

very active demand this fall for strong ram lambs for the American market, as there are very few yearling rams on hand in this country, and farmers having pure-bred or high-grade lambs will do well to pay attention to growing them fast, so that they may be fit to go off early in the season. And those who need to secure rams to mate with their flocks should make their selections early, before the stock on hand has been culled over, for the strongest and best will certainly be the first sold, and they will be picked up earlier than usual this year. In regard to this important matter, a word to the wise should be sufficient.

THE FARM.

DIFFERENCE BETWEEN PORTLAND AND ROCK CEMENT.

Editor "The Farmer's Advocate":

In reply to inquiry re the difference between lime, rock cement and Portland cement, I may say that lime is simply limestone rock from which the carbon dioxide has been driven out by heat, leaving an oxide of calcium (CaO). In the eighteenth century engineers found difficulty in making stone-work built under water permanent, because lime would not set in the presence of water. Investigations at that time showed that pure lime, which had been thought to be the strongest, was not as good as the soft, clayey ones. Lime made from the soft-clay limestone would set better in the presence of water than when made from the pure limestone. Later it was found that the layers of stone which would not slake after burning could be used in making mortar. They were ground after burning, and thus converted into a good hydraulic lime. This was the beginning of what was known as Roman cement, the forerunner of the Portland cement.

The three different forms of cements may be distinguished as follows: First, natural or natural rock, Rosendale, or Roman cement, which is made by burning a suitable clayey limestone to the point at which most of the carbon dioxide is expelled, and then grinding to a powder the resulting soft, brownish-yellow clinker.

Second, Portland cement, which is made by grinding to an impalpable powder a mixture of clayey and calcareous substances in proper proportion, burning the mixture to the point of vitrification, and then regrinding the resulting greenish-black clinker.

Third, Slag or Puzzolan cement, which is made by grinding together, without subsequent incineration, a mixture of blast furnace slag and slaked lime. It is now generally accepted that the cements used by the Romans were of this character, and were made from volcanic slag.

R. HARCOURT.

Ontario Agricultural College.

BELIEVES IN CARING FOR THE WOOD-LOT.

Editor "The Farmer's Advocate":

I have about twenty acres of woodland—white pine (second growth), chestnut, beech, maple, with a sprinkling of black ash in the wetter spots. This I have been caring for during the last seventeen years, cutting out the poorest where white pine is too thick, and the others are taken as required for home firing, selecting those that look like making the least future gain.

My objects are to insure a supply of shelter, and home fuel, and fence posts. Last year I had one hundred bushel boxes made from poplar planted twenty years ago.

I would welcome the extension of shelter-belts, and consider that where they were so situate, and of such extent as to benefit further than the owner, it would be both wise and just to exempt such belts from taxation, provided, always, that the owner was deriving no benefit from pasturing and was protecting the wood-lot from damage by stock, etc.

JOHN WILSON, Jr.

Halton Co., Ont.

WHICH IS BEST, 100 OR 150 ACRE FARM?

Editor "The Farmer's Advocate":

I should like to see this question discussed in your columns. "Which is the better, 100 acres or 150 acres?" It requires the same machinery and horse-power to work 100 acres as to work 150 acres, but cannot one grow more high-priced crops on the smaller place, as small fruits, beans, hoe peas, etc., to bring the profits up to the larger farm, where these could not have attention? How many cows can be kept on 100 acres? Would some readers tell the possibilities of a small farm—not what might be done, but what is being done?

Peterboro Co., Ont.

G.

Every farmer in Canada needs "The Farmer's Advocate."

THE VARIEGATED CUTWORM.

Regarding the visitation in Western Ontario of destructive cutworms, referred to in last week's "Farmer's Advocate," Dr. C. J. S. Bethune, Entomologist, of the Ontario Agricultural College, does not anticipate a recurrence of the plague next year, but advises reducing their numbers in every way by such measures as have already been suggested. Mr. L. Caesar, of the O. A. C. staff, was sent to Leamington to investigate the outbreak, and the pest was found to be the Variegated Cutworm (*Peridroma saucia*), which infested the Pacific coast in 1900. They feed at night, and remain in concealment during the day, hiding in the ground where the soil is loose, and under any rubbish or other shelter that they can find. When full-grown, the worm is about two inches long, with a yellowish stripe on each side above the legs; the rest of the body is darker, and mottled with black, white or gray. The most characteristic feature is a row of yellow or white spots, five to seven in number, along the middle line of the back. Some are already changing into the chrysalis stage, for which purpose they bury themselves in the ground, and form there an oval, earthen cell. The moth, into which they finally turn, has a wing expansion of about an inch, and is dark blackish-brown in color, often clouded with red towards the front margin of the wings, but with no conspicuous or distinguishing markings; the under wings are white, with a pearly lustre. Like so many other of our most destructive insects, this one has come to us from Europe.

THE DAIRY.

VERMONT ANNUAL REPORT OF EXPERIMENT STATION, 1905-1906.

The State of Vermont is one of the solid dairy States of the U. S. Republic. For keen, business-like, up-to-date methods of handling cows and manufacturing butter on the farm or in the creamery, we can commend the Vermont dairymen. The nineteenth annual report of the Agricultural Experiment Station is strong in dairy features. The first dairy article of the report deals with the results of Act No. 81, of the year 1898, entitled, "An Act for the Protection of Dairymen, Relating to the Testing of Milk and Cream." This Act requires that all glassware used in testing at creameries or cheeseries shall be tested by the Experiment Station as to its accuracy, and that all operators must secure a certificate of competency before they are allowed to test milk or cream at factories where dividends are made according to the test plan.

From July, 1899, to July, 1906, 26,975 milk (Babcock) bottles and 20,057 cream bottles have been tested, of which 2.8 per cent. in 1899 were found incorrect, and only .17 per cent. were incorrect in 1906. The writer calls attention to the fact that in Vermont, in 1899, 81 per cent. of the Babcock bottles tested were milk bottles, and only 19 per cent. were cream. In 1906, 34 per cent. were milk and 66 per cent. were cream bottles, showing the change in the method of operating creameries during that time. He also says: "Not an ounce of milk has been received

at either of the two largest creameries in Vermont for some time."

Not only is all the glassware used for testing milk and cream passed upon by the Experiment Station, and those found incorrect discarded, but, in 1899, for 233 licenses granted for operating the test, 27 were refused. The following year, 21.1 per cent. of those applying for licenses were refused. Up to July, 1906, 593 certificates of competency to operate the Babcock test have been granted and 59 have been refused. We need a similar law in Canada. Is it any wonder patrons have little faith in the test under conditions as at present. A case came under our notice recently where a factory pays by test, and all samples were read from 3.4 to 3.7 per cent. fat. This struck us as being rather strange. On inquiry, we found that all those patrons whose milk tested below 3.4 were raised to that figure, and those above 3.7 were lowered to 3.7. Man, thou art a wonderful creature, and thy ways are past finding out!

FEEDING TRIALS WITH COWS.

The trials related to:

1. Feeding value of silage made from frosted and frozen corn.
2. The feeding value of alfalfa-hay meal.
3. The feeding value of "protena" (a ground alfalfa-hay product).

In these trials some 44 cows were used during six months' tests. In addition to the roughage, wheat bran, cottonseed and linseed meals and dried distiller's grains were used.

Under "The Effect of Frost on Corn for Silage," the writer asks the question, "Shall one cut corn early to avoid frosts and loss in potential growth, or shall one let the crop stand to a fuller maturity, despite frost, and run the risk of injury?" This is, or will be, a live question in Canada this year, when the corn crop nearly everywhere is very backward. The results of these tests should be of great value to all dairymen in localities where frost usually damages the corn crop somewhat before it is placed in the silo.

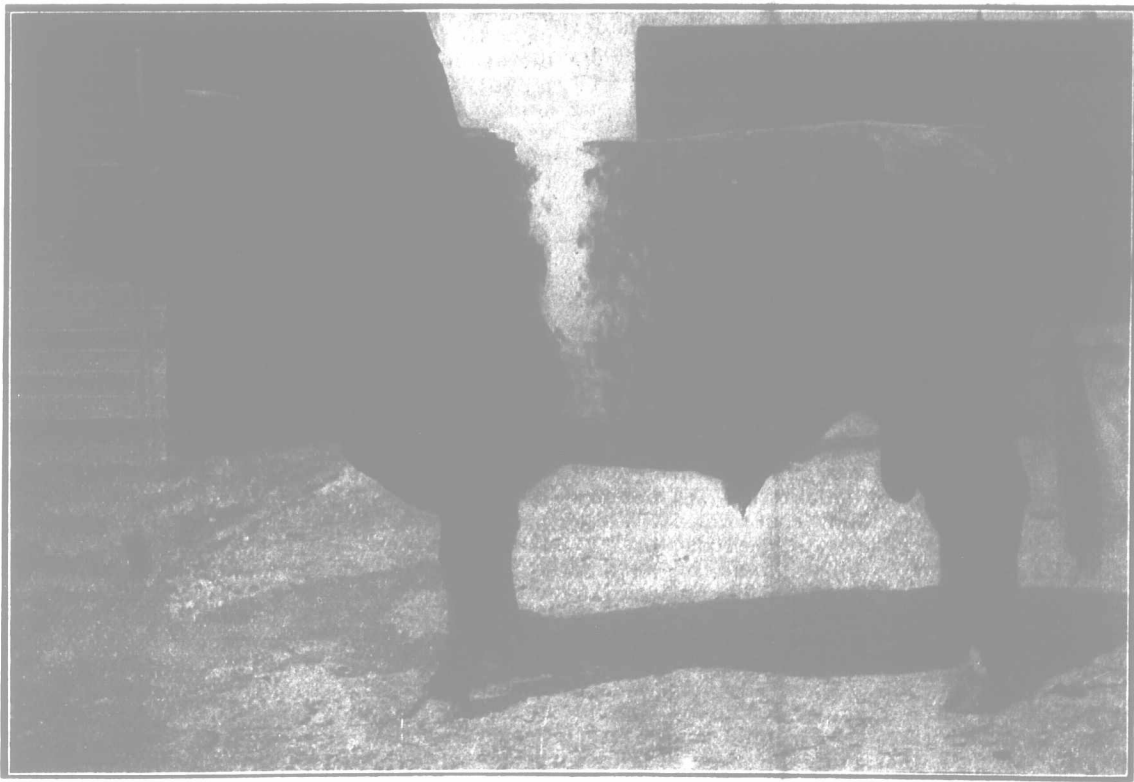
Early in October, 1905, about 4½ acres of corn were reserved for the tests. About one-half was cut October 7th, while still immature, and just barely touched by an extremely light frost. One-half of the remainder was cut October 21st, on the night of which a very heavy frost occurred, and the remainder was cut two days later, after the heavy frost. The three lots were placed in separate silos and sampled.

The conclusion reached was that there was no apparent diminution in the amounts of grass nutrients because of freezing.

In the feeding trials of the silage from these lots, there was little difference in the amounts of milk yielded from the immature silage and from the mature, frosted silage, but the results in milk yield were slightly in favor of the unfrosted corn. The general conclusion of the writer is: "It would appear, therefore, that the testimony of this trial is, on the whole, in favor of running frost risks to gain a greater maturation of the corn."

THE FEEDING VALUE OF ALFALFA MEAL.

An alfalfa meal is simply an alfalfa hay, ground either in its entirety or in part. Three sets of experiments were made: Comparing alfalfa meal with wheat bran, with distiller's dried grains, and



Topsman's Duke 7th =60258=.

First-prize senior yearling and grand champion Shorthorn bull, Winnipeg Industrial Exhibition, '07. Bred and owned by J. G. Barron, Carberry. Man. Sire Topsman's Duke.