pulverizing of the soil. Shallow fall plowing may be advisable when some of the other reasons are considered, but, from the viewpoint of water-holding capacity, the deeper it is stirred, the better. It is also necessary to plow deep occasionally, in order that the depth of loamy soil be maintained. Continued cultivation slowly wastes this surface soil, and it must be renewed from below. The depth of plowing must be decided after the needs and conditions of the soil and the crop to be sown are carefully considered. It is always advisable to develop and maintain a deep soil. It is not, however, safe to deepen a shallow soil in one season. It must be done gradually from year to year.

The question now arises, how deep should we plow? A few years ago, the best farmers plowed to a depth of seven, eight, and sometimes nine inches, but of late years there has been considerable agitation in favor of shallower plowing, with the result that many now turn a furrow from four to six inches deep. On light soils this is done to keep the humus as near the surface as possible and prevent leaching, but, on heavier soils, where there is less danger of loss from this cause, it is a question whether or not shallow plowing in the fall has been overdone. Six inches seems shallow enough for this class of soil, and a depth of about six or seven inches seems to be about right to meet all the needs of soil and plant.

The burying of weeds, manure and litter is one which cannot be well accomplished with any other implement than the plow; and, with all the advance made in tillage implements, it still stands supreme in this regard.

The autumn is conceded by all as the best time to plow most soils in preparation for next year's crops, and the more exposed the surface is left, the better the results. Conservation of moisture and pulverization of the soil are greatly aided if the plowing is done in the fall previous to the late rains, and the land is thus left in good condition for the action of the frost. Lose no time now, but keep the plow going, and get the land all turned before winter.

THE DAIRY.

Making Buttermilk Cheese.

Buttermilk cheese is a new product obtained by curdling buttermilk with heat, draining the curd and adding salt. Large amounts of buttermilk are wasted annually in many creameries. If this were made into cheese, it would furnish a large supply of palatable food, equal in food value, pound for pound, to lean beefsteak, and it can be sold profitably at half the price of meat. In the process of making this cheese, the curdling of the milk is produced by heating to 80 degrees, and leaving it undisturbed for one hour. It is then heated to 130 degrees, and after standing quiet for about an hour, the clear whey is drawn off the curd, and the latter is placed on a draining rack which is covered with cheese-cloth. Here it remains half a day or over night, until as dry as desired, when it is salted with one and one-half pounds of salt per hundred pounds of curd. The cheese is now ready for use.

Buttermilk cheese can be made from buttermilk from cream which was pasteurized before ripening, or the buttermilk may be pasteurized during the process of cheesemaking, in either case insuring the absence of disease germs. Since the public is not familiar with the product, it is necessary that it be well advertised, and that the packing and selling of it must receive special attention. It may be safely shipped in butter tubs and retailed in paper pails or other small packages. It will keep for a week or ten days at 50 or 60 degrees, and much longer than this if stored at 32 degrees or lower. It may be sold at from three to five cents per pound at the factory, and retailed at from seven to twelve and one-half cents per pound, and at these prices should prove a profitable product for both the creamery and the retailer. Cheese color can be used if high color is desired. The curd from buttermilk containing 50 per cent. or more fat, as well as from buttermilk from cream which was pasteurized when very sour, is always so fine-grained that it runs through the draining cloth and is lost. The food value of the product is high in comparison to its cost, and it is said to be very palatable when eaten alone, like cottage cheese, seasoned with salt or pepper, or when used in salads. It will spread like butter, and is thus very suitable for sandwiches. The fine buttermilk flavor makes it preferable to cottage cheese to many consumers, which should make a keen demand for this product once it becomes well known.

The special apparatus for making this cheese is inexpensive, and the draining-rack strainer and section may be made by almost any buttermaker; in fact, where only a small quantity is made daily, the ordinary utensils of a creamery may be used. This cheese can also be made on the farm for home use, and if anyone wishes to try it, and wishes further information on the subject, they should write J. L. Sammis, of the University of Wisconsin Agricultural Experiment Station, Madison, Wisconsin, for his bulletin on "Buttermilk Cheesemaking at the Creamery," from which the foregoing points were taken.

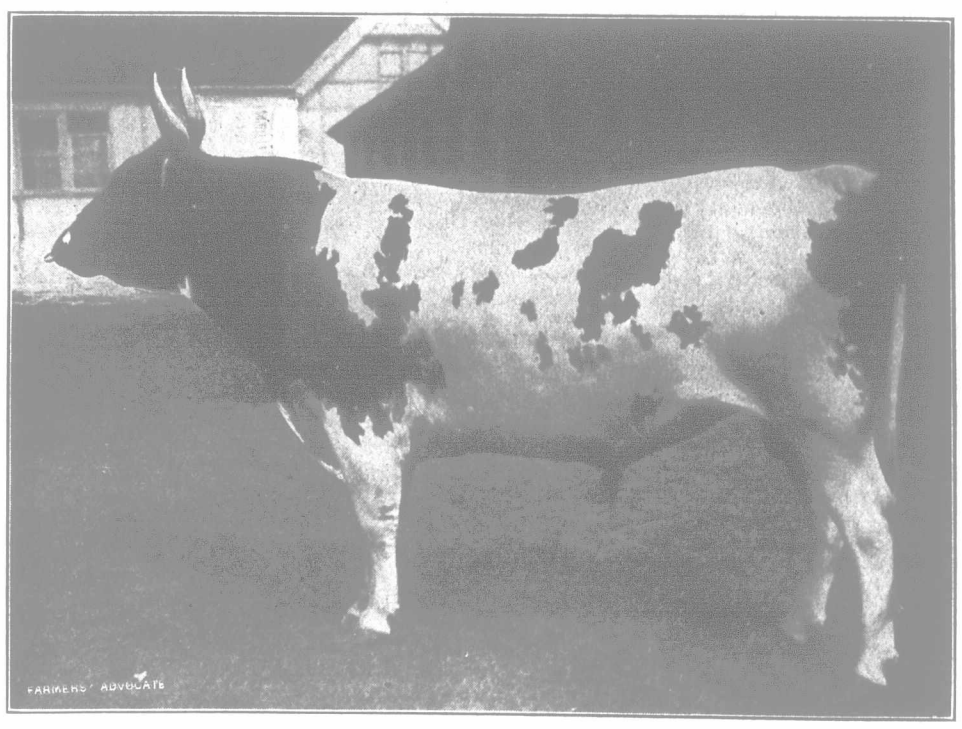
Barn of E. J. Pearson, Oxford Co., Ont.

Plans of this barn appeared in "The Farmer's Advocate" of August 24th, 1911. Cost roughly estimated at $3,000, not including all the labor. Many convenient features are embodied in this plan.

Dairy Educational Exhibit at the Western Fair.

The accompanying half-tone illustrates the Educational Exhibit of the Dairy Branch of the Ontario Department of Agriculture at the recent Western Fair, in London.

On the right is shown two experimental cheese made at the O. A. C. Dairy School, and demonstrates the increased yield of cheese from milk testing high in fat and casein, compared with milk testing low in these two constituents. The figures given below include the amount of money the two patrons, E. and F., would receive, if paid by different methods:



Auchenbrain Hercules (imp.) —30592—.

Ayrshire bull; two years old. First and champion, Western Fair, London, 1911. Exhibited by Alex. Hume & Co., Menie, Ont.

E. delivered 300 pounds of milk (made into the smaller cheese) testing 3.6 per cent. of fat and 2.4 per cent. casein. Pounds of milk to make one pound of cheese, 10.34.

Lbs. of cheese made, 29; at 12c. per lb....	$3.48
If paid on basis of weight, E. gets.....	3.75
If paid on basis of fat, E. gets.....	3.18
If paid on basis of fat and casein, E. gets	3.28
If paid on basis of fat, plus 2, E. gets...	3.36

F. delivered 300 pounds of milk (made into the larger cheese), testing 4.9 per cent. of fat, and 2.8 per cent. of casein. Pounds of milk to make one pound of cheese, 8.95.

Lbs. of cheese made, 33½; at 12c.....	$4.02
If paid on basis of weight of milk, F. gets	3.75
If paid on basis of fat in milk, F. gets.....	4.32
If paid on basis of fat and casein, F. gets...	4.22
If paid on basis of fat, plus 2, F. gets.....	4.14

Next is shown samples of milk tested for casein in the bottles used with the Hart Casein Test.

Next is seven small flasks of milk furnished by the Bacteriological Department of the O. A. C., which clearly illustrates how easily milk may become contaminated, and points out the necessity for constant care in the handling by producers and consumers.

All the milk was first sterilized, and then divided among the seven flasks.

In No. 1 was placed a single cow's hair.

In No. 2, some road dust.

In No. 3, a single fly.

In No. 4, a small bit of hay.

In No. 5, a particle of cow's manure.

No. 6 had nothing added.

The flasks were then sealed, and after several months No. 6 is still sweet and in good condition, while all the others are spoiled. This is proof that the minute quantities of these different substances which were placed in the milk had adhering to them a sufficient number of bacteria, which, when washed off in the milk, and allowed to grow and multiply, caused the changes in the different samples. All such substances should be, as far as possible, excluded from milk. The object of this exhibit was to demonstrate that most of the changes which take place in milk, including souring and the development of tainted flavors, are caused by the introduction of bacteria, and to show some of the means by which bacteria find their way into the milk. It is also pointed out that milk may be made sterile, and then again contaminated.

Next is shown an outfit for keeping samples of milk for cow-testing. Corrosive sublimate tablets for preserving the milk from the time it is sam-