The Farm.

Top Dressing Fall Grain.

The higher average yield of wheat in England above that in America is not the effect of a higher fertility of the soil, but of better cultivation and more liberal fertilizing. The English farmer must grow large crops or he cannot live, for the landlord stands over him demanding his share of the harvest before the farmer takes out of it the bread for his own children. He therefore spares no outlay and no labor that can enhance the yield of the soil. The wheat is hoed with the greatest carefulness; every weed that cannot be reached by the hoe is pulled by the hand, and the crop is liberally top-dressed immediately afterward with fine compost or with artificial fertilizers. Here we take no such pains except in rare instances, and consequently our average yield is but little more than half that grown in England. But it is absolutely necessary now for farmers, who have to compete with the fertile and cheap virgin lands of the far west, to use every practicable effort to increase the yield of their soil, so as to cheapen the cost of production, by all the arts and devices of skilled agriculture. And now that returning spring gives us a glimpse of the fall grain recently emerged from its winter's rest, we can see how much it needs the aid of the skillful farmer. It is now in a critical condition, weak, and often suffering. March is a trying season for fall grain. The constant change of temperature, the cold, drying winds, the frosts and thaws, are all hard on the crop, and some help is necessary to restore its condition after suffering damage from these hardships. A harrowing to loosen up the surface about the plants and cover them with fresh soil is of great benefit. This is done best with a light, close-toothed, sloping harrow, which does not tear up the plants, but slides over them, drawing the soil which it loosens upon the surface over them. Then a top-dressing of fine manure or of some active fertilizer specially prepared or adapted for the crop in its present condition, is required. When the crop has not been liberally manured in the fall, a liberal surface dressing will now be very profitably applied, and if there has been a fall manuring a spring top-dressing will be by no means thrown away or labor lost. Fall grain is the end and the beginning of the usual rotation. It closes up the past and opens up the present, and as grass and clover follow it, and all the other crops following these, and the live stock of the farm, which subsist chiefly upon grass, depend on it for their good condition and thrift, there is double reason why the wheat should be carried through in the best possible manner. It should be a serious part of the winter's work to prepare a compost heap on the border of the grain field for distribution in the spring, as soon as the condition of the soil permits a team to go upon it without injury. A comparatively small proportion of manure will really be required for this purpose. There are several kinds of waste matter about a farm which may be made of equal value with manure if they can be reduced to decomposition. It is this readily decomposable nature of stable manure that gives it its chief value, and its character in this respect is such that it can be used as the active agent in producing decomposition in all kinds of organic matter, and even of some of the mineral matters of the soil. If a heap of sods and soil, and the washings and gatherings of the roads which collect on their borders, be gathered into a heap with other similar substances and mingled with a tenth part of their bulk of fresh stable manure and another tenth part of fresh lime, the latter acting as a ferment produces a vigorous decomposition action throughout the whole mass, accompanied with considerable heat, and these soon reduce it to a homogenous condition of rotted vegetable matter and partially soluble mineral matter, which are now an excellent food for plants. The longer this action can be continued the more complete and effective is the result and the richer will be the compost. Five loads per acre of this, scattered thinly so as to merely darken the surface, will have a surprising effect in a few days, and the effect will become more and more apparent as the spring advances into the summer, and until the harvest tells the story and counts up the gain.—[N. Y. Times.

It is said that nitrate of soda applied to pasture will soon make the stock eating it excessively thirsty, besides causing excess of urine. It will, however, greatly increase the growth, and if the nitrate is applied long enough before feeding the evil effects will be less noticeable.

Land Plaster.

That there is a great benefit to be derived in the sowing of plaster broadcast over the meadows and pastures in spring cannot be denied, notwithstanding what we hear concerning the "waste of time, money and labor" from the present day farmers. It is the result alone that shows the skill. The free use of plaster may not be observed in any appearance of the growing crop other than a brighter, darker coloring; but the cattle that feed on it tell volumes in favor of its influence. Any manuring that serves to promote a rank, succulent growth, which, while it may increase the quantity of milk, contains a large per cent. of water, is not beneficial for the making of butter, reducing at the same time the strength and flesh of the cows in the herd. Cows that feed on pastures which receive a free sprinkling of plaster in the spring, will be found to remain in good flesh through the milking season and give larger quantities of milk, that contains more butter, than when fed on pasture that has never been given this dressing. The juices of the grass are richer and heartier. The hay, too, that has been cut from the meadows where plaster has been sown contains a larger per cent. of nutriment.

Soja Bean, The New Agricultural Plant.

This plant has been grown for some years in Austria and Hungary, both as a forage plant and a vegetable. It resembles somewhat a Bean; the stems are stiff and hairy, as are the leaves; the pods are produced in bunches of from two to five, and contain each from two to four smooth, oval nankin-colored seeds The latter, which are produced in great abundance, pronounced by chemists

to be the richest of all human food, may be used as food for mankind as well as for beasts, and the straw is eaten by sheep and cattle. Sown early in May, in any good soil, in rows twelve or fifteen inches distant; it ripens in August. Stands well heat and drought, and is well adapted for our climate. One of our subscribers reports that from one pound he raised 45 lbs., that all kinds of stock like it as well as peas, and that the straw is relished by sheep and cows even better than hay. It is an excellent bearer.

Draining.

BY C. G. ELLIOTT.

(Continued.)

SILT BASINS.

The silt basin is often a valuable auxiliary to a system of drains, but it is not used as much as it would be if its advantages were better understood. It may be described as a small well, placed either in the line of a single drain, or at the junction of several drains, and serves several different purposes. The silt basin may be built of brick, stone, or plank, and may vary in diameter from twelve to twenty-four inches, according to the use for which it is intended. There should be a depth of twelve inches below the tile for the deposit of muddy water In draining it is often desirable that several sub-mains or branches should join at one place, and there unite in one line as an outlet to the whole system. It permits us to unite several drains entering at different angles, without the objectionable feature of short turns, which we have before noticed. To facilitate the action of the drains, the outlet of the basin should be a few inches lower than the outlets of the lines of tile entering it.

Another advantage is, that the fine earth, or "silt," as it is called, which finds its way into the tile and is carried along with the drainage water, is permitted to settle in the basin, instead of being carried on by the current, to lodge in some portion of the drain where a turn is made, or where the velocity is decreased by a less grade. The basin should have a cover, which may be removed and the silt taken out before it impedes the flow of water through the tiles.

Another use of the silt basin is to prevent the silt from obstructing the drain in cases where the grade suddenly changes from a steep grade to one considerably less. This retards the flow, which causes the silt coming from the upper part of the drain to be deposited at the point where the change to a less grade is made. Here is where the basin should be placed, in order that the silt may be intercepted and removed when the lower portion of the basin becomes full. For this purpose the diameter of the basin may be much less than for the purpose of collecting the water of several drains.

In the ordinary drainage upon western farms, there is but little necessity for the construction of basins for the purpose of simply collecting silt, for there is usually not enough difference in the grade to cause any alarm on that account. Yet near streams which break the land up into alternate steep slopes and flat bottoms, they are sometimes a necessity. In long mains, however, it is best to locate silt basins at various places along the line for the purpose of watching the action of the drain and to see that its several sections are in perfect condition.

Where the soil consists of loam on a firm clay subsoil, there is very little and sometimes no deposit of silt after the drain has been in operation a few weeks. There are many subsoils, even in prairie lands, which contain streaks of sandy material, which, for some time after the construction of drain, will find its way into the tiles. It will be seen that the provisions made for the interception of silt must be regulated by the kind of material in the soil through which the drain runs.

We can not urge too strongly the use of the silt basin for the purpose of collecting the water of several drains into one, and thence conveying it to the ultimate outlet In the system of laying out drains, described in a former paper, the use and importance of the silt basin is shown. A judicious use of the silt basin for the several purposes for which it is intended, will greatly increase the efficiency of any system of drains.

DEPTH AND DISTANCE APART OF DRAINS.

Depth.—So intimately are the subjects of depth of drains and their distance apart connected, that we can not fix upon one without taking into account the other. The first question which should be answered is in reference to the depth which we wish to drain the soil. What is the most suitable depth for the soil we have, and the purpose for which it is to be drained, taking into account the cost of drains at different depths, and the comparative advantages to be derived from them? The drains must at least be placed deep enough to receive no injury from frost during the winter. This is about two feet, though drains much nearer the surface than this have done good work for some time, but can not be regarded as safe. How much deeper than this we had better go depends upon several facts and principles, to which we hope the reader will give attention, for in this, as in many other matters of drainage, no absolute rule can be laid down and mechanically obeyed.

Many farmers have a mistaken idea in thinking that the removal of surface water sufficiently to fit the soil for plowing in the spring, and comfortable tillage during the summer, is the sole object of drainage The advantages of a deep soil, and the use made of it by growing crops, have been explained in previous chapters. If we wish a deep soil, it is evident we must remove the surplus water and admit the air to the depth to which we desire the roots of the plants to penetrate and receive nourishment. We hear many arguments in favor of very shallow cultivation of growing crops, on the ground that the roots at the surface will be cut in pieces and so deprive the plant of nourishment. This argument will apply only to undrained or shallow drained land, where it will be found that the great bulk of the