INTRODUCTION.

Since the year 1921 there has been a heavy and continuous decline in the production of cacao in Trinidad. The cacao industry being the staple industry, this decline in production was viewed with great alarm by both the Government and people of the country, as it could not be attributed to unprofitable prices. The price of cacao during the period 1923-24 to 1929-30 averaged £2. 11s. 9d. per cwt. and cacao was produced at a profit.

The decline during the period 1930-31 to 1935-36 was even more heavy than during the period 1921-22 to 1929-30. This increase in decline may be attributed partly to low prices (average price £1. 8s. 0d. per cwt.) during the former period which made the production of cacao on many estates unprofitable, and partly to the incidence of witchbroom which was first reported in Trinidad in May, 1928, since when it has rapidly spread.

During the year 1929 the Department of Economics of the Imperial College of Tropical Agriculture began an investigation into the condition of the cacao industry in Trinidad. The objects of this investigation were to ascertain the factors limiting profits in the industry and to discover means of improving the efficiency of the industry.

Shephard has presented the results of this investigation up to 1936 in "The Cacao Industry of Trinidad, Some Economic Aspects Series II.,III. & IV". Briefly summarised the results are:-

(a) A financial survey of estates during the seven years 1923-24 to 1929-30 yielded the information that profit was dependent upon yield and indicated that yield was dependent upon soil type and age of cultivation.

(b) An examination of the yields of individual fields showed that part of the decline was due to factors associated with increasing age, and an examination of the yields of individual estates shewed that part of the decline was due to reductions in acreage, and neglect of cultivation consequent on low prices of cacao during the period 1930-31 to 1935-36.

(c) Detailed comparisons of the yields of fields of the same age on different soil types and yields of fields of different ages on the same soil type showed that soil type is the principal factor determining the yields of cacao fields. This detailed investigation of fields was confined to the Montserrat District.

(d) Recommendations were made for improvements in the efficiency of estates.

During the year 1935 it was decided to carry out detailed field examinations of cacao cultivations on two Rio Claro soil types in order to ascertain the potential productivity of these soil types by making detailed comparisons of the yields of these cultivations with yields of cultivations of the same ages on the four standard Montserrat soil types. Further, these field examinations would provide information on which could be based recommendations for improvements in the efficiency of the estate.

The soil types selected for examination were Princes Town Marl and Green Clay. In order to study the age factor as well as the soil factor experimental plots were laid out on each of these soil types on eighteen-year old and forty-year old cultivations.

The results of the investigation were extremely confusing. Yield per acre on Princes Town Marl was found to be very low although Hardy (5) has classed Princes Town Marl as a reasonably good cacao soil, except for the fact that it generally appears to be lacking in available phosphate. The yield per acre of the forty-year old Princes Town Marl field was actually found to be less than that of the forty-year old Green Clay Plot. Green Clay, Hardy (5) states, is unsuitable for the commercial production of cacao. It was also found that there was great variation in yield within the two soil types.

Watson (13) states that these discrepancies are due to the fact that the two old fields are not truly representative of the two soil types, and that a second examination of the soils of the two fields proved this statement. He neither furnishes field nor laboratory data for this second examination nor does he show what areas of the fields are occupied by the different soil types.

Bell (12) states that "As it was impossible to find whole

fields of a suitable age situated on one soil type or the other, areas representative of each soil type were selected on two fields of different ages."

If comparisons of yields on different soil types are to be made the soil types of the fields examined must be reasonably uniform. Comparisons of yields on different soil types cannot be made from figures obtained from areas not representative of each soil type.

From the foregoing it will be seen that "A Re-investigation of the Factors influencing the Yield of Cacao on Different Ages of Cultivation in the Rio Claro District" was necessary.

The objects of the 1936-37 investigations were substantially the same as those of 1935-36, viz:-

(a) To ascertain the potential productivity of the Rio Claro Soil Types.

(b) To ascertain the factors at present limiting yield on good cacao soil types.

(c) To make recommendations for improvements in the efficiency of the estate on which these fields are situated.

In view of the statements made as to the lack of uniformity of the soil types within the Rio Claro fields a soil survey of these fields was carried out and this survey is dealt with in Part I. In Part II. an attempt is made to determine the major factors limiting yield on these fields. The use of artificial manures as a means towards a profitable increase in yield is discussed in Part III. as this has a bearing on the recommendations for improvements in the efficiency of the estate. These recommendations are presented in Part IV. which opens with a summary of the findings of the investigation. In Part V. suggestions for future work are submitted for consideration.