## INTRODUCTION.

During the past few years the sugar cane industry of Trinidad has been affected to a considerable degree by the incidence of a disease commonly known as froghopper blight. The extent of this disease varies from year to year, but has been of such magnitude as to warrant the institution of a special Froghopper Investigation Committee to study the disease from various aspects. This Committee later gave rise to the Sugar Cane Investigation Committee of Trinidad, and among other of its activities are extensive manurial trials laid down by P. E. Turner, Soil Chemist to the Committee.

Previous investigations had shown that froghopper blight was more prevalent and destructive in cane grown on acid soils, while the damage done to the crop grown on alkaline soils was found to be considerably less, although there were many notable exceptions to this generalisation.

Further investigation by Hardy showed that soils supporting unblighted canes usually possessed exchange alkalinity, i.e., were alkaline in presence of a neutral salt. This fact was taken into consideration when manurial trials were laid down, and as a result it was found that liming cane land not only decreased the extent of damage due to froghopper blight, but also independently resulted in a material increase in yield of cane.

The present work is an attempt to study the fluctuations in moisture content and in nitrate content of soils under cane which form part of an extensive trial laid down by P. E. Turner. Two experimental fields were selected, one at Usine St.Madeleine and the other at Waterloo Estate. Periodic samples were taken from plots under different treatments, which were -

(1) Control (no treatment).
(2) Lime.
(3) Pen Manure.
(4) Lime + Pen Manure.

In addition, an effort was made to obtain some comparison of the moisture content and nitrate content of untreated soil supporting cane against untreated fallow land. Rainfall records were also kept, with a view to finding some correlation between rainfall, moisture content and nitrate content.