

## INCOMPATIBILITY AND POLLINATION OF

### THEOBROMA CACAO.

#### GENERAL INTRODUCTION.

The first mention of self-incompatibility in cacao was in the 1st Annual Report on Cacao Research (1931). In the 4th Report Pound (1) produced evidence that the incompatibility may be only conditional, and expressed the opinion that the main difference between trees was the period over which they were capable of self fertilisation, even on so-called self-incompatible trees the bulk of the crop being the result of self pollination.

Subsequent investigations have not supported this view. No clear cases of a change from the self incompatible state have been found despite extensive hand pollinations, and work on the inheritance of bean colour and axil spot point to a considerable amount of cross-pollination. As long ago as 1927, Harland (2) estimated cross-pollination to be in the region of 30% from a study of axil spot, and though it is not known whether any of his trees were self-compatible or not, there seems to be no evidence for reducing this figure.

Now that it is known that some of the selected trees for vegetative propagation and clonal work are self-incompatible, a further investigation of the problem becomes urgent. Cuttings and seedlings from these selected trees will be supplied to planters in order to raise both quality and quantity of Trinidad cocoa, but although these trees have been heavy bearers under present estate conditions, a pure block of self-incompatible trees may set no crop at all, for many such trees are also inter-sterile. It is evident that the only compensating alternative rests between a change into the self-compatible state, or a large number of efficient cross-pollinating agents.