(limestone) or to organic soils. These exceptions occur so rarely that no difficulty will be encountered in New Zealand in adopting soil-texture as a basis of classification.

Soil-texture in all but humus soils is governed by the size of the inorganic (mineral) particles composing the soil. The nomenclature of these particles is framed on words in common use, but it must be remembered that in soil science they have a definite meaning, and that each term refers to particles of a size varying within definite limits. The coarsest of these particles is termed gravel, and the other sizes are, in the descending order, called sand, silt, and clay. The first three are further subdivided into fine and coarse fractions. These terms are sufficiently explanatory to enable one to denote the method of allotting a name to any given soil. That sized fraction which is present in greatest amount gives its name to the soil, and those fractions which are present in still large amounts but less than the largest give (where present) their name as a qualifying adjective. Thus a soil may be called a fine sandy clay, gravelly sand, or a sandy silt. When only one fraction predominates it is, of course, necessary to use only a simple term to describe it. The dune-sands of the coast are therefore merely "sands." This may seem so obvious as not to need the telling, but it is necessary to caution readers that although the terminology of soils is commonplace it is not loosely used. A "sandy silt" not only means that the soil is composed of particles of definite size (within certain limits) to which the words "sand" and "silt" have been allotted, but that the silt predominates in quantity over the sand, and that both occur in the proportions to which that compound name has been allotted. The determination of the proportion in which the differently-sized particles occur is the somewhat lengthy operation of the chemical laboratory known as mechanical analysis or physical analysis.

In the United States it is the practice to prefix a locality-name to the soil-name, indicating the type thus—for example, "Orangeburg fine sand" and "Susquehanna clay."

MAPPING OF SOILS.

Having shown how soils are classified it is necessary to show how their distribution is put on record. This may be done in various ways, but the best is by means of a soil map indicating by various colours the sites of the different types. The presence of certain types sometimes may be inferred by the system of plant-indicators. This method is based on the fact that in some countries certain plants are characteristic of certain soil types and are not found elsewhere in the same abundance or luxuriance. Hence the vegetation is in some cases a guide to the soil. Minerals—mica or calcic carbonate, for instance—occasionally may be used as indicators. Lastly, when the parent rock from which the soil was derived is known the soil may be indicated by that means.

A soil survey may be one of three kinds :—

(1.) A flying soil survey, which aims at making a rapid examination of the soils of a district with a view to discover the main types which occur, and to describe them. This method is suited to country in the virgin state and when covered by virgin vegetation. An example is