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of the land in cheese producing, and he considered that the tendency would be to an increased butter production, and less attention to cheese. Turning to the production of milk for city supply, he said that some of the watered milk was even adulterated with poor water. In some cases typhoid could be traced to this cause, and the cost of one case of typhoid would pay for a few cents on a quart of milk for nearly a lifetime. Milk for home supply should be kept in a tightly-stoppered bottle; should be exposed to the air only when needed, and milk once exposed in a sick room should never be used, as it would certainly be affected with germs.

He favored the churning of cream as soon as possible; under-ripe, not over-ripe, must be the rule. In fact, churning as soon as possible after separating has many advantages.

John Gould, of Ohio, who followed Prof. Dean, spoke on the open door of dairying. By combining statistics of Canada and the U. S., he was able to show the international importance of the industry, and by the record of the past told something of the prospects of the future. His address was illuminated by many quaint and humorous points, and proved very interesting.

A DIFFERENT TUNE.

Hon. Sydney Fisher, in opening his address said that the future work of the association must be to get the people to apply the lessons they have learned at these meetings. Possibly it is an Anglo-Saxon failing, but our practical men are inclined to despise theory. We must take advantage of the knowledge we have gained. The splendid success of the Japanese nation is due to the fact that they have carefully studied out what was best to be done, and then having decided it they went and did it. In this way success has been won. We have the schools, and our young men get the education, but, unfortunately, not more than five per cent. of our men live up to the knowledge they have. The work of the Department at Ottawa was increasing every year. They wanted more information, such as they were getting from the cow census. The various conventions were a great center of influence. He noted that the district in which the convention was held last year had this year produced the best cheese in Ontario. This was a tribute to the work of the association.

THE FUTURE OF AGRICULTURE.

C. C. James, Deputy-Minister of Agriculture, said that the past century was famous for the development of transportation and manufacture. The twentieth century would be noted for the development of agriculture. Agriculture offered to-day the best opportunity for the young Canadian. The future of the industry in Ontario must be in an improvement of quality more than in increase of quantity. We have in Ontario 1,000,000 cows. An increase of one dollar in the product of one cow means a vast increase to our Provincial wealth. Improvement of variety of grain, and improvement by selection must be the line of development. The West contains vast undeveloped wealth, but Ontario can, by the improvement of quality alone, add greatly to the increase of wealth. We must exalt the quality of our products, our workmanship, and develop a high and lofty citizenship.

Friday's Session.

J. W. Mitchell, of the Kingston Dairy School, turned up the buttered side on Friday morning, by discussing the work of the cream-gathering creamery. The product of the creameries was improving, but so was the taste of the consumer, and they must advance faster. Regarding cream-gathering creameries versus separator creameries, he certainly favored the latter, but it was evident that the cream-gathering plan has come to stay. A few years ago the large exporters said that butter produced on that plan must bring fully two cents a pound less. The difficulty with the system was that the cream while ripening was outside of the control of the maker.

In the discussion, Prof. Dean said that the system might have an advantage in theory, but in practice it was bad. This overripe cream would produce what the Montreal buyers called fishy flavor, and he was emphatically in favor of keeping the cream as short a time as possible. J. A. Ruddick, the new Dairy Commissioner, spoke on the signs of the times in Canadian dairying.

SOMETHING OF GROWTH.

In 1890 there were 893 cheese factories and 45 creameries in Ontario, and 617 cheese factories and 111 creameries in Quebec. In 1900 there were 1,061 cheese factories and 103 creameries in Ontario, and 1,207 cheese factories and 445 creameries in Quebec. In the same time there was an increase in value in Ontario from \$7,569,338 in 1890 to \$14,968,932 in 1900. In Quebec the increase was from \$2,918,527 in 1890 to \$12,874,377 in 1900. During this time the home consumption had also increased, and this was a market of even greater importance. Taking Canada as a whole, the number of factories has doubled, while the product has trebled in value in ten years. In regard to grading, he said it was impossible to grade in Canada as they did it in New Zealand. In that country the conditions were the same all the year round, whereas in Canada we had considerable variation in the different months. Grading at the factories was impossible, because once graded the product should be under the control of the purchaser. In answer to the question as

to why the cheese was graded by the month in which it was made, one of the exporters replied that as a rule they were not in the date and fig business, and if the product of July and August was equal to June and September they would always pay a good price for it.

A SANDWICH OF BACON.

Prof. Grisdale took up the subject of bacon production, pointing out the importance of this sister industry of dairying. The pig fed upon grain alone costs from 4c. to 4½c. a pound to produce. By combining skim milk with the ration this could be reduced one cent to one cent and one-half under the cost when fed the meal alone. By the judicious use of skim milk fed to hogs they were able to realize 45c. a hundred for the milk. The reason this price was not always received was because too much was used. When they increased the amount to 15 pounds skim milk per day, they only realized 20c. a hundred for it.

COST OF PRODUCTION.

By mixing skim milk with potatoes and meal, the cost of producing 100 pounds pork was \$2.80 per hundred; skim milk, with rape and meal, \$2.25; with pumpkins and meal, \$2.20; and by combining skim milk with corn meal, rape and pumpkins, they had produced pork at a cost of only \$2.00 per hundred. In feeding young pigs, they had found shorts, finely-ground oats and skim milk produced the best results. As a substitute for skim milk they had found nothing that answered as well as a little oil cake. For feeding the sow, mangels and meal gave a cheap and satisfactory ration. They had fed as high as 25 pounds of mangels per day. Of course this would be decreased, and the meal ration increased as the sow neared farrowing time. "What is the cause of the superiority of Danish bacon, Mr. Grisdale?" asked someone in the audience. Mainly uniformity of breed, replied the speaker. A pig in one end of Denmark is the same as a pig in any other part of the country. The cost of production is higher in Denmark. It costs nearly \$6.00 to produce 100 lbs. of pork there; we do it for about \$4.00 to \$4.50 a hundred. This is largely because the food costs more and because they do not use pasture as we do. Another important point brought out in discussion was the value of the clover leaves as a food for hogs. The leaves broken off the clover in handling are almost as valuable as skim milk. Pour a little hot water over them, or even cold water, and let soak for a day, and you will find it an excellent food for wintering hogs.

Mr. Publow, who was the last speaker on the programme, made a ringing appeal to the makers to avoid two great faults entirely within their control. These were over acidity of the cheese, which destroyed its keeping quality, and a lack of finish, which was detrimental to its appearance. "If you haven't got sufficient style about you to turn out a neat-looking product, get out of the business," said Mr. Publow.

The transportation question was touched upon by Dr. Stark, of Finch. An effort has been made to bring the question before the attention of the Railway Commission, but the resignation of the chairman delayed matters. The question is of vital importance to the dairy interests, and will doubtless receive a larger measure of attention in the future.

RESOLUTIONS.

A formal resolution was passed, recommending all patrons to cool their milk to at least 65° F., instead of depending entirely upon the aerator.

Mr. Dargavel reported that the committee appointed last year to consider the question of licensing factories had gathered information and carefully considered the subject, but thought that more time would be required before they would be able to hand in a complete report upon a question of such great importance to the dairymen of Canada.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year at the closing session on Friday:
President—D. Derbyshire, Brockville.
Vice-president—J. R. Dargavel.
Second Vice-president—G. G. Publow.
Third Vice-president—L. L. Gallagher.
Fourth Vice-president—J. H. Singleton.
Directors: Division No. 1, Ed. Kidd; Division No.

2, Wm. Eager; Division No. 3, Levi Patton; Division No. 4, Jas. Whitton; Division No. 5, F. B. Carlow; Division No. 6, Henry Glendinning. Hon. Director, Jas. Anderson.

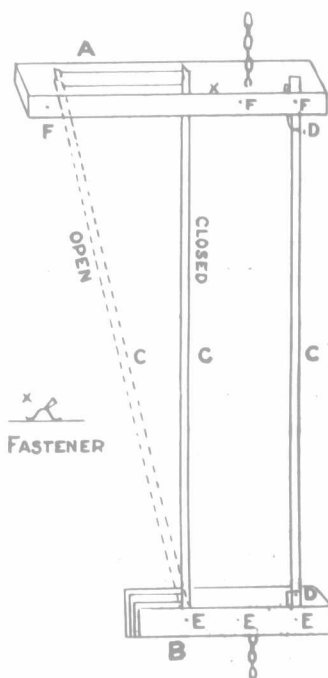
Stanchion for Fastening Cows.

Sir,—In your paper recently I see that J. J. M. makes enquiries with reference to a bale (or stanchion) for fastening cows, which I think is the same as the one used in my new stable, which is just completed. It is cheaper, stronger, and just as comfortable for the cow as the steel ones. I have drawn a plan, which I will endeavor to explain, trusting it may be of service to J. J. M.:

A is the top of bale, 22 inches long by 3 inches wide, and 2 inches thick.

B is the bottom piece, 13 inches long by 3 inches wide, and 2 inches thick.

C C C are the uprights, 4 ft. long 2 inches wide and 1½ inches thick; they are fastened top and bottom by short chains. The top chain is 7 links, 1½ inches long, and fastens to a 2x4 inch scantling above, holding up the bale. The bottom chain is 5 links, same size as top. It fastens to a 10-inch plank, and keeps the bale in position.



Cow Stanchion.

D is a bolt, which passes through C, the upright, and up through A or B, with a nut and washer on it to keep the bale together.

E E E are the cross-bolts, in B, the end ones are 2½ inches from each end, and the third one in the middle. A hole is bored in B from lower side, in which the chain is fastened, the bolt passing through, the end link to hold the bale in place at the bottom. Cut a groove out of B for left upright to work in.

F F F are the upper bolts; the end ones are placed 2½ inches from each end, and the third one 6½ inches from the right end of A, holding chain at top. A groove is cut out of A 10 inches long, 2½ inches from left end, for left upright to open and close in. The bolts E and F are to hold the uprights C, and the center bolts pass through the chain, holes being bored up in bottom and down in top pieces, the end of chain being placed in the hole, and the bolt passes through the end link. The fastener on top is a patent one, with a spring in it to keep it closed. Other home-made devices have been used, which, although not so handy do the work quite as well. I am quite willing to answer any enquiries regarding this tie.
Lanark Co., Ont. ANDREW C. YUILL.

Mr. George Walker, Wellington, Ont., says: "I received your premium knife, and am well pleased with it."



A Typical Western Farmstead.

The home of R. B. Preston, Pilot Mound, Man. (Note the young trees.)