



What Professor Massey Says

MR. WOODS says very truly that vines, as a rule, are injurious to trees. But there is one that does no harm and clothes the tree with beauty in winter. This is the evergreen English ivy. There are immense old trees near me that are covered with ivy and have been so covered for many years, and yet both tree and ivy thrive. Now that the leaves are off the trees, the ivy makes a fine show. But climbers like wistaria and honeysuckle should never be allowed on a tree.

GRAPE cuttings made now should be cut close under the lower bud and about an inch above the upper one. Three buds are enough. Tie the cuttings in bundles and bury them in the ground upside down. I do not know why, but varieties that do not root readily will root well if buried in this way and set in the rows in the spring. In setting the cuttings in spring set them so that the top bud will be just above the ground. If the soil is clayey, it will be better to put some sand in the bottom of the trench in which to set the cuttings.

CUTTINGS of all hardy shrubs, such as the spiraeas, forsythias, deutzias, etc., can be treated in the same way as grape cuttings, and set out to root in the spring. Cuttings of the Leconte pear, too, treated in this way will root easily. Cuttings of the hardy roses, such as the Remontants, the crimson Rambler and others can also be treated in this way and will grow readily in spring. Cuttings of figs, too, made from the past season's growth should be made now and buried deeply in the earth till spring, and then set for rooting.

A SUBSCRIBER asks: "If seed corn is treated with carbon bisulfide will it injure the germination, and will it injure grain for food? Feeding sixty-eight steers, I would like to know if phosphate and potash are sprinkled in the manure of the shed where they feed, will it hurt their feet?" The fumes of the carbon bisulfide soon pass off and no damage is done to the grain for seed or food. There will be no danger in using acid phosphate in the manure, but whether potash would hurt the cattle's feet or not, I am unable to say, and would hardly advise it.

MR. MAXSON found that an ad sold his pears, and every farmer could soon get a regular clientele if he advertised what he has for sale and stated the price at which he will deliver these things. If an ad sold pears, it will sell peppers, turnips, cabbages and anything else that people in the towns want. There is no better way to get a customer than thru printer's ink in the papers. Then, too, a sign-board on the road leading to your place can be constantly stating what you have for sale. Hiding one's light under the bushel never sells products.

WHAT per cent of potash is contained in wood ashes? I can get some from a near-by brick kiln for half a cent a bushel." No one can possibly say how large a percentage of potash may be in any certain lot of wood ashes without a chemical analysis. The amount will vary with the kind of wood from which they come, and the way they have been kept. Ashes from pine wood are very low in potash. Ashes of hardwoods like oak and hickory have a much larger percentage of potash. But even these will have lost a good deal, if left exposed to the rains. The brick kiln probably burns pine wood and ashes are left outside. It would hardly be safe to estimate them at more than 2 per cent in potash. Good hardwood ashes may contain from 5 to 10 per cent, or more, of potash. Then there is usually about 35 per cent of lime and a small percentage of phosphoric acid. But at the price you name it will probably pay to use the ashes up to a ton an acre.

PLEASE tell how to make a fire-heated hotbed, and how many hours a day the fire needs to be kept up?" To make a fire-heated bed it will be necessary to make an excavation the size of the bed and build a furnace like those used in tobacco barns, opening under a shed outside. The flue is run straight thru the excavation. The sides are enclosed and a frame above the ground made to receive the usual 3x6-foot hotbed sashes. A floor is made a foot above the flue on which to place the soil, for if the flue is run thru the soil, it would make a hot and dry streak, and you must have the hot-air chamber under the bed. It is far better to make a little span-roof greenhouse with the sashes and run the flue from a furnace all around it. You can then go inside and work more comfortably than outdoors stooping over a hotbed. I have a little house opening from the rear door of my office. This is 6x10 feet and gives me a

bench 4x10 feet. In the cellar under the office is a little hot-water boiler, and the piping runs into the little house for heat. The whole thing, including the hot-water apparatus, cost less than \$100 and makes a very handy place to start seed and cuttings. With the fire-heated hotbed, you must keep up the regular heat all the time, after starting, night and day, and a furnace arranged for hard coal will be better than one for wood, as you can leave it for hours to run a slow fire. But a little house in which one can work comfortably is far better.

MR. DE SAUSSURE condemns using little potatoes for bedding, but the fact is, that in a bed we want to get as many sprouts as possible, and hence want plenty of potatoes and not so much room for parts that make no plants. I would not advise the taking of the stunted potatoes of the general crop for bedding, but would grow potatoes for that purpose. Make cuttings of the vines in July or August a yard long and coil the cutting around your hand, and plant the whole coil in the hill with only the tip exposed. Every joint will make a bunch of little potatoes that are the very best for bedding, and if the cuttings are selected from the best hills, they will improve the product annually.

Young Man, You Can Get Out of the One-Horse Class.

I HAVE all sorts of sympathy with the one-horse farmer, and my sympathy is mainly devoted to getting him out of the one-horse class, for no man can do the best farming, even on a small place, with but one horse. It is not practicable, especially on the upland red clay soils of the South, properly to break and prepare the land with a single horse or mule.

Now, as I have said heretofore, I was at the close of the war, as poor as any man anywhere. I had absolutely nothing but a little household furniture, and not a horse, nor a plow, nor any implement at all. Yet I had the nerve to rent a farm of over 100 acres and, fortunately, had a reputation for character and honesty of purpose. So I got two horses and a plow and harrow and a few hand tools, and went in debt for these and for fertilizer and seed, and went to work growing corn and truck crops, and at the end of that year I owned the whole and sold my crops and rented a better farm. I have never been a one-horse farmer, and do not believe that it is necessary for any young man, such as I was at the time, to be a one-horse farmer, for it will pay any young man who has energy and character to go in debt for team enough to do his work well. This is especially true of the man who owns his land, and hence can give more security for his purchases than I did.

It is largely a matter of energy and industry, and any young man with good health and industry can work out of the one-horse class. Hence, as I have said, my sympathy for the one-horse farmer would lead me to urge him to get into the two-, four- or six-horse class as fast as he can.

The average one-horse farmer is a one-mule farmer, and while the mule is a valuable animal, it is a poor investment for a poor man. Far better get good mares and raise your colts, and if you do not need them, it will pay as part of your farming to raise good colts and sell them.

I know a renter on a farm of less than 300 acres who had, the last time I was on his place, nineteen horses and colts, and was using an automobile in riding around, for he said that the colts were about the most profitable part of his farming, as he gets all the forage grown on the place free of rent, the farm taking the manure in lieu thereof, and he uses part of his share of the corn crop in the production of good colts, and finds that it pays him better to feed the corn to these and to beef cattle than to sell corn. The manure made not only benefits the owner of the farm but the tenant, too, for he is a permanent tenant, and is fixed on the farm so long as he farms right.

The man who farms one piece of land this year and another next year will always have a hard time to get along and to get out of the one-mule class. We need in the South a fair and permanent tenant system that will encourage young men to farm right and to feel that so long as they do so they can remain as permanently as tho the farm was their own. It is the cropper system of the South that keeps men in the one-mule class. Land-owners need to understand the profit that can be made by having a permanent tenantry in comfortable homes, under a system that is fair to both sides. We need good farmers, tenants compelled to farm in a systematic way, not only for the benefit of the tenant but also of the land-owner.

Of course, it is better for the young farmer to work out his salvation on land that is his own, but when one can only get the stock needed he had better get a fair rental and farm on the land

of another till he is able to get land of his own. Under the present system, or rather lack of system, in the South, the tenant is simply regarded as a land-skinner, and rented farms are considered to be on the road to ruin; while under a fair system, in which good rotative farming is the rule, the tenant has a better chance, while the land-owner finds that his farm is improving instead of running down. Men in eastern Maryland have become millionaires by burying and renting land, and their tenants have prospered and have bought farms, and the same system in the South would rapidly do away with the one-mule tenant and make him a more prosperous and successful man.

All of which means, of course, that every young man should as soon as possible get land of his own to improve. Land is still cheap in the South, but the day of cheap land is rapidly drawing to a close, and the men who own land and cultivate it in a profitable way will find its value increasing all the time. Mr. Poe has well shown the value of intensive work on small farms in Denmark, and what we need in the South, is to understand the profit there is in the intensive working of a small farm rather than spreading our efforts over a large area and scratching the land instead of plowing it well.

The boys in the Corn Clubs have shown how the productiveness of the land is increased by heavy manuring, and if we can get one acre up to the production of over 200 bushels of corn, why not extend the same to ten acres, rather than try to spread it over 100 acres. Stable manure is important, but the same result can be had with peas and crimson clover, aided by commercial fertilizers, and when we get one acre to make two to three bales of cotton, the cotton crop assumes a much greater importance. But this improvement cannot be well done with only a single mule to do the breaking, for he cannot turn an eight-inch furrow in a clay soil, and the loss on even a small place will soon more than pay for another horse.

We hope that all of the young men who read this paper and are now trying to farm with a single horse or mule will determine to get out of the one-horse class at once. You can do it if you will.

The Farmer and Fertilizer Experiments.

HARROW seems inclined to criticize my advice in regard to experimenting with the soil to find what is needed in the way of fertilizers. He thinks that the average farmer will not do this with any exactness. Probably not, but we are writing for the reading farmers, rather than the average man whose crops cut down his State's average in the making of statistics. This average man is always a poor farmer, and we would like to get him educated up to the point of taking some pains to find out what his soil needs. But there are thousands all over the South who are sufficiently intelligent to make these experiments, and I know of some good farmers who have tested their soil in this way, and have done it with care and accuracy. The average farmer is down in the ruts, and we want to elevate all the readers of The Progressive Farmer away above the average, and we assume that most of them are already above the average or they would not be taking the paper.

Of course, I can advise a man in a general way in regard to what would probably be a profitable fertilizer in his soil, but as I have often said, it looks too much like quackery to advise in all cases as to what a farmer should use for the greatest profit. When a man writes to me: "My land is poor and makes about ten bushels of corn an acre; how much fertilizer and what kind shall I use to get fifty bushels an acre?" I simply have to tell him that I do not know, and do not think it can be done in that way. My constant effort is to get farmers to farm right and thus to increase the humus content in their soil so that any fertilizer they may use will have a better effect than it will on the old dead mixture of sand and clay. I want to show them that by good farming, with the legumes, and the growing and feeding of these with the cottonseed meal, they can entirely avoid the purchase of the costly nitrogen in a fertilizer, and on the majority of the upland clay soils of the South need buy no fertilizer except a good carrier of phosphoric acid, and by spending the same amount of money for this that they now spend for a complete fertilizer, they can farm far more profitably. I want to get all of our farmers out of the entire dependence on fertilizers to make a crop, and to show them that they need not spend money for what their land does not need, or for what they can get in greater abundance without cost, and even make a profit in getting it. In short, I do not want to assume that our Southern farmers are all careless ignoramuses, but men intent on doing better and better in their farming every year. Hence I try to advise them as to what I consider the best means for the study of their soil, assuming that they are really intent on improving.