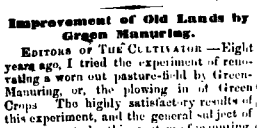
Agricultural.



Improvement of Old Lands by Green Manuring.

EDITORS OF THE CULTIVATOR.—Eight years ago, I tried the experiment of renovating a worn out pasture-field by Green-Manuring, or, the plowing in of Green Crops. The highly satisfactory results of this experiment, and the general subject of improvements by this system of manuring, were so freshly brought to mind yesterday, in strolling over my field, that I now give you my experience, together with a brief collection of facts and principles touching the matter, from other sources.

The field which I experimented upon contains four acres; it is a light, thin, sandy loam, and is situated upon a high swell, over a mile from the barn, and difficult of access with a manure cart. It had been exhausted of all fertility by successive and injudicious croppings with rye, before it came under my management. A thin herbage, of little or no value, would show itself in the spring, only to be followed by a brown and most arid appearance at mid-summer. For two or three years, I carefully passed over this land, thinking that the next season should witness some exploit for its renovation; but the great difficulty, that continually presented itself to my mind, was, how to commence an improvement where there was no possibility of carting on any fertilizing substance, at a less sum than expense. I finally decided upon the following course:

In the latter part of June, when the little vegetation which the land produced was at its greatest height, it was nicely turned under, and the field rolled. I was quite sure, to start with, that the usual depth of plowing, namely, three to four inches by which the skinning process is made finally complete, or receives its full finish, had been the practice here; and I therefore put the plow in to the depth of six inches, in order to expose a surface that had never before been the day, which was thought to be of better quality than the first four inches.—At any rate it could not be poorer. Three pecks of buckwheat to the acre, were sown upon the rolled surface, and harrowed in. The crop was permitted to ripen and gave an average yield of eight bushels per acre. As I had laid a plan of operations which were to extend through more than one season, and as I wished to test the merits of green manuring, I concluded to take off whatever of a scanty crop the land would naturally produce, in order to compare it with another crop, to be harvested at the end of the course. Otherwise, I should not have taxed this poor old pasture with a grain-crop at all.

In May following, one bushel of buckwheat was sown on each acre, and when the crop had attained its blossom it was turned under. A heavy chain, with one end attached to the plow-beam, immediately forward of the mould-board, and the other to the off-end of the evener, lopped down the tender buckwheat stalks, so that the plow covered them up pretty well. The field was then rolled; the same quantity of buckwheat again sown, and the crop managed precisely like the preceding one. Late in September, one and-a-half bushel of winter rye was sown to the acre. The following spring, the rye presented a remarkably appearance. It stood so thick and heavy upon the ground that it required some resolution to plow it under, especially when all outsiders were pronouncing it an improvident and injudicious procedure. The rye was turned under. On the 25th of June, one bushel of buckwheat was again sown on each acre, together with grass seed. It is risky sowing grass-seed at such a season of the year; but it was wet weather at the time, and we had a sufficient succession of showers through the summer to insure a good catch of grass. This crop ripened and gave an average yield of 18 bushels per acre,—being an increase of over 100 per cent. over the first crop. It is entirely safe to say, that one-half an acre has produced more value in feed since, than the four acres did previous to plowing in the green crops. I shall never be at a loss to know what to do with similar fields hereafter.

A number of interesting communications upon the subject of green crops for manure, have been published in our Agricultural Journals. With your permission, I will cite the following interesting facts from two of them.

In the 9th vol., *N. E. Farmer*, W. Buckminster, Esq., of Framingham, Mass., states, that in May, 1828, he plowed up three and a-half acres of poor pasture. It had been so reduced by a former owner, that ten acres did not afford sufficient pasturage for one cow through the season.—Immediately after plowing, a bushel of buckwheat to the acre was sown, and in six weeks, the crop was rolled down in the direction he intended to plow, and then turned under, and the field sowed as before. In the latter part of August, the second crop was served like the first, and the land then seeded to clover, herd-grass and red-top. The next season, the field was mowed, and although the grass was considerably winter-killed, it yielded a ton of hay to the acre. The field was afterwards pastured, and he never had any pasture-ground yield so well before. He thought the green crops improved the land as much as a good dressing of manure.

In the 12th volume, *N. E. Farmer*.—John Keely, of Haverill, Mass., gives an account of remarkable crops of rye—which he had raised by the use of green crops for fertilising the soil. The land on which the experiments were made, is situated on the Merrimack river; the soil a sand, approaching to loam as it recedes from the river.—It is altogether too light for grass. The crops found most profitable to raise on it, was winter rye, and Indian corn;—the crops of rye ordinarily yielding 8 to 12 bushels, and of corn, 18 to 30 bushels, to the acre.

The land on which he raised the premium crop of rye, in the season of 1832, had for three or four years previous, been planted to corn; and owing to the extent of his tillage land, had not received more than four or five loads of manure to the acre, each season. The weed commonly called charlock, (charlock?)—which very much infested the land,—was suffered to attain a rank growth in the spring of 1831, and about the 20th of June it was plowed in. Another crop sprung up and covered the ground, and in August, that was plowed in also. A third crop soon appeared, which, in the latter part of September, was served like the others. At this time the rye was sown in the usual manner, namely, a narrow strip of land was plowed, the seed sown immediately upon the furrows, and harrowed in, and so on, until the whole was completed. Sowing the seed immediately after the plow, was considered very advantageous to the crop. The soil then being moist, caused the seed to spring immediately, and gave a forwardness and vigor to the plants, which they ever after maintained. The next year, 1832, the rye was harvested at the usual season. The land contained one acre and thirteen rods, and yielded forty-six bushels and three pecks. A field of four acres, similarly managed in 1828, gave 33½ bushels of rye to the acre.

Mr. Keely remarked that experience and close observation upon the management of green crops, had convinced him that three things, among others that might be more obvious, were essential to a successful result: First, the absolute necessity that the plow should be of good construction. Second, that some method be devised to prostrate the crop before the plow, or it would not be covered.—He used a wooden roller, about four inches in diameter, and sixteen inches long, fixed on the end of the plow beam, in a frame temporarily put on for the purpose. Third, it had been found necessary to plow the land soon after a rain,—this was very light, sandy land,—while it is moist, or the plow would smear the furrow, instead of turning it hands-mely. He also considered it advantageous to roll the land, after each plowing.

The principles by which lands are improved by turning in green crops, are clearly set forth by Prof. Johnston, in his usually happy way. I cannot resist an inclination to quote briefly from his lectures.—

"The plowing in of green vegetables on the spot where they have grown, may be followed as a method of manuring and enriching *all* land—where other manures are less abundant. Growing plants bring up from beneath, as far as their roots extend, those substances which are useful to vegetation—and retain them in their leaves and stems. By plowing in the whole plant, we restore to the surface what had previously sunk to a greater or less depth, and thus make it more fertile than it was before the green crop was sown.

"This manuring is performed with the least loss by the use of vegetables in the green state. By allowing them to decay in the open air, there is a loss both of organic and inorganic matter—if they be converted into fermented (farm-yard) manure, there is a large loss, and the same is the case if they are employed in feeding stock, with a view to their conversion into manure. *In no other form can the same crop contribute to the soil an equal amount of enriching matter as in that of green crops and stems.* Where the *first* object, therefore, in the farmer's practice is, so to use his crops as to enrich his land—he will unquestionably get it by plowing them in in the green state.

"But it is deserving of separate consideration, that green manuring is especially adapted for improving and enriching soils which are poor in vegetable matter. The principles on which living plants draw a part—sometimes a large part—of their sustenance from the air, have been discussed, and I may presume that you sufficiently understand the principles, and admit the fact. Living plants, then, contain in their substance not only all they have drawn up in the soil, but also a great part of what they have drawn from the air. Plow in these living plants, and you necessarily add to the soil more than was taken from it—in other words, you make it richer in *organic* matter. Repeat the process with a second crop, and it becomes richer still—and it would be difficult to define the limit beyond which the process could be no further carried.

"I would never depend upon green manuring alone, on land that I intend to tax with grain crops. In such a case, some additional saline, substances would need to be added, which this system of manuring could not supply in order to support those crops, and maintain the fertility of the soil. The possession of light and poor, sandy or gravelly lands, is usually attended with limited means for making or *purchasing* manure; and these soils are always materially deficient in vegetable matter. It has therefore been my impression, for years, that, were I to become the owner of such a farm, I should use green crops extensively, in connection with other manuring, to invigorate my poor soil, and supply it speedily with that essential material—vegetable matter.

In the case of worn and exhausted pastures,—such as the one I have described,—which are level enough to plow, and where a good portion of the droppings of the cattle remain on the land, a resort to green manuring will doubtless increase and perpetuate its fertility. In my immediate vicinity, pasturage is worth from 40 to 50 cents a week for each cow. If my pasture ranges were five or ten times larger than they are, I could readily obtain these prices. With me then, a considerable outlay for increasing the productiveness of these lands is judicious. In other sections, where the various conditions I have named are all right, I would confidently recommend the practice of turning in green crops, as a cheap, effectual and speedy method for increasing the productiveness and profit of worn-out pastures. F. HOLBROOK. *Brattleboro', May, 1849.*

*The manure voided by an animal contains very much less solid matter than the food it has consumed. For every 100 lbs. of dry fodder, the horse or the cow will give on an average, 46 lbs. of dry manure. Lec. 18, Sec. 13.

FROM OREGON.—The Alta Californian, of the 22d of March says that the new governor, general Lane, had reached Oregon city, and issued his proclamation as governor of that territory. He assumed the duties of his office on the 4th of March.

TO THE BOYS.—Never marry a girl who is fond of being always in the street—who is fond of running to night meetings—who has a jewelled hand and an empty head—who will see her mother work and toil while she lays in bed and reads novels or feigns sickness—who is ashamed to own her.

Bank Note Table.

Pennsylvania.

Bank of Commerce, North America, Northern Liberties, Pennsylvania, Penn Township, Commercial, Farm & Mech. Girard, Kensington, Manuf. & Mechan., Mechan's, Philadelphia, Southwark, & Westpen—all of Phila. par
Bank of U. States, par
Chambersburg, do
Bank of Chester county, par
Do Delaware county, do
Do Germantown, do
Do of Gettysburg, do
Do of Middletown, do
Do of Montgomery co. par
Do of Northumberland, do
Bank of Pittsburg, par
Bank of Susquehanna county, do
Carlisle bank, do
Columbia bank & Bridge co. par
Do Erie bank, do
Exchange bank, do
Far. bank of Bucks county, par
Far. & Mec. bk Washington, do
Far. bank Lancaster, par
Farmers & bank Reading, do
Far. bk Schuylkill co. do
Franklin bank, do
Harrisburg bank, do
Honesdale, do
Lancaster, do
Lebanon, do
Lycoming, do
Miner's & Manufac. do
Miners bk Pottsville, do
Monongahela, do
Wood Bemedy, do
Wyoming, do
York, do

New York.

American Exchange Bk. Bank of Chenango, Commerce New York, Dock Companies, State of New York, Bank of Buffalo, Bank of Poughkeepsie, Chemical Bank, Del. & Hud. Canal Co. Farmers' Bank of Hudson, Farmers' Exchange Bank of Glens Falls, Farmers' & Drovers' Chemical Bank, Bank of Genesee, Bank of Geneva, Bank of Hudson, Bank of Lockport, Bank of Lyons, Bank of Niagara, Bank of Orleans, Bank of Rochester, Bank of Salina, Bank of Utica, Bank of Ithaca, Bank of Oswego, Bank of Rome, Bank of Saratoga county, Bank of Syracuse, Bank of Troy, Bank of Utica, Bank of Whitehall, Bank of Ogdensburgh, Bank of Plattsburgh, Bank of Sandy Hill, Bank of Washington county, Bank of Auburn, Bank of Rochester, Bank of Batavia, Bank of Canandaigua, Bank of Geneva, Bank of Lockport, Bank of Niagara, Bank of Orleans, Bank of Rochester, Bank of Salina, Bank of Utica, Bank of Ithaca, Bank of Oswego, Bank of Rome, Bank of Saratoga county, Bank of Syracuse, Bank of Troy, Bank of Utica, Bank of Whitehall, Bank of Ogdensburgh, Bank of Plattsburgh, Bank of Sandy Hill, Bank of Washington county, Bank of Lake Erie, Buffalo