Colver vs. Commercial Manures.

In an article on "Mowing vs. Pasturing Clover," it was stated that Dr. Voelcker had ascertained that the amount of Nitrogen left in the soil when the crop of clover was removed, was rather more than equivalent to eight hundred pounds of Peruvian guano on an acre. This shows that as far as nitrogen or ammonia and nitric acid are concerned, clover is vastly cheaper than guano; for, calculating the clover roots and stubble left after a two year's clover lay at half the weight of hay that was taken off,—say four tons of hay and two tons of stubble and roots—and that the former contained the same amount of nitrogen as the latter, then as far as nitrogen—the most valuable portion of guano—is concerned, the two years' clover crop would be equal to 2,400 pounds of Peruvian guano.

Again, J. B. Lawes, the great English farmer-chemist, found 50 pounds of nitrogen in a ton of clover hay, making 200 pounds in four tons, and if we add half as much to the stubble and roots, there would be 300 pounds in two years' growth of clover. Mow, as good Peruvian guano contains 12 per cent. of nitrogen, it will take, 2,500 pounds to equal the two years' growth of clover.

True, guano supplies other valuable, fertilizers, one of the most important of which is phosphate of lime. But clover supplies this salt also, containing, according to Mr. Lawes, 25 pounds in a ton of hay. It is also rich in potash—26 pounds to the ton of hay. Now these are the most important fertilizers or constituents of manures, and this shows why scientific farmers value the manure from clover hay so highly. Mr. Harris states that, "From numerous analyses, and from actual experiments, J. B. Lawes of England, estimates the manure made by the consumption of a ton of clover hay as worth $9 64." And Mr. H. further states that: "Many farmers in the Eastern and Middle States are now (1862) purchasing artificial manures, such as guano, fish manure, poudrette, &c., and certainly they pay for the substances, which these manures contain, fully as high as the above estimate for clover."

Now, in the four tons of hay and two tons of roots and stubble, grown on a two years' clover lay, there would be six tons, which, at $9 64 a ton, would amount to $57 84. Calculating for the course adopted by Peter Hodson, allowing an extra crop of clover in a rotation of six years there will be about three tons more tops and roots, making in all $87 76, value in fertilizing materials—calculated as we have seen, at the price they would cost in artificial manures—that may be realized in a six-years' rotation. All of this can be had without cost, as the value of the hay for feeding on the farm will much more than pay for growing the clover.

Many of the best farmers in England, and some in this country, buy oilcake to feed, in order to make rich manure. According to Lawes, a ton of oilcake contains 106.4 pounds of nitrogen, and the manure made in feeding a ton is worth $19 72. A ton of clover hay contains a trifle over half the nitrogen, and affords nearly half the value in manure obtained from a ton of oilcake, and as the latter costs over $50 a ton, farmers can easily calculate which is cheaper—to buy oilcake or to grow clover hay to feed, to make rich manure.

But enough of these scientific facts. Though generally founded on practical as well as scientific experiments, many farmers will require further evidence, that to them shall seem of a more common, practical character. Happily such evidence is most ample and conclusive.

Foremost in this kind of proof stands the practice of plowing under clover every other year for wheat. This course has been largely practiced in Western New York—in many localities from twenty to forty years—and with every evidence that the land is now in a better condition than at the beginning. Nay, more; there are many instances where land that was badly run down has been brought up, and made to produce heavy wheat every other year, and whenever a change of crops appeared necessary or desirable, such farms have produced heavy crops of corn and barley.

There are also a great many instances, where, by following a good rotation of crops, land has been brought up and made to produce largely without other manure than that made on the farm, except plaster. Now, it is well known that barnyard manure, in such cases, can only contain a portion of what is produced on the farm, as all products sold are lost to the manure, while of those fed out a portion must be retained by the animals kept, so that, in such cases, the farm produces a large amount to sell, and sufficient fertilizing substance to keep the soil improving besides. But this is seldom done without growing a large proportion of some improving crop, like clover. The only real difference is that in a rotation, clover is made into hay, and fed and made into manure, before it is used as a fertilizer. The great fact remains, that whether the clover is plowed under or used to make manure, the farm has produced a large amount of other products for sale, and the fertilizing crops besides, in both cases. The principal advantage of the longer rotation is, that the land is seldom used to grow a crop to plow under, but is every year producing something that will yield a direct profit. There is little doubt that a rotation of crops, and a system of feeding and making manure, can be adopted, that will improve the soil as fast as plowing under clover every other year.

Now, it is evident that a large amount of enriching material is secured, whether we plow under clover or follow a more systematic rotation of crops; and as it is well known that a succession of grain crops, however varied, will sooner or later exhaust the soil, and equally evident that, if clover only draws from the same sources, within the same limits as such crops, the supply must also fall short, it necessarily follows that clover draws largely from sources not available to the cereals. Hence, by careful investigation, it has been found that the leaves of clover draw largely on the atmosphere for fertilizers, which grain crops have not the power to do, while the long tap roots of clover not only draw largely from the subsoil, but their large wedge-shaped growth loosens up the soil and subsoil, and lets in the air, rain water, and the different chemical agents, that render available the inert mineral plant food, which otherwise would remain locked up in the subsoil.

It was through the agency of clover roots that the large amount of nitrogen found in the soil by Dr. Voelcker, after the clover crop had been removed, was accumulated. And as the supply of nitrogen in the air is practically unlimited, it follows that the supply of nitrogenous fertilizers may be kept up indefinitely; as the ammonia that is dissipated in the air by other means, is again re-absorbed and restored to the use of the farm by the leaves and roots of clover.

There may be more danger of a final exhaustion of mineral plant food, especially where the subsoil is very poor; but this is not the case in Western New-York. Here the subsoil is rich, and only a gradual deepening of cultivation is necessary to continue the supply indefinitely. In doing this, clover is a great help. Constantly extending its roots beyond the reach of previous cultivation, it prepares the way for deeper plowing, by gradually loosening the soil. It also not only draws mineral plant food from the deepest places reached by the roots, but lets in the chemical agents brought down by the air and rains, which, like thorough cultivation, are constantly preparing additional plant food. Hence here, as well as in all places where clover does well, a great deal more mineral, as well as nitrogenous plant food, is collected and furnished to other crops by clover, than by any other crop or agency the farmer can employ.

Doubtless it would be a matter of interest, as well as encouragement to farmers, to inquire into the actual amount of the most important fertilizers that may be removed, in a term of years, from a good farm, and the soil, as shown by the crops, kept improving. But this article is too long to admit of entering into this question at this time.

A young gentleman paid his addresses to a young lady, by whose mother he was unhonorably adored. "How hard," said he to the young lady, "to separate those whom love has united!" "Very hard, indeed," replied she, with great innocence, at the same time throwing her arms around his neck, "and so mother will find it."