

Professor Massey's Editorial Page.

Commercial Fertilizers, Their Use and Abuse.

THAT THE INJUDICIOUS use of commercial fertilizers has been the cause of a great deal of the depleted state of much land in the South is certainly true. But I get letters from farmers in some sections saying that they do not believe in commercial fertilizers. One writes that he will use lime in the improvement of his soil at rate of two tons an acre, and will feed stock and make manure, but he does not want to have anything to do with commercial fertilizers.

This simply shows that he fails to understand the essential matters connected with the restoration and maintenance of the productiveness of the soil. He has seen that men have grown poor while annually growing cotton on the same land with a little dribble of a low-grade fertilizer, and charges this poverty of soil to the fact that they used commercial fertilizers, when it was due to ignorant methods in farming and a neglect of the means for maintaining the humus in the soil.

He proposes to use lime to enrich his land, but while lime has a valuable and important part to play in farming, lime will never make poor land rich. Lime is not properly a fertilizer at all, and is not used as a fertilizer, though we often see it advertised as such. All of our cultivated soils have plenty of lime in them for all the use plants make of lime as food. We use lime to sweeten the soil when it has become sour. We use it on lands that abound in insoluble potash, such as most of the red lands of the Southern Piedmont, for lime has the power to release potash in the soil. We use it to hasten the nitrification of organic matter in the soil, but we must maintain this by a proper rotation of crops and the use of animal manures. Lime is very useful in a good rotation of crops, but used with the idea that it is a fertilizer, we can soon run the land down to a totally unproductive state through its use.

Stable manure is excellent, of course, and few of us can get enough of it. But stable manure alone will not maintain the phosphoric acid and potash in the soil. Every growing animal takes phosphorus to form its bony system, and thus carries phosphorus off the farm.

In fact, phosphorus is the one element that we must add to all of our old soils in some artificial way. We need never buy an ounce of nitrogen, for we can maintain our supply of this and increase the amount in our soils through the growing of the legumes and feeding them to cattle, but we cannot get the phosphorus from the air, and in some soils, especially the sandy soils of the Atlantic Coast, potash is also needed. If a man is situated like Dr. Dietrich was on his little farm in Pennsylvania so that he can afford to buy and feed grain grown on the land of other people, he can avoid the purchase of any plant food in a fertilizer. But such situations are rare, and most of us must restore the wasted phosphorus and potassium in commercial fertilizers.

When these are used for the purpose of increasing the production of peas and clover or other legume crops, the feeding of which will give us the needed supply of manure, it will be found that liberal applications will pay exceedingly well.

But because thousands have been putting 200 pounds an acre of the poor 2-8-2 fertilizer on cotton year after year, and have thus reduced the fertility of their soil, this makes no cause for the abandonment of chemical fertilizers. For the little 200 pounds of 2-8-2 had in its less than 24 pounds of plant food to go over a whole acre, and this was at once used up in the start and the plants made strong enough to draw still further on the plant food in the soil, and the natural result is a depletion of the fertility of the soil. Then all that is produced is sold off.

It is this use of commercial fertilizers that I do not believe in. But I do believe in the heavy use of phosphoric acid, and in many soils of potash, to give us more of the legumes to feed and more humus-making manure. The broad assertion that you do not believe in commercial fertilizers simply shows that you are ignorant of the needs of plant life and of our old soils.

A Batch of Garden Notes.

WE ARE NOW at the height of the summer production in the garden. I have now fourteen varieties of vegetables ready for use on the table, and every one the product of my own labor, and gathered daily by my own hands.

The latest to come in were the eggplants, but these are producing rapidly. Good eggplants are largely a matter of heavy manuring, for it is useless to try to grow them without this. The ground where they were planted was heavily manured in the spring, and after the plants were set they were mulched with manure on the surface to keep the soil moisture in, and on this I applied a liberal dressing of a fertilizer of a higher grade than our cotton farmers ever dream of, for it runs 7-6-5, and is the mixture the Norfolk truckers are using heavily. Of course, to get the 7 per cent of nitrogen, there is a large amount of nitrate of soda used in it, and it makes things jump surely.

We have been having more tomatoes than we can consume since the first week in July, and but for the cool and backward spring, I would have had them in June. But being very busy about

WHAT THIS MAN IS DOING YOU MIGHT DO.

MR. James C. Austin of New Salem Township purchased a pure-bred Guernsey bull four years ago and began to grow cattle along with his corn and cotton and other crops. He is not growing any less corn or cotton, but is actually growing more and in larger quantities per acre, and consequently receiving a greater profit per acre. And he is now raising and selling fifteen to twenty head of dairy cows each year at an average of \$50 per head. He grows the forage for winter feeding on his place, exchanges his cottonseed for meal, makes 150 to 200 tons of manure annually, and is emphatic in his statement that there is more money in cattle than there is in cotton. And Mr. Austin is not neglecting cotton, either, for he this year put over one hundred tons of good, fine manure on his cotton land, and his corn crop is fine. He has added to his gross income \$750 to \$1,000 annually, of which half at least, according to his own reckoning, is net profit.
—T. J. W. Broom, in *Monroe (N. C.) Journal*.

other matters, I neglected spraying early enough, and the result has been more rotten tomatoes and more boll worms than I ever had.

And on the corn the boll worms have taken a large toll, for some ears are almost eaten up. I hope that the later corn will escape, for the early corn is about the first thing the boll worms can find. I have some tomatoes grown from seed sown outdoors that are now loaded with green fruit and not a boll worm hole nor a rotten fruit to be seen. So we have to pay the toll for earliness.

The best snap beans I have tried are the Silver Wax. I planted these last year early, and the first beans were a disappointment, as they seemed scanty. But when they got well down to work they beat any bean I have ever had, for the same vines continued to give us snaps till the middle of August. The pods are a golden yellow color, and never rust as some wax beans do.

The plot where I dug early potatoes that made at rate of 350 bushels an acre is now growing Stowell's Evergreen sugar corn, and in a little while I will sow spinach between the rows of corn.

All the refuse in the way of vegetable matter that grows in the garden I will return to the soil after rotting it down. As fast as the ears of corn are cut, I pull out the stalks, for I do not want any stumps in the garden, and pile the stalks with the potato tops and peavines and sprinkle with lime in an out-of-the-way corner to rot.

Then the garbage from the kitchen goes on the same pile, and by next spring I expect to have a mass of humus-making material to go back on the garden.

People ask me how to get rid of nut grass, and I tell them the only way is not to allow it to grow. My land was infested with it, but I have kept at its daily, and already have to hunt for stray plants. These I pull out and throw in the sun to wither. Just outside the fence it is still very thick, but it is evident that one can banish it from cultivated ground if he keeps everlastingly at it.

The worst thing I have to contend with is a green brier of the smilax family that has a deep running stem under ground and shoots up everywhere. I am keeping this chopped off at the ground, knowing that no roots can long survive if not allowed to make green leaves above ground. Making a garden from a lot that has lain vacant for years and covered with all manner of weeds is a serious task, but the weeds can be conquered if we give them no quarter.

I have two varieties of okra. One, the Perkins Mammoth, is of the White Velvet class. The other is a dwarf green-podded sort that is much earlier than the Mammoth. Both are excellent for soups. The tender green pods can be put in the sun to dry and then will keep in cotton flour bags for winter, and then they come in finely to help out the soup.

On a sunny border I have beds of parsley and sage, for I grow sage from seed every year, giving the old plants to any one who wants to keep the bushes in the garden, but I get more sage, and better, from the seed.

Brussels sprouts are now making buds along the stems, and in the fall these will make little heads the size of a small walnut and are among the finest things for the winter table, as they are improved by frost.

How the Other Fellow Beats Us.

HE BEATS US, especially in the Northwest, because there they have always had to contend with the labor scarcity, and have been compelled to economize in human labor and use teams and machinery of the best sort. They have thus made one man's labor far more productive than we have in the South, where it is one man and one plow continually. One man with a team of horses does more work in the cultivation of the hoed crops than three men singly with three mules going four times in a row where they should go but once.

They beat us, too, in the superior intelligence of their laborers. Their farm hands are paid larger wages than in the South, and are as cheap, or cheaper, at that than the labor in the South, for they stick at it in an intelligent way day after day, and do not run off for every baptizing and every excursion and every Saturday afternoon as the darkey will.

I lectured once at an institute in northern Pennsylvania only a mile and a half south of the New York line. I had a large, well-dressed, intelligent and attentive audience, and was told that three-fourths of the bright-looking men in the audience were farm hands who got \$25 to \$30 a month and board and washing, and were all looking forward to the day when they could have farms of their own. It is this class of farm hands, with good teams and improved implements, that make the greater figures produced per capita on the Northern and Western farms.

Then, too, they farm, and are not single croppers with all their eggs in one basket. They feed stock and make a profit out of them and get manure, and are not eternally asking what fertilizer and how much per acre, as do too many men in the South who are working the soil and thinking they are farming, while they are simply gambling with fertilizers. In a climate where there is always the impending shadow of an untimely frost in the early fall, the Iowa farmer makes more corn and feeds more stock than we do in the splendid climate of the South, where no frost nor summer hot wind ever blights the corn, while the Iowa man is in danger of both.

To the three needs the Editor gives, I would add: More use of the brain and more study of improved methods of farming; better laborers, and less of slavish dependence on the fertilizer sack.

There is just as much beauty visible to us in the landscape as we are prepared to appreciate,—not a whit more.—Thoreau.