During the early work of the Soil Survey, mechanical analyses of representative samples were used to determine the quantities of sand, silt, and clay in the various textural grades defined by the field workers. Due to differences between the areas in which the field men worked, the definitions of the textural grades varied. As the work progressed, changes were made in the definitions until those in use today were evolved. Davis and Bennett (2) in a circular published in 1927 suggested some changes, and summarized the principal class definitions used at present. Textural class limits were shown on a triangular diagram (Fig. 1) which are difficult to disperse. In the case of some other soils, organic matter tends to granulate the soil and give a coarser field texture. Only by removal of the organic matter can such granules be broken up completely (6).

In the mechanical analysis laboratory, practically complete dispersion is obtained by the pipette method. The use of sodium hydroxide (1) instead of sodium oxalate as a dispersing agent for lateritic soils aids materially. It is essential, in connection with problems involving complete dispersion, to remember that all soil colloids do not disperse or remain dispersed to the same degree with any one treatment.

In making a textural determination the field worker is guided mainly by the "feel" of the soil. He bases his judgment of texture upon the "apparent" quantities of sand, silt, and clay present. In some cases he obtains a high degree of dispersion; in others, a low degree. He has no exact method of controlling or estimating the degree of dispersion obtained.

When the data obtained by mechanical analysis in this division are made the textural classification, the results are found to disagree in most cases with the textural designation of the field man. Several years ago G. W. Conrey and C. F. Shaw cooperated with this Bureau in investigating the lack of agreement between field and mechanical analysis data. Some of the results of this study will be presented in this paper.