

culture. One of the most important changes was provision for a greater representation upon the board of directors. This necessitated the division of the eastern part of the Province into 18 districts, in each of which a special dairy meeting is held at some point, determined by a committee appointed for that purpose. At these district meetings a representative is selected by the dairymen in attendance. These selections, approved by the association in annual convention, constitute the board of directors for the ensuing year. This gives a larger directorate than formerly, but the plan has worked very satisfactorily the past year.

The membership for the year was 245. This number is very much less than it should be, for in the territory covered it is considered that there ought to be at least as many thousands as there now are hundreds.

MAKING BUTTER FROM WHEY.

A new phase of dairy practice was introduced in a few of the factories of the Brockville district last season, viz., the manufacture of butter from whey, but it has not yet become general, and the association is not prepared to recommend it. They have looked into the matter far enough to be able to say that small cheese factories cannot add a plant and manufacture whey butter at a profit.

SPREADING THE GOSPEL INTO NEW QUARTERS.

Between 175 and 180 factories received instruction last year that had never had it before, said G. A. Putnam, Director of Dairy Instruction, and Superintendent of Farmers' Institutes. The change in the system by which the Provincial Department of Agriculture gave all the instructors authority to act as sanitary inspectors, and directed them to visit all factories, abolishing the annual fee heretofore charged by the Dairymen's Association, has worked well, and tended to bring about a more hearty co-operation than ever among patrons, makers and buyers. The reports received have been very favorable to the new plan, though he was satisfied that public opinion would back up the Department in a somewhat more aggressive attitude next year in regard to insisting upon further improvement of the sanitary conditions under which milk is produced and manufactured.

A prominent feature of the departmental work this winter is the sending of speakers, on application, to a good many hundreds of the annual business meetings of the factories, it being stipulated that the speaker thus sent be allowed a favorable opportunity of speaking at least three-quarters of an hour. At these annual meetings, when the patrons' business methods are discussed, there is a large attendance of those who would not attend a meeting called merely for educational purposes, and a vast amount of good is being accomplished in quarters where it is badly needed.

ADDING A FEW STRINGS TO THE BOW.

The regular Farmers' Institute meetings are also a valuable means of dairy education, and while in Eastern Ontario it is always arranged to send at least one man who is a dairymen, it is necessary that this work cover a wide field. While dairying is properly the leading phase of farming in the East, he suggested the wisdom of combining some other lines with it as adjuncts, and referred to one young farmer in Eastern Ontario, who, after leaving the Agricultural College, went back home and undertook to weed out his cows by churning their cream separately, the Babcock test being not then in vogue. By means of this somewhat laborious method, he succeeded in weeding out his herd, so that in twelve years he had increased the average yield of butter-fat by 100 pounds per cow each year, which meant an increased annual income of \$900 from his herd. He also planted an orchard, and kept seventy-five or eighty head of poultry, and this past year, which was not very favorable for dairying, he probably has made more out of his orchard than out of his cows.

LOCAL FARMERS' OR DAIRYMEN'S CLUBS.

As to further improvement of dairy conditions, the people must look to themselves. He urged the delegates not to depend upon the stimulus of one annual convention, but, to form local farmers' or dairymen's clubs, for the discussion among the members of difficulties and problems. Many of the most prominent agriculturists of the Dominion attribute their success in public life to the advantages of such local organizations in their youth. The Provincial Department of Agriculture is issuing a leaflet on the formation of these clubs, which will be free on application. All that is necessary is for some leading spirit in the community to call in his neighbors and organize one. Papers may be read, addresses given, or articles from agricultural journals read to start the discussions. The Women's Institute has grown in three or four years from an annual membership of three thousand to eleven thousand, and their remarkable strength and growth he attributed to the fact that almost from the start they have made a feature of monthly local meetings, conducted by themselves, with comparatively little help in the way of outside talent.

COWS ABOVE AND BELOW AVERAGE.

There were, roughly speaking, three times as many co-operative cow-testing associations in 1907 as in 1906, said C. F. Whitley, of the Dairy and Cold-storage Commission's Branch. Fifty-two associations, comprising 870 herds, tested over 9,000 cows, and the interest of the co-operators was keener than ever before. At the suggestion of the Department, occasional meetings of members were held to discuss the records of their cows and herds. The cow-testing results, as collated and tabulated, afford opportunity for three distinct lines of

comparison: 1st, comparison of herds in various districts; 2nd, comparison of herds in the same district; and, 3rd, comparison of cows in the same herds. The great object is to afford a study of the individual animals of each herd, and lead to the development of strains of good producers.

He gave a few figures to illustrate the difference among herds in various localities. Taking the average six-month yields of 240 cows in two associations, one in Oxford and one in Victoria County: In the former case the average yield was 4,793 pounds milk and 165.3 lbs. fat, in Victoria it was 2,724 lbs. milk and 99.2 lbs. fat, a difference of 76% in favor of the former. This was not due to better crops, for in this particular section of Victoria County crops last year were good. The trouble was attributed to the fact that they kept a scrub bull. Numerous similar instances could be cited. Over and over again, ten cows have been found doing the work of twenty others.

THE \$3,500,000 SHORTAGE OF THE POOR COWS.

The "average" cow is, of course, a mathematical proposition, but taking the records of the 9,000 cows under co-operative test, it was found that in every month practically one-half fall below and one-half exceed the average production of the whole. If of the million cows in Ontario, the poorer half could be brought up to an average yield, their product would add \$13,500,000 more to the value of the dairy output.

Mr. Whitley assured his audience that he was not quoting extreme cases. In many associations each month there were scores of cows yielding 180 pounds less than the average for the association. He then quoted some figures, comparing the poorest and best cows in a representative herd in a 11-months' testing period:

	Lbs. Milk.	Lbs. fat.
13 cows averaged per cow in 11 months.....	3,886	180
The 4 best cows in the herd averaged in 11 months.....	4,562	216
The 4 poorest cows in the herd averaged in 11 months.....	2,721	135
Average difference in yields of best and poorest.....	1,841	81

The average difference in value of products of best and poorest cows, \$26.40.

He had seen a statement somewhere to the effect that some dairymen were content to milk a cow nine times for one cent of profit. No system of farming is complete that does not record profit and loss accounts. Intensive agriculture and dairying, dense population, high development of industry and high development of agriculture and horticulture naturally go hand-in-hand. Close about the outskirts of Paris there are 2,000 acres rented at an average annual rental of \$150 per annum, and there are gardeners there who sell produce to the extent of \$1,000 per acre, not by producing rare crops, but by securing immense yields of ordinary vegetables. On the Island of Jersey, with its 28,000 acres all told, and a trifle of 11,000 acres of arable land, 12,000 head of cattle are maintained. In Canada we have about one cow for thirteen acres.

NET PROFIT AND TOTAL YIELDS.

In comparing net profit of cows, it is not fair to consider only cost of feed. We have to consider also the interest on her value, annual depreciation in value, housing and taxes, and cost of caring for her, crediting her with the value of the manure. He submitted the following as a fair basis of calculation:

Interest and taxes.....	\$ 3 50
Depreciation.....	8 00
Interest and taxes on buildings.....	8 50
Cost of care.....	12 00
Total.....	\$27 00

Deducting the value of the manure, this would leave \$21.00. He then called attention to a tabulated comparison of two cows, one good and one average:

Cow No. 1—Total value of product.....	\$99.55
" 2—Total value of product.....	56.85
" 1—Value of product, less cost of feed (\$30.00).....	69.55
" 2—Value of product, less cost of feed (\$30.00).....	26.85
" 1—Value, less feed and other expenses (\$21.00).....	48.55
" 2—Value, less feed and other expenses (\$21.00).....	5.85

In other words, while the difference in total value of product is about 75%, the total net profit of the good cow was 8 3-10 times as large as that of the average cow; or, in other words, to obtain \$1,000 net profit one would need 20 cows like No. 1, or 171 cows like No. 2.

ALFALFA HAY PRODUCED FOR \$2.00 PER TON.

For profit in milk production we must have cheap, bulky and succulent feed, and we must also have in the ration a generous proportion of protein, said Henry Glendinning, of Manilla, Ont., in his highly-appreciated address on feeding the dairy cow. Corn silage is cheap, bulky and succulent, and an excellent food for economical milk production; but, in order to get good results, we must use with it some feed high in protein.

In the past we have used wheat bran, but at present prices of \$23 to \$28 per ton (the latter figure being cited by one man in the audience), bran is too expensive, and a substitute must be found. Alfalfa is the ideal substitute. Alfalfa hay contains nearly as large a percentage of protein as bran, the figures being about 11 per cent and 12 per cent., respectively; and the results in feeding substantially accord with the analysis. The question, then, is what does it cost to produce this hay? On his own farm, he is able to raise it for an average of \$2 per ton, allowing an annual rental of \$4 per acre for the land. He submitted figures based upon actual experience. Taking the first cutting of three tons per acre from an eight-acre alfalfa field, he had the following bill of expense:

Rent for one year.....	\$32 00
Cutting (ten hours, man and team).....	3 00
Tedding twice (9 hours).....	2 25
Raking (4½ hours).....	1 15
Cocking and turning out cocks.....	5 00
Hauling (two teams and four men one day).....	8 00
Man in mow (one day).....	1 50
Horse and boy on hay fork.....	1 00

\$53 90

Counting in the second and third cuttings (this year's rent having been fully allowed for in the estimate on the first cutting), he had 42 tons of hay produced and put into the mow for \$1.80 a ton; the two-dollar estimate thus allowing a margin of 20c. for contingencies. Now, according to calculations, a daily allowance of 20 lbs. of this hay will contain as much protein as 18½ pounds of bran, or, in other words, a feed of alfalfa hay, costing about 2 cents to produce, will take the place of 19 4-5 cents worth of bran. As to its effectiveness for dairy purposes, on New Year's Day he was in his own stable, and his herdsman pointed out one Jersey cow which freshened the end of June, and in July gave 28 pounds milk per day. On New Year's Day she gave 25 lbs. This cow's average test of butter-fat, by the way, was 4.4 per cent. in July, while in December it was 5.2 per cent. While the difference in test is not accounted for by the feed, it is noteworthy that the cow yielded more butter at New Year's than on pasture just after freshening in July. This cow's winter ration was corn silage, oat straw, about 15 pounds mangels, and all the alfalfa hay she wanted to eat, with not a bit of grain or bran, except the corn in the silage. It is true this cow is an unusually persistent milker, but the sustained mid-winter yield, on a ration of silage, roots and alfalfa, without grain, is striking proof of the value of alfalfa hay for balancing up a ration of corn silage.

The idea is particularly valuable in Prince Edward County, where large quantities of sweet corn are grown for the canning factories. About two tons of ears per acre sell for \$18, and the balance of ears and stalks may be ensiled and used to excellent advantage, along with alfalfa, for winter production of milk.

THE UPLIFT OF THE HOME.

Within the past twenty or thirty years, farming has almost completely changed, said C. C. James, Deputy Minister of Agriculture for Ontario, in his address on Wednesday evening. During this time, agriculture has evolved a science as distinct as that pertaining to any other line of work. It now has its books, its journals, its colleges, with experiment stations for research, its organizations, and numerous facilities for help. But, gradually, we have discovered that instead of the people flocking to these sources of information, it was necessary for the emissaries, the enthusiasts, to go out from the associations and the colleges to the farmer—another case of Mahomet being obliged to go to the mountain. More recently the further discovery has dawned upon us that these influences were reaching only the elderly men and those of mature years, many of whom are past the stage where they can receive the greatest help and stimulus. We have been working over the heads of the young men, whereas the time to mould, educate and direct a person to a calling is in youth, while he is in the educative and pliable condition. In order to make the progress we should in agriculture, we must get hold of the young men and boys.

Finally, we have made another discovery. We have at last perceived that the farmer has a wife and a daughter, whereas we had regarded him as if he were an old bachelor. The home is the center of the farm and of the life of the country, and in nearly every farm home there is a wife and one or two daughters. At last, through our Women's Institute system, we are reaching out to assist them, and the progress of the Farmers' Institutes is nothing compared to the way the Women's Institute work has gone ahead. The farmer's wife and daughters have found out for the first time that, outside of church circles and the old-fashioned sewing bee, there is something coming into their lives that promises hope and progress and help. In this movement he has found an element of hope such as he cannot find in any other organization. It gets into the center of the farm life, and leavens the whole lump. Home life and home work are the matters of most consequence to-day. The church is important, the school is important, but if the home life is neglected we need not expect any of our other organizations or movements to effect their full fruition.

THE FARMER COMING INTO HIS OWN.

In the old days, said Hon. Sydney Fisher, Minister of Agriculture for the Dominion, our farmers were disunited, each struggling with his own problems and