TAXONOMIC STUDIES ON INSECTS OF FAMILY COCCINELLIDAE

By

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B.Sc. Agric. Sci. (Plant Protection), Fac. Agric., Sana'a Univ., 2000
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ABSTRACT

Ladybird beetles (Coleoptera: Coccinellidae) were collected from the fields of wheat, barley, alfalfa, beans, mustard, vegetable crops, and ornamental plants from Experiment Station in the Faculty of Agriculture, Cairo University-Giza, during two years 2013-2014. Six species *(Coccinella undecimpunctata, Exochomus nigripennis, Hyperaspis marmottani, Rodolia cardinalis, Scymuns syriacus,* and *Hippodamia variegata*) belong to six genera, from five tribes and three subfamilies; were recorded throughout the study and were morphologically identified and a taxonomic key was also given.

Using molecular tools based on 28S r DNA, this study aimed to show the relationship among five species: *Coccinella undecimpunctata, C. septempunctata, Cydonia vicina isis, C. v. nilotica,* and *Hippodamia variegata,* collected from Giza region throughout the years 2013 and 2014. Results revealed that the species *C. undecimpunctata, C. septempunctata* and *H. variegata* were identical to the same specimen species in the Gene Bank. Meanwhile, a monophyletic relationship appeared between the species *C. v. isis* and *C. v. nilotica* compared to the species *Cheilomenes sexmaculata*. The sequences obtained in this study were deposited in the Gene Bank. Analysis of phylogenetic relationships tree database was performed using UPGAMA method by MEGAV6. software.

Key words: Coccinellidae, Morphology, molecular study, Phylogeny tree, 28S r DNA gene.

DEDICATION

I dedicate this work to my parents, sisters, brothers, husband, and daughter for all the support they lovely offered during my Ph.D. program. Also, I dedicate it for re-establishing peace in Yemen.

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LIST OF ABBREVIATIONS

Adalia	*Ad.*
Adonia	*A.*
Anegleis	*An.*
Brumoides	*Br.*
Bulaea	*Bu.*
Cheilomenes	*Che*
Chilocorus	*Ch.*
Clistostethus	*Cl.*
Coccinella	*C.*
Coelophora	*Co.*
Coleomegilla	*Col.*
Cryptogonus	*Cry.*
Cryptolaemus	*Cr.*
Cycloneda	*Cyc.*
Cydonia	*Cy.*
Eriopis	*Er.*
Exochomus	*Ex.*
Halyzia	*Hal.*
Harmonia	*Ha.*
Harpasus	*Har.*
Henosepilachna	*He.*
Hippodamia	*Hi.*
Hyperaspis	*Hy*
Illeis	*I.*
Menochilus	*Me.*
Micraspis	*Mi.*
Neocalvia	*Neoc.*
Neococcinella	*Neo.*
Nephus	*Ne.*
Oenopia	*Oe.*
Ona	*O.*
Parexochomus	*Pa.*
Pharoscymnus	*Ph.*
Phrynocaria	*Phr.*
Platynaspidius	*Pla.*
Platynaspis	*Pl.*
Pricibrumus	*Pri.*
Propylea	*Pr.*
Psyllobora	*Ps.*
Rhyzobius	*Rh.*
Rodolia	*R.*
Scymnus	*S.*
Stethorus	*St.*

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