

brook which drains all my farm and three or four of those above it just where it runs swiftly off from my land. If a thaw or heavy rain swells the brook (as it sometimes will) so that it rises above my outlet aforesaid, the strong current formed by the concentration of the clear contents of so many drains will not allow the muddy water of the brook to back into it so many as three feet at most; and any mud or sediment that may be deposited there will be swept out clean whenever the brook shall have fallen to the drainage level.

MY SUCCESS.

I judge that there are not many tracts more difficult to drain than mine was, but I had seven acres of Indian Corn, one of Corn Fodder, two of Oats, and seven or eight acres of Grass on my low land in 1869; and though the Spring months were quite rainy, and the latter part of summer rather dry, my crops were all good. I did not do better in Westchester County, and I shall be quite content with as good hereafter. Of my seven hundred bushels of Corn (ears), I judge that two-thirds would be accounted fit for seed anywhere; my Grass was cut twice, and yielded one large crop and another heavier than the average first crop throughout our State. My drainage will require some care henceforth; but the fifteen acres I have reclaimed from utter uselessness and obstruction, are decidedly the best part of my farm.—*Greele, j.*

FUNDAMENTAL ELEMENTS OF AGRICULTURE.

1st. All land on which clover or the grasses are grown must either have lime in it naturally, or it must be artificially supplied. It matters but little whether it be supplied in the form of stone lime, oyster-shell lime, or marl.

2nd. All permanent improvement of lands must look to lime as its basis.

3rd. Lands which have long been in culture will be benefitted by application in the form of bone dust, guano, native phosphate of lime, composts of fish, ashes, or in oyster-shell lime or marl, if the land needs liming also.

4th. No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.

5th. Mould is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover and the grasses, the turning in of green crops, or by the application of composts rich in the elements of mould.

6th. All highly concentrated animal manures are increased in value, and their benefit prolonged, by the admixture of plaster or pulverized charcoal.

7th. Deep ploughing and subsoiling greatly improve the productive powers of a variety of soil that is not wet.

8th. All wet land should be drained.

9th. All grain crops should be harvested several days before the grain is thoroughly ripe.

10th. Clover, as well as other grasses intended for hay, should be mown when in bloom.

11th. Sandy lands can be most effectually improved by clay. If such lands require liming, it is best done by a compost of lime and clay. In slacking lime salt brine is better than water.

12th. The chopping or grinding of grain to be fed to stock effects a saving of at least twenty-five per cent.

13th. The draining of wet lands adds to their value by making them produce more and better crops, by producing them earlier, and by improving the health of the neighborhood.

14th. To manure or lime wet lands is to throw manure, lime and labor away.

15th. Shallow ploughing operates to impoverish the soil, while decreasing production.

16th. By stabling and shedding stock during the winter a saving of one-fourth of the food is effected. That is, one-fourth less food is required than if they were exposed to the inclemency of the weather.

17th. A bushel of plaster per acre, sown broadcast over clover, will add from 50 to 100 per cent. to its produce.

18th. The periodical application of ashes leached, tends to keep up the integrity of the soils, by supplying most if not all of the organic substances.

19th. Thorough preparation of land is absolutely necessary to the successful and luxuriant growth of crops.

20th. Abundant crops cannot be grown on the same land in succession, unless fertilizing matter is returned to it in equivalent proportions to those substances taken away.

FARM GLEANINGS.

Of the lands granted to the Kansas State Agricultural College, 42,000 acres have been sold at an average price of \$4.10.

The *Massachusetts Ploughman* recommends for pasture grasses, Italian rye grass, meadow fescue, oat grass and red-top.

A CORRESPONDENT of the *Country Gentleman* writes that he killed a full-blooded Jersey heifer two years and four months old, just from pasture. The quarters weighed 423 pounds, and the beef was excellent.

DR. VOELCKER, in his experiments with different soils, arrived at the conclusion that potash is non-essential in many clay soils, because these contain an abundance of the article; but is most essential on poor, sandy ones. These are generally quite deficient in potash, so necessary to the perfection of clover and root crops.

MR. QUIMBY, of Irondequoit, said, at the Rochester Farmers' Club recently, that during the past three years he has drawn 10,000 bushels of leached ashes on his farm and spread them at the rate of 200 or 300 bushels per acre, and has threshed 40 acres. He thinks the application has doubled his wheat crop. His land is light; had seen ashes applied to heavy clay land with little benefit.

According to the last returns there are now in France 470 beet-root sugar factories; in Belgium 116, and in Prussia 225. In the Zollverein 2,500,000 tons of beets are annually converted into sugar. In Austria, Hungary, Russia and other parts of Europe, the process is also successfully carried on to a very large extent. Mr. Howard says that "to France, that which was commenced as a military expedient has proved to be not only an important