

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم



HOSSAM MAGHRABY

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأقراص المدمجة قد أعدت دون أية تغيرات



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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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بعض الوثائق الأصلية تالفة



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بالرسالة صفحات

لم ترد بالأصل



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Zagazig University
Benha Branch
Faculty of Science



B1472

Effect of Bacillus sphaericus on Different Developmental Stages of Culex pipiens L. and Aedes caspius (P.)

Thesis

Submitted for Partial Fulfillment For Master Degree
of Science (M.Sc.) in Entomology

By

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B.Sc. (Entomology) 1987

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DIDICATED TO

My Mother,

My Husband,

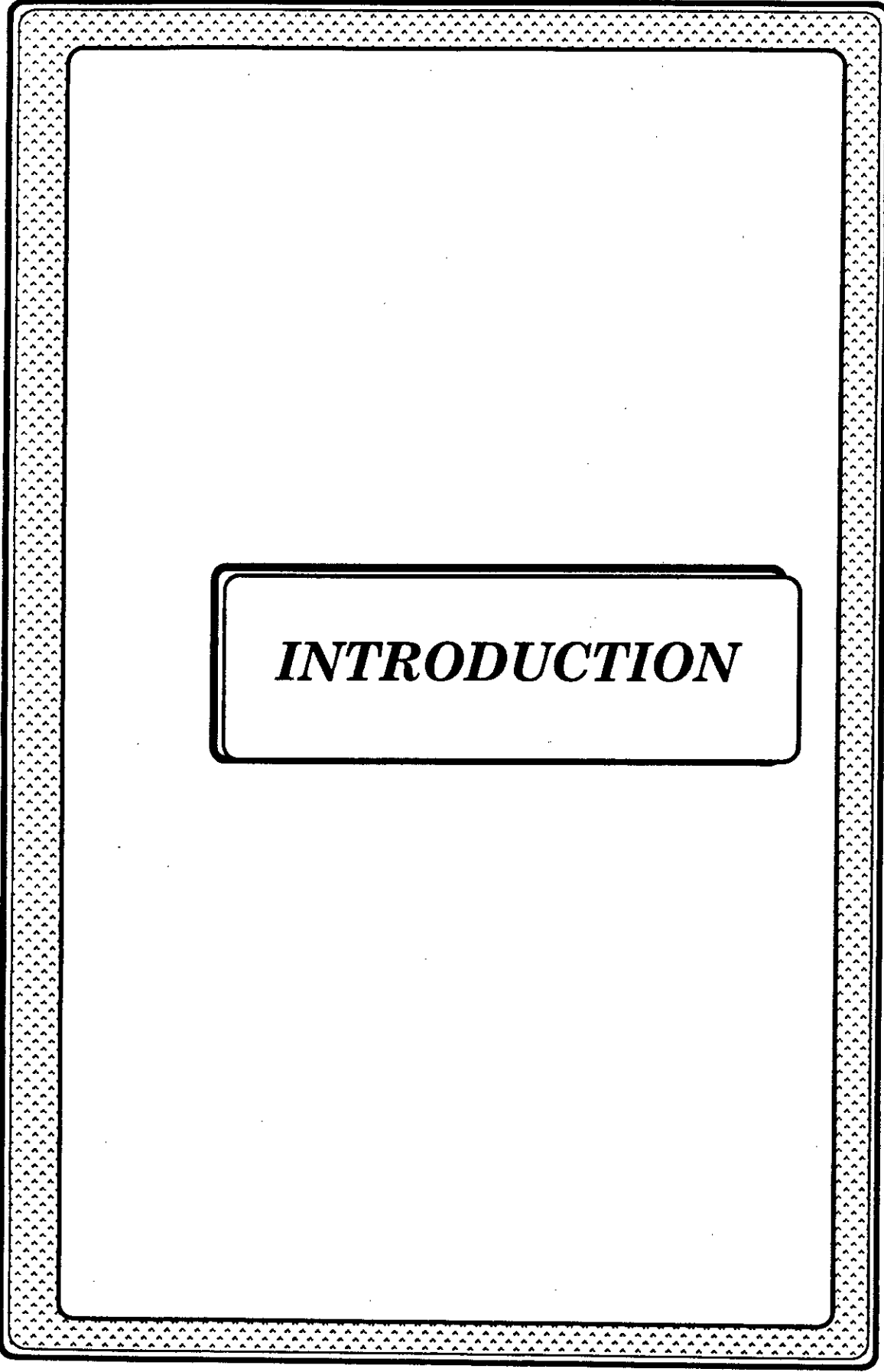
My Daughter Norana

AZZA

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INTRODUCTION

INTRODUCTION

Among blood sucking insects mosquitoes are, by far, the most important pest of man and animals. Their vexatious bites and extraordinary role as vectors of debilitating and fatal diseases such as malaria, filariasis, yellow fever and encephalitides place them in a preeminent position among the enemies of man.

Of these diseases, hyperendemic malaria and filariasis have been major deterrents to human settlements and agricultural development in the tropical and subtropical regions of the world. Moreover, with a rising demand for better public health standards on a global basis, there has been a continuous need to obtain a sound and most effective method of mosquito control. In the struggle for the control of harmful insects in general and mosquitoes in particular, great efforts have been made since the beginning of the twentieth century. Several chemical insecticides have been employed in the control and prevention of mosquitoes for both mature and immature stages. The consistent employment of the insecticides in mosquito control possesses a continuous threat of the development of mosquito resistance and hazards to non-target organisms in the environment.

Because of these considerations and increasing of the environmental consequences, an everlasting need to develop new, safe and promising insecticides as an alternative method for insect control will prevail in order to obtain desired public health standards. Among the most promising alternatives to chemical pesticides for vector control are the microorganisms which are pathogenic to the vectors but are not pathogenic to other invertebrates or to vertebrates. Many pathogens of vectors are known, but only a few of these have potential for mosquito vector control (*Arata, 1977*). Two spore-forming bacilli, Bacillus thuringiensis Var israelensis [also called serotype H-14] and Bacillus sphaericus have demonstrated marked pathogenicity for mosquito larvae, and currently are undergoing intensive study and developments as microbial control agents. Insect-pathogenic spore-forming bacilli have several advantages as microbial control agents; most relatively easy to culture on artificial media or under commercial fermentation conditions; all bear a resistance by the host insect to these microorganisms appears to occur more slowly than to chemical insecticides (*Davidson, 1981*).

The toxins produced by these bacterial agents are particulate in nature having low solubility in water and on ingestion act as stomach poisons (*Matsumura, 1975*). Without ingestion, bacterial agents are

not toxic to mosquito larvae. The activity of these larvicides depends on many physical and biological factors.

The physical factors that have the greatest impact on microbial insecticides in the aquatic environment are; pH, sunlight [especially ultraviolet], heat and chemicals in the water. The most important biotic factor influencing the efficacy of bacilli larvicides is the characteristic of the organisms or the host.

The present work deals with the effect of B. sphaericus on larvae of two mosquito species, C. pipiens and A. caspius. It aims also to study the effect of a physical factor (water temperature) which have an effect on the activity of bacterial larvicide on mosquito larvae.