Character of the Colloidal Material in the Profiles of Certain Major Soil Groups

M. S. Anderson, Associate Chemist,
Bureau of Chemistry and Soils,
U. S. Department of Agriculture.

Abstract

A study has been made of colloidal materials from the profiles of certain soils representative of the action of a single one of the major soil-making processes exerting its influence to the extent of developing a typical profile of its class. Included in these major soil-making processes are podsolization, calcification and lateritization. The podsol soils show marked differences in the character of their colloidal materials in the different horizons of a particular profile. The colloids from a profile where calcium carbonate is being accumulated in the lower horizons show but slight variation in composition and properties throughout the profile except insofar as calcium carbonate is admixed with the other colloid. Calcium carbonate appears relatively inert as regards most colloidal properties.

A highly lateritized soil shows marked similarity of colloidal material in the several horizons. The major elements of composition vary widely from those of the colloids of the calcareous profile and the colloidal properties are much lower in magnitude.