

INTRODUCTORY.

The present paper is written in conjunction with two other papers, namely " Stored Maize Pests " by Johns and Notley (1), and " The Insect Pests of Maize " by Johns (2), both presented as theses for the Associateship of the Imperial College of Tropical Agriculture at the same time. Though of necessity a certain amount of overlapping has occurred, yet this has been reduced as far as possible, so that certain gaps in this paper may be found to be filled by reference to the others.

It was felt that to attack the problem of the insect pests of maize a knowledge of as many as possible of the insects connected with the maize plant must be obtained, so that it might be viewed first of all from the broad ecological standpoint before any attempt was made to study each insect pest individually. Though this scheme has not been entirely adhered to it has remained the underlying principle: but certain insects whose biology has been largely worked out have been neglected in favour of others which because their damage is not so conspicuous have not been studied in such detail. Time has also precluded anything like a complete survey being made, only some of the more obvious having been noticed, and even these the writer is aware have been treated very scantily. It is hoped however that this paper may assist some other observer in getting quickly to grips with the problem of maize ecology.

One of the chief difficulties in the way of such an ecological study is that the postgraduate student at the Imperial College sees only a part of one year's cycle. In the case of maize he sees one wet season's crop and one dry season's crop; he is therefore unable to say whether the

fluctuations in the numbers of the insects which occur are due to seasonal or other factors. It is impossible with any certainty to put them down to seasonal causes on one season's experience; and again his observations may come to a sudden end by the insect in question vanishing. This happened in the case of *Laphygma frugiperda* at the end of December, though it appeared suddenly again in March.

The drawings were nearly all made with a camera lucida, using a binocular microscope; and ~~except where otherwise stated are magnified 40 times.~~ The observations were all made on the College farm.

The insects are dealt with in the following order.

- (1) Insects attacking the plant.
- (2) Insects attacking the cob, including a mention of stored grain pests.
- (3) Insects only occurring in the stored grain.

Several of the insects have not been definitely identified but specimens have been left with the Entomological Department: it is hoped that they will be identified later and their names appended to this paper.