INTRODUCTION.

One of the chief problems in the rearing of stock in the tropics is the provision of adequate forage during the dry season. In the wet insular tropics where there is a short and mild dry season, the problem may not be so acute as there is no severe shortage of forage. In these regions sugar cane tops are usually readily available, and a small area of grass may be set aside for the purpose. However, where a dry season of some months is experienced, pastures and crops grown for soiling deteriorate, causing stock to lose condition. Thus the effects of the proceeding wet season are to some extent nullified, the result being an increased cost to the farmer in restoring his stock to their previous condition.

Stockdale (1) stresses the importance of mixed farming systems, but the intensity of stocking a farm at present is governed by the amount of feed available in the dry season, which means that there is a super-abundance of lush green forage during the wet season. If the surplus could economically be conserved without undue loss of nutrients, then the problem would be solved.

In the West Indies, today, there are few means of ensuring an adequate food supply for stock throughout the whole year. On sugar estates, sugar cane tops are fed in the dry season to their working oxen and any dairy stock that may be kept. For large dairies the problem is more difficult. Hammond and Storrar (2) have discussed the practice of growing Elephant grass (Pennisetum purpureum) under irrigation, using waste water from dairy washings, or growing a drought resistant fodder crop such as Uba cane (Saccharum sinense) or Guatemala grass (Tripsacum laxum), and they point out that these fodders may be of unpredictable quality due to variable conditions of the dry season.

It would be an advantage to have access to a succulent feed, the quality of which could be fairly accurately judged, to be fed in conjunction with these grasses.

In temperate regions hay making, the drying of grass, and ensilage have all been successfully used for conserving forage crops, but in the tropics generally speaking, only the latter is economic. In Antigua hay has been made with some success, but in areas of heavy rainfall occurring at the time of making, the process becomes difficult and costly. Grass drying needs expensive equipment and few farms and estates would be able to meet the capital outlay. Paterson (3) in Trinidad investigated the utility of two types of Elephant grass, Para grass (Brachiaria mutica) and Savannah grass (Axonopus compressus) in this respect but concluded that - "None of the grasses tested in this experiment is considered to be suitable for the production of dried grass concentrate, chiefly because the herbage, even when harvested every two weeks, is of too low nutritive value to make artificial drying an economic project."

Ensilage therefore, seems to be the only suitable method of conserving green forage for use in the dry season. Its advantages are that it can be made when there is an abundance of green nutritious feed, it can be stored for several months and even years, it is available whenever needed, and its feeding value, if correctly made, need not be far inferior to that of the original crop.

During 1942-43 Hammond and Storrar (2) carried out preliminary investigations in ensilage in the tropics and their work has been used as a basis for continuation in the present experiment.