ECOLOGICAL AND TAXONOMIC STUDIES ON CERTAIN PARASITES AND PREDATORS ATTACKING STORED PRODUCT INSECTS

THESIS

Submitted in Partial Fulfilment of the Requirements
for the Award of the Degree
Of

MASTER OF SCIENCE

By

Faculty of Science

1976

SUMMARY

The present work dealt with the study of the ecology and taxonomy of certain parasites and predators of stored grain and grain products insects. It included the following:

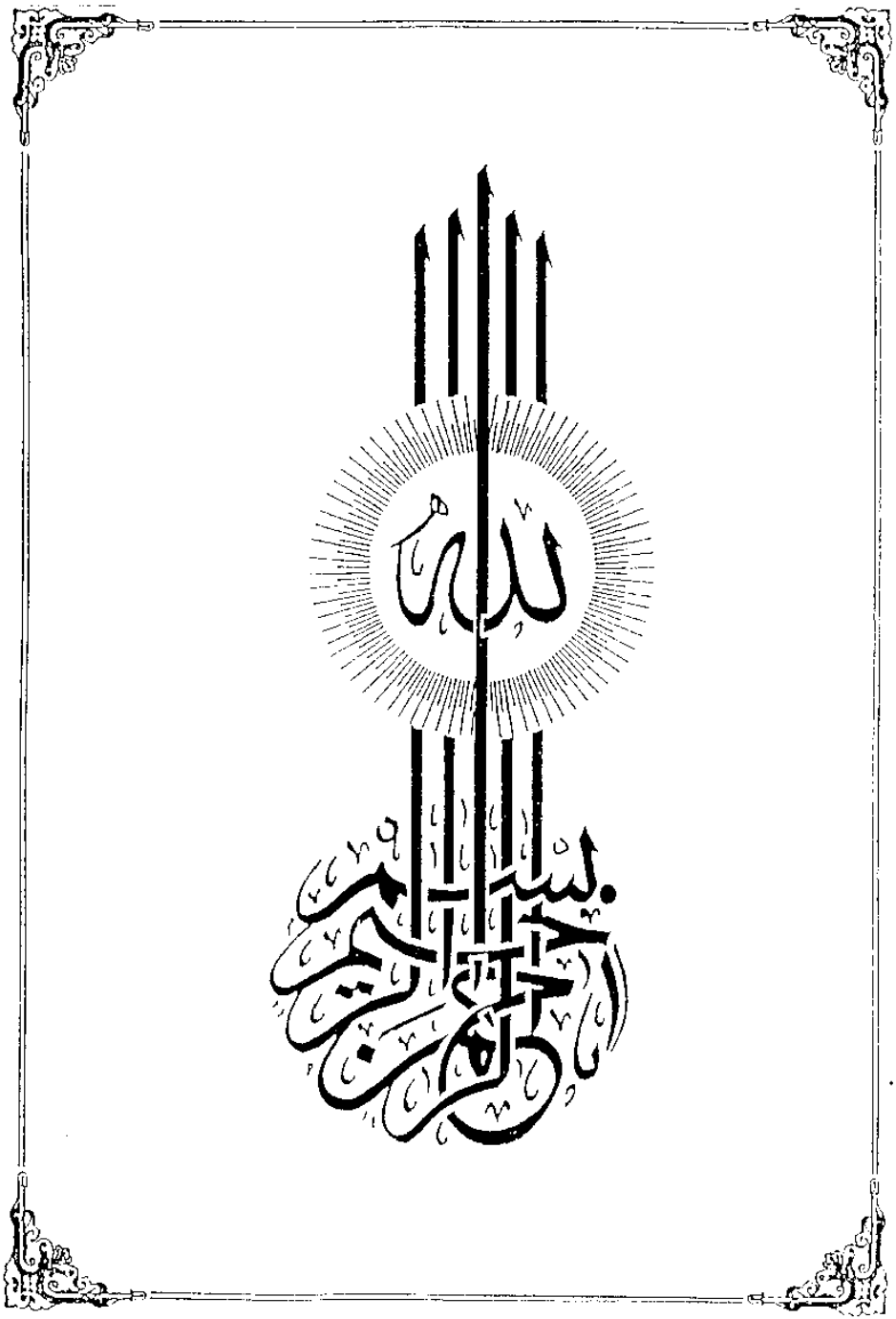
A: Survey and taxonomy:

A survey of parasites and predators of insects infesting stored grains and grain products was carried out in Cairo, Qalyubia and Giza Governorates throughout the period from October, 1973 to December 1975.

Diagnosis, keys to families, genera and species as well as descriptions accompanied with illustrations were given to the predators and parasites collected.

The predators were restricted to orders: Hemiptera (Fam. Anthocoridae, Joppeicidae and Reduviidae); Coleoptera (Fam. Histeridae and Trogostidae) and Diptera (Fam. Scenopinidae).

The parasites were confined to order Hymenoptera in families: Bethylidae, Evaniidae, Ichneumonidae, Ichneumonidae, Braconidae, Trichogrammatidae and Pteromalidae.



Ecological and biological studies of Xylocoris flavipes(Reut.), a predator of stored grain insects:

1- Efficiency of the predator Xylocoris flavipes.

The adult stage was much more efficient than the immature stages in consuming eggs and larvae of stored grain insects. The 5th nymphal instar was more efficient than the other nymphal instars.

2- Development and reproduction on different stored grain insects :

The predator developed faster on Coleopterous preys especially Tribolium sp. than on lepidopterous ones. Its longevity was shorter on the latter and the percentage of mortality was much higher than in Coleopterous ones. Feeding on Tribolium sp. gave high number of eggs.

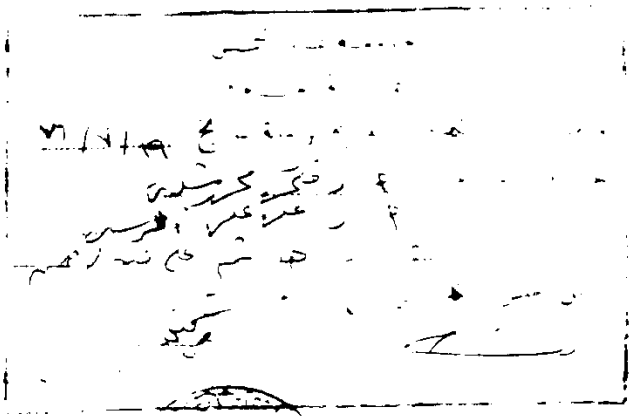
3- Development and reproduction under controlled conditions:

The effects of three different temperatures (15 , 25 and 35 ± 2°C) each combined with three different relative humidities (10, 50 and 90% R.H.) on the development, survival and reproduction of Xylocoris flavipes was studied.

- Occurrence of Micropterous and Macropterous forms :

The micropterous forms were dominating. Few macropterous females and no macropterous males were obtained under the tested conditions.

Mating between different forms produced only micropterous forms of different sexes and different sex ratio.



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THESIS EXAMINATION COMMITTEE

NAME	TITLE	SIGNATURE
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B I O G R A P H Y

Date and Place of Birth	:	20th June 1950, Cairo
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CONTENTS

I- INTRODUCTION

Several kinds of seeds and grains in Egypt are stored in different types of stores, such as : room type stores, warehouses, mud bins in the villages, "Shounas", concrete elevators etc. They are deposited in heaps or in large stocks composed of filled sacks side by side; and are subject to different deteriorating factors among which are insects, mites, rodents and moulds.

The damage caused by stored grain and grain products insects only is estimated by thousands of pounds annually. This damage affects not only the farmer, but also, every user or consumer of grain or grain products.

It is therefore agreed that every step that can be taken for their prevention or control is of great value and should be encouraged.

The last few years have witnessed a marked interest in the biological method of insect control. This arose from growing realization that supplements or alternatives to chemical insecticides are needed to overcome some of the faults or weakness now recognized in the chemical method of insect control.