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Nec araneorum sane textus ideo melior, quia ex se fila gignunt, nec noster villior quia ex alienis, libamus ut apes.

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Tendency of Soils to deteriorate.

The natural, the inevitable tendency of all cultivation of the soil, is deterioration. The richest and most fertile contain but a certain proportion fit for the purposes of vegetation; and every crop taken from the soil sensibly lessens this quantity. The result therefore must be that continual cropping will reduce the best soils to barrenness, until, where circumstances admit, nature by her gradual method of repairing wrongs, imparts a degree of fertility. It is however possible to counteract this tendency to sterility in soils; to prevent the exhaustion of the qualities necessary to support vegetable life; and the difference between good and bad farming, or proper and improper cultivation, may be determined mainly by a reference to this single result.

In this country we can hardly form a correct idea from any thing around us, of the frightful barrenness to which fertile soils may be reduced by improper management. Cultivation is here so young, that had it been of the worst description it would hardly have been possible to have exhausted so soon the treasures that had been for centuries accumulating in our soils. Still there are examples in the United States, where soils have nearly reached that point from which a restoration to fertility is impracticable. Soils of a silicious nature, or that are inclining to sand are the most easily and quickly reduced. Of this the southeast part of Massachusetts, and parts of the southern States at the present time, and parts of Long Island as it was some thirty years ago, furnish striking proof. When cultivated without regard to consequences, the nutritive part of such soils is quickly exhausted; the little vegetation produced is not sufficient to prevent the burning effect of the sun; the roots of the grasses are unable to fix and bind the soil; it becomes loose and floating; plants root themselves with more and more difficulty, and at last what was once a fertile plain, becomes a sandy waste, where cultivation is impossible.

It is in the old world that this process of deterioration may be the most clearly traced. To renovate, seems to have formed no part of the ancient profession of agriculture. In all the writings of antiquity there is scarcely a hint that manuring, or in any way improving cultivated lands, was practised to any extent. Now and then, where nature had set the example of imparting fertility by the annual overflow of rivers, man seemed inclined so far to imitate her works, and irrigation for ameliorating land was frequently adopted. But this was about the extent of ancient attempts at improved cultivation, and the result has been such as might confidently have been predicted. The regions of the east that two or three thousand years since were as the garden of Eden for beauty and fertility, have gradually become sterile and worthless; and tracts of country that once supported a thriving and industrious population, have from

the action of the cause alluded to above, become deserts, in which the solitary camel can scarce find a shadow of vegetation to supply his easily satisfied wants. Mesopotamia; parts of Syria and Palestine; Edom, and parts of Arabia Felix; many parts of the north of Africa; and no inconsiderable portion of Asia Minor, have thus become hopelessly barren. The finest of wheat can now no longer be grown, on the plains where once the reaper filled his arms with the yellow sheaves. They were ceaselessly cropped, until the soil was so exhausted, that the unaided efforts of nature were unable to restore fertility, and the result is perpetual barrenness.

To counteract this tendency to sterility is the business of the farmer; and on the possibility of doing this, rests the whole system of improved agriculture. Science has here come to the aid of the cultivator of the soil, and by revealing the agents and promoters of fertility, has greatly assisted and simplified the processes without which all would be still doubtful and uncertain. The action of manures has been ascertained; the value and activity of the various salts formed by the decomposition of animal and vegetable matter in part determined; the aid which the mineral earths afford vegetation has been carefully examined; and those combinations of soil the best calculated to induce fertility been accurately investigated. It has been shown that to take from the soil, without making corresponding returns is suicidal policy; and that if this point is properly attended to, land can be cropped without danger of deterioration.

Manure then, is the chief anchor of the farmer. It is to this source of fertility he must look for the renovation of the soil, and the means of continued productiveness. And it is to manures produced from his fields, from his herds and his flocks, from decayed animal and vegetable matter, that he must look for this result. These are the true fertilizing ingredients; and though agents may be useful as exciting these to action, yet these may be considered as constituting the food of plants, the cause of growth and nutrition. The application of the exciting mineral manures, such as lime and gypsum, is productive of the happiest effects, for the reason assigned above; yet they are not so absolutely essential to the improvement of the soil as those that have a vegetable or animal origin. Matter which has once lived, which has already taken the forms of organized existence, more easily assumes the forms of organized life, and is more easily assimilated, than that which has never undergone such a change. It is the office of the vegetable to take the crude atoms of matter as they exist in the soil, and prepare them for the support of animal life; and when this has once been done, though a partial decomposition may have been effected, a renewal of the process is comparatively easy and certain.

In connection with the preparation and application of manures the next most important step which modern agriculture has taken to prevent a deterioration of the soil, is rotation in crops. Judiciously conducted, the

result is certain; exhausted lands are restored, and the profits of the agriculturists greatly increased. It was formerly the custom to let lands suitable for grass remain for that purpose alone; while those suitable for the plough were annually subjected to its use until exhaustion forbid. It was then left to the restoring processes of nature. There were at the beginning of this century, lands in the farming sections of England which it was well known had lain in grass for five hundred years, and there were other tracts which had been as constantly submitted to the plough, or at least as often as the soil promised to repay the expense of cultivation. This system has been abandoned; a more enlightened system of agriculture has prevailed; and the products, in consequence have been more than doubled. The course of rotation is indeed variable in different districts, both in Europe and in this country, but it is founded on the same great principle, both in Europe and in this country, but it is founded on the same great principle, that different plants take up different soil, and from different depths, and that a new plant will flourish in a soil where one of the same kind previously cultivated could not succeed at all. Thus in England, in Holland and Belgium, in some parts of Germany and France, and in some few instances in this country, a regular course of cropping adapted to the soil, has been adopted with the happiest effect. This course which varies from two to three years, according to circumstances, embraces roots, grains, and grasses, and taken in connection with thorough manuring, which this system enables the farmer to practice, not only improves the quantity and value of each kind of crop, but is deepening, enriching and fertilizing the soil. Manure, and the rotation of crops, are then the great means to which we must look to preserve our own fertile plains from the fate which has overtaken so large a part of the east; and they are fortunately both easy of application, and entirely within our reach.

From the "Book of the Farm."

A curious fact on Food and Manure.—Every part of a plant contains nitrogen as well as carbon: but as an invariable rule, the seed of all plants contains a much larger quantity of the nitrogen than the leaves and stalks, and a greater quantity of carbon, and a lesser quantity of nitrogen. Now, when a horse is fed on grass, his food consists almost of carbon; and the result is, that with a sufficient supply he gets fat—that is, that particles of oily, fat matter, are deposited on the muscles under the skin; but it is well known, a horse in this condition is quite unequal to any work, and the least exertion reduces its bulk. But when the same horse, under other circumstances, is fed on corn, his food consists principally of nitrogen; and although he may never, under this keep, get as fat as on the other, still the increase he does require will be a pure muscle, or, as is technically termed, sound flesh; and on this keep he can perform work, with less fatigue, than on food containing no nitrogen. A more complete instance

could not be adduced to show that animals, as well as plants, can only assimilate that food which is presented to them; in the first case, carbonaceous matter being the food of the horse, carbon is deposited in the shape of fat; in the latter, when more nitrogen enters into the composition of his food, the deposit of muscle preponderates. So it is with wheat. With a manure that only supplies carbonaceous matter, starch is the result. With a manure containing nitrogen, gluten is formed; both cases being completely analogous, and affording unerring proof of one simple and unerring law.

Neatness in Agriculture.—The remark that Agriculture and civilization keep pace with each other, may be applied to individuals as well as nations. Where a farmer is wanting in one, he is very apt to be deficient in the other. If in passing through a country we were to discover a miserable and wretched system of agriculture, we should not expect to find an educated, intelligent, and refined people; nor in passing a farm, characterized by every mark of ignorance and indolence, should we expect to see in the owner an industrious, intelligent, educated and refined gentleman.

To protect Grain from Rats.—One of our subscribers wishes us to state for the benefit of his brother farmers, that green elder boughs, scattered in and about a mow of rye and other grain, will effectually protect it against the depredations of rats. These vermin are often very troublesome and destructive in their ravages in the farmer's barn, and if so simple a remedy will prevent their mischief, it should be known and remembered by all.

Remember that heavy gales sometimes follow hot summers. When harvest is over, see that barn doors are well secured. Many a barn has lost its roof through neglect of fastening the big doors.

Blight in Pear Trees.—This tree is frequently affected with a disease which blackens the leaves and renders it barren. The following remedy from the Albany Cultivator is worth trying:—"We state, on the authority of Samuel Myers, of Ohio, that spreading tan around the roots of the tree, has been found to be a preventive of blight, and that where the tree has been already affected, it has stopped the disease, and caused thrift and fruitfulness."

When turnip leaves are five or six inches long, if there should be more than one English turnip to a square foot, or more than one Swedish to a square half yard, pull out the overplus and give it to the cows. The remainder will produce more than the whole would have done. The oldest writer on farming whose works have reached our times, observes that 'half' in some cases is more than the 'whole.'

The Palmer Worm.—This, and several other kinds of worm, are found on apple trees in August and September. They weave their webs on the leaves and small twigs, and their