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The Field.

RESTORING LOST FERTILITY.

Under a proper system of culture, not only will the original fertility of the soil be retained, but it will be constantly increasing. A farmer should carry on his business just as a wise merchant does, who is not satisfied with profits merely, but aims to add continually to his stock-in-trade. The elements of productiveness in the soil, are the farmer's stock-in-trade. He should not only maintain the stock, but increase it. A merchant can sometimes realize considerable cash-in-hand by running his stock low, but he must replenish without delay, or the business will stop. Customers will not long continue to come to a shop, where they fail to find what they ask for. In the case of the merchant, it is comparatively easy to replenish an exhausted stock. He has but to go to the wholesale dealer, and order in a new supply. At most, he only needs to wait long enough to import fresh goods. He can quickly fill up his empty shelves. It is not so with the farmer. Time and patience are demanded in order to replace the stock he has used up in an exhaustive system of farming. If barn-yard manure were sufficiently plentiful and not too costly, and if it could be had as easily and quickly as dry goods can be got from the wholesale houses, the case would be different. But manure is always scarce and dear. There is never enough of it on hand to meet fully the regular demand; and it is costly. So a lost fertility can only be got back by slow and gradual processes. Let us glance at some of them.

1. *Fallowing.* A piece of land is said to be fallow, when there is no valuable crop on it during the growing season. This condition of things is sometimes spoken of as "letting the land rest," and the effect of it is, to some extent, the same as rest or sleep to a tired man. It recuperates the soil. The ancient Greeks and Romans were familiar with this mode of getting back lost fertility, and had much recourse to it. It is common at the present day in many parts of the world; but only in exceptional cases, can it be regarded as the best thing to do. It benefits the soil by weathering it, as it is called. The air, sunshine, rain, cold and wind act upon it. Oxygen, carbonic acid, and ammonia blend with it, dissolving and rendering available the mineral salts which lie in the soil, and which when rendered soluble, help to furnish plant-food. But this weathering process can be better carried on without keeping the land idle. A change of crop and thorough tillage, will accomplish the same results, and bring a greater or less remunerative return. If a field is badly infested with weeds, and it is desired to clean it as well as improve the quality of the soil, it is well to let it lie fallow. When the weeds are well grown, or are in blossom, such land should be ploughed,—the weeds ploughed under with a dressing of manure. Two, three or more crops

of weeds may be thus disposed of. Some quick growing plant like buckwheat, may be sown in the course of the season and ploughed under. Each of these crops not only takes out of the soil its appropriate food, but draws largely on the atmosphere, which is more or less charged with gases which form plant nutriment. Thus, when ploughed under, the land is enriched by the gain in growth, in addition to the improvement caused by exposure to the weather; besides which, it will be comparatively free from weeds, and in a good state to yield some useful crop.

2. *Deeper Ploughing.* A farm has been ploughed about the same depth for a series of years. There is only a shallow seed-bed. Mr. Mechi facetiously calls this, the "agricultural pie-crust," and says that even in England, it does not average more than five inches in thickness. Perhaps in this country, the average is not more than three or three and a half inches. This thin layer of surface soil is worn out. Just beneath it, hard and compact, there is, it may be, another layer, or perhaps there are successive layers, of rich earth. In such a case, if the plough be run down to a depth of eight or ten inches, it is as though a new farm had been found under the old one. Of course this can only be done where there is a good sub-soil. But even when the sub-soil is no better than the top-soil, deeper ploughing will, ultimately secure improvement, by exposing more soil to the action of the elements, and providing a deeper, as well as a better seed-bed for the growing plants.

3. *Clovering.* To sow clover and plough it under, is an excellent plan of improvement, and particularly well adapted to certain soil. Clover is a deep-rooted and broad-leaved plant; a deep ploughing lifts the sub-soil to the surface, so the clover by its long tap roots brings up not the soil itself, but the better parts of it to the top. At the same time its numerous broad leaves drink in supplies from the air, and so a two-fold process of enrichment goes on. When clover is sown it is well to give it a dressing of plaster, and it will pay to coat it lightly with well-rotted manure. The heavier the clover crop, the greater the enrichment it will yield the land when ploughed in.

4. *Root-growing.* Nothing has tended so powerfully to revolutionize the agriculture of the old world, as the culture of turnip and other root crops. From comparatively worn-out land, by a good dressing of barn-yard manure and some artificial fertilizer, a good yield of roots is obtained. These roots are fed to stock, and the manure made by them applied to the land, with remunerative returns, and constant improvement as the results. Root culture is an essential part of that system of mixed husbandry, which, under a well-regulated rotation of crops, enables the British farmer both to pay an enormous rental, and realize good profits. Root growing renders it possible to keep more stock,—with more stock there is more manure,—with more manure, there is regained increasing fertility, and it is no longer complained that "farming does not pay."

5. *Light-pasturing.* Land that is not too valuable to be so treated may be rendered more fertile by so stocking it, that the consumption of herbage shall be less than the supply. Pasturage is usually overstocked. The exacting owner asks it to support two animals when there are scant resources for one. Both animals and land grow lean on this plan. A pasture used only for growing and fattening animals, to which grain, oil-meal, or other extra feed is given, will if understocked, visibly and rapidly improve. An example in proof of this will appropriately close this article:

"Three brothers, each having a small farm of his own, with pretty good meadow and plough land, but lacking in pasturage, bought three farms adjoining each other, two or three miles from their homes, to be held in common and to supply the deficiency of pasturage on their home farms. These three farms contained about 400 acres. The former owners had cleared nearly all the land, and had lived mainly by selling wood, lumber, and fencing timber. There were, however, rails and standing chestnut poles enough to enclose the whole in one great pasture. Their practice was at first to turn in rather late—not till the snow was fairly off the ground. By limiting the number they found that the animals became fat enough to attract the drovers early—as early in some instances as the 20th of June, and during the months of July, August, and a few days in September, the whole drove was off, at times when beef was then, as we believe it is now, in greater demand and at higher prices than later in the season. As their custom was not to turn in a second drove the same year, this not only enabled them to get the highest prices, but it also gave their pasture time to rest, or rather to grow for itself a heavy mulching for the coming winter, which, as all observant farmers well know, enriches the soil and brings in earlier growth of fresh grass the following spring; and this mixture of the new grass with the old affords a gradual change from dry to green feed more favorable to health and early fattening than a sudden change. Two or three years' practice of stocking lightly in spring and summer, and of pasturing little or no stock in autumn enabled them to increase the number of cattle, and yet have them ready for the drover quite as early as at first. The three brothers became rich, as the term rich then signified, and at the same time enriched instead of impoverishing their land."

Less Land and Better Tillage.

Joseph Harris, the retired editor and successful farmer, of Rochester, N. Y., gives his ideas of improved farming, in the *American Agriculturist*:—"My plan of improved agriculture does not necessarily imply the production of any more grain of any kind that we sell than we raise at present. I would simply raise it on fewer acres, and thus lessen the expense for seed, cultivation, harvesting, etc. I would raise thirty bushels of wheat per acre every third year, instead of ten bushels every year. If we summer fallow and ploughed under clover in order to produce the thirty bushels of wheat once in three years, instead of ten bushels every year, no more produce of any kind would be raised. But my plan does not contemplate such a result. On my own farm I seldom summer fallow, and never plough under clover. I think I can enrich the farm nearly as much by feeding the clover to animals and returning the