THE FARMER'S ADVOCATE.

DAIRY.

104

Questions for Factorymen.

We have sent out the following questions to a few cheese factories that paid their patrons last season by the Babcock Test. Not having the ad-dresses, we were unable to send to them all, and therefore take this opportunity of inviting every one who tried the test system to send in the result of the experience gained, whether satisfactory or otherwise. Others will be trying the plan this year, and practical information along this line will be helpful. What we desire is a perfectly frank and impartial discussion of the subject. As active preparations for the season's operations will soon begin, replies should be in at as early a date as possible. The questions are as follows :

1. Do you find the test an improvement on the pooling" system, and if so, for what reason?

"pooling" system, and if so, for what reason. 2. Will you continue it this season, and if not, for what reason?

3. What method do you follow in taking and preserving samples of milk?

4. How often do you test, and what points do you deem needful of special care in making the tests

5. By whom is the expense borne, and what would you say is a fair estimate of the expenses per patron for materials, extra labor, etc.

6. Do you prefer having the maker do the testing, or would you favor one man doing the testing for a group of factories?

Western Dairymen's Association. (Continued from Page 88.)

A spirited discussion followed, in which Mr. Gould stated that Virginia corn would do well in Minnesota, and he did not see why it would not do well in Ontario. He would allow the corn to stand until it was past the boiling stage. He fed ensilage to all his animals—fattening steers, lambs and colts. His ration for milkers was fifty pounds ensilage, five pounds ground wheat and shorts, and

five pounds hay. Prof. Dean then read an interesting paper on the factory, to which composite milk testing in the factory, to which we have already referred. He outlined the differ-ent methods of making the test, and gave many practical hints to cheesemakers.

PRACTICAL EXPERIENCE ON A FARM.

"My Experience and Practical Results of Farming 120 Acres of Land for the Past Four Years was the subject of a thoroughly practical address delivered by Mr. D. M. McPherson, of Lancaster, Ont. He set out with the text that farming as a rule does not pay. If the professors who give us our theories could show us how the farm could be nade more profitable they would have accom-plished much. Farming could be made to pay if those engaged in it went about it properly. He then proceeded to give the results from his own experience. His farm was composed of 120 acres of lightish land, which had been cropped for about sixty years, and for a part of this time had been rented. Four years ago, when he took hold of the place, it was very poor and run out. His first move was to reconstruct the buildings, and to erect silos, so as to render them better fitted for the produc-tion of mill, park and hoof tion of milk, pork and beef.

He then gave the items from his last year's books, which showed a profit of \$1,200 for the year, which had all been obtained by hired help. This help, he said, was worth \$2 per day to him, while he only paid on the average \$1,00 per day. His profits were largely due to a definite plan of work, and owing to lack of system about the laying out of work he thought that the average farmer received less than a dollar per day for his work. Farming could be made to pay, and pay well, even if the farmer had to hire all his help, if he only applied the same business methods to his work that the manufacturer did. The best means of increasing the fertility of the soil is by the purchase of animal foods; he had used both commercial fertilizers and city manure, and had come to the conclusion that they were both too expensive, and would not pay except under special circumstances. Every stable should be looked upon as a fertilizer establishment. He then showed in a very significant manner how when we increase the product of an acre that we decrease the cost in the inverse ratio. He proposed the establishment of small model farms in different parts of the county, one for each county, or, perhaps, even for each township. These should be object lessons to the farmers in the vicinity, who could thus see scientific methods applied on a paying basis. The Provincial Government were spending large sums of money on dairy men's conventions, agricultural societies and farmers' institutes, while the Federal Government was spending equally large sums upon experi-mental farms, but there was such a wide gulf between these and the farmer that he would be drowned if he tried to reach them. What the farmers wanted were small farms, where they could see and profit by the application on a paying basis of business principles and scientific methods In the discussion which followed, Mr. McPherson stated that he kept all his manure under cover, and drew it out during the winter, putting it in small piles ready to be spread on the corn fields in the spring. What is left over he uses to top dress his

ture, and the poorest land for grain. His rotation is two years pasture, two years corn, and one year grain.

OFFICERS ELECTED.

Upon the recommendation of the nominating committee, the following officers were elected :--President, Andrew Pattullo, Woodstock; First Vice-President, A. F. McLaren, Windsor; Second

Vice-President, John S. Pearce, London. Mr. Geary, the retiring president, then introduced the president-elect in a neat speech, to which Mr. Pattullo replied in a fitting manner. He considered the position of president of a dairymen's association as the most honorable that a man could be selected to fill. He referred to the retiring president and his work of the past year in the highest terms. A vote of thanks was then moved and carried unanimously to the retiring president.

PROF. ROBERTSON.

Prof. Robertson delivered his address on "The Winter Dairy Movement in Ontario," to which we have referred in a former issue. The audience was intensely interested during the entire address, and at the close an interesting discussion took place, in which a member who had misunderstood Professor Robertson in regard to speaking of the maturing of corn for the silo, asked why you should allow your corn to come to maturity and not your hay crop. The answer given was that they should be both cut about the same period of growth, when the seeds are in the milk stage. Corn can be put in the silo a little later than this period and no loss occur, because the juice of the stalk will keep the cobs and grain soft, so that it will be entirely digested, while, on the other hand, if the hay is allowed to get a little too ripe much of the most valuable part, the seed, will be shaken out, and what is left is encased in such a hard, dry skin that the most of it will go through the animal undigested.

Prof. Robertson had found no trouble from the seeds of sunflowers being undigested, the ensilage keping them soft and moist, so that they could be crushed between the thumb and finger.

Plant the sunflowers as early as possible in the spring, which will likely be two weeks before the corn, while the beans should not be planted until three weeks afterwards, as his experiments of the past year show that the beans do better when they are planted alone, and later than the corn.

In answer to a question on the effect of freezing upon cream, he said that he had butter made from cream which had been frozen, and experts had pronounced it better then that from unfrozen cream. His opinion was that frozen milk would do no injury to either butter or cheese if the milk was

ripened sufficiently afterwards. In answer to a question on the safety of feeding ensilage, he said that he would feed cows all the ensilage that they would eat, but would feed five pounds of cut straw with every fifty pounds of ensilage.

Mr. Gould fed, as a rule, fifty pounds of ensilage and five pounds cut hay; this winter he was feeding ensilage alone, and his cows were doing as well as when they were fed hay.

As soon as milk is soured or slightly coagulated the butterfat cannot be taken out by the separator. The only way of securing the butter is to churn it. For this reason it is of the utmost importance that no sour or slightly tainted milk should be taken in at the butter factory. In case of diarrhœa in calves, Mr. Gould advised

the giving of two teaspoonfuls of rennet extract in milk.

n answer to a question as to the best method of keeping butter, he said that he would not advise farmers to hold butter for an advance in price, for the reason that fresh butter always commands the highest price, and the risk of loss through deterior ation in flavor is very great. Senator Read, of Belleville, here addressed the meeting for a short time. He gave a review of the dairy industry in his district from its inception in 1865, when his prize of \$100 to the first factory established under the joint stock plan was won, up to the present time.

proportion in all ordinary factory milk. The proportion was two-thirds pound of casein to every pound of fat. Three per cent. milk contained two per cent. of casein, four per cent. milk would contain 2.67 or 23 per cent. of casein, while five per cent. milk would hardly keep up this ratio, the percentage being but 3.15 instead of 3.30, which the ratio would call for. Five per cent. milk is above the average milk, and in any case the variation was so small that it need not be taken into account, for the additional butterfat would add to the value of cheese. The amount of cheese made to each in-crease in the butterfat of milk is given in the following table.

Prof. Vanslyke was satisfied that for all practical purposes the fat and casein go hand in hand.

The second objection urged against the test is that when the fat gets beyond a certain limit a large amount would be lost in the whey. He then referred to the following table, which was the result of his own experiments, and showed that more fat was recovered from rich milk than from the poorer milk :

Per cent. of Fat in Milk.	Loss of Fat.	Fat in Whey.	Cheese from 1,000lbs.Milk	Cheese from 11b.of Butte fat.
$\begin{array}{ccc} 3 & \text{to } 3\frac{1}{2} \\ 3\frac{1}{2} & 4 \end{array}$.32	9.6 8.5	9.20 10.30	2.73
$\begin{array}{cccccccccccccccccccccccccccccccccccc$.35	5.5 5.9	11.34 13.00	2.37
5 upwards.	.25	6.0	13.62	2.66

Reasons why the old method should be discarded : 1st, Unfair, because it is based on a false assumption; 2nd, The old system offers no inducement for dairymen to improve the quality of their milk ; 3rd, It offers a premium for dishonesty.

The new method should be adopted because, 1st, Fat in milk is an accurate test of its value for cheesemaking; 2nd, Pays for what is in the milk that will make cheese and not for water; 3rd, Does away with all dishonesty.

DISCUSSION.

In the discussion which followed, Prof. Vanslyke said that the smaller loss in the case of the rich milk was doubtless due to the smaller amount of milk used. It was impossible to get a large amount testing a high per cent. He had not found any difference in the loss of fat in different qualities of milk where different amounts of rennet had been used. He did not think, so long as there was a sufficient quality of rennet used, that the amount had anything to do with the loss of fat. The loss of casein in cheesemaking is about one-tenth of one per cent. Dry weather he had found had had a more injurious effect on the casein than it had on the fat. After the fall rains it was noticed that the casein returned to its normal standard.

Mr. Ballantyne thought that this system should be thoroughly ventilated, and that every factory should pay according to the butterfat.

Mr. Parker, Elma factory, said that the Babcock would educate the farmer to take better care of his milk, for if he did not aerate his milk it would not test so high. Where there were complaints about the Babcock from companies, he thought it was more owing to the bad season than the fault of the test. A number here gave their experience in favor of the Babcock test.

Mr. McPherson, who controls about seventy-five factories, did not see how anyone could doubt the good effect of the Babcock. He here gave some examples of where the patrons' milk did not test high, owing to neglect of caring for and aerating the milk. He is using the Babcock in fifteen of his factories

THE NEW VERSUS THE OLD.

Dr. S. S. Vanslyke, Chemist of the New York Experiment Station at Geneva, N. Y., gave the results of the past season's work in experimenting with the different samples of milk, which proved. conclusively the great advantages which the new system of paying for milk had over the old way of pooling it all together. The results given were from two seasons' experiments, in which they had actually handled a million pounds of milk. The common system of pooling all milk for cheese factories assumes that all milk has an equal value for cheese production, but his experiment had shown that the cheese from a hundred pounds of milk will vary from eight to fourteen pounds, which at once disproves this assumption.

Fat and case in are the only constituents of value which enter cheese making. We have a practical and simple method of determining the amount of butterfat in milk, but have no reliable way, except by chemical analysis, of determining the proportion of casein in milk.

Is the fat of milk a reliable indication of the value of milk for cheesemaking? This was the great question that was agitating the minds of dairymen at the present day. His experiments

MR. JOHN GOULD.

Mr. Gould then delivered an address containing an immense amount of information upon the Natal Life of the Dairy cow.

He gave a laughable description of the evolution of the dairy cow of Ohio. The care of a dairy cow should begin a year before she was born. He then gave a few notes from his own farm. His cows were tied in the stable all day; he did not think that exercise was necessary for cows in the winter months, provided they had plenty of air space. Each cowshould not have less then five hundred cubic feet.

He would prefer a clay floor, and had found nothing equal to fresh horse manure as an absorbent. He would have the little calf appear in October. Twenty-six or twenty-eight months of age is early enough for the heifer to come in. He thought that it injured their constitution to breed them before this time.

Put the cows in the stable as soon as the nights begin to get cold. \$5.00 worth of bran is worth \$25.00 worth of dog in coaxing them into the barn.

Put the mouth of the ventilators down to within a couple of feet of the floor. Feed only twice a day. Pump water into a tank in stable, in order day. to get it up to the same temperature as the stable before watering.

INSPECTOR MILLAR'S REPORT.

Mr. J. B. Millar, instructor and inspector for the Western Dairymen's Association, then delivered his third annual report. During the past season he had visited seventy-eight cheese factories and one cheese and butter factory. In the performance of his duties he had travelled 6040 miles by train and had driven 1575 miles. He had tested 3,000 samples of milk, fifty-seven of which tested less pastules in the fall. His best land is kept for what are for him the most paying crops—corn and pas-casein are found in practically the same relative the hard brid information against thirty-five

he ar

TI

M

ST

A

 \mathbf{sh}

SC

ta fa fu fa