

INTRODUCTION.

In the investigation described hereafter it was hoped that some correlation between the yield of Sugar Cane per acre and the nitrate producing power of the soil would have been found; but these hopes were not realized: this may have been due to one of the following factors:-

- (1) The fact that all the plots were not growing the same kind of cane.
- (2) The different times of harvesting.
- (3) That on all soils the correlation which Arrhenius suggest does not exist.
- (4) Rather an abnormally dry season.

Although the results obtained have not given many significant differences; there are many indications which suggest that had the investigation been carried on over a longer period, or more replication been practiced; many of the differences which are not significant with the present data, would have been ^{sign.} with the longer period, or more replication.

The relationship between soil moisture; yield and nitrate formation was also investigated, and the first part of this paper attempts to show the significance of water in crop production, and its relation to certain soil and climatic conditions.

The soils of the areas from which the soil samples were taken are described, and the methods by which they were obtained is ^{also} described.

The technique adopted in the laboratory in obtaining the results is explained; followed by a Brief discussion on the efficiency of the method.

The results are all given in a condensed form (for the reason given later) interspersed by a short commentary on the possible significance of bacteria in nitrification.

In conclusion there is a general discussion of results obtained followed by some suggestions for any future work on a similar Problem.