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AN INVESTIGATION OF VARIABILITY AMONG  
SEEDLINGS OF COCOA. (THEOBROMA CACAO L.).

INTRODUCTION.

In the average cocoa plantation in Trinidad there will be found no two trees alike - there is a great diversity of form of inter-grades between the main types - Criollo, Forastero, Calabacillo. Not only do the trees vary in vegetative characters, but also in the quantity and quality of the seeds they produce; obviously it is very desirable that there should be a high yield and that the cured beans should be uniform.

Experiments at the River Estate, Trinidad (1 and 2), have shown the improvement that is affected by growing trees budded with certain clones of proved value, but the bulk of cocoa trees in Trinidad are still grown from seed.

METHODS OF CULTURE.

Selection of seed for sowing has been a common practice; in some cases the best of the pods were picked out from the bulk and the seed from them was sown: Hart (3) points out that pods like those of a good type may contain seeds of a poorer one, and continues "It is seen therefore that the reliance hitherto placed upon the selection of pods for seed by outside characters is entirely unsupported and their use for planting will clearly tend to deterioration in quality". His recommendation, now a frequent custom, is the sowing of seeds from trees whose value has been proved as regards both yield and quality "in any case, some inferior seedlings will appear, but the maternal strain will assuredly be the most predominant, and the result will be better than if seed had been taken from pods selected from their outer appearance only". It does not seem clear as to why there should be this predominance of the maternal parent, except in cases of self-fertilisation; which, according to the work of Harland and Frechville (4)



is responsible for 70% of the cocoa fruits ripened in Trinidad.

Plantation cocoa trees are very heterozygous and even when they are

self-fertilised their progeny may be expected to vary greatly: the

object of this investigation was <sup>to</sup> estimate the amount of the variability.