

## **SURVEY OF SOME HETEROPTEROUS INSECTS IN LIBYA**

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### **ABSTRACT**

*From 2001 to 07, research was carried out to investigate the composition of the Heteroptera fauna in Libya. Many types of soil were involved, viz., semi desert, desert and agricultural land, on various grown crops were grown.*

*It appeared that Heteroptera fauna were 91 species, classified into 18 families of them 40 species are recorded in Libya for the first time.*

*As these species have a wide ecological range they are capable to adapting themselves quite well to the changing environmental factors which results from the various cultivation methods.*

*Conclusively, it appeared that Heteroptera fauna were 91 species, classified into 18 families from them 40 species are recorded in Libya for the first time.*

**Key words:** Heteroptera, Insects, Libya, Host plants, Distribution, Survey.

### **INTRODUCTION**

The Heteroptera of Libya have been very poorly studied and are known only from a few faunal lists; the first list was published by Zavattari (1934). Damiano (1961) listed 7 species of Heteroptera and out of these only 5 species were found in Libya. Later, Linnavuori (1965) made a contribution to the hemipterous fauna of Libya. From time to time, a few species were described by various authors among whom, Hessein (1978) who collected four species from Tripoli. The order Heteroptera is a very important one in regard to man's welfare. Among its members are many of our serious pests such as the stink bug, squash bug, chinch bug. Also, this order contains some of our very valuable allies such as, the Damsel bugs, that predate on many different types of insects. The order Heteroptera are characterized by prognathous mouth parts, which is used for piercing and sucking; in the winged members, the fore wings usually sclerotized basally and membranous epically. The first comprehensive family-group classification of the Heteroptera was published by Amyot and Serville (1843), their *Histoire naturelle des insectes Hemipteres*, Modern textbook

authors such as Borror, and De-Long, (1978), and Richard and Davies (1977) have argued that the Heteroptera should be called Hemiptera .The most basic catalogs are in form of checklists (Oshanin, 1912; China, and Miller,1959; Maldonado Capriles, 1990; Lethierry & Severin, 1893). A great number of classifications papers have proposed for the Heteroptera (Henry, 1997; Hoberlandt, 1953; Carapezza, 1999 and Carapezza, 2002)

## **MATERIALS AND METHODS**

Many localities representing different types of habitats (Semi desert, desert, agricultural land) in Libya were surveyed for Heterotopous dwelling insects. The survey was continued for seven years starting from early January 2001 until late December 2007.

The adults of Heteroptera species appear on many plants in spring soon after the foliage is out; they may be collected by hand, by a sweeping net or sheet-screen (90cm in diameter) with 15 cm wood handle while they rest on the host plants, and by beating the plants by a wooden stick (80 cm in length) then the falling insects are taken by hand or by soft forceps. The collected specimens were killed in KCN bottles, then pinned or mounted on cards, labeled and prepared for taxonomic studies.

The identification for determining the specimen of Heteroptera is based on various sources, especially on that found in The Biology of the Heteroptera (Miller, 1956 and 1971), a review of the Hemiptera-Heteroptera by Priesner and Alfieri (1953) and True bugs of the world (Hemiptera : Heteroptera), classification and natural History by Schuh and Slater (1995).

The taxonomic study of the order Heteroptera in Libya was carried out by examining the specimens collected during the present work as well as the specimens kept in the main Egyptian refernce collections .These collecions are:

- 1- Collection of Ain-Shams University, Faculty of Science, Entomology Department.
- 2- Collection of Cairo University ,Faculty of Science, Entomology Department.
- 3- Collection of the Entomological Society of Egypt.

## **RESULTS AND DISCUSSION**

Different methods were used to collect insects, by hand, a sweeping net or sheet-screen, The collected species were gathered during early January 2001 until late December 2007 by all this methods. The species with **an asterisk** \* are firstly recorded from Libya.

Insect species	Host	Distribution
<b>I-FAMILY: CYDIDAE</b>		
Subfamily : Cydninae	Under stones on sandy beach	Benghazi, Ejdabia, El - Kufra,Fezzan
<b>Genus: Aethus</b> Dall		
1. <i>A. pilosus</i> (H.S.)		
<b>Genus: Byrsinus</b> Fieber	Under stones on sandy beach	Benghazi, Misurata ,El Merj, Salog (47km south to Benghazi); Tripoli
2. <i>B. flavicornis</i> (Fabricius)		
<b>Genus: Cydnus</b> Fabricius	Under stones near roots of various plants	Kuwaifia, Derna, Tripoli
3. <i>C. aterrimus</i> (Forster)		
<b>Genus: Macroscytus</b> Fieber	Under grasses or stones	Benghazi, Gabber Jera, El-Merj and Gubba; Tripoli
4. <i>M. brunneus</i> (Fabricius)		
Subfamily: Sehirinae	Alfalfa plants	El-Beida
<b>Genus: Adomerus</b> Mulsan & Rey		
*5. <i>A. biguttatus</i> (L)		
<b>G: Canthophorus</b> Mulsant & Rey	Under stones on sandy beach	Benghazi
*6. <i>C. impressus</i> Horvath		
7. <i>C. melanopterus</i> (H.S)	Under bark of olive trees	Benghazi, Misurata, Jabel Nefoussa, Fezzan, Kuwaifia ; Tripoli
<b>Genus: Legnotus</b> Schioedte	Under grasses	El-Beida
*8. <i>L. limbosus</i> (Geoffroy)		
<b>G: Tritomegas</b> Amyot & Serville	Under grasses	El-Beida
*9. <i>T. sexmaculatus</i> Rambur		
Subfamily: Thyreocorinae	Under grasses	El-Beida
<b>Genus: Thyreocoris</b> Schrank		
*10. <i>T. scarabaeoides</i> (L)		
<b>II-FAMILY: PENTATOMIDAE</b>		
Subfamily: Asopinae	Predator of Sunflower beetle larvae	Benghazi
<b>Genus: Perillus</b> Mulsant & Rey		
*11. <i>P. bioculatus</i> Stal (nymph & adult)		
Subfamily: Pentatominae	<i>Euphorbia paralias</i> L	El-Merj , Tobruk ;
<b>Genus: Acrosternum</b> Fieber	<i>Tamarix aphylla</i> (L);	Benghazi
12. <i>A. (Acrosternum) heegeri</i> (Fieber)	<i>Medicago sativa</i> L	
13. <i>A. (Acrosternum) millierei</i> (Mulsant & Rey)	<i>Euphorbia paralias</i> L, <i>Tamarix aphylla</i> (L) ; <i>Hyoscyamus albus</i> L	El-Merj , Tobruk , Benghazi ; Tripoli

Cont.

*14. <i>A. (Chinavia) bergroth</i> (Horvath)	On the lower plants near borders of cultivation	El-Beida
*15. <i>A. (Chinavia) emmerezii</i> (Shouteden)	On the lower plants near borders of cultivation	El-Beida
<b>Genus: Aelia</b> Fabricius	<i>Hordeum vulgare</i> L ;	El-Beida, Benghazi;
*16. <i>A. punctiventris</i> Horvath	<i>Triticum aestivum</i> L	Teuchira
*17. <i>A. acuminata</i> L	Wheat, barley and other <i>Graminaceae</i>	Kuwaifia
<b>Gen: Brachynema</b> Mulsant & Rey	On the lower plants near borders of cultivation ,	Benghazi ; Tobruk
18. <i>B. cinctum</i> (Fabricius)	<i>Suaeda aegyptica</i> (Hasselq.), <i>S. vera</i> Forsk, <i>Artemisa campestris</i> L ; <i>Hyoscyamus albus</i> L.	
<b>Genus: Carpopocoris</b> Kolenati	On ground vegetation,	Benghazi
*19. <i>C. mediterraneus a.</i> Tamanini	<i>Lygeum spartum</i> Loef., <i>Avena sterilis</i> L ; <i>Echinops spinosissum</i>	
*20. <i>C. pudicus</i> (Poda)	On ground vegetation, <i>Lygeum spartum</i> Loef. <i>Avena sterilis</i> L ; <i>Echinops spinosissum</i>	Benghazi
<b>Genus: Chroantha</b> Stal	<i>Acacia farnesian</i> (L);	Benghazi ; El-Meghzaha
*21. <i>C. ornatula</i> (H-S)	Tamarix bushes	
<b>Genus: Codophila</b> Mulsant & Rey	On ground vegetation	Benghazi
* 22. <i>C. maculicollis</i> (Dallas)	, <i>Lycipersion</i> <i>esculentum</i> Mill; <i>Echinops spinosissum</i> Turra	
23. <i>C. varia</i> (Fabricius)	On ground vegetation ; <i>Euphorbia paralias</i> L	Benghazi
<b>Genus: Dolycoris</b> Mulsant & Rey	On the lower plants near borders of cultivation	El-Beida and Teuchira
24. <i>D. baccarum</i> ( L. )	<i>Hyoscyamus albus</i> L , <i>Carduus getulus</i> Pomel, <i>Centaurea</i> <i>alexandrina</i> Delile , <i>Hordeum vulgare</i> L ; <i>Zea mays</i> L	
		<b>Cont.</b>
<b>Genus: Eurydema</b> Laporte	<i>Zilla spinosa</i> (Turra)	El-Beida and Teuchira

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*25. <i>E. ornatum</i> (L)		
<b>Genus:</b> <i>Eysarcoris</i> Hahn	On ground vegetation,	Benghazi, Derna, Fezzan;
26. <i>E. ventralis</i> (Westwood)	& <i>Euphorbia paralias</i> L	Tripoli
<b>Genus:</b> <i>Holcogqster</i> Fieber		
27. <i>H. exilis</i> Horvath	On <i>Juniperus phoenica</i>	Benghazi , Gubba ,and El Merj
<b>Genus:</b> <i>Mecidea</i> Dallas	From cultivated field	Tripoli
28. <i>M. lindbergi</i> Wagner		
29. <i>M. pallidissima</i> Jensen-Haarup	On <i>Hordeum</i> sp	Sebha
<b>Genus:</b> <i>Menaccarus</i> A & S		
30. <i>M. dohrnianus</i> (Mulsant & Rey)	<i>Artemisia campestris</i> L	Benghazi ,Zoura ; Tripoli
<b>G:</b> <i>Nezara</i> Amyot & Serville	<i>Medicago sativa</i> L, <i>Zea mays</i> L, <i>Solanum elaeagnifolium</i> Cav, <i>Hyoscyamus</i> sp	El-Beda , Benghazi , El-Mekely, Teuchira ,Abu Atni ; Al- Kufra
*31. <i>N. viridula</i> (L)		
*32. <i>N. viridula</i> var <i>torquata</i> (F)	<i>Medicago sativa</i> L, <i>Zea mays</i> L, <i>Solanum elaeagnifolium</i> Cav, <i>Hyoscyamus</i> sp	Derna, El-Beida, Benghazi ; Teuchira
<b>Genus:</b> <i>Pausias</i> Jakovlev	On <i>Acacia</i> sp	Sebha
33. <i>P. leprieuri leprieuri</i> (Signoret)		
<b>Genus:</b> <i>Sciocoris</i> Fallen		
34. <i>S. (Parasciocoris) angusticollis</i> Puton	<i>Ficus carica</i> L.	Benghazi
35. <i>S. (Neosciocoris) conspurcatus</i> Klug	Under <i>Zygophyllum album</i> L	Benghazi
36. <i>S. (Sciocoris) helferii</i> Fieber	Under grasses and shrubs	Benghazi
Subfamily : Podopinae	On Umbelliferae	Benghazi and Tripoli
<b>G:</b> <i>Ancyrosoma</i> Amyot & Servill		
37. <i>A. leucogrammes</i> (Gmelin)		
<b>Genus:</b> <i>Graphosoma</i> Laporte	<i>Eryngium campestre</i> L.	Benghazi ,Teuchira &Derna
38. <i>G. semipunctatum</i> (F.)		
<b>Genus:</b> <i>Putonia</i> Stal	: <i>Zygophyllum album</i> L	Benghazi
* 39. <i>P. torrida</i> Stal		

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Cont.

<b>Genus:</b> <i>Tholagmus</i> Stal	: <i>Pituranthos tortus</i>	Benghazi
40. <i>T.chobauti</i> Puton	(Dessf )	
*41. <i>Ventocoris</i>	On <i>Echinops</i>	Benghazi
( <i>Paraselenodera</i> )	<i>spinosissum</i> Turra	
<i>martini</i> Horvath		
*42. <i>V. (Selenodera) obesus</i>	On ground vegetation,	Benghazi
(Stal )	& <i>Echinops</i>	
	<i>spinosissum</i> T.	
*43. <i>V. (Paraselenodera)</i>	On ground vegetation,	Benghazi
<i>oblongus</i> ( Horvath )	& <i>Echinops</i>	
	<i>spinosissum</i> T	
*44. <i>V.(Selenodera) productus</i>	On ground vegetation;	Benghazi
(Jakovlev )	<i>Echinops spinosissum</i> T	
<b>III-FAMILY:</b>	On ground vegetation	Benghazi
SCUTELLERIDAE		
Subfamily : Eurygasterinae		
<b>Genus:</b> <i>Eurgaster</i> Lap.		
*45. <i>E. maura</i> (L.)		
Subfamily : Odontotarsinae	On ground vegetation	Benghazi
<b>Genus:</b> <i>Odontotarsus</i> Lap.		
*46. <i>O. robustus</i> Jak		
*47. <i>O. caudatus</i> (Burm)	On ground vegetation	Benghazi
Subfamily : Scutellerinae	On ground vegetation	Benghazi
<b>Genus:</b> <i>Odontoscelis</i> Lap.		
48. <i>O. tomentosus</i> ( Gm)		
<b>IV-FAMILY: REDUVIIDAE</b>	At the lamp	El-Beida
Subfamily: Harpactorinae		
<b>Genus:</b> <i>Coranus</i> Curtis		
*49. <i>C. aegyptius</i> (F.)		
Subfamily: Reduviinae	At the lamp	Benghazi
<b>Genus:</b> <i>Reduvius</i> Fabricius		
50. <i>R. personatus</i> (L.)		
51. <i>R. jakowleffi</i> Retter	At the lamp	Benghazi & Tripoli
52. <i>R. tabidus</i> ( Klug )	At the lamp	Benghazi
<b>V-FAMILY: MIRIDAE</b>	<i>Haloxylon</i> sp	El-Beida
Subfamily: Deraeocorinae		
<b>Gen:</b> <i>Deraeocoris</i> (D)		
Kirschbaum		
*53. <i>D. (D.) eremicus</i> LV		

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*54. <i>D. (D.) trifasciatus</i> (L)	<i>Haloxylon</i> sp	El-Beida
Subfamily: Mirinae	Under grasses	Benghazi
<b>Genus:</b> <i>Calocoris</i> Fieber		
55. <i>C. porphyropterus</i> Reuter		
<b>Genus:</b> <i>Creontiades</i> Distant	From cultivated field	Benghazi
56. <i>C. pallidus</i> Rambur		
<b>Genus:</b> <i>Eurystylus</i> Stal	<i>Zygophyllum album</i> L	Benghazi ; Gabber Jera
57. <i>E. bellevoeyei</i> (Reuter)		
<b>Genus:</b> <i>Horistus</i> Fieber	On Rubiaceae sp	Benghazi
* 58. <i>H. orientalis</i> (Gmelin)		
Subfamily: phylinae	Under grasses	Benghazi ,Cabber Jera and Zoura
<b>Genus:</b> <i>Amblytylus</i> Fieber		
59. <i>A. vittiger</i> Reuter		
<b>Genus:</b> <i>Psallus</i> Fieber	Under grasses	Benghazi
60. <i>P. aurora</i> ( Muls & Rey)		
<b>VI-FAMILY: LYGAEIDAE</b>	Swept from herbs	Tobruk, El-Beida,El- Merj ,Benghazi, Misrata; Sebha
Subfamily : Lygaeinae		
<b>Genus:</b> <i>Lygaeus</i> F		
61. <i>L. pandurus</i> (Scop)		
<b>Genus:</b> <i>Horvathiolus</i> Josifov	Swept from herbs	El Bakour
* 62. <i>H. superbus</i> ( Pollich)		
* 63. <i>H. persimilis</i> Horvath	Swept from herbs	Tobruk,Derna, Gubba ,El- Merj and Benghazi
Subfamily : Oxycaroninae	Swept from desert vegetations	Benghazi and Kufra
<b>Genus:</b> <i>Leptodemus</i> Reut		
64. <i>L. minutus</i> (Jak)		
Subfamily : Orsillinae	On <i>Juniperus phoenicea</i>	El- Merj
<b>Genus:</b> <i>Orsillus</i> Dallas		
65. <i>O. depressus</i> Dallas		
<b>Genus:</b> <i>Nysius</i> Dallas	Weeds and Orchards	Tripoli.
66. <i>N. ericae</i> (Schilling )		
<b>Genus:</b> <i>Caenocoris</i> Fieber	Swept from herbs	Derna and Benghazi
67. <i>C. (Caenocoris) nerii</i> (Germ)		
Subfamily : Piratinae	At the lamp	El- Merj
<b>Genus:</b> <i>Ectomocoris</i> Mayr		
68. <i>E. ululanus</i> (Rossi )		
Subfamily : Henestarinae	Swept from grasses	Zoura
<b>Genus:</b> <i>Engistus</i> Fieber		
69. <i>E. boops</i> Df		

Cont.

<b>VII-FAMILY: RHOPALIDAE</b>	On <i>Thymus</i> sp	Benghazi ,and Cabber Jera
Subfamily : Rhopalinae		
<b>Genus:</b> <i>Rhopalus</i> Schilling		
*70. <i>R. parumpunctatus</i> (Schilling)		
*71. <i>R. subrufus</i> (Gml)	On <i>Thymus capitatus</i>	Barsis , El- Merj
<b>Genus:</b> <i>Corizus</i>	Common in Gardens,	Derna , Gubba, El- Merj ;
72. <i>C. hyoscyami</i> ( L.)	usually feeding on plants of the Geranium family	Benghazi
<b>Genus:</b> <i>Liorhyssus</i> Stal	<i>Zea mays</i> L	El- Merj ,Kufra ;Tripoli
73. <i>L. hyalinus</i> (F.)		
<b>Genus:</b> <i>Stioctopleurus</i> Stal	On Xerophilous vegetation	Benghazi
74. : <i>S. riveti</i> Roy		
<b>VIII-FAMILY: ALYDIDAE</b>	On Orchards and borders of cultivations	Benghazi
Subfamily : Alydinae		
<b>Gen:</b> <i>Camptopus</i> Amyot & Servile		
*75. <i>C. lateralis</i> (Germ)		
<b>Genus:</b> <i>Euthetus</i> Dallas	Under grasses	Tripoli
*76. <i>E. sabulicola</i> Lindberg		
<b>IX-FAMILY: PYRRHOCORIDAE</b>	On ground near grasses	El-Mekely ,Derna ,Gubba, El-Beida ,El-Merj, Teuchira,Kwaifia, Abu-Edressa, Benghazi , Tripoli ,Tarhona ,Sebha ; Kufra. Kwaifia and Benghazi
Subfamily: Pyrrhocorinae Fieber		
<b>Genus:</b> <i>Scantius</i> Stal		
77. <i>S. aegyptius</i> (L)		
<b>Genus:</b> <i>Pyrrhocoris</i> Fall	Wheat, barley , other Graminaceae& holly hock <i>Althaea rosea</i>	
* 78. <i>P. apterus</i> (L.)		
<b>X-FAMILY: NABIDAE</b>	On <i>Tamarix</i> sp	Benghazi and El-Meghzaha
Subfamily: Prostemmatinae		
<b>Genus:</b> <i>Nabis</i> Latreille		
*79. <i>N. viridis</i> Brulle		
<b>XI-FAMILY: COREIDAE</b>	<i>Foeniculum vulgare</i>	Burdi , Jagbob ,Benghazi; Tarhona
Subfamily: Coreinae		
<b>Genus:</b> <i>Haploprocta</i> Stal		
80. <i>H.sulcicornis</i> (F.)		
<b>Genus:</b> <i>Centrocoris</i> Klti	On Graminae	Karsa ,El-Bebida and Kuwaifia
81. <i>C.spiniger</i> (F.)		
<b>Genus:</b> <i>Gonocerus</i> Berthold	On <i>Juniperus phoenicea</i>	Benghazi and Merj
82. <i>G.freyi</i> Mancini		

Cont.



Subfamily: Pseudophloeinae <b>Genus:</b> <i>Bathysolen</i> Fieber * <b>83.</b> <i>B. nubilus</i> (Fall.)	Under grasses and Shrubs	El Bakour
<b>XII-FAMILY:</b> STENOCEPHALIDAE Subfamily: Alydinae <b>Genus:</b> <i>Dicranocephalus</i> Hahn * <b>84.</b> <i>D. setulosus</i> (Ferrari )	From a low herbaceous	Barsis
<b>XIII-FAMILY:</b> ANTHOCORIDAE Subfamily : Anthocorinae <b>Genus:</b> <i>Anthocoris</i> Fallen * <b>85.</b> <i>A. nemoralis</i> (F)	Mainly predaceous on insects	Karsa ,El-Bebida and Barsis
<b>XIV-FAMILY:</b> NOTONECTIDAE Subfamily : Notonectinae Latreille <b>Genus:</b> <i>Notonecta</i> Linnaeus * <b>86.</b> <i>N. maculata</i> F	were collected from a fresh water pond located at Garyounis University	Benghazi
<b>XV-FAMILY: CORIXIDAE</b> Subfamily: Corixinae Enderlein <b>Genus:</b> <i>Sigara</i> Fabricius * <b>87.</b> <i>S. alateralis</i> (Leach) * <b>88.</b> <i>S. hoggarica</i> Poisson	were collected from a fresh water pond located at Garyounis University  were collected from a fresh water pond located at Garyounis University	Benghazi  Benghazi
<b>XVI-FAMILY : CIMICIDAE</b> Subfamily : Cimicinae Latreille <b>Genus:</b> <i>Cimex</i> Linnaeus * <b>89.</b> <i>C. lectularius</i> L	Blood –sucking	Tobruk, El-Mekely, Derna ,Gubba, El-Beida ,El-Merj, Teuchira, Kwaifia, Barsis ,Benghazi, El-Meghzaha ,Tripoli, Tarhona, Sebha , and Kufra.
<b>XVII-FAMILY :</b> <b>ARADIDAE</b> Subfamily : Aradinae <b>Genus:</b> <i>Aradus</i> Fabricius * <b>90.</b> <i>A. flavicornis</i> ( Dalm )	At Light traps	Benghazi

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<b>XVIII-FAMILY :</b>	Under Gramineae	Benghazi
<b>BERYTIDAE</b>		
Subfamily : Berytinae		
<b>Genus:</b> <i>Berytinus Kirkaldi</i>		
<b>91. B. hirticornis</b> ( Brulle)		

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## DISCUSSION

Results of the present study indicated that the order Heteroptera is widely distributed in Libya. The study revealed the presence of 91 species in Libya, belonging to 18 families. The following species are firstly recorded in Libya. They are: *Canthophorus impressus* Horvath, *Adomerus biguttatus* (L.), *Legnotus limbosus* (Geoffroy), *Tritomegas sexmaculatus* Rambur, *Thyreocoris scarabaeoides* (L.), *Perillus bioculatus* Stal, *Acrosternum (Chinavia) bergroth* (Horvath), *Aelia (Chinavia) emmerezzi* (Shouteden), *A. punctiventris* Horvath, *A. acuminata*, *Carpocoris mediterraneus a.* Tamanini, *C. pudicus* (Poda), *Chroantha ornatula* (H-S), *Codophila maculicollis* (Dallas), *Eurydema ornatum* (L), *Nezara viridula var torquata* (F), *Putonia torrida* Stal, *Ventocoris (Paraselenodera ) martini* Horvath, *V.( Selenodera ) obesus* (Stal), *V. (Paraselenodera ) oblongus* ( Horvath), *V.( Selenodera ) productus* ( Jakovlev ), *Eurgaster maura* (L.), *Odontotarsus robustus* Jak, *O. caudatus* (Burm), *Coranus aegyptius* (F.), *Deraocoris (Deraeocoris) eremicus* LV, *D. (Deraeocoris) trifasciatus* (L), *Horistus orientalis* (Gmelin), *Horvathiolus superbus* ( Pollich), *H. persimilis* Horvath, *Rhopalus parumpunctatus* (Schilling), *R. subrufus* (Gml), *Camptopus lateralis* (Germ), *Euthetus sabulicola* Lindberg, *Pyrrhocoris apterus* (L.), *Nabis viridis* Brulle, *Dicranocephalus setulosus* (Ferrari ), *Notonecta maculata* F, *Sigara hoggarica* Poisson, and *Berytinus hirticornis* ( Brulle ).

Their wide range of distribution may be attributed to favorable climatic conditions which aid the insects to be established and widely distributed. Also, the presence of many suitable habitats may provide suitable environments for breeding and hiding from their enemies. Absence of control measures helps in the increase in prevalence of these Insects. The members of this order very greatly in their habits, some are generally plant feeders, sucking juices and have a distinct preference for immature fruits and seeds. Others are predaceous in their feeding habits on a wide variety of other insects by sucking their blood.

**Conclusively**, the survey of the order Heteroptera in Libya, during the period extended from January 2001 until late December 2007, covering a variety

of different ecological habitats. The taxonomic study of the order Heteroptera in Libya was carried out by examining the specimens collected during the resent work. Phytophagous insects in general and many species in particular are superbly suited to using these crops as food plants.

Many species only become pests when their preferred food plant suddenly become abundant and many others have switched from wild plant species to cultivated ones. It appeared that Heteroptera fauna were 91 species, classified into 18 families from them 40 species are recorded in Libya for the first time.

## REFERENCES

- Amyot, C. J. B. and Serville, A. (1843).** *Histoire naturelle des insects.* Hemipteres, Paris: Faint et Thunot. 681pp
- Borrer, D.J. and De Long, D. G. (1978).** *An introduction to the study of insects*, Holt. Rinehart, New York.
- Carapezza, A. (1999).** Glieterotteri del Museo di Terrasini (Palermo). *Insecta Hemiptera. Naturalista Sicil.,S.IV,XXIII(3-4)*,531-585pp.
- Carapezza.A. (2002).** Heteroptera of Jordan: new taxa and new records (Hemiptera Heteroptera). *Naturalista Sicil.,S.IV,XXVI(1-2)*: 35-76.
- China,W.E.,and C.E.Miller.1959:** Check-list and keys to the families and subfamilies of the Hemiptera - Heteroptera. *Bulletin of the British Museum(Natural History). Entomology*, **8** (1):1-45.
- Damiano, A. (1961).** Elenco delle specie di insetti dannosi ricordati per la Libia fino al 1960.Tipografia del governo. *Nazirato dell Agricoltura.Tripoli*, 27- 81.
- Henry,T. J. (1997).** Monograph of the stilt bugs, or Berytidae(Heteroptera) of the Western Hemisphere. *Memoirs of the Entomological Society of Washington*, **19**:1-149.
- Hessein, N. A. (1978).** Functioning of Rothamsted light traps and their use for collecting insect species. *Libyan Journal of Agr.*, **10**: 111 - 116.
- Hoberlandt, L. (1953).** Results of the Armstrong College Expedition to Siwa Oasis (Libyan Desert), 1935 under the leadership of Prof. J. Omer- Cooper *Hemiptera - Heteroptera. Bull. Soc. Fouad. (ler entom)*, **37**:359-370.

- Lethierry, L. and Severin, G. (1893).** Catalogue général des Hemipteres,1.Pentatomidae, *Bruxelles*: 241-242
- Linnavuori, R. (1965).** Studies on South and East Mediterranean hemipterous fauna. *Acta.Ent.Fenn.*,**21**: 1-70.
- Maldonado Capriles, J. (1990).** Systematic catalogue of the Reduviidae of the world (Insecta:Heteroptera).*Caribbean Journal of Science*, (Special edition), 694pp.
- Miller,N .C . E. (1956).** The Biology of the Heroptera.Leonard Hill Books,London.162 pp.
- Miller, N. C. E. (1971).** *The Biology of the Heroptera.*, 2<sup>nd</sup> ed., review, Hampton, Classey, **xiii** +206pp.
- Oshanin, B. (1912).** *Katalog der Palearktischen hemipterten* (Heteroptera, Homoptera -Auchenorrhyncha und Psylloidea).**1-16**:1-187.
- Priesner ,H.and Alfieri,A.(1953).** A review of the hemipteta -Heteroptera Known to us from Egypt. *Bull. Soc. Fouad. d 'Ent.*, **37**:1-119.
- Richard, O. W. and Davies, R. G. (1977).** Imms' General text of Entomology. Vol.(2), tenth ed. *Classification and Biology*, London Chapman and Hall .
- Schuh,R. T. and J.A. Slater 1995:** True bugs of the world (Hemiptera: Heteroptera).*Classification and Natural History*. Cornell University Press/ Ithaca and New York, **XII**+336.(Keys to families, bibliography, glossary).
- Zavatari ,E. (1934).** *Prodromo della Fauna della Libia*. Pavia,Co-operativa, **VII**,123 p.

## حصر بعض أنواع حشرات غير متجانسة الأجنحة في ليبيا

### مفتاح سليمان المغربي

#### قسم الحيوان - كلية العلوم-جامعه قاريونس - ليبيا

أجريت هذه الدراسة علي رتبة غير متجانسة الأجنحة الموجودة في ليبيا خلال الفترة من يناير ٢٠٠١ حتى آخر ديسمبر ٢٠٠٧.شامله أنواع عديدة من البيئات منها الصحراوية، وشبهه الصحراوية، وأراضى زراعية منزرعة بمحاصيل مختلفة.وقد أوضحت الدراسة أن أنواع الحشرات غير متجانسة الأجنحة التي تم الحصول عليها ٩١ نوعا تتبع ١٨ عائلة منها ٤٠ نوع تسجل لأول مره في ليبيا، ولان

هذه الأنواع لها مدى بيئي واسع فانها قادرة على تكيف أنفسها وفقا لتغيير العوامل البيئية الناتجة من طرق الزراعة المختلفة .