the writer's survey of the Auckland Islands (1907), in which it was found possible to correlate the main types of soil with reference to the natural vegetation (see this *Journal* for January, 1911).

(2.) A reconnaissance soil survey, which is a more careful examination with a view to a detailed survey later.

(3.) A detailed survey, which can only be undertaken with the aid of a good base map on a scale sufficient to show the situation and extent of each type when the area is mapped.

Accurate mapping is not attempted in the first two kinds of survey. In these it is sufficient to give such information, be it of topography, appearance of soil, or plant covering, which will enable the man on the land to recognize the soil types by mere description. In the detailed survey the farmer is not put to the trouble of identifying soil types from description, but only has to identify the position of his soil on the map.

In the United States the soil surveyor is provided with a base map of one-mile-to-the-inch scale. Each section or square mile is divided into 40-acre plots on the map, and the surveyor must inspect every 10 acres and determine the type or types of soil composing the section. The different types are indicated on the map in different colours. The samples are drawn for inspection, and, if necessary, for analysis, by means of an auger which may be lengthened to reach subsoil depths. A method of checking the accuracy of the work in the field is for two men to operate on adjoining strips of land, and if the work is done correctly the soil-type boundaries will correspond on the line between the strips.

The largest unit used in classifying the lands of the United States is the soil province, which is subdivided into the soil series, which are again divided into the smallest unit, the soil type.

The soil province is a large area of country, not necessarily massed together as the word "province" might seem to imply, but of odd shape, often straggling over huge areas of territory or existing even in disconnected stretches or patches of country. The soil provinces of the United States are some fourteen in number, and owe their individuality to varying causes, some being defined from geographical position, some on geological, and some on climatic grounds. Thus the flood-plains of the great rivers flowing into the Gulf of Mexico are a soil province, the glacial lake and river terraces are another, the limestone uplands and valleys are a third, the Rocky Mountains and plains are a fourth, the arid South-west a fifth, and so on.

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When the soils of a province have a common origin, differing only in texture, and are alike in colour and physical properties other than those affected by texture, this collection of soils is termed a soil series, and these are arranged, according to texture, into soil types. Thus in the glacial and loessal* soil province, which includes the State

*Loessal material means material deposited by wind.