

fed and fattened. The immense grazing grounds upon which these sheep are fattened are owned, for the most part, by the big western railroads. In every case the yardage is free. The grain consumed is supplied at market price. Grazing costs one-half of one cent a day per head. Dipping cost, $2\frac{1}{2}$ cents per head. Shearing is done at ten cents per head. Of this seven cents goes to the operator and three cents to maintain the plant. All shearing is done by machinery, and it is estimated that the excess wool secured by this method more than pays the cost of removing the coat.

Water for Live Stock

We wonder if every one who keeps live stock knows exactly how much water a cow or a horse requires to keep it in a healthy condition. We question whether a large majority of them have ever considered what is the minimum or maximum amount of water a cow or a horse will take. Many take it for granted that a working horse should be watered in the morning, at noon, and at night, and that a cow only requires to quench her thirst once or twice a day, or whenever it is convenient for the person looking after her to provide her with the liquid.

The amount of water an animal will take is governed, in a large measure, by the condition of the weather, and a safe guide is to follow one's own inclinations in the matter. We all know that on a day when the air is dry we will drink more water than when it is moist. Besides, a very high temperature will induce more thirst than a low one. The same conditions of climate will affect the thirst of live stock, especially the bovine and equine stock. And owners of horses and cattle should be careful to provide each animal with a sufficient supply of water regularly.

There have not been very many experiments along this line. While the feeding of an animal has been the subject of very many experiments, the amount an animal will take has been given comparatively little attention. Horses, sheep and pigs are smaller drinkers relatively speaking than bovine animals, but even here there are differences in individual capacity. For instance sheep when on grass or when they have turnips or other succulent foods in good supply require very little water excepting in hot and dry weather or when only dry food is available. It is estimated that horses will drink from five to ten gallons of water per day and even more than this when conditions are such as to promote thirst. A horse on grass and with a plentiful supply of good pasturage will not drink as much water as when fed in the stable on dry feed. The nature of the food also affects the amount of water that a pig will drink. A hog fed on a food containing a high percentage of water will not require as much water as when fed on dry feed. With pigs, perhaps more than any other animals, the amount of water they require will be governed more by their age and size and so it is difficult to give an estimate.

But it is with cattle more than any other animal kept on the farm that this water question takes on the greatest significance. A cow will drink more water than any other animal kept on the farm, and more frequently than any of the others does not get all she wants, and because of this fact her profit to her owner is very often smaller than what it should be if she had got all the water she required. For example, a cow in milk, if she is not able to get a sufficient supply of water, will shrink in her flow of milk and cause a direct loss to her owner. This applies in winter as well as in summer, but more frequently in the latter, when the pastures are dry and the weather is hot. In winter, however, it is often the practice on many dairy farms to turn the cows out to water only once a day, and then expect them to drink enough water to do till the next day. A cow may pull through on one good dose of water a day if she is fed largely on ensilage or other succulent foods, and even then she will do better if she can drink oftener and take a little less at a time. But if a cow is kept in a stable on dry feed it is simply absurd to expect her to drink a sufficient amount to last her all day when let out

in the morning while the stables are being cleaned out. She should have water before her manger so that she can take it whenever she wishes, and if this cannot be arranged she should get it at least twice or three times a day. If dairymen only knew how this question of water affects their pockets it would be given more attention by them.

An English authority gives somewhere in the vicinity of 20 gallons as the amount of water the average cow in milk requires. It is known, however, that some cows will drink considerably over 20 gallons per day if they have free access to it and the weather is warm. Dry cows and young cattle require, as a rule, about one-half the quantity required by cows in milk, but this will vary according to age. A few years ago Mr. Geo. Rice, of the firm of A. & G. Rice, Curries, made a few tests of the cows in his herd as to the amount of water they would drink. He found that, while a heifer not in milk, drank only two or three pails daily, his cows drank as high as ten pails daily; two cows fresh in milk drank from eight to ten pails daily, while others, longer in milk, and consequently not giving so much, only drank from four to six pails daily. He found also that one heifer, when dry in August, only drank from two to three pails daily, but, after she had calved in December, required from six to eight pails daily.

The Ontario Agricultural College

This well-known and valuable institution is doing better work at the present time for the Ontario farmer than at any previous period in its history. The present college term, which opened on Sept. 26th last, promises to be one of the best the college has ever experienced. Nearly all the students who have registered this year are from Ontario farms. This is as it should be. The college is maintained for the Ontario farmer, and it is the Ontario farmers' sons, and, we were going to say, daughters, who should patronize it and get the full benefit of its work. We do not mention the daughters in this connection in any frivolous sense, for we believe that a course in cooking and conducting the household operations on the farm might with great profit be added to the college curriculum. There is a partial course of this nature in the Home Dairy Department, where farmers' wives and daughters are instructed in the best methods of managing the dairy on the farm, and why should not the other subjects that we have mentioned be also included?

FARM DEPARTMENT.

No better work is being done in any of the departments than that of the farm proper, which is under the supervision of Mr. Rennie. By his methods of tillage and crop rotation he has brought the land up to a very high state of cultivation. It may be news to some to know that the farm itself, as distinct from the college proper, pays a good profit over and above all expenses. In the College Report for 1897, page 220, is given a detailed statement of receipts and expenditures. This shows that the total cash receipts for 1897 were \$4,295.55, and that the value of products supplied the college and work done for the other departments which should properly be credited to the farm proper was \$3,993.28, making the total receipts \$8,288.83. The total expenditure, including permanent improvements, for 1897 was \$7,125.82, leaving a net profit of \$1,163.01.

PIG FEEDING EXPERIMENTS.

Mr. G. E. Day, agriculturist, for the past two years has been conducting a very valuable line of experiments in pig feeding. The object of these experiments is to ascertain the effect of exercise and non-exercise on the quality of the bacon produced; the effect of feeding corn and rape as compared with mixed grains; the effect of feeding whey and to ascertain the influences which are the most conducive to firmness in the quality of the bacon. In the 1898 series, which is about concluded, 36 purebred hogs, comprising six different breeds, and 24 grades are being treated. These hogs when the experiment began weighed about 100