to be held at a comparatively high temperature, in surroundings which are not as sanitary as they should be. An educational campaign has been carried on for some years, and it has borne fruit to a certain extent at least. Mr. Waddell considered the grading of dairy products as a step in the right direction, and stated "that he could scarcely conceive of anything more satisfactory for a creamery owner or operator than to have every churning of butter scored and recorded by a capable, efficient and disinterested man appointed for that purpose." The grading provides a medium of sale, as the maker can send his butter forward knowing that he will get a square deal, and the buyer can safely purchase on the score of the official grader. The speaker mentioned a case in which having his butter graded was decidedly to his advantage. A number of boxes of butter had been purchased by a dealer who complained that it did not score as high as it had been represented, but, when informed that the score was that of the official grader, no more was said about the matter and the cheque was forwarded. The system induces the maker to put forth every effort to have high-scoring butter. He takes greater care in churning and working the butter. He is more particular about the cream used; thus, there is a tendency for the product to be higher in quality than if the grading was not in vogue. The speaker claimed that the report of each sample, pointing out the weaknesses, was a help to the maker, as it enabled him to locate and remedy deficiencies. A high-scoring butter cannot be made from poor cream; consequently, the grading of butter will eventually lead to the grading of cream. Mr. Waddell has found grading to be an advantage and advised every creamery to adopt the system the coming season.

I. W. Steinhoff discussed the grading service from a butter dealer's standpoint. He considered the grading of butter a step in the right direction, and was sorry that the creamerymen had not taken greater advantage of the system. Even those who had their butter graded did not always separate the grades and sell on a graded basis. However, the speaker claimed that graded butter was attracting attention, and the system should be the means of a more uniform quality of butter being marketed in Ontario. Mr. Steinhoff was one of the butter judges at the exhibition held in connection with the convention, and stated that he was rather disappointed with the quality of butter shown. He advised closer co-operation between creamery men and markets.

What Grading Has Done For Manitoba.

L. A. Gibson, Dairy Commissioner of Manitoba, brought greetings from the Western Provinces. Grading of cream and butter has done a good deal for the dairymen of Manitoba. For four years the grading system has been practiced, and the results have been very gratifying. Five years ago fifty-five cars of creamery butter were imported into Manitoba to meet the demands, while in 1917 one hundred carloads of creamery butter were exported from the Province, besides supplying the local demand. Mr. Gibson commended Ontario dairymen in inaugurating the grading system, but informed them that they could not accomplish all that they would like to in one, two or three years, and he advised them to keep up the grading of butter and cream. In Manitoba a difference of two cents a pound is made between Specials and No. 1, and three cents between No. 1 and No. 2. The cream is pasteurized by heating to 165 or 170 degrees and holding it for ten minutes. The speaker contended that the cream-buying stations were a curse to the business. Three years ago there were one hundred such stations in Manitoba, but by enforcing stringent regulations regarding the stations, shipping, etc., the number was reduced to twenty-two last year.

Cream Gathering Stations.

A. McKay, who is in charge of a large creamery at Winnipeg, also claimed that the cream-buying station was detrimental to the production of good butter. It simply introduced an extra middleman who cared little for the quality of cream delivered. The grading of cream, he believed, would do a good deal toward eliminating the cream-buying stations. The method of handling cans by the creameries in Ontario was considered to be very wasteful, as the shipper not owning the cans was not very careful in the way he handled them. The creameries in the West purchase cream cans in quantity and then sell them to the patrons at cost price.

A Dominion-Wide Organization Needed.

W. A. McKay, Superintendent of Dairying in Nova Scotia, gave a short address in which he stated that dairymen are the most disorganized business men in Canada, as there was no central working body of the dairy industry to champion the cause of dairying. Mr. McKay would like to see a central organization which would be Dominion-wide, with an executive formed of representatives of associations interested in dairying.