INTRODUCTION

Scientific research has shown that vegetables vary widely in their composition, but are extremely valuable for the vitamins and minerals which they furnish. Some vegetables such as potatoes, sweet corn, lima bean, which are rich in starch content, twenty to twenty-five per cent. (20 - 25%) can often contribute materially to the day's energy. Others like tomatoes, containing more than ninety per cent. (90%) water and low in carbohydrates, make their contribution as important carriers of minerals and vitamins. The watery vegetables, squash and chayote, although low in nutritive value may be used to provide variety in flavour, texture and colour. Many vegetables are of value for their mild laxative properties. Authorities in the field of nutrition advocate the eating of at least three vegetables each day.

Unfortunately in the tropics the value of vegetables as a food has not generally been realised as a result of which the diet of most people is low in fresh vegetables valued for their vitamins and mineral contents. A survey of the diets in Puerto Rico which are fairly typical of those in most tropical areas showed an unbalanced condition. The lack of use of many of the leafy vegetables has been claimed as part of the reason for the great incidence of malnutrition and diseases in many of the African colonies. The tropical field is therefore open to expansion in the production of vegetables, not only for fresh consumption, but also for canning and freezing. For apart from a few favoured areas in Cuba, Mexico, U.S. Virgin Islands and Puerto Rico which have already exported at one time or another fair quantities of vegetables, no tropical area is able to support its own requirements.

However, before this can be accomplished there is a lot that remains to be done. The report of the Caribbean Commission states that vegetables require intensive and fundamental research no less than sugar. This can be regarded as the first step
towards improvement. The work now being done at the Imperial College of Tropical Agriculture, Federal Experiment Station in Puerto Rico, the Hawaii Agricultural Experimental Station may be regarded as the first step towards the desired goal. Until such a time, the vegetable industry in the tropics cannot reach the degree of proficiency and magnitude that vegetable production has attained in most truck gardening sections of the temperate zone.

A. FACTORS AFFECTING VEGETABLE PRODUCTION IN THE TROPICS

CLIMATIC FACTORS

The climate is by far the most important factor determining the regions of production of vegetables. It determines the degree of success with which vegetable growing can be accomplished whether or not other suitable conditions are present. It is, therefore, extremely important for vegetable growers to be thoroughly acquainted with the climatic requirements of the vegetable he intends to grow, with the prevailing climatic conditions in his region, on his farm, and even on the different cultivated lands on his farm.

The principal factors determining the climate of a region during a certain time of the year and likely to affect vegetable production are temperature, rainfall, length of day and winds.

Temperature.

Both directly and indirectly, temperature has the most profound influence on vegetable growing. Went\(^1\) investigating the optimal conditions necessary for growth of tomato (*Lycopersicum esculentum* var. San Jose Canner), found that humidity, length of photoperiod, light intensity, mineral nutrition, root temperature, watering, root media, could be varied within comparatively wide limits without significantly changing the rate of stem elongation and setting of fruits. In contrast with the wide optimal range for the factors mentioned above, small differences in temperature affect the growth and setting of fruit. Went states that a closer