

mainder will be spent on practical work on the farm. Students must be not less than 17 years of age, and each applicant must give an understanding that it is his intention to become a farmer in Ireland, and he must also produce, in his application form, evidence of a sure prospect of obtaining a farm of his own, or bona fide occupation on a farm. The students are required to reside in the school.

About £11,000 have been spent in buying and equipping the institution, which the county has undertaken to manage and support. The student fees are moderate, so that no farmer will be precluded through financial reasons from sending his sons to the school. A favorable change of attitude has come over the farmers of Great Britain and Ireland regarding the practical value of such schools.

Co-operative Silo Filling.

Editor "The Farmer's Advocate":

I am somewhat amused at the letters on silo filling in the recent issues of your paper. We think, we cannot help thinking, that there are a great many folks in this country whose heads need fixing, and in this regard we will not except your worthy self. For instance, you are the man who has advocated in season and out of season, for farmers to do their work quickly and cheaply, and to get implements to enable them to do this. And when you go to fill your own silo, behold, we find you hiring an army of men, and resurrecting the old slow back-breaking method of cutting corn with a hoe. Now why did you not get a few more and pull it up by the roots, it could not have cost much more than it did. \$111.00, good Lord, what a sum! Now, Mr. Editor, there was no necessity for such a cost, and as silo time is close at hand, just take heed to the following items. We fill here on the co-operative plan, and have done so since we put up the silos, some ten years ago. Three of us are inside the half-mile, on opposite sides of the road. We bought the binder between us, costing \$45.00 apiece, cash. No hoe for us. We cut the day before filling. Sometimes when rushed, hang a lantern on the tilting lever and cut all night. The three farms supply all the teams necessary, sometimes four and sometimes five, according to the distance we have to draw. Our gang consists of the teamsters, two men in the field to help load, one to help unload, one to feed the box, and three to tramp in the silo. With this gang we can fill a 14 by 30 foot silo in seven hours. We aim to build our loads from both ends and fill in the centre last, then when at the box take out the centre first till we get our feet on the rack bottom, then the men face each end, and swing sheaf about laying the tassels on the band of the preceding sheaf, in this way we make it as easy as possible for the feeder. That Middlesex man says you can't do fast work with two unloading. He should be careful about that word "can't." The box we use has a capacity of a ton in two minutes, and on trial we put through a ton in two minutes and a half. That would make his one man go some.

Now, Mr. Editor, another beauty of the co-operative plan is we have five bosses in the gang, and they keep all hands on the move. Another point is its cheapness as the actual cash outlay is never more than twenty dollars, ten dollars for engine, box, engineer and feeder, the rest for twine and what extra hands we need. Now in conclusion and for the sake of contrast, we will figure it the way you do at Weldwood:

To threshers for outfit, per day.....	\$10.00
4 teams @ \$5.00 per day.....	20.00
2 loaders @ \$2.00 per day.....	4.00
1 to help unload @ \$2.00 per day.....	2.00
3 men in silo @ \$2.00 per day.....	6.00
8 acres corn cut @ \$1.00 per acre	
(usual charge)	8.00
Twine	2.40
Total	\$52.40

Throw away that hoe Mr. Editor, and go at your silo filling in an up-to-date practical manner; never mind that two or three inches of corn stubble. The feeder would only have to shovel it out of the mangers in the winter time anyway.

LAMBTONIAN.

[Note: Some of these suggestions are good. Co-operation is the ideal way of filling silos where practicable, but it is not so in all cases. As for cost, we wonder whether "Lambtonian" ever compared the difference in capacity of a 40-foot silo, refilled, and a 30-foot one filled only once. From personal experience as well as from tables before us, we would compare it as about 150 tons to 90. Taking his own figures we find that it cost "Lambtonian" about 58 cents per ton of capacity to fill his silo. It cost us about 74 cents. But remember, our corn had been badly bent and lodged by an August storm, and being very stout and heavily eared, was hard to cut, hard to handle and slow to feed. Moreover, extra cost was entailed by refilling, especially as

some of the corn had to be shocked in the meantime. Refilling gave us more use of our silo, but added to the cost per ton of filling, and we shall not do it again. A corn-binder would have made a bad mess of our field, hoes made a fine job. It cost us less per acre to cut our corn than it cost "Lambtonian" with the binder, counting the twine. It did cost more to handle. So far as the stubble is concerned, we have only to report that excepting a few basketfuls of joints, etc., from the silage made out of the shocked corn, there was not a shovelful of waste thrown out of the mangers all winter, nothing at all after Christmas. The mangers were polished every day from end to end. We shall buy a corn-binder if help becomes too scarce, but where feasible we prefer to cut with hoes, and by starting in good time it doesn't take an army of men by any means. Two acres of hill-corn a day is a man's work.

—Editor.

Effective Dynamiting of Subsoils Expensive.

In our Exhibition Number (August 29th) we drew attention, editorially, to an idea which has received more or less prominence of late, viz., the use of low-grade dynamite for loosening hard subsoils, not only where fruit trees are to be planted, but even on areas where garden and general farm crops are to be grown. We took care to state that we knew nothing personally about this, and, of course, would not think of advocating it till we did, but from what we had seen of the effects where the dynamite was employed to blow out stumps and boulders we were prepared to expect good results, barring certain practical difficulties that might arise. We are still in the same receptive frame of mind, though dubious as to its economy for purposes of general farm cropping. Believing, at any rate, in the policy of presenting full information, we quote an opinion from John P. Brown, of Alabama, Secretary of the International Society of Arboriculture, who writes an American exchange as follows:

"During the past winter and spring I have used some 500 pounds of dynamite for opening holes in which to plant trees. Undoubtedly it is beneficial, but the quantity required to loosen the soil for farm purposes would be nine or ten times the amount usually claimed. The explosion will loosen the soil somewhat for a distance of five feet in each direction. Those who expect results by placing a charge every fifteen feet will, I think, be disappointed as a rule."

Fill Silo Slowly.

"The best way to fill a silo, according to many," writes W. A. Freehoff in the Iowa Homestead, "is to have a small power cutter and work slowly. There will then be a little loss of space by settling and an extra amount may be packed. When a farmer does his own filling he is not dependent upon his neighbors and can do it just when he pleases. The expense is greater, however, and should a sudden frost 'catch' him, he could hardly get done in time to save all of the corn for silage. The better way, perhaps, would be for two or three, seldom more, farmers to unite and buy a medium-sized outfit, and by co-operating fill their silos quickly. By moving from one farm to another several fillings may be made, and the silos loaded to their capacities. It will not take more than a week, all told, to fill three such silos. With the larger cutters, distributing attachments should always be connected to the blowers."

There should be no complaints of land being too hard to plow this fall. If the heavy rains continue much longer, low or clay soil will surely be too wet. Underdrains have been working overtime this season.

THE DAIRY.

More about Payment for Cheese Milk.

Editor "The Farmer's Advocate":

A. C. Abbott quotes this statement from Professor Dean: "both casein and fat should be tested if we wish to pay for cheese milk on a just basis." Then wonders how I got the impression that Prof. Dean hindered taking milk by test at cheese factories. If Mr. Abbott is a dairyman, he knows that testing for all solids is too complicated to be done in the cheese factories. If the other solids increase with the increase in fat, testing for other solids would not be necessary. The man with the poor milk, the man who skims his milk and the man who waters his milk, will all quote this very statement of the professor's. We do not ignore the importance of all solids, but insist that they increase with the increase of fat. Mr. Abbott again quotes from Prof. Dean: "by adding 2 per cent. comes very closely to the actual cheese value of milk." This statement proves our contention, that all solids increase with the increase of fat.

The Department had two cheese at the Toronto Exhibition, the one made from milk, the richest in fat contained most cheese. Did that cheese contain more fat than the cheese made from the poorer milk, or was there more waste of fat in the whey? Would the Department be kind enough to state through the Farmer's Advocate the point intended to teach.

Middlesex Co., Ont.

THOS. B. SCOTT.

Editor "The Farmer's Advocate":

At your request, I beg leave to make some observations on Mr. Scott's letter, published in this issue of "The Farmer's Advocate." Before doing so, allow me to thank Mr. Abbott for his very pointed and clear answer to a former communication of Mr. Scott's. Who can measure the value of a friend?

1. It is quite true, that "if the other solids increase with the increase in fat, testing for other solids would not be necessary." The fact is that the "other solids" in milk are not in a constant relation to the fat, hence the need of testing for at least one other solid, viz., the casein, which is essential for cheesemaking. In tests made of patrons' milk at ten Ontario Cheese Factories in 1911, we found the casein varying from 1.6 to 2.9 per cent.; the average for the samples tested in Western Ontario was 2.26; and Eastern Ontario 2.1. Similar variations have been found in the samples tested at factories, tested in 1912. Details will be published in the next College Report.

2. Your correspondent says: "The man with the poor milk, the man who skims his milk, and the man who waters his milk, will all quote this very statement of the Professor's." Which statement is referred to? I fail to see the point of the argument. Dickens tells us in one of his sketches about a man who was always "lugging in" a quotation from Byron's "Don Juan", whether it had any bearing on the subject under discussion or not. A dirty dairyman can quote Scripture in favor of his methods—"He that is filthy let him be filthy still." Quotations which do not illustrate or illuminate the point at issue are of no value.

3. 'By adding 2 comes very closely to the actual cheese value of milk.' "This statement proves our contention that all solids increase with the increase of fat."

This is a common error. Many persons regard the addition of 2 to the percentage of fat, as being a case of "as you were." A simple illustration will make it clear that such is not the case.

Suppose two patrons furnish milk testing 3 and 4 per cent fat, respectively. If we divide the money according to the percentage of fat, one man would receive three-sevenths of the money and the other four-sevenths, a difference of one-seventh. If we add two to each, one man will receive five-elevenths and the other six-elevenths of the money, a difference of one-eleventh. It is found in practice that the yield of cheese is not in proportion to the fat in the milk. Milk testing high in fat does not yield so much cheese per pound of fat in the milk, as does normal milk with the average of low fat content. The addition of 2 to the percentage of fat, is an approximation to the actual results. We are now able to test milk for both fat and casein, and this we recommended in preference to "% fat + 2," where practicable in cheese factories.

4. The main lesson which was intended to be taught by the two cheese exhibited at the National Fair, Toronto, is that there is a difference in the yield of cheese from two lots of milk, both weighing the same, but having different percentages of fat and casein.

The main facts in reference to these two cheese are as follows:

	A	B
Lbs. milk	339	339
Per cent fat in milk	3.4	3.9
Per cent casein in milk	2.1	2.4
Weight of green cheese	31.5 lbs.	35 lbs.
Per cent fat in cheese	36.9	36.9
Per cent moisture in cheese	33.6	34.2
Lbs. cheese per lb. fat in milk	2.73	2.64
Lbs. cheese per lb. casein in milk	4.43	4.31

It will be noticed that in this case the percentages of fat in the cheese were the same for both. Frequently we find that cheese made from milk containing a higher percentage of fat, also have a higher fat content, but in many cases they are the same, or there is very little difference. The moisture was higher in the B cheese, which is rather unusual. The percentages of fat in the whey were .12 from the A milk and .16 from the B lot.

O. A. C., Guelph.

H. H. DEAN.

The 46th Annual Convention and Winter Dairy Exhibition of the Dairywomen's Association of Western Ontario will be held in Woodstock, January 15th and 16th, 1913. One hundred dollars in cash prizes is donated by the association and two Diamond Hall medals are given by Ryrie Bros., Toronto. Competition is open to herds consist-