SOIL CROSS SECTIONS.

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In connection with the classification of lands, one of the first difficulties encountered by the Surveyor, is to differentiate between his classes; for example, a sandy loam in one locality may be a sterile, almost barren soil, while in another area it may be the very best of agricultural land.

Description of course, clearly sets out the difference between the soils, but a name, something by way of a prefix is most desirable to enable one to distinguish at a glance the difference.

The United States Bureau of Soils have adopted Series names to accomplish this much desired object; however at the present time these determinations of Series are largely made by comparison of descriptions, a somewhat cumbersome method, due to the fact that the memory of the observer is constantly taxed with the data necessary to make the determinations.

In order that the data gathered may be readily and accurately put to use in the determination of like and unlike soils, for instance sandy loams, if, in place of being forced to trust to the memory for almost numberless descriptions, to locate the proper one, a graphical representation could be arranged, and these spread before the observer, similar soils' would be quickly and accurately identified.

With this purpose in mind, soil profiles or soil cross sections are asked in our surveys, showing the principal soil horizons together with concise information as to color, structure, texture, organic matter content, topography etc. etc; as shown on the accompanying cards, and field plan.

These graphic representations enable one much more readily to determine the soil horizons in any locality, than a mass of figures and descriptions, depths and other information, and a soil profile of an area may be drawn giving a very considerable amount of valuable information regarding the locality or the type in which it is taken.

The best method of studying these soil horizons on the ground is to dig a hole of such a size, say (3 by 3 feet) that the soil surveyor may make his observations and measurements and do such sampling as may be desired.

Indeed, in this way only is it possible for the soil surveyor to arrive at any proper conception of soil structure, which is one point in which our soil work is deficient.

The samples collected in bags or jars give little or no idea of soil structure as it is in the ground, but if the Surveyor is able to