

lying at and near the surface and more or less mixed up with the remains of plants and animals that have died thereon.

There are numerous kinds and varieties of rocks differing from each other both in their chemical constitution and physical structure. Some of them abound in matters required by plants, which in others are either deficient or absent, as will be seen in the description which will be given of the rocks of Maryland.

From what is now known of the origin and characters of soils, we must conclude that the very foundation of an intelligent and practical application of science to agriculture in any region, must consist in a thorough investigation of its geological and mineral constitution.

A survey of this kind for our State should have for its object the determination of the chemical, physical and other characters of each kind of rock, bed of clay, sand, marl, or other mineral deposit within our borders.

They should be minutely described, and their position and extent be accurately shown on a map, and sections upon a large scale. We should make ourselves acquainted with the properties of every mineral that can be usefully applied to the soil, and also, with those that may promote industrial operations within our limits. These last should by no means be overlooked, because of their importance in adding to the demand for the products of the farm.

In addition to many obvious advantages, we shall find if a work of this kind be thoroughly executed, that the wants of our soil can generally be supplied with much less dependence upon manures or fertilizers from abroad than has hitherto been supposed.

Fully impressed with the correctness of these views, I propose to give in this report a sketch of the geological features of Maryland. Much of my time during the last thirty years has been occupied with investigations connected with the industrial application of Chemistry, Geology, &c., in Maryland, Pennsylvania and Virginia. The information obtained whilst thus engaged, is as far as it seemed to be required, embodied in the present report.

Since the commencement of my term of office on the first of May, 1858, I have been fully occupied with the field work portion of my duties whenever the weather and season permitted. Preliminary investigations have been made in nearly all the counties, although not as fully as I designed, because of the very unusual amount of rainy weather during the autumn of 1858, as well as during the last winter and spring. The intervals during which the field work could not be prosecuted in the counties, have been devoted to collecting such information from abroad, as well as at home, as might prove useful to the public. My position also makes it ne-