

cover the ground. And only from the universities can we hope to get men of adequate general culture and sufficiently high scientific capacity to undertake to grapple with the very complicated problems, both scientific and practical, involved in agriculture.

As far as I know, the great majority of our leading farmers are convinced that the art of farming can only be taught as in other industries, by apprenticeship to one who is engaged in it as a business.

Killerton Exter.

THOMAS DYKE AGLAND.

Phosphatic manures—I do not know that I can find anything very new to say upon this subject, but as the time will soon arrive for the employment of artificial manures, or fertilisers, as they are called here, I may as well remind my friends that there are several preparations of phosphates, not always equal in value in spite of the assertions of certain interested parties. These preparations may be roughly divided into two classes—crude ground phosphates, and dissolved phosphates, or, as they are commonly called, superphosphates. Of the former class, crude ground phosphates, bone-dust, Carolina-rock, and phosphatic guano, I cannot recommend the use, unless with a mixture of dissolved or superphosphate, except in the case of finely ground bones, carefully prepared. Our *apelite*, I need not repeat, unless dissolved, is absolutely inert in the soil, however finely it may be ground, as the organic acids have no effect upon it. Carolina-rock is not so refractory: added to a moderate dressing of superphosphate it is, from all accounts, so far soluble that, after a couple of months residence in the land, it is capable of sustaining and promoting the growth of plants that have been started into vigorous life by the more quickly acting dissolved phosphate. The more recently discovered *basic cinder* is being largely used in Great Britain. It is a by-product of the iron-industry, as thus: Almost all English iron-ores are contaminated with phosphorus, and this must be got rid of somehow or other before good tough iron can be made. The slag, which previous to 1886 was thrown aside for road-making, is now ground to an impalpable powder, and used for manure: it is said to contain as much as 15% of phosphoric acid. I hope to obtain some of this *basic cinder* for experimental purposes this spring.

But concerning the two chief forms in which phosphoric acid is administered, there is one point chiefly to be considered: Is the land on which it is proposed to use it calcareous or not? From seriously conducted experiments in England, it seems probable, nay even certain, that when the soil contains a fairly abundant proportion of lime, the dissolved form of phosphate, commonly called superphosphate, is the most economical; but, when lime is wanting, or present in very small proportions, bone-dust, Carolina rock, or this *basic cinder* will answer equally well and be less expensive; always, be it understood, that they be reduced to a very fine powder. Still, seeing the immense advantage of using a manure for such crops as turnips that shall go to work at once and push the young plant out of the way of the fly, I should prefer mixing a proportion of dissolved phosphate with the other.

On such soils as the Sorel sand, on peaty land, I should use for swedes or turnips half a dressing of dung and a mixture of 200 lbs. of bone-dust or Carolina rock, and 200 lbs. of superphosphate containing 15% of available phosphoric acid, and, as farmyard dung here is not often too rich, I should add about 100 lbs. of sulphate of ammonia, taking care to get the artificials as near as possible to, but not in contact with, the seed.

The Question Box.—"Which is best to feed when cows are on pasture—cottonseed meal or wheat bran?"

W. H. Hallock—I prefer wheat bran.

Mr. Van Alstyne—It has been stated by the experimenter at Cornell that it will not pay to feed anything. This must be where the pasture is very rich. I prefer cottonseed meal, as it will enrich the ground faster than bran. Linseed meal will do the same thing.

I should prefer a mixture of pease, corn, and linseed, ground together and given dry for butter, or in a mash for milk.

Mr. Van Alstyne has hit the right nail on the head. As is too often the case, the experiment at Cornell was vitiated by the fact that the grazing was too rich, and the cows could get all they were able to employ from it.—(see p. 84.)

Horses bearing to one side.—A question was asked in one of the Montreal papers last month as to a cure for horses that persistently bore to one side of the road. Dr. McEachran, in reply, recommended, very properly, driving the delinquent with another horse as a pair. But, if this is inconvenient, I advise the use of a port bit and driving the horse with the rein down to the lowest bar on the side he is given to bore to. He will soon find it easier to his mouth to give up the trick. I had, years ago, two very fine dog-cart horses that were dreadfully tiresome to drive on this account, but treated as above, they were soon cured. The fault arises, of course, from not watching the colt when on the *mouthy-bit*.

English riders.—Joaquin Miller, the American humourist, is good enough to say that no Englishman knows how to ride, and that there never will be one who can ride. This is what Mrs. Camp calls "laying down the law pretty positive"! As I was put on horse-back, or rather pony-back, before I was four years old, and sent out with the foxhounds before I was eight—without stirrups, too—I really used to think that I was not a bad horseman by the time I was grown up. The common opinion in Europe is, that we Englishmen are the best riders across country in the world.

Agricultural education.—Professor Shaw is reported to have said at Dundee, Ont., that only one Ontario farmer in five thousand sends a son to Guelph agricultural college!

Grain after silo-maize.—It is now generally allowed that all the valuable matters are present in the maize-plant when it is harvested for the silo in the state of glazed-ears. Now taking this to be the case, and comparing a crop of 20 tons an acre of corn with a crop of 20 tons an acre of swedes, is it wonderful that the grain-crop after the corn should be much inferior to that after the roots? The remedy would seem to be to sow 100 lbs. or 125 lbs. of sulphate of ammonia on the crop succeeding the maize.

A. R. J. F.

Beet-pulp for Cows.

THE OTHER SIDE OF THE STORY.

Mr. H. Trudeau, agent, of St. Laurent, says the statements recently made that the beet root pulp furnished to milkmen in the vicinity of Cote des Neiges is in a state of decomposition and emits a bad odor, and that the residents of the place from which it is sent have complained of the nuisance is incorrect. The pulp, which is brought to Cote des Neiges by railway, "is perfectly sound, makes clean food for milkmen's cattle and furnishes milk of first class quality. More than thirty milkmen are ready to make affidavits that the pulp is so good that since they have had the advantage of getting it, none of their customers have complained that their