

and rotting down by luxuriance enlarge the surfaces of the injured places. This is to be prevented by scattering these accumulated obstructions at short intervals, or which is better, collecting them and carrying them off the field. (1)

Any pasture may be trebled in its usefulness and value by dividing it into two parts, using one while the other part is left to recover its growth. (2) As the constant dropping of water will hollow a rock, while if the whole quantity falling in ten years should be poured on it at once it would show no trace of wearing, so the pasture constantly eaten down is worn away, when by feeding it to an equivalent extent at intervals it will suffer no injury, and furnish feed for twice the number of stock. It is this continuous gnawing at the short, weak herbage, giving no opportunity for recovery, that ruins pastures so quickly. (3) Thus twenty acres of good pasture may be made to feed twenty head by this alternate method of use and rest, when ten head, or even five, will keep it bare, and themselves as poor as the herbage is. And the effect of this resting will be even more apparent if, when the animals are turned off one section, the grass be stimulated by a dressing of 100 lbs. of nitrate of soda, and the same of gypsum. Then by such liberal management, with the precautionary care suggested, the liberal soul will be made fat, along with his well-fed stock.

HENRY STEWART.

Macon County, N. C., April 15.

(Cultivator.)

## The Farm.

### CLOVER ENSILAGE

By WM. BUTLER, DEREHAM CENTRE, ONT.

In reply to your request for a report from any one who had filled a small silo with clover, I will relate my experience. Making ensilage of clover has been long practised in Europe. We naturally wonder why it has not become more common in America, but after giving it a moment's thought we would conclude that. 1st. The shortness of our season has something to do with it. 2nd. Not enough clover grown. The silos are too large. 4th. Hands and machinery are too scarce. The size of the silo has a great deal to do with it, because after it is once opened it should be fed immediately as it so soon rots and dries out on the top after the air gets to it. The size of the silo which I filled was 10x12 and 20 high, which will hold about 54 tons of corn or 36 tons of clover ensilage. The silo is built of wood, which I do not recommend for this purpose. I think stone or brick would be preferable. A silo this size will answer the purpose very well for about thirty five head of stock. Care should be taken not to have too much outside surface in proportion to the amount it holds. A round or square silo would be the best shape. The more there is exposed to the air the more will be the waste.

The hands and machinery required will not be large. The nearer the field to the barn the less will be needed. Six men are all that will be required.

(1) Very good indeed, but we prefer scattering to collecting. Ed.  
(2) Three parts, please. Ed.  
(3) Excellent. Ed.

One mower, two waggons and racks, an engine, horse or tread-power to run a cutter with carrier, are sufficient.

The time required to fill a silo of the size mentioned with the number of hands stated will be about two days. The silo may be filled without interfering with the securing of the other hay, indeed, the time spent in filling this year was never missed. After a shower, or in the morning when the other hay is drying, is a good time, although, after once commencing to fill, the sooner it is done the better.

### YIELD OF CROP.

A heavy crop of clover will yield as much per acre as from  $\frac{1}{2}$  to  $\frac{3}{4}$  of an acre of corn. Four acres filled a silo of 2,400 square (cubic?) feet, this being a little above an average crop. The kind used was the common red clover, *Trifolium Pratense*, but if clover was grown especially for the silo I would recommend lucerne, being better for producing milk and muselo. Alsike is good, but will only produce one crop and no aftermath. Lucerne is a more sure crop, and will produce more in bulk and two or three cuttings in one season. Dry weather will not affect lucerne as much as it does other clover, on account of it being a deeper feeder. The principal objection raised against lucerne by the farmers is the amount of care which has to be exercised in harvesting it, on account of it getting woody so quickly. This would be obviated in utilising it for the silo. I have no doubt if rye or other green fodder were mixed and cut at the same time it would give good satisfaction. This would be better done if the clover had got a little old.

### FILLING.

Filling should commence when the clover is green, especially if the silo is made of wood. The greener the clover the better it will pack and the less waste there will be from rotting. Drying or wilting does not improve the quality of the ensilage; the fresher it is when fed the more it will be relished by the stock. Tramping in the silo should be thorough—better still if done with a horse, which should be used most round the outside. About three feet in the silo that we filled this year didn't get tramped. When we came to feed it out the ensilage was good almost to the wall where it was tramped, but where it wasn't tramped it had decayed in about nine inches to one foot. A good covering can be made of the rakings. We commenced filling this year on the third of July and finished on the eleventh.

### FEEDING.

Feeding may commence in a couple of weeks after being filled. It is better to let it settle down perfectly before opening, to prevent the air working in so quickly after opening. If pastures remain good, it would be better to delay opening a little longer. Commencing feeding on the 30th of July, we have fed about one-third of the amount up to August 24th. The amount of stock fed on this was 5 horses, fed all they would eat, and 30 cows, twice a day. The horses don't care for dry hay now, and I think it preferable to hay; at least they are doing better on the clover than when fed hay. Clover ensilage is principally used for feeding horses in England. I cannot say how pigs will thrive on ensilage, but I think wheat at 55 cts. per bushel will be cheaper and give better returns. I would re-

commend bran or wheat chop rather than pea chop to be fed with the clover.

### COST.

The cost of filling was about \$20. Being hard to figure on the profits, I will leave that with the reader to judge for himself. Had it not been for the fly pest coming on about the same time as the pastures failed, I think my cows would have held their own in milk.

### MAKING CLOVER HAY.

A large number of the farmers of the Northern and many in the Western States are now engaged in the cutting of their heavy clover crop, and in manufacturing it into hay. Many are successful in thus making the most valuable of all kinds of fodder, while others, by not selecting the most favorable times of weather, largely fail, meet with heavy loss, and obtain a black, half-rotted article, of little or no value for cattle fodder. In this condition its only and real value is as a compound part of manure. The valuable treatise on this subject by Henry Wallace presents some hints which may aid in securing clover hay in the best condition, and which is in accordance with the practice of a large number of good farmers: The mowing is done late in the evening, and always after four o'clock. The time of the man, mower and team, is worth a great deal more after sun down than in the heat of the day. Clover is not damaged in the least by being cut when the dew is on, and the heat of the sun from four to six is seldom sufficient to render clover cut during these hours liable to damage even if wet again with dew or rain during the night. The first work in the early morning should be to start the tedder. This shakes off dew or rain, and leaves the mass in the best possible shape for the circulation of the air and the action of the sun. The amount of dryness necessary for storing cannot be accurately described. Mr. Wallace further states, from other authorities, that the amount evaporated in the process of curing is 58 per cent; and that 100 pounds of green clover cut at the proper season and cured in its best estate, will make 41 pounds of hay ready for the mow. Twenty days after storing it will weigh 37 pounds. It is obvious however, that these amounts will vary greatly, sometimes by reducing the weight and at others by augmenting it, according to the nature of the weather, whether moist or dry.

The preceding directions are based on the possession of complete machinery. There are many small farmers who do not own a tedder to enable them to get the dried clover quickly out of the way of threatening weather (1). They can secure themselves from loss by storms by cutting small portions of the crop at a time. We give a single illustration. A small farmer was in the practice of mowing but two acres on each day. He nearly always secured the crop when dry, the small amount allowing him to pass between showers. A neighbor, who was a larger and more extensive farmer, mowed a handsome forty-acre clover field at one operation. The weather at the time appeared favorable, but as we passed another day we saw the whole crop blackened by the storm, which had come of a previous night. Had he divided the field into portions, he need not have lost more than one of these portions. Cultivator.

(1) So much the better. The tedder is quite out of place in a clover-field. Ed.

## Swine.

### TRADE IN HOGS.

It is pleasing to notice the rapid increase that is taking place in the number of live hogs that are prepared for shipment in southern Manitoba. In a country like Manitoba where food for hogs can be provided so plentifully and so easily the industry is sure to grow to important proportions as soon as this business becomes better understood and is engaged in more systematically than is the case now, when farmers only now and then prepare a few fat hogs, and these are generally provided to eat up the refuse from the granaries. In the future, when proper pens are prepared and when large quantities of coarse grains and potatoes are raised purposely to be used in the feeding of hogs, the increase in the number of animals prepared for market may be enormous and the supply continuous.

Canadian bacon is in good demand in the English market and in 1891 Great Britain took \$1,520,000 worth from Canada. The price was the highest paid, except for Danish and Irish meats. English dealers, however, complain that while the bacon is generally good, the lean is sometimes hard and dry, owing to the animals having been fed entirely upon grain, and farmers are strongly recommended to feed to their hogs a greater quantity of potatoes in order that fat and lean meat may be better mixed. This is the report of Gilchrist & Co., of Liverpool, and the statement is of the greatest importance to the farmers of Manitoba, who have not generally understood the value of potatoes when used in the preparation of meat. As there is scarcely a limit to the quantity of potatoes that can be raised, every season in the loose, dark soil of the prairies, there is an unusually good opportunity for the farmers of this province to meet the requirements of the English market by furnishing a large supply of fine bacon at a good and a sure profit to the producers.

There are some men in the Pilot Mound district who came originally from the Ottawa country and who will remember that before railways penetrated the white pine region, lumbermen had to depend for supplies of meat on that produced by farmers who lived nearest to the places where lumbering operations were carried on. As land was often poor and stony, little grain could be raised for feeding purposes and a large proportion of the pork then produced and disposed of at the lumbering settlements was fed on potatoes with a small quantity of peas or corn meal added, and notwithstanding the disadvantages of inferior oil, money was made, for prices were generally high.

The natural food of the hog is roots, as anyone can discover who examines the nose of the animal, and there can be no mistake in supplying the food that nature intended should be eaten. A much greater quantity of food for swine can be raised on a few acres of land that have been planted with potatoes than can be grown on many acres sown with grain. Nearly all the work in the potato field can be performed with machinery and the land will be left in excellent condition for other crops, and vile weeds that are now overrunning much used grain fields would have no home in the well kept potato ground.

In former years, farmers generally dressed the hogs which they raised