

PART I.INTRODUCTORY.

The work, which is reported in this thesis, was originally undertaken in an endeavour to evolve a method for studying the organic matter in cocoa soils.

In his thesis, 'An Investigation of the significance of the C/N ratio in cocoa soils', Griffith was able to show a definite relationship between a high soil C/N ratio and the fertility of the cocoa plantation, but, at the same time, he pointed out several well-marked exceptions to this general rule, and suggested further investigation of the organic matter as a possible means of explaining these anomalous cases.

Following up this idea Griffith carried out a preliminary experiment in fractionating organic matter contained in certain highly humic soils and plant residues. In this work he employed a slightly modified ^{form} of the organic matter fractionation suggested by Waksman (1); the C/N ratio of the various fractions being investigated, without actual isolation of the organic matter, by means of a wet combustion method of carbon analysis, first proposed by Robinson (6) and the normal Kjeldant's nitrogen method.

Lack of time prevented Griffith from obtaining sufficient data to justify any general conclusion as to the suitability of his method for the end in view; but it seemed that a more precise knowledge of the nature and amount of each fraction would be necessary before this type of work could have much value. A general study of soil organic matter and methods of analysis was accordingly undertaken.