INTRODUCTION

The struggle between man and insects has been going on since the early days of history. Insects not only transmit serious disease pathogens among man and animals but also eat a considerable portion of our crops and do great damage by aiding in the spread and development of plant diseases. Man on his part has succeeded in conquering a good number of these pests but there still remained many destructive insects against which little progress has been made. Cotton stalkers are one of these.

The red cotton bug, *Dysdercus cingulatus* is a well known pest of cotton in India. Both the nymphs and the adults suck the sap from the leaves and green cotton bolls and when the latter open they attack the young oily seeds rendering them unfit for sowing. The yellow excreta of the bugs stains the lint and the species has also been reported to introduce *Nematospora gossypii* into the bolls. But in spite of all its vile to human economy, our knowledge of the ecology and control of this insect is fragmentary and very little has been accomplished with respect to its control.

The present work was undertaken with two objects in view. First, to investigate the effects of environmental factors influencing the activities of *D. cingulatus* at various
stages of its life, and second, to find out if it can be controlled effectively by the use of chemicals that have been employed against other related pests. An attempt has also been made to study the phenomena of insecticide resistance in this species and to find out if BHC selection pressure has any effect on the bionomics of the insect. The efficiency of the commonly used aziridine compounds, apholate, tepa and metepa as chemosterilants of D. cingulatus has also been evaluated.

For the sake of convenience the findings have been presented in two parts. Part I deals with studies on the ecology of D. cingulatus while in part II tests conducted to determine the sensitivity of the red cotton bug to insecticides and the sterility effects produced by the chemosterilants have been described.