

additions of Peruvian guano, nor of any other manure, as has been advised.

This law is correct, that the yield of crops is not in direct ratio to the quantity of any substance either originally existing in the soil or applied to it by a manure, but on a proper proportion of all the elements of the food of plants. Crops cannot, therefore, be economically produced by the application of three or four hundred pounds of Peruvian guano, as has been recommended by some who assume to direct agricultural improvements, without either practical experience or scientific knowledge. If we go beyond a certain quantity, the crop will not be increased in proportion to the expense of the surplus added, and this large application will consequently be unprofitable, save to the manure dealers. The application of 200 pounds of Peruvian guano, *containing compounds capable of forming sixteen per cent. of ammonia*, is enough for any soil, and on many soils a less quantity is all that is required; and the effect of this, if used according to the directions which we have given, will equal in effect double or treble this quantity improperly applied.

This advice has heretofore saved thousands of dollars to the farmers and planters of our State, and if followed will save many more thousands. They should not make up for *other deficiencies* in the soil by the application of large quantities of a manure so expensive as Peruvian guano.

*Nitrate of Soda—Chili Saltpetre—Cubic Nitre.*—This is a salt found already formed in some narrow valleys a short distance from the sea-coast in the provinces of Peru and Chili in South America.

It has in some respects the same effects as Peruvian Guano on the crop in its early growth, but cannot perform all the functions of that manure, inasmuch as it does not contain any Phosphate of Lime or any compound analogous to it.

It however has an advantage over Peruvian Guano in being more efficient when applied as a top dressing, especially when used in the winter or early in the spring.

Nitrate of Soda is a most valuable application to the wheat crop; when it seems slow to start, or when the blades are pale, sickly, yellow or in any manner weak, it gives it a quick growth, turns the leaves green and at once causes them to assume a healthy appearance and greatly increases the product.

It also conduces very much to the brightness in color and strength of the straw. On grass land as a top dressing it is far superior to any other manure that I know of; it greatly increases the product at the time of mowing and keeps the meadows luxuriantly green for a long period afterwards.