

## (1) OBJECT AND USES

The purpose of this report is "to provide accurate soil maps, necessary for the classification, interpretation and extension of data regarding agricultural production (1)" on the College Old Farm and the Cotton Station.

The value of a detailed knowledge of a soil for the crop producer or to be more exact the crop ecologist is now rarely questioned and this is even more important where experimental work is undertaken and where management and natural property variation must be accepted as essential features of every soil type or more detailed mapping unit. Knowledge is of limited value however until it is classified and Marbut (2) was insistent that soil profile examination should be the basis of this.

Since the inception of the College in 1922 the Soil Science Department has acquired much detailed knowledge on the characteristics of the soils of these areas and every fresh investigation has emphasized the existence of appreciable variation throughout and many of these results have been published but today no single report has presented a comprehensive description of the soil characteristics of these two areas.

A soil survey should provide qualitative and quantitative data on the major properties of the soil. These may be grouped into:-

- (1) Mechanical Properties
- (2) Water Properties
- (3) Air Properties
- (4) Plant Nutrient Properties

The first three may be evaluated to a reasonable degree of accuracy by field examination of the soil profile to a depth of 4 ft. The fourth group of properties usually requires laboratory data especially with those soils which have been cultivated for many years. With virgin soils and those recently brought into cultivation, colour and depth of the humic horizon and the extent and nature of the chief soil forming agencies, together with an examination of the soil parent material where this is applicable,

should give a valuable indication of the nutrient status.

It is hoped therefore that this soil survey will provide information and data of value in the efficient practical utilisation of the soils of this area.

## (2) LOCATION AND AREA

The area consists of approximately 90 acres at present cultivated on the College Farm and that area to the north previously held by the Empire Cotton Growing Corporation.

## (3) TOPOGRAPHY AND GEOLOGY

This area is part of a terrace sloping in an almost north to south direction. The north-east extremity of the Cotton Station is at 119 ft. and the south-west corner of the College Old Farm 81 chains to the north at 35 ft. above sea level. The northern boundary of the Cotton Station is at the base of the Northern Range foot-hills. This range of mountains running in an east to west direction with rapidly rising peaks of 2000-3000 ft. has besides affecting the climate of the area been the source of its parent soil material.

Waring (3) states that the core of the range is probably granite but the surface formations are Paleozoic rocks of the Caribbean series. This series consists in general of a silvery-grey muscovite mica schist with some carbonaceous matter giving rise to graphitic, asbestos and talcose schist. Large amounts of quartz occur which may exist as stringers, candsor boulders. Locally quartz aggregates are often stained red iron oxide along the minute cracks which traverse the rocks. The nature and extent of this cracking has probably been one of the important factors determining the sand grain size of derived soils.

Waring further considers the terrace of detrital sand and gravel, of which the area under consideration is part, was formed

---

\* The slope is very uniform and has an average fall of 1 in 72.

---