

The Dairy.

Our Annual Dairy Prize.

Our dairy prize will this year again be offered at the Toronto Industrial Exhibition. Professor Robertson has again consented to take charge. He will meet the breeders and other interested parties to discuss and adopt rules, etc., at the Albion Hotel, Toronto, on the evening of March the 12th, at 7 o'clock. All are invited to attend. We hope all the breeds will this year be represented. At all former competitions the Jersey breeders seemed to have had more confidence in their favorites than the breeders of other sorts; yet at Ottawa, last fall, where the test was governed by the rules drawn by Professor Robertson, and adopted by us, the Holsteins were victorious.

Ontario Creameries' Association.

The large attendance and enthusiasm which characterized the Sixth Annual Convention of the Ontario Creameries' Association at the town of Berlin, Waterloo Co., on January 13th and 14th, indicate clearly that Canada is now making a forward movement in the production of butter. There was a large representation of thrifty and progressive Germans present. Speeches and discussions were pre-eminently practical, while the ADVOCATE's suggestion that more discussion and enquiry should come from the "floor of the house," made the convention in that respect a marked improvement over the one held a year ago. President D. Derbyshire, of Brockville, made a grand chairman, Mr. R. J. Graham, of Belleville, doing efficient work as secretary.

Mayor H. L. Janzen, on behalf of the council and people, welcomed the dairymen to Berlin. Mr. Derbyshire, in reply, congratulating the place on its evident thrift and enterprise. He regarded the producer of milk as the real butter maker, as far as quality was concerned, and urged a thorough reform in the breeding, feeding and care of cows. He endorsed winter-dairying, and said the cost of keeping a cow milking in winter was not fifteen per cent. more than what was necessary to sustain her as a dry cow, so that she would do good work next season, while the profit on winter milk was over thirty per cent. greater than on summer milk. The day was at hand when milk delivered at creameries would be paid for according to its fat content. Ninety per cent. of our butter is still made on the farm, and he estimated that lack of skill in this business last year cost the country a loss of \$2,700,000—a terrible penalty to pay. Creamery butter was worth at least four or five cents per pound more than private farm butter. In reply to Mr. John Sprague, he cited a case north of Brockville where a separator creamery, in the midst of a group of cheese factories, took milk from the latter when their season was over. To make the butter cost the farmers 2½ cents per lb. and it netted them 19½ cents. They hauled their own milk and got the skim milk back. Discussion showed the view of the convention to be that union or co-operative factories are likely to give place to individual control, the latter being more profitable all round, and better adapted to Ontario conditions.

THE VALUE AND SOURCE OF NITROGEN.

Dr. Thomas McFarlane, Dominion Public Analyst, present with the permission of the Minister of Inland Revenue, explained the nature of the Fertilizers' Act, under which manufacturers are required to state the constituents of fertilizers they put upon the market, and the Department to make analyses and publish statements showing the relative values of the fertilizers, based upon the market values of their constituents. He regarded artificial fertilizers

in the nature of medicines required to stimulate the soil in supplying plants with food. The three chief manurial elements were potash, phosphoric acid and nitrogen, and if the first were worth 4 cents per lb. in the open market, the second would cost 8 and the third 16 cents on a rough estimate. Nitrogen was then the most costly and important element for consideration, and it went to make up muscle and cheese, but was not appreciably present in butter; hence a farmer could sell butter without impoverishing his land. Nitrogen was most abundant, constituting four-fifths of the atmosphere. As atmospheric pressure amounts to 15 lbs. to the square inch the value of the nitrogen pressing on one square foot was about \$288, estimating at 17 cents per lb., so that on 100 acres it would amount to a fabulous sum. How to utilize this vast store of fertilizing wealth was the farmer's problem. A German on a poor, sandy soil that failed to grow crops found that by applying cheap potash salts to one of the legumes he was able to produce large and profitable crops, and thereafter his rotation was nitrogen collectors one year and nitrogen consumers the next. Leguminous crops are such as clover, beans, vetches, lentils, etc., which have the power of appropriating nitrogen from the air under certain conditions, and storing it in their roots, stalks, etc. A certain part of the nitrogen, for instance, of a clover crop, on being fed, went to support the cow and make milk, but about 80 per cent. went into the manure. Nitrogen is not only hard to catch, but very ready to escape again into the air unless absorbents like land plaster are used in the stable gutter, or to trickle away in a yellow stream when the manure pile was exposed to rain and snow.

President Derbyshire warned farmers against leaky stable floors, or using lime or ashes instead of land plaster for manure gutters.

AN OLD DAIRYMAN'S EXPERIENCE.

Mr. John Sprague, of Ameliasburg, after a good many years' experience heartily endorsed the silo and ensilage in order to increase the capacity and profits of a dairy farm. He did not believe in trying to couple beef production with a butter cow. In buying milk he always considered its quality. In preparing for corn he recommended deep fall ploughing, the gang plough in spring, thorough pulverizing of soil, the use of a common grain seeder, with all but two spouts stopped for sowing, cross-harrowing when the corn plant appears, and thorough cultivation all season. He heartily endorsed winter dairying.

POINTS ON CORN CULTURE.

Prof. Jas. W. Robertson, Dominion Dairy Commissioner, said he had the reputation of being a "corn crank." It was a grand crop for Ontario, being hardy, free from disease and parasites. Corn being a deep feeding plant did not lessen the power of the soil to grow shallow or surface-feeding plants, though it requires plenty of manure itself. In addition to points on cultivation mentioned by Mr. Sprague, he advised deferring planting for a week if need be in order to get the soil in extra order and to escape early frost. He would plant from 18 to 25 lbs. of seed per acre, and give the plants plenty of room. In addition to the Mammoth Southern variety he recommended for this section of Ontario, Pearce's Prolific as an early variety, and Thoroughbred White Flint as both early and prolific. Corn should be wilted one or two days before being put into the silo. Corn cut too green made sour smelling ensilage. A cow fed on ensilage, with a proper grain ration, would give one quarter more milk the following summer. At the Tuesday evening session a town glee club and orchestra furnished music, speeches being delivered by Mayor Janzen, Mayor-elect Staebler and Mr. Snyder, M. P. P.

Mr. Moses Moyer, from the standpoint of an extensive Toronto butter dealer, said he had customers that he dare not offer more than one out of 100 samples of farm butter. Good butter was in demand at 23 cents, but a low grade article was not wanted. He advocated the creamery or butter factory system as against private dairying. Coarse salt should never be used in butter making, nor turnips used to feed the cows.

IMPORTANT WORK FORESHADOWED.

Prof. Robertson said the work of the Ontario Creameries' Association was invaluable, and, as indicating what had yet to be done, he pointed out that while ninety-nine per cent. of our cheese was made in factories, only two per cent. of butter was so produced. Practically the English demand was unlimited for fine butter. Canada could produce better butter than Denmark, because corn ensilage was a superior food to sugar beet pulp. He explained the work of the Ontario Agricultural College and outlined the Dominion Experimental Farm system. All over Canada he found that the farms carrying the most cows were making the most money, and the best kept cows were giving the largest returns. In Quebec the Government next season expected to pay half the expenses of fifteen properly qualified, and duly authorized travelling dairy instructors. He also foreshadowed the probable establishment by the Dominion Government of two experimental dairies in Ontario, and one each in the other provinces. In these, during the summer, standard and fancy cheese could be manufactured, and experimental work carried on, but in winter they would be conducted as butter factories. The Government would doubtless undertake to bear the loss on trial butter shipments to Britain till a trade was established. Makers or farmers in the locality or from a distance could visit these experimental factories, so that each might become a centre of dairy improvements. Success being demonstrated, it would not be long before other factories, making cheese in summer and butter in winter, would begin operations. However, as half the butter of the country would for some years to come be made in private dairies, something should be done for their improvement, and he suggested that skilled makers with a travelling wagon and butter-making kit, go from one locality to another in every dairy township, holding meetings of farmers and their families, at which butter would actually be made and the whole process explained. As an immediate move, he recommended the women to "strike" work of all kinds till provided with a proper milk house, churn and other appliances. Passing on, he advised farmers against slaughtering all the calves, especially when good beef was in such demand all over the world. The raising of good calves, horses and hogs could be profitably coupled with dairying, and sheep should not be neglected. Having specially described the ideal dairy cow, which the farmer must select according to the work he has in view, Prof. Robertson emphasized the importance of well-ventilated stables, the immediate removal and setting of milk on being taken from the cow. As a grain ration for winter butter-making, he recommended: Pease, 2½ lb.; barley, 2½ lb.; bran, 2 lb., and oil cake or cotton-seed meal, 1 pound, given daily in two feeds. The finest dairy salt, having a velvety feel, should always be used for butter at the rate of about 1 oz. to the pound. He told how to build a cheap, durable silo of rough boards, tar paper and dressed lumber inside. Speaking of winter dairying, he said it was not hostile to summer dairying. The cow that ran dry in the winter would not milk as well in the summer as if the flow had been kept up about ten months. Heifers should be made to milk ten months the first season. Farmers should raise their own cows instead of buying. Cream should be kept cool till the day before churning and then be warmed up to 70 degrees, with a little sour cream or milk (not butter milk) added to develop acidity. In that way the farmer need churn but once per week during the winter season. Referring to the grand work of the Creameries' Association, he said it originated in the persistent advocacy of such an organization at the dairy meeting in Woodstock just five years ago by Messrs. Hannah and Moyer.

CREAM CANS AND BUTTER PACKAGES.

Mr. Aaron Wenger's advice was to use cream carrying cans so constructed as to be non-conductors of heat and cold. He recommended tinned butter tubs for export trade, and white-wood, paraffine-wax lined packages of various sizes, according to demand, for the domestic trade. The difference found in testing cream was due to the varying conditions under which it was raised. Patrons should never attempt to