

plaster of Paris (sulphate of lime) afforded the only necessary mineral constituent absent, and promoted the growth of clover, this, by its roots, straws, and fine leaves which it produced, gave an abundance of organic matter, which, by its decomposition, afforded abundance of carbonic acid to aid rain water in dissolving all the necessary mineral constituents. The sulphate of lime at the same time aided by absorbing and fixing the ammonia of the atmosphere, made up the sum of the necessary constituents and conditions to produce abundant crops. Plaster and clover, it is apparent, however, could only act in this manner upon soils which had all of the other necessary constituents; had any one been absent or deficient, it would not have produced any results. This shows how necessary it is to ascertain all of the conditions upon which the action of a manure depends; otherwise, as I have before stated, the success of a manure in one place will cause loss in another, where the same conditions do not exist as in other places where it had been successful. The success of clover and plaster here has been the cause of much loss in other places where it had been employed only because successful here.

This soil has a very large proportion of all the necessary constituents well balanced, that is, no one being in much greater quantity than the other. If plaster be sufficient and thorough cultivation adopted, they will, for a long time, remain productive. The sub-soils too partake very much of the character of the surface soils, and thus will, for a long time, furnish all the necessary constituents. There is now on these lands, from the large proportion of undecomposed organic matter in them, great tendency to the production of sheep sorrel, which frequently very much injures the clover crop. Oxalic acid found, so abundant in the sheep sorrel, is a product of partially oxidized or undecomposed organic matter. This can be destroyed by the application of magnesian limes, and it should be done. It will add greatly to the product of these lands, and give much increased weight to the grain. The increase of crops on these lands from any manure would not be equal to that on poor land, but a sufficient increase would be given to make the application which I have recommended one of the best investments for domestic capital that could be entered into. These soils all contain a large proportion of potash. In many cases the green sand can be seen mixed with the sub-soil. The green sand is not in separate beds, but mixed intimately, in many places, with the soil. The soil in the forest of Prince George's differs from those in Anne Arundel county, in being less compact, containing a smaller quantity of ammonia, and having the grains of sand in the soil somewhat larger, otherwise they are precisely similar. The soils in Prince George's bring better tobacco, but do not produce such luxuriant crops of wheat.