INTRODUCTION.

The fungus diseases affecting cover crops is a subject to which little attention has hitherto been paid, at any rate in the West Indies. In his book "Fungi & Disease in Plants", E.J. Butler gives an account of several of the Indian cover crops, some of which are grown throughout the tropics. Apart from this book, references to cover crop diseases are confined to isolated papers published by Agricultural Stations etc. or to a few lines in general textbooks on plant diseases.

Although certain diseases may accompany a crop wherever it occurs, others may be confined to a relatively small locality, due either to the diseases originating in this area, or to the conditions necessary for infection being more favourable than in other countries.

Concerning the cover crops in use in Trinidad, no regular study of their diseases has yet been made. By growing the principal crops under observation, however, a few years should be sufficient to discover the organisms or conditions causing the more important diseases, and to indicate any possible means of control.

The chief cover and green manure crops grown in the island are:

- **Stizolobium atterrimum**
- **Canavalia ensiformis**
- **Cajanus indicus**
- **Crotalaria juncea**
- **Tephrosia spp.**
- **Phaseolus mungo**

Bengal or Velvet Bean.
Sword Bean.
Pigeon Pea, (chiefly var. bicolor).
Sunn Hemp.
Woolly Pyrol.

The first four of these, together with *Vigna catjang*, have been studied during the past eight months. Bengal beans, which are used especially on the larger estates, form an excellent cover crop and a cattle-food. *Crotalaria juncea* has been introduced only recently, and as a cover crop it is very quick growing. *Cajanus indicus* is used for green manure, for a cover crop, for producing shade for young cocoa trees etc., and the seed are eaten as a vegetable. *Canavalia ensiformis* is grown for green manure and to produce cover.
cover, especially under cocoa and coconut trees. *Vigna catjang* forms a good cover crop, and a green manure crop, and the pods are used for human consumption.

For the purpose of carrying out observations on these crops, they were grown in a field on the Imperial College of Tropical Agriculture farm. In the first instance the percentage germination of the seeds sown was estimated, comparing the field results with those obtained in the laboratory. However, owing to the poor nature and extreme variability of the soil in the field, and the bad quality of the seed used, the results obtained were of no great significance. As the crops developed, observations were made on the different diseases as they occurred, and those found were investigated as far as their importance seemed to warrant, and as time allowed. Certain suggestions have also been made as to further lines of enquiry, which might be followed up next season.

PART I. GERMINATION OF THE CROPS.

Arrangement and preparation of the Flots.

A portion of Field C, rather less than an acre in area, and occupying the south side of the field, was set aside for growing the crop. The land was in poor condition. It had been reclaimed from waste area earlier on in the year, when the vegetation was cut and burnt, the land ploughed, and sown with Bengal beans, which were finally ploughed in. The general condition of the soil was better at the West end, but as the subsequent growth of the plants showed, the soil varied considerably in places only a few feet apart. The drainage was very bad, and during the wet season water collected in depressions all over the field, especially near the South side, whether the general slope of the field tended.

In November the land was ploughed twice and cultivated, and owing to this being done in wet weather, an attempt to get rid of the nut grass was ineffective.