

of cattle, and have been contented to sell grain, and so rob the soil of its due returns in manure. A period of low prices always depresses the breeding interest, but as such are as certainly followed by periods of correspondingly high prices, or at least profitable prices, it is the poorest kind of policy to relax the effort to continue the improvement of farm stock. Let each man who is breeding pure-bred cattle do more to encourage breeding up with all kinds of pure-bred stock and less in behalf of his own special interest. The need of the hour is disinterested work for a general improvement of our cattle.

## THE FARM.

### A New Nitrogenous Fertilizer.

For some time it has been known that, by growing such crops as peas and clover, the farmer can draw on the immense amount of nitrogen in the atmosphere. Quite recently it has been demonstrated that when powdered calcium carbide is heated in air from which the oxygen has been removed, a compound known as calcium cyanamide is formed. It is a black powder, resembling basic slag or Thomas' phosphate in weight and appearance, and contains from 14 to 23 per cent. of nitrogen, all of which has been taken from the atmosphere.

Experiments carried on by Hall, in England, and Gerlach and Wagner, on the Continent, with pots and in the field, indicate that the manurial value of calcium cyanamide is almost equal to sodium nitrate and ammonium salts, which is equivalent to saying that it is equal as a fertilizer to the best salts containing nitrogen that we have. Some preliminary pot experiments, conducted in our own laboratories, show that the nitrogen is very readily available to the plant. On some soils it acts injuriously, owing to the formation of a noxious compound, but experiments seem to show that if the fertilizer is applied some two or three weeks before the crop is sown, no injury will be done.

At present very little can be said about the price of this new fertilizer. When its value has been fully demonstrated, and it is manufactured on a large scale, it is quite possible that this fertilizer will be much cheaper than either nitrate of soda or ammonium sulphate.

The introduction of this new manure, which can be produced in almost limitless quantities, and especially if it can be produced at a much cheaper rate than the old forms of nitrogen, will have a marked effect in enabling the agriculturist to obtain a full supply of nitrogenous fertilizers. The introduction of this manure is also another instance of where science has been able to help the agriculturist. There are immense quantities of nitrogen in the atmosphere, and it is the fertilizer constituent which costs the most money. Therefore, it will readily be seen that any method by which we are able to draw on the large supply in the atmosphere, must be of great benefit to the farmer.

R. HARCOURT.

Ontario Agricultural College.

### A Time to Sum Up.

Summer is over, the threshing is nearly done, and much of the farmer's product in sight of the market. It is therefore a good time for those concerned to do a little summing up of the result of the season's labor. A farmer is in danger of going back who is not making some advance, and the secret of success lies in knowing the details of farm results. Just now, when labor is so well paid, a farmer's own time and labor, to say nothing of that of his wife and family, have a good market value, and it must be reckoned with when the total is considered. Now, if a farmer in Old Ontario has not made money this season, there is something radically wrong. The season has been a fine one, and the average of prices has been high. The cities are clamorous for produce, while John Bull is more anxious than ever to pay handsomely for the best the Canadian farmer can send him. Hence the pertinence of the farmer's questions: "Am I making money, and if not, why not?"

As I have said, it is really a question of details. For instance, an account should be kept with each line of the farmer's business—grain-growing, dairy, poultry, and so forth. The reply, "Oh, I guess it pays all right!" is hardly satisfactory, in regard to any line of farm work. Many a man has given over the dairy business in disgust because he has failed to discover the three or four robber cows who have eaten all the profit, while not a few have come behind in grain-farming because too great an acreage has been attempted. Others fail because their help has not been efficient. Still others fail because they have had too many irons in the fire. In some way they have allowed "politics" or some other kind of "lies" to dissipate their energy, and to leave their main business—farming—to take care of itself. At any rate, it is the duty of every farmer to spend a good deal of time in finding out just what he has accomplished this season. Just now he has the results before him, and he ought to know his own work before him in detail, in order that he may next year reject the unprofitable and pursue the profitable. O. C.

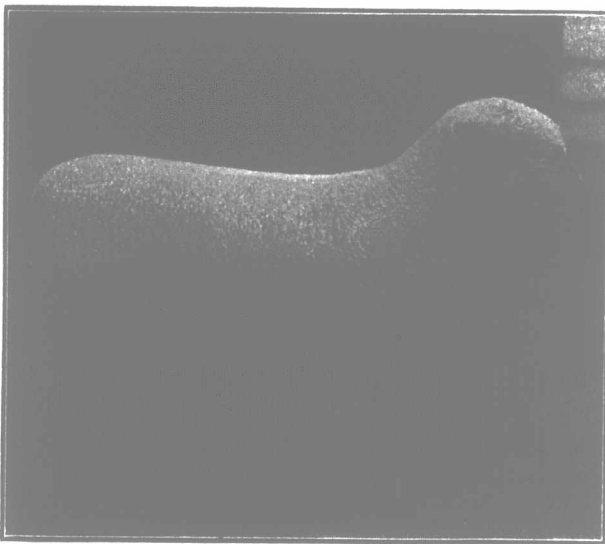
### Rotations and Weed-killing.

In one of your late numbers a three-year rotation of crops was recommended for killing weeds and keeping the farm clean. At our annual Farmers' Institute meeting a speaker, discussing weeds and their eradication, said he very much preferred a long rotation, and would even recommend an eight-year rotation. Our time at the meeting was so limited that there could be no discussion. If room would allow, I would gladly see this subject discussed in "The Farmer's Advocate."

J. G. V.

Oxford Co., Ont.

The problem of rotation of crops is one that is affected to such an extent by local conditions and requirements that its solution must be worked out largely by every man for himself. A rotation which suits one man will not necessarily suit another, and we seldom find two farmers following exactly the same rotation. The question you ask, therefore, as to the relative merits of a three-year rotation and an eight-year rotation, in regard to destruction of weeds, does not admit of a clear, straightforward answer, as the whole question hinges on the kind of three-year rotation and the kind of eight-year rotation, and neither of these points is made clear in the question. It is quite possible to have a three-year rotation which would not be so effective in destroying weeds as a carefully-planned eight-year rotation. Generally speaking, the main advantage of a short rotation in destroying weeds, rests in the fact that it admits of the frequent introduction of hoed crops. If this opportunity is not taken advantage of, the superiority of the short rotation over the longer one, so far as killing weeds is concerned, largely disappears. It is true, however, that the short rotation permits frequent seeding with clover, and clover has a tendency to check the spread of many kinds of weeds. So that we may say that a short rotation tends to check weeds in two ways, namely, by allowing the frequent introduction of hoed crops and of clover. The main advantage



Imported Two-shear Shropshire Ram.

Winner of second prize, Western Fair, London, 1906.  
Owned by John G. Clark & Sons, Burwell, Ont.

of the short rotation over a long one is in connection with the matter of fertility. The frequent introduction of clover is one of the farmer's most important means of improving the fertility of his soil, but this is another matter, and one that does not belong to the question in hand.

Ontario Agricultural College.

G. E. DAY.

### Maize in England.

In the whole of East Anglia, says an English exchange, maize is now not an uncommon crop, but in journeying through Essex, the writer this season could not but notice the considerable increase in the area under this crop, especially within thirty miles of London. Dairy farmers, especially this hot and droughty summer, cannot but congratulate themselves on having grown this year maize as a fodder crop, for, with the shortage of green food and the dried-up pastures, they can well feel like Longfellow portrays the young Indian in "Hiawatha's Fastings," when he gave the cry of rapture on finding "this new gift to the Nations":

"Maize in all its beauty,  
With its shining robes about it,  
And its long, soft, yellow tresses;  
Mondamin!"

Mondamin, the Indian name of maize, translated, means "the friend of man," and Essex farmers have found it for weeks past a godsend. Several dairy farmers, indeed, are now bemoaning the fact of their not having sown a larger acreage. Not far from Charles Dickens' favorite hostelry, opposite Chigwell Old Church, a week or

two ago could be seen maize (Indian corn), over six feet high, being cut and carted away for food for a herd of milch cows, and from this spot eastward and north-east, within a short walk, may be seen field after field of growing maize, but in many cases partly cut.

### Favorable Results from Nitro-culture.

Editor "The Farmer's Advocate":

Having conducted a few experiments this season with nitro-cultures furnished by the Ontario Agricultural College, and thinking that the results might be of interest to your readers, I am sending you the result of my experiments. I applied the culture furnished for field peas as per directions, and sowed them on a piece of clay loam which has been under cultivation for at least thirty years and has never received any manure or fertilizer whatever, nor have I known any clover or other leguminous crops on the land within the last fifteen years. It has, however, been under timothy and blue-grass sod for a considerable time. So I consider this piece of land was in ideal condition for an experiment of this kind.

The peas were sown the 12th of May, and they came up very evenly on both treated and untreated pieces. But in about three weeks there was a noticeable difference in favor of the treated portion, and, upon examination of the roots, the treated plants showed numerous nodules, while the untreated plants showed far less, a large percentage showing none at all.

Unfortunately, the heavy rain in June damaged the crops very much, and what would have been the final result of this experiment, I am unable to say.

The culture which I received for field beans was applied to a small quantity of beans, and they were planted with a corn-planter, a few rows of untreated seed being planted for comparison.

The result was very much in favor of the treated seed; so much so that untreated rows could be distinguished from a distance, being only about one-half as large as the treated rows.

The culture which I applied to clover seed showed no difference whatever between the growth of the treated and untreated seed; but perhaps it was owing to the season being so favorable to the growth of clover, as it all grew splendidly.

Lincoln Co., Ont.

A. BINGLE.

### Our Western Letter.

One of the greatest problems of the Western farmer is, "Weeds, and How Not to Grow Them." Grain-growing without the advantages of roots and corn in the rotation, foreign seeds brought in by new settlers, unfenced fields, and thousands of other things, combine to give the farmer trouble in the struggle against weeds. However, there are compensations. In the Provinces of Saskatchewan and Alberta we have wide-awake Departments of Agriculture, and their efforts count for something in coping with the difficulty. The weed ordinance is pretty strict, and the next session of Parliament will see the Act still further strengthened. There has recently been patented an attachment for separators that seems full of promise. It consists of a cylinder of perforated zinc, and along this revolving cylinder the grain is carried, and through the perforations the small weed seeds are thrown. The writer saw it working at Moose Jaw last year. It looks good, and if it proves a success it will obviate one great difficulty—separator distribution of noxious weeds.

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A recent visit to British Columbia has confirmed me in the belief that Ontario must wake up and hustle if she hopes to do anything to hold her fruit trade with the West. The B. C. people are growing mighty good fruit. They take endless pains in boxing and marketing, and when the product appears on our markets we are led captive, even if the price is higher. The area of fruit land in B. C. is, of course, somewhat limited, but the yield from a small acreage is large and the markets good. Fruit-growers in the Pacific Province are certainly making money.

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Happy in the consciousness of their own mightiness, the manufacturers blew in upon us the other day—pardon the Westernism. It has often been a point in my mind as to whether "nerve" or true worth figured most in the strife for success in life. If the former should, from any cause, fail them, they would fall back on loyalty, and loyalty (to your own interests, of course), plus nerve, always carries the day. This much is certain, if persistence is a virtue, they deserve the palm, and unless the farmers are on guard they will get it. We need wide-awake men to watch this tariff question—it will stand watching.

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Fall fairs are nearly over, and never have they been more valuable. It seemed, a few years ago, that for some reason or other the fair business was sliding down hill, but now they have picked