INTRODUCTION.

The growing popularity of tomatoes has resulted within recent times in a rapid expansion in the production of this crop. There is an increasing demand for high quality table fruit largely due to its vitamin value, its attractiveness and flavour as a slicing vegetable and its pre-eminent suitability for canning purposes. This has led to the development of an important tomato industry in certain countries.

In the United States, tomatoes according to Work (23) rank third in importance amongst the vegetable crops both in acre-age and value. They are also held to be the leading canned vegetable and one of the three chief greenhouse vegetables. In England, they are the most widely grown greenhouse crop and are intensively raised in centres around Cheshunt and Wisbech. In the tropics, however, the crop is relegated to a minor position and is mainly produced in peasant allotments - where little or no improvement has been effected - for sale in local markets.

The main commercial purposes for which tomatoes are grown may be classified as follows and it is in the first two categories that tomato culture in the tropics has at present any possibilities of development.

1. Local markets.
2. Export markets.
3. Canneries.
4. Seed.

Tomatoes are raised in home and market gardens, green-houses, and as a field rotation crop, under a diversity of soil and climatic conditions. The methods of growing and handling
the crop vary considerably but depend largely on the purpose for
which it is grown and the areas where it is produced.

Even in centres of limited markets the crop has proved
attractive. In comparison with most other annual field crops in
the tropics, its yield and return per acre are high. But there
is the danger of overproduction and consequent wastage owing to
the perishable nature of the fruit, unless wider and regular mar-
kets can be organised. The crop is also very susceptible to
disease, especially during seasons of prolonged wet weather.
There is, nevertheless, much scope for the development of tomato
production in tropical countries, but it lies rather in the direc-
tion of an export trade especially for smaller places like the
West Indies.

The general increase in the consumption of tomatoes
and the improvements that have taken place within recent years in
the methods of grading, packing and transport have made it possi-
ble to extend the markets of this crop and to grow it for export
during seasons of shortage in other countries. An opportunity
has therefore arisen for the development of tomato growing under
such conditions in the tropics.

A beginning has already been made in this direction in
the export of tomatoes from the smaller British West Indian islands
to Canada during the Winter months when the crop is short and
prices high. The export has been made possible by a preferential
tariff and these islands have therefore an advantage over other
neighbouring tomato producing countries like Mexico which may be
less distant. The extension in production to include the whole
of the British West Indies has recently been viewed in order to
enable the larger islands of Jamaica and Trinidad to participate
in the trade without competing with the smaller islands and a re-
commendation has been made at the recent West Indian Conference (24)
that the former should endeavour to produce tomatoes during the Spring months when supplies from the smaller islands become limited by virtue of their earlier planting season. It was also suggested that before any production be attempted on a large scale that experiments should first be undertaken to investigate the possibility of growing tomatoes commercially under the conditions mentioned.

There have been scarcely any data so far accumulated in regard to the improvement of tomato growing in the tropics and much work needs to be done on questions of yield, varieties, systems of cultivation, etc. in order that high quality fruit should be produced remuneratively and satisfactorily. The demand for information on the cultivation of the crop is increasing with the attention that is now being paid to vegetable culture in general and to the search for new crops with commercial possibilities. A programme of experiments designed to supply some data on the crop in the West Indies has been prepared by Paterson (15) so that the work in these islands could to some extent be coordinated.

The aim of this investigation was primarily to carry out a comparative trial of three varieties and three spacings purely from the yield standpoint and to examine any other data which were obtainable during the course of the experiment. Each class is again subdivided by him according as to whether the fruit is (a) Scarlet red or (b) Pomegranate purple.

II. VARIETIES.

There are numerous varieties of tomatoes which differ in characters of shape, size and colour of fruit, yield, season of maturity and storage qualities etc. Certain varieties are more suitable than others for particular purposes as early markets, canning and export. Unfortunately scores of varietal names, many of which are misleading and some of which show no differences morphologically or even in behaviour from others, have been given from time to time by growers and seedsmen etc.