Journal of King Saud University (Science) (2010) **22**, 61–65

King Saud University
Journal of King Saud University (Science)
www.ksu.edu.sa
www.sciencedirect.com

ORIGINAL ARTICLE

A checklist of some recorded insects in Misurata, Libya

Walid Fathy Mohamed [a,*], El Sayed Hassan Shaurub [b]

[a] *Faculty of Education, Ain Shams University, Roxy, Cairo, Egypt*
[b] *Faculty of Science, Cairo University, Giza, Egypt*

Received 28 June 2009; accepted 10 January 2010
Available online 6 February 2010

KEYWORDS
Insects;
Misurata;
Libya

Abstract Insect fauna of Libya is poorly studied. The insect fauna recorded from Misurata, northwestern Libya is represented by 16 orders, 59 families and 77 genera all are arranged alphabetically. The verification and corrections will be available in a detailed work revising different insect orders and families of Libya. This work is considered the first checklist of insects in Libya at all.

1. Introduction

Insects are invertebrate animals of the Class Insecta which comprises the largest known and widely distributed group of animals in the world. Insects can be found in almost anywhere, on plants, around buildings and under objects like rocks and logs. Aquatic insects can be found in ponds, lakes, streams, rivers, and bogs. Many insects are considered as pests by humans including those are parasitic, transmit diseases, damage houses or destroy agricultural goods. Insects also produce useful substances such as honey, wax and silk. On the other hand, they introduce a great job in pollination of the flowering plants. Insects are integral part in the food chain whether consumer, prey or predator (Grimaldi and Engel, 2005). Studies on insect fauna in Libya at all is poor. Ahmed (1978) gave a study on the insect pests of corn in genera in Libya at all. No such published works or studies were constructed to study or record insect fauna of Misurata Jamahiriya. El-Ghariani (1992) recorded many Lepidopteran species by using light traps in El-Beida region. Kaal et al. (2006) reported the flea infestations in farm animals especially ruminants in northern Libya. El-Maghrabi and Amin (2007) surveyed the ecological habitats of Lepidoptera insects in El-Beida area, western Libya with notes on their world distribution, host plants and taxonomy. This paper introduces the first comprehensive study of some recorded insect families and in northwestern Libya. Based on the collected samples from Misurata, this paper adds a biogeographical significant segment to the recent ongoing evaluation of the insect fauna in Libya.

* Corresponding author.
E-mail address: walidfathy72@yahoo.com (W.F. Mohamed).

1018-3647 © 2010 King Saud University. All rights reserved. Peer-review under responsibility of King Saud University.
doi:10.1016/j.jksus.2010.02.001

Production and hosting by Elsevier

2. Materials and methods

2.1. Study site

Misurata city (32° 23′ N and 15° 6′ E) is located at the northern corner of Sirt Gulf on the coast of the Mediterranean Sea 211 km east of Tripoli and 825 km west of Benghazi with a coast 125 km and 15 m above sea level (Fig. 1). The location of the city forms a mixture of a dualism of sea and sand for it is surrounded by the sea from the north and east and from

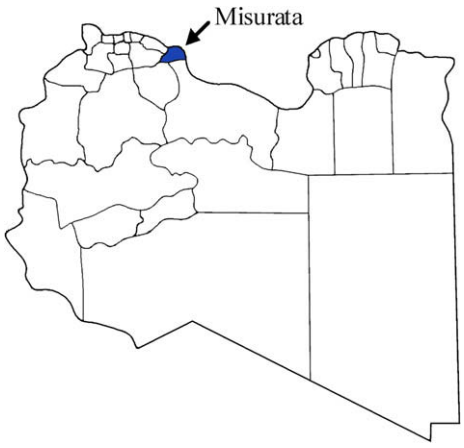

Figure 1 Misurata city.

the south it is surrounded by the golden sands combined with the long palm trees, the shady olives and the green plains which encircle the center of the town. Misurata is submitted under the Mediterranean climate, average temperature reaches to 27.3°, average of rain fall reaches to 200 cm/year and relative humidity reaches to 72.78% in average (after National Weather Service, 2002). Misurata is divided into eleven communes as follow: Kasr Ahmed, Al Zarrok, Ras El Toba, Zat El Remal, El Remela, 9 July, Zawiyet Al Mahjob, Al Dafniya, Al Gheran, Tomena and Tawargha.

2.2. Collecting insects

Insects were collected throughout all seasons of the year especially summer and spring where most of all insect species are active. Collection was done by using forceps, jars, hand made collecting nets, digging and bottles for terrestrial and water in-

Table 1 Orders, families and genera within parentheses of the collected specimens.

Class: Insecta			
Order: Coleoptera	10 (15)	Order: Mallophaga	1 (1)
Order: Dermaptera	2 (2)	Order: Neuroptera	2 (2)
Order: Dictyoptera	2 (2)	Order: Odonata	3 (3)
Order: Diptera	11 (14)	Order: Orthoptera	3 (6)
Order: Hemiptera	4 (5)	Order: Siphonaptera	1 (2)
Order: Homoptera	1 (2)	Order: Siphunculata	1 (1)
Order: Hymenoptera	7 (10)	Order: Thysanoptera	2 (2)
Order: Lepidoptera	8 (10)	Order: Thysanura	1 (1)

1. Order: Coleoptera Linnaeus 1758
Family: Bruchidae Latreille 1802
Bruchus rufimanus Linnaeus 1767
Family: Carabidae Latreille 1802
Graphipterus serrator Latreille 1802
Family: Cerambycidae Latreille 1802
Cerambyx dux Latreille 1802
Family: Cicindellidae Linnaeus 1758
Cicindella aulica Linnaeus 1758
Family: Coccinellidae Latreille 1807
Coccinella septumpunctata Linnaeus 1758
Family: Curculionidae Latreille 1802
Sitophilus oryzae Schonherr 1825
Family: Dermestidae Linnaeus 1758
Attagenus trifasciatus Brahm 1791
Trogoderma granarium Linnaeus 1758
Family: Meloidae Gyllenhal 1810
Meloe sp. Linnaeus 1758
Family: Scarabeidae Latreille 1802
Scarabaeus saccer Linnaeus 1758
Tropinota squalida Latreille 1802
Family: Tenebrionidae Latreille 1802
Adesmia bicarinata Latreille 1802
Blaps polychresta Latreille 1802
Pimelia sericata Latreille 1802
Tribolium castaneum Winkler 1927
Tribolium confusum Geoffroy 1762
2. Order: Dermaptera De Geer 1773
Family: Labiduridae De Geer 1773
Labidura riparia De Geer 1773
Family: Labiidae De Geer 1773
Labidura minora De Geer 1773
3. Order: Dictyoptera Linnaeus 1758
Family: Blattidae Linnaeus 1758
Periplaneta americana Linnaeus 1758

Table 1 (*continued*)

Family: Mantidae Forskal 1775
Sphodromantis viridis Forskal 1775
4. Order: Diptera Linnaeus 1758
Family: Asilidae Loew 1848
Erax rufilabris Loew 1848
Family: Calliphoridae Robinaeu-Desvoidy 1830
Calliphora erythrocephala Robinaeu-Desvoidy 1830
Chrysomya albiceps Robinaeu-Desvoidy 1830
Lucilia sericata Meigen 1816
Family: Culicidae Linnaeus 1758
Culex pipiens Linnaeus 1758
Family: Faniidae Linnaeus 1761
Fannia canicularis Linnaeus 1761
Fannia scalaris Fabricius 1794
Family: Hippoboscidae Theobald 1830
Hippobosca camelina Theobald 1830
Family: Muscidae Latreille 1802
Musca domestica Linnaeus 1758
Stomoxys calcitrans Linnaeus 1758
Family: Psychodidae Loew 1845
Phlebotomus papatasi Loew 1845
Family: Sarcophagidae Linnaeus 1758
Sarcophaga carnaria Linnaeus 1758
Family: Tachinidae De Geer 1776
Mintho rufiventris De Geer 1776
Family: Tephretidae Wiedemann 1824
Ceratitis capitata Wiedemann 1824
Family: Tipulidae Latreille 1802
Trichiotinus piger Latreille 1802
5. Order: Hemiptera Linnaeus 1758
Family: Belostomatidae Lepeltier and Serville 1825
Lethocerus niloticus Lepeltier and Serville 1825
Family: Cimicidae Kirkaldy 1909
Cimex lectularius Kirkaldy 1909
Family: Pentatomidae Leach 1815
Nezara viridula Linnaeus 1758
Spilostethus pandurus Leach 1815
Family: Reduvidae Linnaeus 1758
Reduvius jakovlevii Linnaeus 1758
6. Order: Homoptera Linnaeus 1758
Family: Aphidiidae Linnaeus 1758
Myzus persicus Linnaeus 1758
Schizaphis graminum Linnaeus 1758
7. Order: Hymenoptera Linnaeus 1758
Family: Apidae Linnaeus 1758
Apis mellifera Linnaeus 1758
Polistes gallicus Latreille 1802
Xylocopa austeneus Latreille 1802
Family: Cephidae Linnaeus 1758
Cephus pygmaeus Linnaeus 1758
Family: Chrysididae Linnaeus 1758
Stilbum cyaneum Linnaeus 1758
Family: Evanidae Linnaeus 1758
Evania appendigaster Linnaeus 1758
Family: Formicidae Latreille 1809
Cataglyphis bicolor Fabricius 1793
Monomorium pharoensis Mayr 1855
Family: Mutillidae Ashmead 1899
Mutella barbara Ashmead 1899
Family: Vespidae Linnaeus 1771
Vespa orientalis Linnaeus 1771

(*continued on next page*)

Table 1 (*continued*)

8. Order: Lepidoptera Linnaeus 1758
Family: Danaidae Linnaeus 1758
Danus chrysippus Linnaeus 1758
Family: Gelichidae Stainton 1854
Phthorimaea operculella Zeller 1873
Sitotroga cerelella Stainton 1854
Family: Gracillaridae Bruand 1851
Phylloconistis citrella Bruand 1851
Family: Lycaenidae Leach 1815
Virachola livia Leach 1815
Family: Nymphalidae Rafinesque 1815
Cynthia cardui Linnaeus 1758
Family: Pieridae Duponchel 1835
Pieris rapae Linnaeus 1758
Family: Pyralidae Latreille 1802
Ephestia kuehniella Heinemann and Wocke 1876
Family: Sphingidae Linnaeus 1758
Acherontia atropos Linnaeus 1758
Hers convolvuli Bergh 1895
9. Order: Mallophaga Haekel 1896
Family: Menoponidae Haekel 1896
Menopon gallinae Haekel 1896
10. Order: Neuroptera Linnaeus 1758
Family: Chrysopidae Linnaeus 1758
Chrysoperia vulgaris Linnaeus 1758
Family: Myrmelionidae Linnaeus 1758
Cucta varigata Linnaeus 1758
11. Order: Odonata Fabricius 1793
Family: Aeschnidae Rambur 1842
Hemianax ephippiger Rambur 1842
Family: Coenagrionidae Fabricius 1793
Ischnura sengalensis Selys 1854
Family: Libellulidae Rambur 1842
Brachythemis leucostica Rambur 1842
12. Order: Orthoptera Latreille 1793
Family: Acrididae MacLeay 1819
Acrotylus insubricus Latreille 1793
Acridella nasuta Latreille 1793
Acrida bicolor Latreille 1793
Aiolopus thalasinus Latreille 1793
Family: Gryllidae Bolivar 1878
Gryllus bimaculatus Saussure 1870
Gryllus domesticus Saussure 1870
Family: Gryllotalpidae Saussure 1870
Gryllotalpa vulgaris Latreille 1802
13. Order: Siphonaptera Latreille 1825
Family: Pulicidae Linnaeus 1758
Echdinophaga gallinae Linnaeus 1758
Pulex irritans Linnaeus 1758
14. Order: Siphunculata Phthiraptera) Haekel 1896
Family: Pediculidae Charles De Geer 1767
Pediculus humanus capitis Charles De Geer 1767
Pediculus humanus corporis Linnaeus 1758
15. Order: Thysanoptera Haliday 1836
Family: Phallopthripidae Uzel 1895
Haplothrips cottei Uzel 1895
Family: Thripidae Stevens 1829
Heliothrips haemorrhoudalis Stevens 1829
16. Order: Thysanura Linnaeus 1758
Family: Lepismatidae Linnaeus 1758
Lepisma saccharina Linnaeus 1758

sects during the period from 2003 to 2008 from all communes of Misurata. Specimens were taken twice a day to record the diurnal and nocturnal ones. Samples were collected by aid of Misurata dwellers and students in the Department of Biology, Faculty of Science, 7th October University in Misurata city. Collected specimens were categorized, photographed and kept in tight sealed boxes. Orders, families and scientific names were given to each after identification and verification by the authors according to Borror et al. (1981).

3. Results

Orders, families and genera of the insects collected during this study were arranged in a table (Table 1) followed by the scientific names for each insect.

4. Discussion

Insects have a high value from the faunistic point of view due to their significance in the food web and environmental effect (Frantz and Cordone, 1966). Most of all published works revealed with one family of the insect families around Libya (Edwards, 1921; Abdel-Malek, 1960; Subba Rao, 1967; Hayat, 1999) even some entomologists done their medical manual without mentioning insects there (Furman and Catts, 1982). So there is no information about the insect fauna of about all regions of Libya. This work revealed with only collected specimens from Misurata city which considered the third big city in Libya after Tripoli and Benghazi. And also considered the first commercial city there. In total, 16 orders, 59 families and 77 genera were listed for some recorded insect fauna of Misurata city located in the northwestern Libya. This checklist is considered as a beginning for further studies on insect fauna of Libya at all.

References

Abdel-Malek, A., 1960. The culicine mosquitoes of the northern region of the United Arab Republic (Diptera: Culicidae). Bulletin de la Societe Egypte 44, 111–128.

Ahmed, M.K., 1978. Insect pests of corn in the Libya Jamahiriya and infestations associated with its seedling stage. Libyan Journal of Agricultural 7, 109–114.

Borror, D.J., De Long, D.M., Triplehorn, C.A., 1981. An Introduction to the Study of Insects, fifth ed. Saunders College Publishing.

Edwards, F.W., 1921. A revision of the mosquitoes of the Palaearctic region. Bulletin of Entomological Research 12, 263–351.

El-Ghariani, I.M., 1992. Collection of insect species by using of light trap in El-Beida, Libya. Menofiya Journal Agriculture Research 17 (3), 1427–1434.

El-Maghrabi, M.S., Amin, A.H., 2007. List of the Lepidoptera insects surveyed in El-Beida area, with their world distribution, host plants and notes on taxonomy. Journal of Science and its Applications 1 (2), 21–31.

Frantz, T.C., Cordone, A.J., 1966. A preliminary checklist of invertebrates collected from Lake Tahoe, 1961–1964. Biological Society of Nevada Occasional Papers 8, 1–12.

Furman, D.P., Catts, P.E., 1982. Manual of Medical Entomology, fifth ed. Cambridge University Press.

Grimaldi, D., Engel, M.S., 2005. Evolution of the Insects. Cambridge University Press, Cambridge, UK.

Hayat, M., 1999. Taxonomic notes on Indian encyrtidae (Hymenoptera: Chalcidoidea) – V. Oriental Insects 33, 349–407.

Kaal, J.F., Baker, K., Torgerson, P.R., 2006. Epidemiology of flea infestation of ruminants in Libya. Veterinary Parasitology 141, 313–318.

Linnaeus, C., 1758. Systema Naturae, sive regna tria naturae systematice proposita per classes, ordines, genera et species. Holmiae (Stockholm), 824pp.

National Weather Service, 2002. Climate Prediction Center. Last modified: August < www.nws.noaa.gov > .

Subba Rao, B.R., 1967. Description of some new species of encyrtids from India. Bulletin of Entomology 8 (1), 1.