INCREASING THE PRACTICAL EFFICIENCY OF SOIL SURVEYS.

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In this day of soil investigations in the field as well as in the laboratory—investigations from the point of view of the needs of the plant and the business organization of the farm—an efficient soil survey is a necessity. In recognizing this fact, we must not overlook the further fundamental fact that the soil survey is a means to an end, and not an end in itself. We must not expect too much of the survey. Just as the topographic base map may be useful in directing the traveler in locating a railroad or in preparing a soil map, so the soil map may be useful in studying the properties of a particular soil type, in locating a farm, in adopting a new crop, or in determining a life-insurance risk. Essentially a soil survey is a statement of the existing soil conditions in any particular half section or acre. It should give us an understanding of the essential properties of that particular soil. It should, if possible, give us some notion of the setting of the soil—the general agricultural status of the region. But in my judgment it is not practicable to gain from a soil survey all of the information we shall need concerning that soil. Using the soil survey as a basis, we should seek to work out its inherent problems of productiveness and management. We shall need also to correlate many other types of information, such as tillage practice, drainage, crop adaptation and rotation, farm management and rural sociological conditions upon the primary basis upon which they everywhere rest, viz., the soil. I feel that the development of these latter types of information must be worked out after the soil survey has been completed. We may well relieve its report of that burden of relationship. As a matter of fact, I do not believe that we are yet able to realize all the ways in which a good soil survey may be utilized.

While I would make the distinction between the soil survey as a means and not an end, I am ready to hold it up to the most rigid standards of accuracy and efficiency. What are the elements of a good survey? To name only a few of them, I should mention, first of all, a thorough and scientific scheme of classification—one separated with reference to plant growth and farm management. It must be an agricultural classification, and not simply a textural, a chemical, or a geological classification in the usual sense. It must