Steer-feeding Returns.

Results from cattle-feeding, obtained from a farm not 60 miles from London, Ont., furnish interesting food for thought. Eighty-eight head purchased 16th October, 1908, and sold 21st April, 1909, showed fair gains, but labor given and feed consumed demand serious consideration in arriving at net profits.

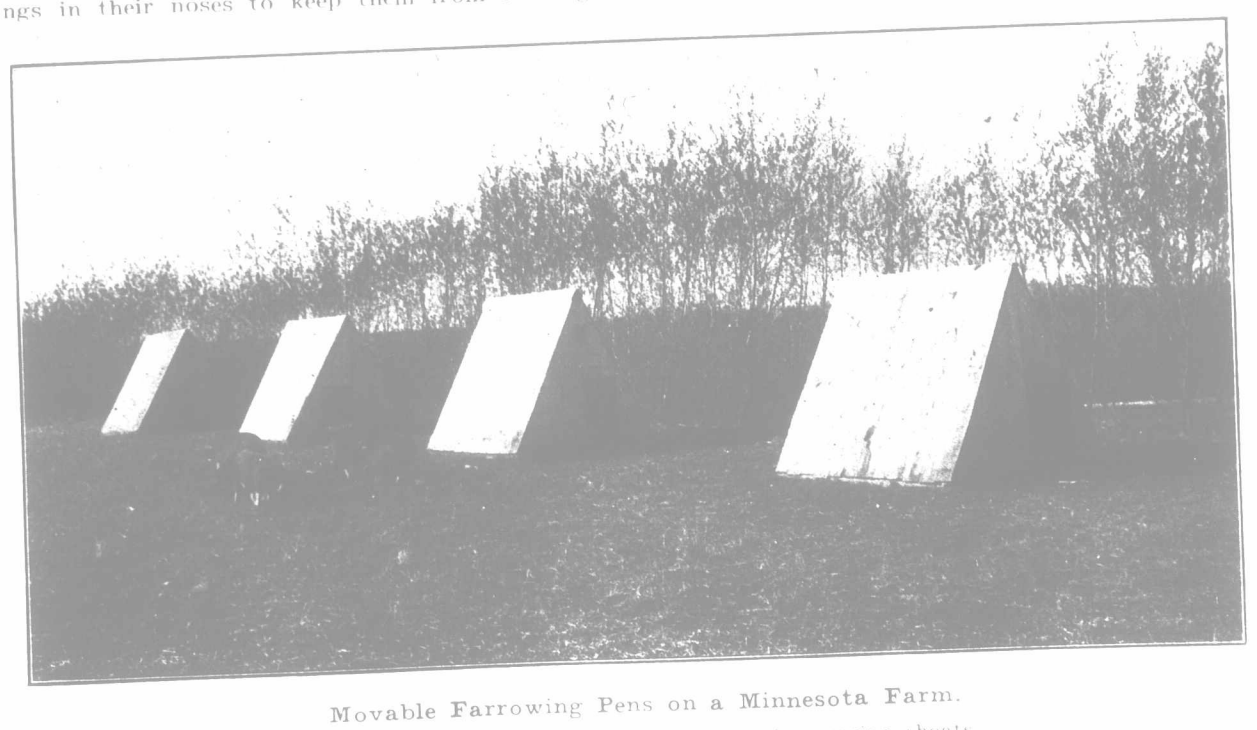
The cattle were purchased, and weighed, on delivery, well shrunken, 1137 pounds each, costing $47.30 each for 88 head, laid down in the stable. They were of various breeding, but principally Shorthorn grades. They had been on pasture during the summer and fall. About December 1st they were put into the stable, and fed lightly at first, gradually increasing, until, at the finish, they were getting practically all they could take. They were fed hay uncut, turnips and mangels, silage, cut straw and grain, the latter consisting of one-third corn to two-thirds oats, peas and barley mixed. The animals were tied in the stalls. When stabled, the cattle averaged 1,137 pounds, and 1,324 pounds when they came out. They sold for 5¾ cents, showing an increase in value of $28.80 per head. A close estimate shows that the whole gain in value obtained was consumed by the cost of bringing them through, and that the profit on the transaction is represented by the manure produced. From this, the feeder decides that it does not pay to prepare cattle for market in this way, unless the farm is kept in first-class condition as regards fertility. A man can do better with his money than to buy cattle and buy feed, and then sell them under such conditions. A man with a farm is obliged to feed stock, because, if he sold the produce, the farm would rapidly depreciate in value."

Shelter for Grazing Hogs.

In the summer time, swine should be on the ground. It is natural for them, and one seldom makes much mistake in following nature. Hogs which are pastured on alfalfa will make rapid and very profitable gains with small grain allowance. If a small quantity of skim milk or whey can be added for a month or so after weaning, so much the better, but, in the absence of dairy by-products, alfalfa pasture makes the best substitute, and, with or without milk, it should be provided. If one has not alfalfa, let him use clover, or even an old grass meadow. Rape, artichokes and mixed grain sowing may also be employed. Anything to get the pigs out on the land, and to provide pasture to reduce feed bills.

For grazing hogs, suitable shelter sometimes becomes a problem. In some cases convenient access may be had to the piggery. In other instances, portable pens must be provided in the pasture-lot. The main thing is to give the pigs a clean, dry, sheltered sleeping place. It need not be enclosed. Fresh air is as good for hogs as for other animals. It should, if possible, be movable, in order to change it around from one pasture to another, and to prevent the hogs killing out the grass or clover in spots by close eating and trampling, especially trampling when wet. The accompanying illustration of farrowing pens on a Minnesota farm suggests an excellent plan of providing shelter for grazing hogs. They may be used summer and winter, but, for reasons of convenience, are of special adaptation to summer conditions, for which purpose they are better with one end removed, all but a cross-piece or two for support.

The trough may be outside, and should be of heavy plank, with a two-foot piece at each end, to avoid upsetting easily. The pigs should have rings in their noses to keep them from rooting. Grain, especially ear-corn, may be fed on the ground, and the shorts mixed with milk, whey or dish-water, fed in the trough, at least three times a day. Where a large number of pigs are kept, a cart or old democrat may be used to distribute the feed. It is better not to have too many hogs in one pasture, and to have the field divided into sections, changing the pigs from lot to lot for the good of the pasture. There is money in this way of raising hogs. Try it.



Movable Farrowing Pens on a Minnesota Farm.

A modification of these pens are excellent for grazing shoats.

THE FARM.

A Business-bringer.

I have had a barley advertisement running in your paper for some time, which I would ask you to discontinue, as the barley-seed season is about over. I feel that I cannot let the opportunity pass without extending to "The Farmer's Advocate" very great thanks for the many inquiries and orders this great paper has brought me. I have received somewhat over 200 letters since my advertisement was first inserted. Of course, I had it in several other papers, but I can safely say "The Farmer's Advocate" sent the bulk of the orders, and that, from all over the Province. I have shipped something over 500 bushels from Hensall station, 10 bushels going to Richmond, Quebec; 10 bushels going to Nairn, on the Soo line, north of Lake Huron. I even heard from an inquirer from Nova Scotia, who saw my advertisement in "The Farmer's Advocate." In all, I have sold over 700 bushels of No. 21. It is easily seen that a great many people are aware of the great qualities this barley possesses over the Mandscheuri, by the business people who are after same. I have sold same at $1.00 per bushel, and I have received many very grateful letters for the quality of seed I supplied my customers. I have not had a complaint.

Huron Co., Ont. JNO. ELDER.

Forms of Phosphorus in Fertilizers

A Nova Scotia reader has sent us two newspaper cuttings, one of an article depreciating acid phosphate, and the other of an article discouraging the use of basic slag (otherwise known as Thomas phosphate powder) and the raw phosphates as sources of phosphoric acid, and naturally asks the question: "If neither acid phosphate nor basic slag are to be encouraged, what shall we use for our phosphoric acid?"

It is to be regretted that articles, in which unqualified statements are made regarding the desirability of using one particular source of phosphoric acid (or other essential plant-food ingredient) in preference to any other, should be published, since it is most confusing and misleading to farmers who may just be commencing the study of the fertilizer question.

One of the articles before us is an extract from an article by Prof. Charles E. Thorne, Director of the Ohio Experiment Station, originally published in the "Ohio Farmer" of January 2nd, wherein Prof. Thorne testifies to the beneficial effect produced by an application of lime to the experimental plots at Wooster Farm, and makes the statement that since on the soil of that farm "the use of acidulated fertilizers is injurious to the clover crop—the use of acid phosphate has been abandoned at this station except to continue experimental work."

Naturally, in reading the abbreviated article referred to, one would conclude that the use of acid phosphate at the Wooster Farm had been unprofitable, but a brief reference to Bulletin 182, of the Ohio Experiment Station, shows that both on the Strongsville and Wooster Farms of that station, no source of phosphoric acid was more profitable than acid phosphate.

Both the Strongsville and Wooster soils contain a large proportion of clay, but are deficient in lime, which accounts for the beneficial effect of the lime application.

For our present purpose it is only necessary to quote a few brief passages from Bulletin 182, which all go to show that acid phosphate in these experiments proved rather more efficient than any other source of phosphoric acid.

Page 159. "Table XVIII. shows that, for the rotation as a whole, acid phosphate has been the most effective fertilizing material, and that its effect has been greater during the second rotation than during the first, and greater during both periods at Strongsville than at Wooster."

Page 167. "The combination of acid phosphate with either of these salts (potash and nitrogen), produces a much larger increase than either substance has produced when used separately."

Page 175. "Taking acid phosphate as 100, the relative efficiency of the four phosphates is as shown in table XXVII.:

TABLE XXVII.—RELATIVE EFFICIENCY OF CARRIERS OF PHOSPHORUS.

Phosphate.	5-year Rotation.		Potato Rotation.
	Wooster.	Strongsville.	Wooster.
Acid Phosphate	100	100	100
Raw Bonemeal	83	96	94
Dissolved Boneblack	85	85	98
Basic Slag	87	100	100

The other article with which we have to deal is by W. H. Bowker, of commercial-fertilizer fame, and is reprinted from the Maine Farmer.

While Mr. Bowker's article is, on the whole, interesting and instructive, we cannot agree with his opinion as expressed under the head "Tetra-lime Phosphate, or Slag Phosphates," which is as follows:

"These are, no doubt, valuable in their place, but they have their limitations. According to the official methods of analysis in this country, slag phosphates contain no soluble phosphoric acid. Therefore, when one applies them, he is only adding to the sum total of phosphoric acid in the soil, of which the soil, as we have seen, contains enough for a number of centuries.

"Slag phosphates, however, are made up of about one-third free lime, and are valuable when the soil is acid. Probably a considerable part, if not all the efficiency of slag phosphates, is due more to the free lime than to the phosphoric acid they contain. If one needs to apply lime to sweeten his soil, and does not care about the insoluble condition of the phosphoric acid, why not make a mixture of 1,000 lbs. of agricultural lime and 1,000 lbs. of "floats" (raw rock phosphate), and thus have a ton that will contain as much phosphoric acid and more active lime than the slags contain, and costing about $5 a ton less? The lime in such a mixture would be quite as active as the lime in the slags, and chemists tell us that the phosphoric acid in either case is insoluble.

"Again, slag phosphates contain about 15 per cent. of iron, which is regarded as a bad thing in a phosphate, producing insoluble salts or reversion. The mixture of "floats" and agricultural lime will avoid this objectionable feature."

In order to show where Mr. Bowker is in error, it is necessary that we first of all explain the nature of the various phosphates of lime.

The most commonly occurring is the tri-calcic form, which we find in bones and the crude rock phosphates. It may be graphically represented thus:

Lime)
Lime)Phosphoric acid=or three lime phosphate.
Lime)

Tri-calcic

This tri-calcic phosphate is insoluble in water, but is soluble in acid. To render this phosphate available, it is treated with sulphuric acid, the resultant substance being then known as acid phosphate, or superphosphate. Its composition is:

Water)
Water)Phosphoric acid=or acid phosphate.
Lime)

Mono-calcic phosphate

Here it will be seen that in the combination two parts of water have replaced two parts of