SUSCEPTIBILITY & RESISTANCE OF SOME CULICINE AND ANOPHELINE MOSQUITOES TO SOME INSECTICIDES IN SHARQUIYA GOVERNORATE

Thesis

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BY

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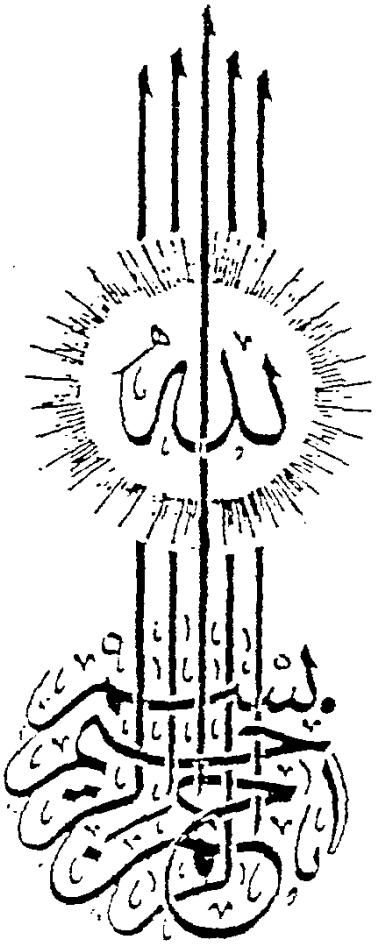

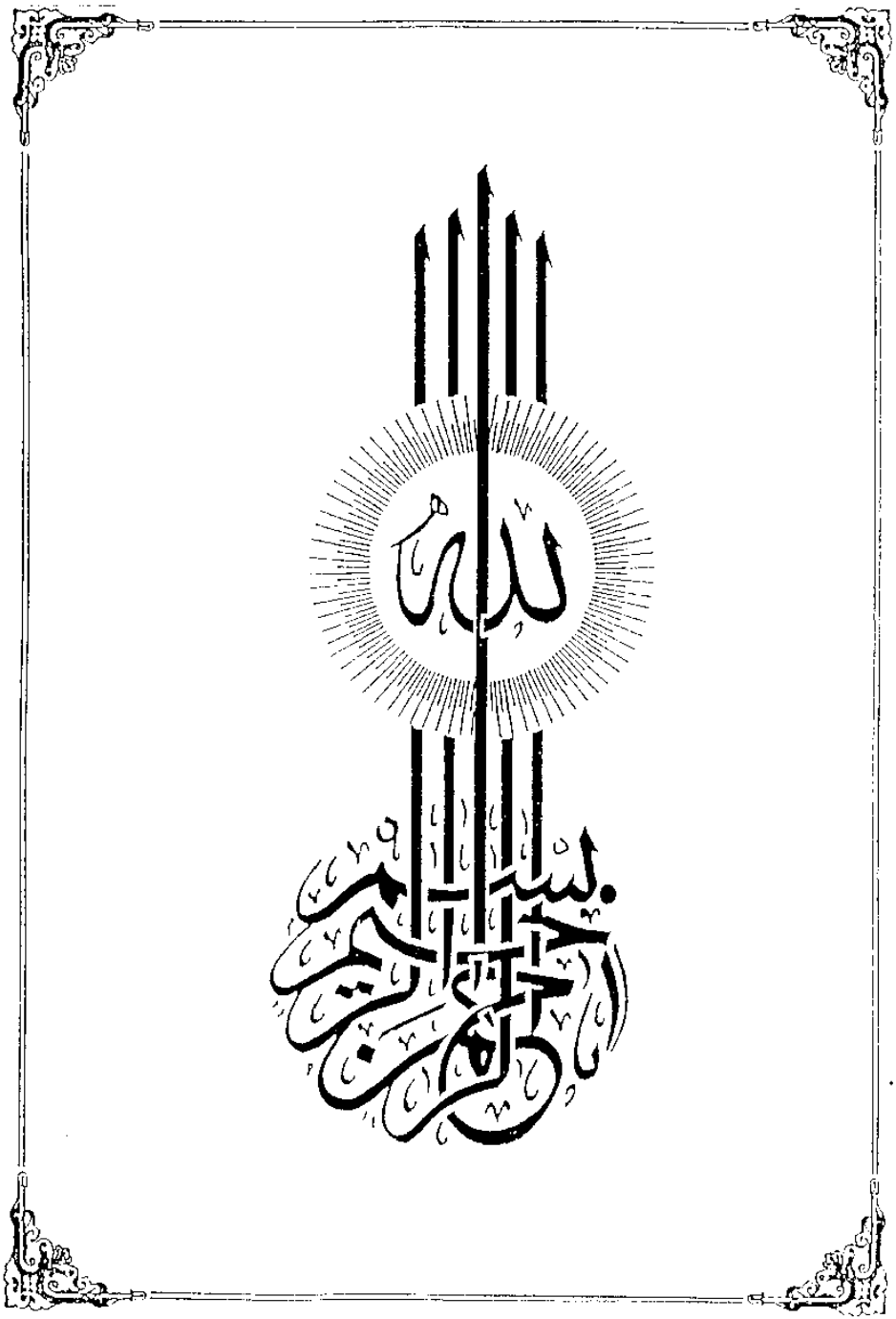

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I- INTRODUCTION

INTRODUCTION

The large scale use of toxicants against insects of either agricultural or medical importance, has frequently led to the development of strains of insects resistant to many insecticides which were designed for their eradication. It is in the field of public health that insecticide resistance has become a serious problem.

The total number of species of these pests with resistant strains has risen since 1945 to an applying figure. This period commenced with development of resistance to DDT in the mosquitoes followed by the appearance of resistance to BHC, dieldrin and others. Considerable works has been devoted by many entomologists, allover the world for investigating this phenomena from various angles with the hope of overcoming resistance and for a successful control of insect pests.

An attempt to study the nature of resistance to organophosphorus insecticides in Culex pipiens, the important vector of filariasis and RVF in Egypt, was thought to be an essential contribution towards its effective control. The present investigation also attempted to study the resistance spectrum to various insecticides in fenitrothion resistant Culex pipiens larvae aiming at achieving the appropriate chemical for controlling this insect under field conditions.

In addition, the study of mosquito bionomics in the indicated areas may offer valuable information for the search of the nature of the developed resistance.

The present study aimed to study the bionomics and susceptibility of mosquitoes to insecticides in Sharquia Governorate which serve in the development of the control strategy for mosquitoes.

The current of the present work :

1- Study of the resting habits of adult mosquitoes in different sites (indoor and outdoor).

2- Study of the residual effectiveness of some insecticides on different walls under field conditions.

3- Determination of susceptibility status of larvae and adult

4- Relationship between adult resistance and larval susceptibility under laboratory condition.

5- Detection of cross-resistance of different insecticides under laboratory conditions.

II- LITERATURE REVIEW

II. REVIEW OF LITERATURE

A) Field Studies :

1- Measurement of the level of resistance :

a) susceptibility of larvae and adult mosquitoes to insecticides :

Wharton (1954), stated that field tests can not determine innat susceptibility since the degree of contact with an insecticide deposit would vary with different individuals of the same species and would vary widely with species having different feeding and resting habits. Also he suggested that the LC_{50} should be determined for the main vector moquitoes wherever residual insecticides were used to serve as a basis for comparison when resistance was suspected.

Hadaway and Barlow (1956), reported that females Aedes aegypti and Anopheles stephensi which tested against DDT after 3 hours of taking the blood meal were more susceptible than those which were tested after 24 hours of taking the blood meal. The authors also reported that the nutritional state, age and sex were important factors which might influence the susceptibility of the mosquitoes to different insecticides.

Brown (1957), advised that in determining of insecticide resistance in mosquito larvae should be in the late