

It is an old proverb, that "tillage is manure," and in view of the scarcity of the literal article, would it not be better policy to obtain the same results by thorough tillage and clean culture, rather than by small doses of manure which go to the support of useless and noxious weeds.

The value of barn-yard manure is not only providing a store of plant-food, but making the soil more retentive of moisture, is a point of no small importance in a country like ours, where summer droughts are so apt to prevail.

The results obtained in the continuous cultivation of the same crop, and that an exhaustive cereal, show the policy and economy of rotations. By alternating other crops, requiring to some extent a different kind of food, the stock and store of nutriment in the soil is more evenly distributed and more completely used than when the same product is grown year after year. The results of these experiments do but confirm the old and time-honored axioms of enlightened agriculture as to stirring the soil, exterminating weeds, applying manure, and rotating crops. Messrs. Lawes & Gilbert have laid the whole civilized world under a fresh and weighty obligation of gratitude, by their recently reported labors of theirs in the field of scientific farming.

Ploughing.

The common reasons given as the object of ploughing are, "to pulverize the soil, to mingle the different portions, to kill weeds, to cover manures, and to keep the surface open and fresh." A still further object, which may perhaps be implied in the foregoing, is to air the soil. Air is essential to preparation of plant food in a soil. It changes a putrefactive process to one of oxidation; and the moment in which putrefaction of organic matter in the soil changes to one of oxidation, the soil changes from an unfertile to a fertile one, or its fertility is immeasurably increased; the oxygen in the soil is no longer employed in converting soluble matter into insoluble, but serves for the formation of carbonic acid, which enters largely into the composition and food of plants. In a soil to which the air has little or no access, animal and vegetable matter do not decay; at most they can only putrefy, which is a strong dioxidizing process. They only decay when air is freely supplied. We thus see that a most important object in ploughing is to freely air the soil, that oxidation and decay may go on; thus preparing and supplying adapted plant food in the soil that may be readily absorbed and taken into the composition of plants.

The ploughing which will accomplish the foregoing objects in the greatest perfection is the best. It will be inferred from what has been already said that pulverization of the soil in ploughing is the most important, and that the system which accomplishes this to the greatest depth the most thoroughly is the best. This is best understood by all those most thorough cultivators who wish to grow the finest, best and greatest product from a given soil. Would all our farmers but adopt this course in ploughing and culture generally with all their lands, we should hear little about poor crops, failure, &c. In this way we may make twenty acres do the duty now performed by thirty or forty. And how much better than to add the increased cost to the farm by doubling its surface area. A saving of the first cost, saving in labor, and saving in every way, are thereby accomplished. The writer is well aware that soils vary, and that they cannot all be ploughed alike; but that there can be a great improvement in the ploughing and working of all soils, there is not the least shadow of doubt.

It has been aptly said that "nearly every farmer in the country has a new farm under the old one." I would add it is as my conviction that nearly every farmer has a new farm lying within the confines of his present cultivated one, and that by performing all his culture in a more thorough, careful manner, he will soon find his reward in the old new farm. It is never advisable, in any soil, to plough so deep as to throw the cold, dead subsoil on the top of the richer, warmer upper soil; but, in many instances, the loosening of the hard and compact subsoil is of the greatest importance—this to be the first step in deepening the surface soil, after which we may begin

to turn up a slight depth of the subsoil, gradually, and as it becomes ameliorated more may be added in the same way. There are several different ways of ploughing soil and fallow ground, but it is not my purpose here to criticize or describe any of them, only to state principles deduced from experience, as well as observation. That way of ploughing which most effectually pulverizes the soil, and still keeps the richest and best at the top, is the best and most economical. The tendency of the feeding-roots of plants is to seek congenial soil near the surface, as here the larger part of pabulum from organic matter is prepared; air, moisture, and warmth of the sun, act more immediately near or at the surface.—*N. Y. Weekly Times.*

Turnips for Seed.

In answer to W. E. L. Sherman, Texas: The turnips should be sown so as to prevent their heating, and to prevent their premature growth; keep the apartment at a low temperature, and delay the planting until the frost at night ceases or becomes very light. But if our Texas friend relishes a good turnip, he should not rely on Texas-grown seed. I have tried raising turnip seed from the choicest specimens, with great care that nothing of its kind was planted near by, but have always failed out West to get the quality in my second crop. There is no bulbous root that will so soon degenerate in a dry climate as the turnip. I have planted nothing but imported (European) turnip seed for many years; would not plant western-grown seed if presented. W. C.—*Des Moines, Iowa.*

I notice a Texas correspondent asks how to manage turnips for seed. In this climate, and I suppose in his it would do as well, when we trim our ruta Lagas, we select the best shaped and finest, cut off the top leaving about two inches of it, and leave all the roots. If the weather is suitable, or whenever it is not frozen, we set them out in rows three feet one way by two the other, manuring with half a handful of bone if we have it, or a shovelful of other manure to the turnip. One hundred will make him ten pounds of seed if they do well—often fifteen. C. H. M.—*Johnstonville, Va.*

Generally the best roots are selected and drawn, tops cut off, not too close, and buried with roots on the same as potatoes. But I should think in Texas they might be planted out at once, if not too large, covering the roots up well with the earth. I have done so here with good success when the winters were not too severe.—*Cor. Country Gentleman.*

Honey Locust Hedges.

Mr. Josiah Hoopes, one of the best pomologists of Pennsylvania, writes to the *New York Tribune* in relation to the honey locust as a hedge plant:

The honey locust differs from the Osage orange, in being a stouter and less branching hedge plant, therefore, to insure a perfectly formed, and what is of the greatest importance, an impervious barrier, trim severely while young and secure a thick growth at the bottom; or, as some of the modern growers insist upon doing, allow the young plants to grow at will for a year or two, and then cut down to the ground, thus obtaining a stronger growth. Knowing so well the benefits of the old system, so long tested and proved satisfactory, I prefer to abide by it for the present. This branching from the ground is the most desirable feature in the work—in fact it is indispensable.

A friend of mine who has boasted for several years that he had the finest hedge in the country around his pear orchard, now wishes to qualify his former statements by saying that it looks well, but near the ground, and shaded by the overhanging branches, it is not sufficiently twiggy, and, as a matter of course, the boys by lying flat can crawl through and help themselves to his fruit. The great fault in all of our hedges is in having the individual plants composing them with small bodies at the base, or as the gardeners term it, "half-standard." In the place of one body we want a half-dozen at least, and the side branches (plenty of them too) starting right at the ground. To do all this we must commence early, and keep it up in the way of trimming.

Hedges of honey locust may be laid, but I prefer the cutting down process, believing it to be much less expensive and quite as effective, although I have seen as beautiful hedges grown on the latter principle as any other. Always bear in mind that we can readily get our hedges high enough, but it is not so easy to make them thick at the bottom in after years.

WHEN a boy is put to farm labor he is given an old hoe, a fork with a broken tine, a round-edged axe, a scythe that nobody else will use, and is expected to work more hours than a hired hand, to do all the chores, to build fires in the morning, to run on all errands, to turn the grindstone and to go to meeting in cowhide boots. With this experience he does not like farming; and lecturers, editors, members of Congress and petty lawyers mourn because so many young men go from the farm to the city.

FRESH MANURE.—Flesh manure is almost exactly identical in quality and effect with guano, and may be used in the same manner. Except on very rich soil it should not be used in larger quantities than 250, or 300 pounds per acre, as it would only stimulate a straggling growth, which could not be kept up in vigor. As a change of manure on rich garden soil, which is heavily cropped, it may be used to advantage. The best way to preserve it is to keep it dry, or mix it with earth. Its value, if free from foreign matter, and dry, is \$50 a ton.—*American Agriculturist.*

WORM-EATEN PEAS.—Prof. Maurice Perkins, Union University, Schenectady, furnishes the following for the *Country Gentleman*. Very often in the spring I have noticed that the peas, beans, &c., for sale in the stores for seed were worm-eaten. In many cases the seeds were so eaten as to be useless for seed. The worm, and even the egg, may be easily destroyed by the bisulphid of carbon, a colorless, volatile liquid. Lay it on the seeds and cover the barrel with an old horse blanket. The vapor of the bisulphid will sink down among the seeds and destroy all animal life. The seeds themselves will not be injured. Two or three ounces will be enough for a half dozen barrels. This liquid is used in Europe to destroy the weevil in wheat. I have not seen the above mentioned in any agricultural paper, and thought that it might prove useful to some of your readers.

LAND WASHING.—One of the greatest objections to our farming operations in this country is the tendency of our rich soil to wash off and rapidly deteriorate in fertility. Another misfortune is the indifference with which many farmers treat this important subject. It is plain to any observing mind that a field of rich, fertile soil will yield double the amount of one that has been thus neglected, and suffered other mispractices. I have in my mind now the case of a so-called farmer who allowed an old roadway, a quarter of a mile in length, to wash so deep that a plough could hardly cross it, when ten minutes work with a spade would have prevented it. And often we see large, impassible ditches form through valuable land, with no effort to stay the fearful waste. This, with fearful force, verifies the old saying, "a stitch in time saves nine." A few hints in regard to remedies are in order. First, the land can be ploughed so as to help the case by running the furrows crosswise of the rills. I prefer to have the water flow in straight rills at regular intervals, and to prevent these from washing deeper, back corn-stalks, large green weeds, fine straight brush etc., in the bottom, and allow the grass and weeds to grow in these ditches. Thus the water has something to wear on, and with a little care much soil can thus be saved. But the best manner to preserve the fertility of the soils is, as any intelligent farmer knows, to seed down to grass, especially clovers, not forgetting the importance of the proper use of manure.—*Western Farmer.*

CLEAN SEED.—As a rule, those farmers who are the most careful in cleaning their seed grains, and the most thorough in their cultivation have the fewest weeds to contend with; and such are the most fully compensated in the end for their pains. One of the most prolific sources of the spread of weeds is sowing directly from the threshing-machine, for however well these machines clean the grain for market purposes—and the better classes of them do it admirably—still there is no power machine that will clean seed in so thorough a manner as to fit it for sowing. This, however may be accomplished by careful cleaning by the more modern fans, having sieves adapted to the various sizes and shapes of seeds, and perfectly controlled by the blast given. With their use we have often secured a large advance over the ordinary market price, on account of the seed being perfectly clean.

Among the most difficult seeds to separate from grain are cockle and ches; and to do so thoroughly, it is necessary to have proper sieves for separating these from the good grain, since the specific gravity of these seeds is very nearly that of barley, rye and wheat. In the case of ches, the peculiar form of the seed being long, like wheat and rye—renders it especially difficult of separation. But with the modern fans, but little difficulty will be experienced in their separation, and the value of the seed will be thereby much enhanced.—*Exchange.*