THE FARMER'S ADVOCATE.

is an abundance of water at a temperature of 50° F. or under. There will be ample time during February to put up a supply of ice. Do not neglect this.

Talking with a Kent County dairy farmer recently, he said they could get ice delivered in Chatham by rail at sixty-five cents per ton. In localities where there is no local supply of ice, dairy farmers should arrange to have it shipped No matter how it is got, a supply in by rail. of ice should be arranged for, as it means money in the pockets of milk and cream producers.

Let us see how a system of grading and paying an extra price for sweet cream will work out in dollars and cents on an ordinary ten-cow dairy farm, where the average production per cow is 250 pounds fat in a year: $250 \times 10 = 2.500$ lbs. fat, which at average price of 25 cents per pound fat would mean \$625. If by cooling the cream and keeping it sweet, this weight of milk-fat can be increased in value by two cents a pound, the added value of the fat is \$50, or a total of \$675. One of the Toronto creamerymen at the Guelph meeting in December, said they made a difference of from 2 to 5 cents per pound fat, between sweet and sour cream. Suppose the difference were 5 cents per pound fat, we have an added value of \$125, or a total of \$750 for the cream of these ten cows.

How does this figure in value of ice? Let us assume that twenty tons of ice were necessary to cool this cream. On the two cents added value basis, we have twenty tons of ice worth \$50 or \$2.50 per ton. On the five cents per pound fat added value basis, we have twenty tons of ice worth \$125 or \$6.25 per ton. There is scarcely a dairy farm in Ontario where the cost per ton of ice would exceed one dollar. In many cases the cost. is practically nothing, as teams and men are utilized that would otherwise be doing little or nothing, and they need the exercise.

Don't stop to build an elaborate ice-house, but put up at least one ton of ice per cow in any old building that is convenient and if nothing better is available, pile it up under a tree; cover with hay or pea straw and old boards. This will last a long time, if the pile is big enough, and it is well covered and well drained.

Again we would say don't neglect the iceharvest which comes only once a year and is so essential for dairy purposes during hot weather. H. H. DEAN. O.A.C.

Butter Fat and Testing.

1. Will five pounds of butter-fat make six pounds of butter?

2. We are using the oil test in our creamery; all the other factories around are using the Babcock test. Now, if we pay 18 cents per pound butter, what should they pay for one pound butter fat? Please give the difference up to 28 cents. J. W. H. cents.

Ans.-1. Five pounds of butter-fat might make six pounds of butter if there were little or no loss of fat in buttermilk, as I presume J. H. W. refers to "butter-fat" in cream, not in milk. A common rule is to add one-sixth to the fat in milk when calculating the weight of butter which can be made from, or the equivalent of any given

butter. If this latter creamery were making butter containing 82 or 84 per cent. fat, then the difference in price would not be so great.

The table shows the relative prices from 18 to 28 cents per Ib. butter : 1 1b butter-fat

Price 1 lbs, but	ter.	Price	1 lb. butter-fat (80% basis.)
18c			20.25 c.
19c.			21.375c.
20c.			22.50 c.
21c.			23.625c.
22c.			24.75 c.
23c.			25.875c.
24c.			26. c.
25c.			27.125c.
26c.			28.25 c.
27c.			28.375C.
280.	Mar.		29.5 C.
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Bacteria From Straw.

Few dairymen realize the amount of contamination which gets into milk through the dumping of straw, hay and other feeds down an open chute from the barn above to the stable below. At the Central Experimental Farm, Ottawa, an experiment was conducted to ascertain the effect of putting straw down an open chute as against putting it down a closed chute and taking it out at the bottom. When the straw was put down the open chute the number of bacteria per cubic centimeter of milk increased 18,000 as compared with milk taken when the straw was put down a closed chute. In each case the straw was put down after milking, and there was no great amount of dust in the stable as would have resulted if the straw had been thrown down when milking was in progress. This should lead dairymen to take greater precautions in the dumping of feed or bedding from the barn to the stable, and especially where an endeavor is being put forth to produce certified milk or even pure milk, a chute of this kind leading to the stable door and the door opening from it at the floor would surely aid greatly in keeping the bacteria count low

FARM BULLETIN.

Nova Scotia Fruit Growers¹ Association.

Editor "The Farmer's Advocate"

Some of the old standard bearers were absent from the Fifty-first Annual Meeting of the Nova Scotia Fruit Growers' Association, held recently in Middleton. We missed the faces of R. W. Starr, Peter Innes and E. E. Archibald who have been habitual attendants many years, the first named having attended overy year since its organization.

Last year's president, F. W. Bishop, reviewed the vicissitudes of frosts and inclement weather throughout the season as well as the difficulties which they had experienced in marketing during the fall season. Prices were discussed y in Mr. Bishop's address and reference made to the selling agencies in the Province. Mr. Bishop believed that Nova Scotia was still in a position to go on and plant more apple trees. Owing to the compactness of the fruit growing area in Nova Scotia they were in a position to load their apples quickly and land them on European markets whereas the western provinces were somewhat remote and somewhat scattered as regards fruit growing areas. B. Leslie Emslie, fertilizer expert, dealt with the kind, and quality of fertilizers necessary for the orchard. Refering to the scarcity of potash compounds, resulting from the war, he said we could really dispense with potash for a year or two by using in our orchards lime-carrying compounds which would help to liberate the potash dormant in the soil. Ground limestone was considered better than quicklime since the latter would have a fourning effect on the organic matter of the soil. Most of our soils are acid, and lime compounds will correct this acidity. In any case it will not do to use any form of lime in excess, on account of its tendency to use up organic matter. Slag is a phosphate of lime and as such, it supplies phosphoric acid and at the same time corrects acidity. Sydney slag carries about forty per cent. of free lime, and is one of the cheapest and best fertilizers known. Wood ashes as a carrier of potash is good for erchards but should be used carefully on potatoes. Prof. Cumming, in the discussion of this paper, brought out the point that the best rule for the application of any fertilizer was to as't the soil. By experiments we could best find what treatment each kind of soil needed. At the Agricultural College they had found from the analysis of soils iron all over the Province that on the average our soil contained about 3 per cent, of line, while a good soil should have at least 5 per cent. Prof. Cumming also stated that from an-

price 1.125 cents on the 80 per cent. fat basis for alysis he believed that seventy-five per cent, of the soil of Nova Scotia would show an acid r_{θ} action. On the College Farm, splendid results have been obtained from the use of basic slag, especially in the growth of clover.

Prof. Brittain, of the Entomological Department gave a very interesting and instructive talk on the results of the work of that department during the past year. He had spent considerable time in the study of fire blight of fruit trees, Spraying was of no use in control of this disease. The only remedy was surgery. All infected parts must be cut out and burned, and the cuts swabbed with a disinfectant. Also the trees must be constantly disinfected. In the eradication of this disease, heroic measures must be resorted to and the work thoroughly done. The speaker also gave the life history and means of combatting a new pest, or at least one which we had not recognized before, the Falle Tarnishid Plant Bug.

Mr. Brittain was glad to report that owing to the strenuous efforts of the field workers under the department, that the San Jose Scale (had been so reduced as to be practically exterminated, In fighting the aphis he recommended the addition to the spray in which Blackleaf Forty was the active agent of a little flour paste to improve the sticking quality.

Mr. P. F. Lawson, who accompanied the first cargo of supplies for the Belgians and who spent some time in the fruit markets of the Old Country spoke strongly of the necessity of advertising Nova Scotia fruit. He was glad to ind that Nova Scotia apples were rapidly growing in favor. The quality and pack were improving every year since the United Fruit Companies had been handling so much of the fruit and had been putting up a reliable pack under the supervision of its own private inspectors. He mentioned several schemes of advertising and put it to the Nova Scotia Fruit Growers to do their own advertising. In order to do this effectively, he advocated the fruit growers pledging individually a number of barrels of merchantable apples to be sold and applied to a fund for advertising purposes. Pledges were distributed at the meeting and a good beginning was made. The best means of advertising, however, he explained, was the putting on the markets of a steadily reliable good pack

Bee-keeping claimed a session. B. W. Baker, of Amherst, N. S., gave some interesting figures of costs and profits. Mr. Baker winters his blees in a dark cellar and fastens them in with fine netting, to keep them from flying around. Mr. Baker takes all the honey out of the hive in the fall and winters his bees on sugar syrup made up of equal parts of best granulated sugar and water. He had tried different kinds of hive but had finally come back to the eight-frame Langstroth hive. The bees were placed on their sum mer stands in April. Each kind of honey was gathered by itself and no dark honey sold.

Mr. Hogan spoke of the bee as a pollenizer, citing experiments to show that when branches were isolated by being covered with cheesecloth during the blossoming period very few fruits set as compared with the set on the rest or exposed

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number of pounds of milk-fat. A pound of fat cream will make more butter than a pound of fat in milk, for the reason that in the latter no allowance is necessary for the loss of fat in skim-milk, which has to be considered when calculating butter equivalent from fat in milk.

Using the one-sixth rule, five pounds of fat would make 5.83 lbs. butter, which is .17 or seventeen hundredths of a pound less than 6 lbs. butter.

2. It is always somewhat difficult to make comparisons between oil tests and Babcock or fat tests, for the reason that the oil test is supposed to give the churnable fat in cream in the form of butter, whereas the Babcock gives the absolute or total fat in milk or cream regardless of whether it is churnable or not-it might be largely lost in skim-milk or buttermilk with careless manipulation. However, in good creamery prac-tice there is an excess of butter over fat in milk cream, known as "overrun," which in a creamgathering creamery, usually amounts to 15 to 20 per cent.,-that is, 100 lbs, fat in cream, usually makes 115 to 120 pounds of butter, sometimes more sometimes less. This extra 15 to 20 lbs. is called "per cent. overrun."

Coming to a direct answer of query No. 2, there are difficulties in the way, such as moisture, salt and fat in butter, losses in buttermilk, shrinkage on prints or in cold storage, etc.

For the sake of clearness and easy figuring, we shall assume that for each pound of butter paid for in the creamery using the oil test, the creamery paying by Babcock test furnished or paid for (8, (8, 10)) of a pound of fat. We then have a value of (18, 2, 25-20, 25, (204)) cents as the value of one pound of fat when a pound of hutter is worth 18 cents. We also find that for every increase of one cent per pound of butter paid in the cream-gathering creamery, theoretically, the Babcock test creamery should increase its

contended that bees were better pollenizers than the wind.

Mr. Flock, Chief Fruit Inspector for Western Provinces, described the panicky condition of the Western markets last fall due to the rush of apples on that market and the cutting of prices by rival dealers.

Fruit Commissioner, D. Johnson, spoke very favorably of the advertising campaign which the Nova Scotia Fruit Growers had inaugurated and showed that the advertising done by the Federal Government had good results. Speaking of over production of apples, he thought that in Ontario and the west a halt should be called, but since Nova Scotta was so near the great markets across the water the question of over production was not such an acute one yet, at least.

One of the most important points made by Mr. Johnson was that though there were, to his knowledge, a number of very competent fruit organizations on the continent, the United Fruit Companies of Nova Scotia was the most efficient co-operative organization he knew of. His message and indeed the point brought out by nearly every speaker was that we should not depend too much on our fruit, but combine with fruit raising the keeping of live stock.

We were all sincerely pleased to welcome again to our meetings Prof. F. C. Sears who for many years was head of horticultural activities in our Province, now of Amherst, Mass. His address on the future of fruit growing, was sane, logical and convincing. He said the factors to be considered in any discussion of the future were the increase due to planting, the decrease due to dying out of old trees and younger ones through neglect and the increase of the consuming population. There was a fear of over production but we could do much to overcome the situation. First, by increasing, by grafting or planting better quality varieties since more apples would likely be eaten

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