

\$2.50 to \$3 per acre, and some years the graziers made a profit, and sometimes sustained a loss. We might put the revenue of such a farm at \$300 to \$400 per annum. On another farm, where grain was raised for sale, and a hired man kept in summer, the revenue was \$700 to \$900 per annum per 100 acres, depending upon the season and the price of grain.

On another farm, where no stock was kept in summer, but beef cattle finished in winter, two men were employed in summer and one in winter, and the annual revenue was \$1,500.

On a fourth farm, where pure-bred cattle were kept, the annual revenue amounted to \$2,200 to \$2,400 a year. The fifth farm cited was a dairy farm, where the stock was cows and swine. Three men were employed here the year round, besides the man on the farm, and the revenue was \$4,000. The principle deduced from these illustrations was that the greater the amount of labor judiciously applied, and the better the system of cultivation, the greater the returns. The extra labor was well rewarded.

He cited the case of Mr. Dietrich, of Pennsylvania, who, starting on a fifteen-acre farm near Philadelphia, which at first would not carry two head of cattle and a horse, raised its productiveness by rotation and good methods, till he was able to keep thirty head of cattle and two horses, and sold hay besides. With more labor, more knowledge and better practice, Canadian farmers could easily produce 200 million dollars' worth of dairy products, instead of the 100 millions now constituting our estimated output. There is a great future ahead of this country. We are destined to be a great dairy nation; but one of the prime essentials to this end is better summer feeding of the cows.

#### DAIRY EDUCATION.

Dairy education is that training which enables one to do his dairy work in the best possible manner, said Prof. R. A. Pearson, of Cornell University, Ithaca, N. Y., who, by the way, made one of the most favorable impressions of all the many experts who have come to us from the other side of the boundary. Breezy, cordial and hearty, without palaver or bombast, his remarks struck a true note from the start. The problems of dairy education are similar in both countries. Here, as there, we have a large number of successful dairymen, also a large number of unsuccessful ones, and many on the fence. There are a large number of people who want dairy education, and a large number of people who seem to have conscientious scruples against learning anything. With these, the only thing to do is to wait till they holler, and then stick it in quick. Sooner or later, they always do holler. The number of those who want dairy education is increasing, however, and one of the reasons is competition. In the old days, when transportation was poor, it made little difference to A whether B made cheese better or worse, because B couldn't get his cheese to A's customers. To-day, if A does not turn out the right class of goods, B will take the market from under his feet. We're coming up. The man who knows detail, and works out his knowledge, is going to succeed.

To-day there are liberally-equipped dairy schools all over the United States, and funds provided freely for carrying on the work thereat. At Cornell University there is a dairy building costing \$100,000. Pennsylvania has another costing the same. So they range: Wisconsin, \$80,000; Iowa, \$65,000; Minnesota, \$40,000; and even South Carolina has one costing \$15,000. The great phase of dairy work at these schools is the short-course work. One State reports that 3,000 young men have attended its dairy school since the Chicago Exposition; others, 2,000, 1,200 and 1,000, respectively. The character of the courses is changing yearly. Whereas each student used to be given a fixed programme of study, now they are offered opportunity to specialize in any one of numerous branches.

#### EFFECT OF FEEDING.

There are fifty-five places in the United States where one can go for dairy instruction, also forty State dairy associations, besides the National Dairy office, and a good number of dairy papers. The Farmers' Institutes are introducing innovations, and he was recently at an Institute held in a dairy barn. We must pay more attention to fresh air, comfort and good feeding. He cited an experiment conducted years ago at Cornell, when an ordinary farm herd belonging to a poor feeder was purchased by the station, fed for one year by the owner, then for two years at the College, and then another year by the owner, and careful records kept of production. In the two years at the station, the cows averaged nearly double the yield that they gave in the farmer's hands, besides improving greatly in condition.

#### THE FACTORYMAN IS THE KING PIN.

Then, among the agencies of education are the boards of agriculture and boards of health, but the greatest influence of all is the unorganized force of example. And, of course, the factorymen are of the utmost importance. The makers have it in their hands to do more to uplift dairying than any other force that's working. At Cornell, Dr. Publow (a Canadian, by the way) sets his students at work making cheese from different vats of milk. When it comes to test whey, one sample will test .12 per cent. butter-fat; another, .32 per cent. Same milk in each case, simply a difference of men. The man who is enthusiastic in his work is not the one who complains about drudgery. Prof. Bailey says drudgery is under a man's hat. Get interested. Every factoryman should be an aggressive but modest dairyman, and a center of dairy education. Let him talk ventilation, sanitation, feeding, anything at all leading to better practice.

#### SANITATION AND TUBERCULOSIS.

He cited a tuberculosis experiment with twelve cows, of which eight were sound and four affected with tuberculosis. Four healthy and two diseased ones were put in each stable, and the diseased ones changed back and forth so as to expose each set of healthy cows equally to infection. One stable was light, ventilated and sanitary; the other unsanitary. At the end of seventeen months, the twelve cows were killed. In the sanitary stable, two of the originally sound cows had contracted the disease, and showed slight affection. In the unsanitary stable, the whole four were in an advanced stage of tuberculosis. It was a difference of stables. Talk cow records, feeding, fertilizers; above all, talk clean milk. Years ago, we knew that cleanliness in the dairy was important. To-day, we know why it is important. It is because dirt, manure, straws, dust contain myriads of bacteria, which get into the milk and work mischief. Bacteria are minute. One would have to be magnified two hundred thousand times to make it six inches long. It is the number of them that makes them troublesome.

#### 1,500,000 BACTERIA ON A FLY.

A Connecticut professor caught 100 flies in his house, and put them in sterilized water; then, by counting and calculation he found that on each fly there were 300,000 bacteria, whereas his wife felt very much ashamed. He went to the cow stable and caught another hundred, on which he found 800,000 bacteria per fly, and his wife felt better; thence to the pigpen, and found flies bearing 1,000,000 bacteria apiece. He then foraged about the swill barrel, and captured flies that averaged 1,500,000 bacteria per fly. A few bacteria are nothing to speak of, but take a million times a million, and you have something. It has been said that civilization is marked by the extent to which science is made a part of our daily lives. So, with this in mind, he urged all to work for the uplift of the dairy industry, always believing that the last wayward brother will be brought into the camp of dairy science and practice at least by the millennium.

#### POINTED ADVICE FROM THE BUYERS.

Addresses were made by A. A. Ayer and H. A. Hodgson, cheese merchants, Montreal. Mr. Ayer remarked that there are but four Montreal houses in the cheese business that were in twenty-five years ago, and only one that was in it forty years ago, and he could count thirty or forty failures in that time. The basis of making good cheese or butter is cleanliness. The remedy for tuberculosis is good stabling, with sunlight and fresh air. He cited one case where a woman was able to keep thirty cows on thirty acres of sandy land. She grew a good deal of corn. He thought the cheese factories were missing a great deal of help by not asking Mr. Barr to examine and criticize their cheese, except occasionally in case of a dispute over the grade. He could give them many suggestions, and the buyers would open their warehouses freely to him. Mr. Ayer was a crank on cool-curing. For ten years, their firm has had cool-curing rooms, and while the cool-cured cheese do not always command a premium in price, there is a big advantage in that their cheese rarely or never go back on them. He recommended that small factories sell their cheese once in two weeks. On behalf of the merchants, he asked the co-operation of factorymen in securing lower freight rates, a better class of bills of lading, better cars, a census of the cows in the Dominion, of butter and cheese production, and a correct return from railways and steamboats of the receipts and distribution of cheese at Montreal.

Mr. Hodgson hoped the Dairymen's Association would legislate against whey butter. He had never seen first-class butter made from whey. Even if it seemed all right on bread, it was pungent when spread on toast, and it will not keep well. Start making whey butter, and the creamery industry will suffer. Leave in the whey what little fat there is, and obtain better returns by feeding it to hogs. As the Hon. Senator says, it will make the pig's tail curl once more.

#### THE PROVINCIAL MINISTER OF AGRICULTURE.

Hon. Nelson Monteith, Provincial Minister of Agriculture, speaking before the overflowing audience on Thursday evening recalled that here was cradled one of our first efforts at municipal government, a system unrivalled in the world. Quality tells in people as well as in food products. This Province has been and must be peopled with a high class of citizens. He sometimes felt that memorials should be planted at nearly every crossroad in old Ontario in honor of our pioneers. In the newer parts of Ontario to-day are pioneer conditions vastly different from and better than those which confronted our forefathers. We have a great unoccupied area of 16 to 20 millions acres of excellent land in the northern part of this Province, which will be thrown open under conditions that will afford favorable chances for the settler, and we want our own sons to settle there. Men of good stock, imbued with our own ideas of freedom, are worth thousands of those with no idea of what freedom means.

The Eastern and Western Dairymen's Associations he looked upon as two of the strongest auxiliary forces working in unison with the Agricultural Department. He paid a warm tribute to the efforts of Messrs. Publow, Mitchell and Hens, and also expressed a sort of paternal interest in the staff instructors driving the back concessions.

The dignity of a calling is its utility. In England, at the Royal Show, he was struck with the interest displayed in agriculture by all in the country, by the King and the aristocracy. We want to bring

about such conditions in Canada that the title "landowner" will stamp him who bears it as a man of affairs, and that manufacturers and others who have attained affluence in the cities will seek the farm. With improved postal, telephone and other facilities, and, before long, he hoped, rural-mail delivery, we may expect that the name of farmer will impress all of us with a sense that his is a comfortable business in which to be engaged. The speaker himself had never yet felt that farming was drudgery. He had come to sympathize with the lad or man who has nothing to do. The joy of overcoming obstacles is one of the greatest given to man. Referring to the new system of dairy instruction and sanitary inspection, he owned to some fear, when the plan was decided upon, but was glad it had worked out so well. We would be certainly disloyal if we shrank from doing our duty once we knew it. He concluded with a commendation of the Women's Institutes, and struck a universally responsive chord by saying that it is not enough that our homes be equal to those of any other land. We want them better.

The concluding session of the convention was held on Friday morning, when a discussion of creamery subjects was led by a paper by J. Stonehouse, on "The Creamery Outlook." This, with the discussion, and one or two other articles, we must hold in reserve for later use. Resolutions and officers follow.

#### RESOLUTIONS.

That this convention urge upon the Dominion Government the desirability of taking a census of cattle (cows), and the make of butter and cheese, both in factories and on farms throughout Canada.

That this convention of dairymen would strongly urge upon factorymen the necessity of branding, consecutively, each vat of cheese with a designated number, the same number being placed upon the boxes as upon the cheese, in order that a fair and proper inspection of each shipment of cheese may be made, both by the buyers and the official referee at Montreal.

That we urge upon the Dominion Government the desirability of taking such means as may be necessary to insure correct returns from the railways and boats of the daily receipts and shipments of butter and cheese into and from Montreal, and that the same returns be handed in to the Board of Trade daily.

That this Association desires to express its gratitude to the Hon. Nelson Monteith, Minister of Agriculture for the Province of Ontario, for taking over the entire work of inspection and instruction. We believe that the good results which have followed have fully justified the Government's action.

#### OFFICERS FOR 1908.

The officers of the association for 1908 are practically the same as in the year past: Hon. President, Hon. Daniel Derbyshire; President, J. R. Dargavel, M. P. P.; First Vice-President, Henry Glendinning; Second Vice-President, John H. Singleton; Secretary, R. G. Murphy; Treasurer, James R. Anderson; Auditors, F. W. Brenton and J. A. Kerr. Executive Committee—G. G. Publow, J. R. Dargavel, D. Derbyshire, Henry Glendinning, James Whitton, Edward Kidd, James R. Anderson, T. A. Thompson, J. H. Singleton, R. G. Murphy. Directors—John H. Singleton, Smith's Falls, Renfrew Co.; Neil Fraser, Vankleek Hill, Prescott Co.; Edward Kidd, North Gower, Carleton; John Carscaden, Russell, Russell; John McGregor, Alexandria, Glengarry; Leslie Foster, Newton, Stormont; C. F. Whittaker, North Williamsburg, Dundas; Jas. A. Sander, Kemptville, Grenville; John R. Dargavel, Elgin, Leeds Co.; D. Derbyshire, Brockville, Leeds Co.; T. A. Thompson, Almonte, Lanark; Joseph McGraw, Mount Chesney, Frontenac; W. J. Paul, M.P.P., Tamworth, Lennox and Addington; Jas. Whitton, Wellman's Corners, Hastings; T. B. Carlaw, Warkworth, Northumberland; G. A. Gillespie, Peterborough, Peterborough; Henry Glendinning, Manilla, Ontario, Durham, Victoria, Haliburton; Jas. R. Anderson, Mountain View, Prince Edward; G. G. Publow, Kingston, Ontario; R. G. Murphy, Brockville, Secretary.

#### ONTARIO DEPARTMENT OF AGRICULTURE.

##### FARMERS' INSTITUTES.

Regular winter meetings of the Farmers' Institutes are now on in full force, and being attended by large numbers, who are showing very great interest. Some of the comments made by delegates who attended the November and December meetings of 1907 are very interesting, and extracts are quoted below:

"It was my privilege to attend five meetings in the vicinity of Lindsay, one of the best grain-producing districts in the Province. I was associated with Mr. F. H. Reed, B. S. A., Specialist in Agriculture, and Dr. Annie Backus, who met with the ladies at the Women's Institutes."

"I must say that the meetings were among the most successful I have attended in the Province, both in attendance and interest. The questions relating to the soil, involving grain-growing, drainage and weeds, were mostly the subjects for discussion. It would appear that the day was coming back when local talent would be in great demand, judging from the attitude of fellow farmers in listening to what local men had to say."

"It cannot be denied but that the Farmers' Institute is continuing to do most excellent work, and it should always find a place in our farming economy."

"Farmers now, more than ever, should meet together and discuss not only farm economics, but co-operation in putting the products of the farm on the