

REARING INVESTIGATIONS

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Objective

To improve rearing and mass production of insects infesting cotton for use in programs involving the release of sterile insects and in programs requiring production of parasites and predators for field release.

Summary of Progress

Laboratory cultures of boll weevils, bollworms, beet armyworms, cabbage loopers, pink bollworms, tobacco budworms, and salt-marsh caterpillars are maintained at the U.S.D.A. Cotton Insects Research Laboratory in Tucson. The pink bollworm is being used for studies of irradiation-induced sterility and parasite studies. The other Lepidoptera are used in studies of parasites and predators and are oriented toward biological control.

During the summer of 1968 sufficient numbers of pink bollworms were reared to provide stock for a new Plant Pest Control Division rearing facility at Harlingen, Texas. From 1,000 to 10,000 pink bollworm eggs per day were shipped for two months.

Rearing methods and diets are being improved constantly, and the rearing program now provides host insects for the biological control program and for the studies of irradiated pink bollworms. The rearing techniques are now being utilized to obtain developmental data about the major insect pests of cotton in Arizona. When these studies are completed, mathematical models will be possible for the study of the population dynamics of these pests.

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INSECT GENETIC INVESTIGATIONS

A. C. Bartlett, Geneticist, E.R.D., A.R.S., U.S.D.A.

Objective

To develop genetic methods of controlling insects injurious to cotton.

Summary of Progress

Studies on F_1 sterility. Preliminary cytological investigations of pink bollworms showed that chromosomal aberrations such as translocations could be