

soil consisted, for the most part, of these coarse grains not yet sufficiently disintegrated. The only remedy in such a case consists in heavy application of fresh lime, in order to hasten the disintegration of these coarse grains. Now, an analyses of this soil would have shewn a better supply of the requisites for plants than exist in many soils of the vicinity, which are much more productive.

Another and a serious objection arises from the difficulty of procuring a sample whose chemical constitution is precisely similar to any considerable area of soil around it.

In some cases in order to determine, by analyses, the chemical composition of the soils of a farm, we should require almost as many samples as there are acres. There are also special causes which sometimes occasion erroneous results, such as the existence of the remains of animals which have died on and in the soil. Although the decay may have so far progressed as to leave no trace of structure, yet if the sample should chance to be taken where small animals, such as moles, or even a colony of certain insects have died, the result would be a large excess of phosphoric acid united to lime, iron or alumina.

The analyses that agriculture at present requires are those of plants during different stages of their growth, as I have before suggested. We require more light upon this subject.

The more important characteristics of the soil we can acquire by tracing the soil from its origin through all its changes, including those produced by cultivation and removing crops therefrom. It is to this practical view of the subject, I feel it my duty to invite the attention of the farmers and planters of Maryland.

From what has been said upon the exhaustion of soils in the last chapter, it would appear that such as have long been cultivated without manure, must have been, for the most part, deprived of the small proportions of lime and phosphoric acid they originally contained.

Other essentials have been abstracted to some extent by the crops grown upon the land; but a large portion is again restored in the crop which remains, and in the manure of a well regulated farm.

The principal exceptions are with tobacco, of which the leaves are exported, and hay and straw, which, in the vicinity of cities and towns, are often sold. It will be observed, however, that the ashes of tobacco, as well as the hay, contain small proportions of phosphoric acid, although they abound in potash and lime.

The severe cropping of our soils, especially in the older counties, also destroyed the vegetable mould or humus, with its rich stores of ammonia, and which, as long as it lasted, furnished ample supplies of carbonic acid so necessary for a luxuriant growth of plants.