Problems of Soil Classification

REPORT OF COMMITTEE ON EXCHANGE OF SOIL PICTURES AND SOIL PROFILES

As its major project in 1942, the Committee on Exchange of Soil Pictures and Soil Profiles organized a discussion of the photography of soils for one of the meetings of Section V. Major attention was given to the preparation and use of photographs because work in the photography of soils, especially photography in color, is relatively new. In addition to the discussion of photography, the committee considered the possibility of preparing further exhibits of colored slides for the annual meeting and of assembling a collection of slides and pictures for loan or sale. These latter projects were tabled in favor of the discussion, however, since it was felt that the discussion might serve to stimulate further work and thus pave the way for improved exhibitions and collections later.

A list of organizations interested in the exchange of pictures and profiles, as indicated in replies to a questionnaire circulated in 1941 (Soil Sci. Soc. Amer. Proc., 6:394-395, 1942), was prepared during 1942 and mailed to such organizations. Copies of the list are still available and can be obtained by writing to the committee. One part of the list gives the names of organizations having slides and pictures, together with the soil groups represented, and a second part gives the same information with regard to soil profiles.

The discussion of photography of soils at the meeting of Section V in 1942 consisted of a display of photographs and slides with comments on the methods of taking and using them. Questions of the preparation of a profile for photography, of equipment, of lighting and exposure, and of ways of displaying the photographs or slides were all considered briefly. Some of the common faults of pictures and some of the common difficulties in taking the pictures were "cleaning" of the exposure is necessary to get a good picture. Where the profile exposure has been prepared, the cut can be made vertical with a spade or shovel. After a cut of sufficient width and depth has been prepared, the profile can often be improved for photography by "cleaning" and dampening. The improvement due to "cleaning" is usually evident in the better rendition of soil structure and in elimination of spade marks from the final picture. An example of a profile ready to be photographed is shown in Fig. 1. The vertical cut in the bank, the spade, shovel, the camera and tripod, and miscellaneous smaller tools are all shown.

A close-up view of smaller tools that have been used in the "cleaning" of a soil profile is given in Fig. 2. This picture shows a butcher knife, a two-tine fork (of the kind ordinarily used in carving), a bicycle tire pump, and compressed air sprayer. Knife and fork are used in "cleaning" the profile surface to eliminate spade marks and to bring out the natural structure. The bicycle pump is used to blow away dust and smaller aggregates that mask the soil structure. The spray gun, which holds about 1 quart of water and can carry pressures of 200 pounds per square inch, is used to dampen all or part of the profile surface.

A ruler that has been used in photographing profiles is shown with a profile in Fig. 3. The photograph is the one obtained with the setup shown in Fig. 1. The soil is Tama silt loam, a Prairie soil,