INTRODUCTION.

Maize is not one of the economic crops of Trinidad. Very few attempts have been made to grow it on a commercial scale, and it is only found in small patches on peasant holdings, or roadside gardens. The reason for this is that most of the suitable areas are used for the more remunerative crops such as sugar-cane, coconuts, cacao, etc; that root crops are more adapted to the insular climate; and that the peasant population either prefers rice, or has not been sufficiently educated to appreciate the advantages of maize as a useful grain food and cash crop.

Maize however, has always played an important role in the general system of farming at the Imperial College. But as the environmental conditions represented by Trinidad differ considerably from those met with throughout the important maize growing areas of the world, it became necessary to undertake a series of investigations on the adaptation of maize to such conditions.

Factors such as the optimum date of planting, and spacing are known for conditions in many of the semi-arid and sub-humid areas. But these have yet to be investigated for the insular tropical conditions represented by Trinidad.

The present experiments are part of this general series of investigations on the practice of maize growing in Trinidad. The experiments on spacing are an extension of the work commenced by Jameson last year, and were undertaken with the object of giving greater significance to the results already obtained, and of extending the investigation to include a study of the optimum spacing for the wet-season maize crop.

An investigation on the optimum depth of sowing was also commenced, partly as a guide to farm practice, and partly as a demonstration of the unimportance of deep planting under humid conditions.

The various experiments will be presented under three
headings:

1. Investigations on the optimum depth of planting maize.
2. Report on the spacing of maize (wet season) experiment.
3. Investigation on the optimum spacing of maize (Dry season).

The depth of sowing should range from four to six inches. Such depths are largely a modification to meet the conditions of cropping in semi-arid, continental areas. Under these conditions moisture is the limiting factor, and advantage has therefore by most to be taken of the more uniform and more adequate water supply found in the deeper layers of the soil.

Except for this advantage of supplying moisture to the germination of the embryo, it is doubtful whether deep sowing would favour the crop in any other way.

The depth of planting will have little influence on the rooting system of the seedlings; for the secondary roots develop on the local stele-inferiorae, always within 1-2 inches of the surface of the soil (129).

Further, according to Martin-Day (1), the depth of planting does not appear to affect the depth to which the roots eventually penetrate, nor the yield per individual stalk.

It hence probable, therefore, that deep planting does not render any special moisture conserving facilities to the roots of the young seedlings.

It may be mentioned however, that in the case of continuous planting, it has been shown that the deeper seedlings do develop several secondary roots at the base of the coleoptile, and more roots later on the mainstem. This fact may be of advantage to the young seedling, before the secondary roots have extended their area. The deeper for-tiling the crop renders possible adverse period at its very early stages of development, it is desirable to have the advantage gained at these early stages.

The disadvantages accompanying the unnatural practice of deep planting can be much more definite.

It is a practice an unnecessary strain to put on the young plants in our attempts to place the plumes through the seed-