

boomers held the Government and its treasury so tightly in their grasp that all our efforts were in vain. But no boom can go far till nature cries loud for a rest. We have not yet made a false estimate of any of those booms which have threatened our agricultural interests with destruction; it is our part to measure a boom just as much as it is a carpenter's to measure a board, or an astronomer's to measure the moon. We make no secret of our method of investigation. As a practical farmer of over twenty years' experience, and after twenty years of walks and talks amongst our farmers, we take a practical view of every agricultural question; and as a close student of agricultural science, we compare the scientific with the practical, and at the same time we introduce common-sense and sound business principles. These are the corner-stones upon which we have built the *ADVOCATE*, and every gust and gale makes the structure firmer and firmer. It defies all the elements, and does not quake amidst those agricultural concerns built on foundations of "airy nothingness."

Feeding Horses.

Horses doing full work should be fed three times daily; if they can be fed four times, so much the better. Little, given frequently, is preferable to large feeds given at long intervals. Farm horses, as a rule, are watered immediately before they are fed; otherwise, immediately afterwards. Some experiments tried on worthless horses at Alfort, in France, seem to show that the latter of these systems is not the right one. The horses in question were killed for dissection after being fed. They were first fed and then given water, and afterwards killed and examined. Some of the grain which they had eaten was found undigested in the intestines, twenty feet beyond the stomach. And the waste of food in such cases is not all, for a portion of the material that is carried along undigested is likely to have an inflammatory effect upon the mucous membrane. Nor is the plan of giving a horse its fill of cold water just before eating, altogether free from objection.

The London Agricultural Gazette says that in Dublin the daily ration for horses of the Tramways Company is ten pounds of maize, seven of oats, and twelve of hay, with half a pound of bran. It adds that there is a power for work in the well-fed horse which is usually wanting in the under-fed one, as was well illustrated by Col. Kingscote in a paper on "Horse Labor in Farming," which showed that "where the horses were liberally fed, the plowing cost 6s. 8d. per acre; whereas, with the teams in poor heart, the plowing cost 10s. 6d. per acre," or nearly half a dollar more.

Nor must we forget that horses vary a good deal in their capacity for food; and appetite, which depends on health and temperament, has as much influence as weight in determining how much a horse will eat. We have heard it said that a horse will eat two per cent of its weight in dry food daily, and at this rate a horse weighing 1,200 pounds would require 24 pounds daily of dry provender.

The late Professor Dick found that a horse not working could be kept in fair condition on 12 pounds hay and 5 pounds oats; but, where a good amount of work had to be done, it required 14 pounds of hay and 14 pounds of grain. Horses used for very fast work are fed considerably more grain,—as much as 18 pounds or even 20 pounds where they are continuously employed, and have to be kept in prime condition.

Crushed or bruised corn is more nutritious, and therefore more economical in horse-feeding, than grain fed whole. The most conclusive experiment on this subject is that conducted

some years ago by the London Omnibus Company, who are the owners of some 6,000 horses. One-half the horses were confined to bruised oats and cut hay and straw, while the other half were fed on whole oats and long hay. The ration allowed per day to each horse, on the first system, was: bruised oats, 16 pounds; cut hay, 7½ pounds; cut straw, 2½ pounds. The allowance on the old system was: unbruised oats, 19 pounds; uncut hay, 13 pounds. The money advantage in favor of bruised oats and cut hay was fully 5 cents per day for each horse, equal to \$300 per day on the 6,000 horses. And this saving was accomplished without any sacrifice of efficiency, for all the drivers and those having charge of the horses agreed that the difference in the condition of the horses was decidedly in favor of those fed on bruised oats and cut hay and straw.

Soiling Hogs.

There is a growing tendency to give hogs more green feed than formerly. We have recommended pasturing in clover; but some object to this because the hogs will root up the ground more or less. Ringing is considered a preventive, although it is not always completely so; besides it is some trouble to ring hogs, to say nothing of the cruelty of the practice, which violates the nature of the hog by depriving it of the privilege of indulging one of its strongest instincts, which the peculiar construction of its snout was designed to gratify.

But because hogs are kept in the pen, or not given a wide range, is no reason why they should not have plenty of green feed. They can be soiled as well as cattle, and will relish all kinds of green feed that may be thrown to them. Peas and oats, put in early, make an excellent soiling crop for hogs, and are of the right kind to put on muscle and promote growth. Corn properly grown may follow these. But do not "drill it in or plant it thickly," as we see an exchange recommends. You want all the substance in the stalks that can be got into them, and the most is obtained by planting in the usual way for a field crop. Not only more nutriment, but about as much weight of feed can be obtained in this way as by drilling in or planting thicker. If drilled in, the kernels should be dropped not closer than three or four inches in a row, with the rows three and a half to four feet apart. The corn should reach the milk stage before being fed to the hogs, as it then has accumulated all the gums, sugars, and starches for the production of a full crop of grain.

By a succession of crops, or planting at different dates in patches corresponding to the number of hogs to be fed, they may be kept in a full supply of green corn from the middle of July or first of August until frost comes. The same is true of peas and oats; and it would work excellently well to grow the two crops—corn and peas and oats—so that they may be fed together, first a meal of the one and then of the other. This would make a better balanced ration, and give the hogs a greater variety, which they relish, as well as the human animal, exceedingly well. And in conjunction with these, we would not omit a patch of clover to be mown and thrown to them if they can not be allowed to help themselves. Should it happen that any of the patches are larger than needed to feed to the swine, the fodder would be relished by other animals; or, if not needed at all for soiling, they could be permitted to ripen, or be cut green and cured, as might be the most preferred.

Farmers must study economy in hog raising and everything else, and look for their profit in reduced cost rather than in high prices; and there is no cheaper or better way of raising pork than by making free use of green feed. —[National Live Stock Journal, Chicago.

Methods of Cattle Feeding—Profits in Feeding Steers.

At a recent meeting of the Arva Farmer's Institute, Mr. J. H. McRoberts, Lucan, Ont., gave a bit of his experience on the above subject. It is substantially as follows:

I run all my hay and straw through the cutter, and mix the meal with it in a dampened condition. I clip off the long hair and rub the body over with a mixture of coal oil and fish oil, in proportion of one part of the former to two parts of the latter, for the purpose of killing the vermin and softening the skin. Of all the foods I like bran best, but I also like shorts; I like turnips better than mangels, and clover better than timothy. Bran makes muscle, which suits the English market better than fat. I grind wheat and flax seed together, and mix them in proportion of one part of the former to two of the latter, but if the animal is hide bound I give more flax-seed. I put a teaspoonful of sulphur in each beast's feed twice a week, with a small quantity of salt; otherwise I use no condimental foods. It takes 13 to 15 lbs. of meal per day to fatten a bullock, in addition to hay, bran, and roots; but with this ration I have found that straw is as good as hay, as it gives belly to the bullock. I have fed ground corn and bran with excellent results; but I like peas and wheat better than oats or corn. I can't get steers well enough bred. The "scrub" bull is a pest and ought to be taxed to death or exterminated in some other way. I prefer a heifer to a steer; she takes on flesh better. I give a quarter of a cent more per pound live weight for heifers than for steers, and I can make this difference in my selling price. It doesn't pay to feed old cows. I let my fattening cattle out two hours every day for exercise, except on stormy days. They ship far better when they get plenty of exercise, and improve on the voyage, instead of going back like cattle which get no exercise. Cattle fed on cooked or sloppy foods never stand the journey well; they decrease in weight while being shipped. From the 1st to the 20th of May is the best time for shipping. I never fed oil cake; I use bran and flax-seed instead. I get second grade flax seed for \$1.25 per bushel. I have fed as much as 10 lbs. of bran per head per day. I can fatten bullocks on straw and bran alone. I rub brine over the back of my stock in order to kill the warbles. Summer feeding pays best. I keep the steers on the pasture, and feed four to five pounds of meal per day to each head, chiefly oats and barley. I feed it only once a day, in the cool of the morning. I have boxes arranged in such a manner that the steers do not disturb one another while eating their meal. I have shade trees in the pastures to protect them from the heat. Meal and grass fed steers do not scour; they stand shipping well, they readily eat meal on the voyage, and bring as good prices as stall-fed steers. I keep accurate accounts of my profits. Here is a statement of the profits of 70 head of Shorthorn grades which I fed in the winter of 1883-4, the ages ranging between two and three years:

STATEMENT OF PROFITS IN FEEDING 70 STEERS.

Dr.	
To 70 head @ \$45	\$3,150
Cost of feeding (Oct. 1 to July 20)	1,750
	\$4,900
Cr.	
By 70 head @ \$102	7,140
Total gain	\$2,240
Gain per head	\$32

The average weight when bought was 1,120 lbs., so that the average price I paid live weight was almost exactly four cents per pound. On the date of shipment the average weight was 1,630 lbs., being a gain of 1.75 lbs. per day. I have included all my disbursements in the above estimate, the labor costing me \$20 per man per month without board, and I calculate two hands for each 100 head of cattle. Of course I have the manure in addition to the above profits, but I have not counted interest or risk on the money invested for the ten months.

How would it do to try Mr. McRoberts as