CHEMICAL DETERMINATIONS TO BE MADE IN THE COURSE OF A SOIL SURVEY

P. L. Gilk

The question of what chemical determinations should be made in the course of a soil survey can be disposed of in a few words if the answer is, “make the determinations requested by the soil surveyors.” Judging from past experience, it would appear that two-thirds of the soil surveyors would like to have the samples they have collected subjected to all chemical tests that have been devised. The remaining third of the soil surveyors are of a still more inquiring disposition; they would add chemical determinations for which there is as yet no method.

This desire on the part of the soil surveyors for many chemical tests is prompted by the praiseworthy ambition to find out everything possible about the soils they are classifying and mapping. It may be criticized on the ground that it indicates in some instances a mistaken faith in the adequacy of existing chemical methods of soil examination. Even if it were advisable to make a large number of chemical determinations on soil survey samples, this is at the present time impossible. In the Bureau of Soils there are about seven soil surveyors to one soil chemist and in the state experiment stations there is probably a similar discrepancy between the number of surveyors and the number of chemists assigned to analytical work on soils. It should also be borne in mind that an active and inquiring soil surveyor can collect enough samples in a month to keep a rapid analyst occupied for a year.

It is of course futile to attempt to suggest what chemical determinations should be made in soil investigations in general. Suggestions might be made, however, regarding what chemical work it is advisable to undertake as a supplement to, or as an aid to, the regular work of distinguishing and mapping soils in the field. The chemical determinations that are to be proposed are suggested primarily for the purpose of adding laboratory characterizations to the field distinctions of the different soil types. They are not suggested with the idea of determining the proper fertilizer or cultural treatment of the soils surveyed, although they will inevitably throw some light on these subjects. Also, the determinations are not suggested with the idea that they

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2Chief of Division of Soil Chemistry, Bureau of Soils, U. S. Department of Agriculture, Washington, D. C.