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ORIGINAL ARTICLE

Survey of Some Hemipteran species Attracted to Light Traps

Razzaq SH. Augul\* H.H. Al-Saffar\* , Nassreen N. Mzhr\*\*

\*Iraq Natural History Research Center & Museum, Iraq

\*\* Department of Biology, College of Science, Al-Mustansiriyah University, Iraq

Email: razzaqaugul@yahoo.com

ABSTRACT

*In total; from 593 specimens there are 12 species of 10 genera representing three families were diagnosed: Pentatomidae, Reduviidae and Coreidae (Order; Hemiptera) were collected from Baghdad. The species of Oncocephalus pilicornis Reuter, 1882 (fam., Reduviidae) was recorded for the first time in Iraq.*

**Key word:** light trap, Hemiptera, new record, Oncocephalus, Iraq.

Received 10/12/2014 Accepted 01/02/2015

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**How to cite this article:**

Razzaq SH. Augul, H.H. Al-Saffar, Nassreen N. Mzhr. Survey of Some Hemipteran species Attracted to Light Traps. Adv. Biores., Vol 6 [2] March 2015: 122-127. DOI: 10.15515/abr.0976-4585.6.2.122127

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INTRODUCTION

Heteroptera, or true bugs, is the most diverse group of paurometabolous insects with incomplete metamorphosis. There are about 40,000 described species worldwide and many more await description [1]. Family of Pentatomidae is the largest families within the Heteroptera, estimated at 36,096 described species of Heteroptera. This family is ranked the third largest together with the Lygaeidae, it is surpassed by the Reduviidae (second largest family) and the Miridae are the third largest family. [2,3]. Bugs classified in the family of Coreidae are commonly known as Squash bugs, or leaf-footed bugs, in several species the hind femora are thickened and adorned with large spine [4]. The recent Catalogue of the Heteroptera of the Palaearctic Region lists approximately 3000 species for Europe [5]. Heteroptera have sucking mouthparts and feed—depending on the species—as parasites, predators, or herbivores on different food sources, from blood or hemolymph to plant sap or the cytoplasm of fungi. Heteroptera – unique among insects– colonize almost the entire planet, including the surface of the ocean and Antarctica [1]. Many species of bugs catch other insects and hence beneficial from an agricultural point of view [6].

Collections of a light trap provide a significant clue to the diversity of insects active at night, their respective affinity to different wavelengths of light and to understand and predict how populations function [7]. Such information, if properly documented, could be put to multi-dimensional use by field-researchers, such as, selection of light-traps for attracting specific order of insects. In spite of the market being flooded with different models of light traps with light sources vary in their intensity and wavelengths, no scientific data on the trap collection, diversity, number and its efficacy is available for ready use. Such a data could shed light on the insects attracted to specific range of light. In this regard, a comparative analysis of different light trap collections becomes mandatory in order to study the efficacy of different wavelengths of light in attracting insects of specific orders [8, 9].

A great number of insect species are attracted to light such as moth, beetles and stinkbugs [10], of various wavelength, Although different species respond uniquely to specific portions of the visible and no visible spectrum (as preserved by human) [11].

The collections of a light trap provide significant clue to diversity of insects active at night [7, 12]. Their respective affinity to different wavelengths of light and to understand and predict how populations function [7].

The entomological light trap was apparently developed to collect insects of medical importance , such as mosquitoes ,midges , sand flies and black flies , but application for collecting nocturnal insects is very old , (e.g., 13) . Nowadays light traps are used to attract a wide variety of nocturnal flying insects and many kinds of traps exist [14, 15, and 16].

Many are available commercially, but they can be homemade from relatively inexpensive materials. Some light traps collect the specimens alive, while others draw the insects to a killing chamber filled with cyanide, or a liquid preservative such as 80% ethanol [17].

The previous studies about this order are poorly, but there were surveyed some investigation in Baghdad province on alfalfa plants [18] and on herbs at different regions of Iraq [19].

According to above, the present study suggested surveying the species attracted to light traps.

### **MATERIALS AND METHODS**

The specimens were collected from some different regions in middle of Iraq by light traps (white color) were placed in agricultural areas (figure1), Inspection of the traps and collect samples per week. ; Insects specimens of large and medium size were mounted on the pins while small insects were preserved in 70% alcohol. Locality and date of collection were provided and using keys for diagnosing them such as: [20, 21, 22, 23 and 24] in addition the samples compared with specimens which kept in Iraq Natural History Museum, University of Baghdad to assure this identification. The distribution ranges followed from: [20, 25, 26 and 27).

In this investigation were reviewed lists of the Iraqi group to make sure the species previously recorded, such as: [28, 29, 30, 31 and 32].



Figure (1) light trap in field

## RESULTS AND DISCUSSION

In this study, a total 12 species from 10 genera belonging to three families from Hemiptera were diagnosed: Pentatomidae, Reduviidae and Coreidae were collected from Baghdad.

The species of *Oncocephalus pilicornis* Reuter, 1882 (fam., Reduviidae) was recorded for the first time in Iraq. List of the species is given below:

### 1- Reduviidae

*Ectomocoris cordiger* Stål, 1866 (plate 1, a)

**Materials** (23 specimens): Baghdad, Abu-Ghraib 4.VIII.2014.

**Distribution:** Iraq, Iran, Saudi Arabia, UAE, Sudan, India, Sri Lanka, Uganda and Canary Islands.

*Ectomocoris ululans* (Rossi, 1970) (plate 1, b)

**Materials** (53 specimens): Babylon, Alexandria 4.VIII.2014.

**Distribution:** Turkey, Mediterranean region, Central Asia.

*Oncocephalus pilicornis* Reuter, 1882 (plate 1, c)

**Materials** (30 specimens): Baghdad, Latifiya 27.VII.2014.

**Distribution:** Europe, Northwest Africa, Asia, newly recorded from Iraq.

#### **Diagnostic characters:**

Fore tibiae with dark rings, fore femora within on row of fin teeth or spines, hind femora only at apex with dark spot; hind angles of pronotum not protruding, angularly rounded; tubercles of anterior lobe of pronotum small, rounded, little elevated. Length: 12-18 mm.

*Pachynomus lethieryi* Put. (plate 1, d)

**Materials** (specimens2): Wassit, Aziziya 20.VIII.2014.

**Distribution:** Palearctic region.

*Reduvius pallipes* (Klug, 1830) (plate 1, e)

**Materials** (231 specimens): Baghdad, Latifiya 13.VIII.2014, 69 specimens, Al-Mada'in 20.VIII.2014, 52 specimens, Al-Za'franiya 27.VIII.2014, 37 specimens; Wassit, Aziziya 29.8.2014, 73 specimens.

**Distribution:** Europe, Northwest Africa, Asia.

### 2-Family: Pentatomidae

*Acrosternum heegeri* (Fieber) (plate 2, a)

**Materials** (137 specimens): Baghdad, Latifiya 4.VIII.2014, 64 specimens; Wassit, Aziziya 29.VIII.2014, 46 specimens; Babylon, Alexandria 27.VIII. 2014, 21 specimens and 2.IX.2014, 6 specimens.

**Distribution:** Holomediterranean, extending to the Middle East, Central Asia and tropical Africa.

*Carpocoris sp.* (plate 2, b)

**Materials** (1specimen): Baghdad, Latifiya 4.VIII.2014.

**Distribution:** widespread in most of central and southern Europe, astern Palearctic Asia, extending to southern Russia, the Middle East and Pakistan.

*Mecidea pallida* (Stål, 1854) (plate 2, c)

**Materials** (8 specimens): Baghdad, Mada'in 30.VII.2014.

**Distribution:** Iraq, Syria, Iran, Turkey, Tunisia, Nigeria, Greece.

*Eysarcoris inconspicuus* (Herrich-Schaeffer, 1844) (plate 2, d)

**Materials** (94 specimens): Baghdad, Latifiya 11.VIII.2014

**Distribution:** Turkey, Mediterranean region, Central Asia.

*Nezara viridula* (Linnaeus, 1758) (plate 2, e)

**Materials:** Baghdad, Al-Za'franiya 11.VIII.2014 (9 specimens).

**Distribution:** Ethiopia, tropical and subtropical regions of Europe, Asia, Africa, Paraguay, Argentina and Brazil and United States.

*Chroantha ornatula* (Herrich-Schäffer, 1842) (plate 2, f)

**Materials** (13 Specimens): Baghdad, Latifiya 31.VII.2014, 11 specimens and 2 specimens collected in 21.VIII.2014.

**Distribution:** Cosmopolitan.

Family: Coreidae

*Riptortus linearis* (Fabricius) (plate 3)

Materials (1 specimen): Baghdad, Latifiya 31.VII.2014.

Distribution: Iraq, Iran, China, Taiwan, Japan, Oriental and Australasian Regions.

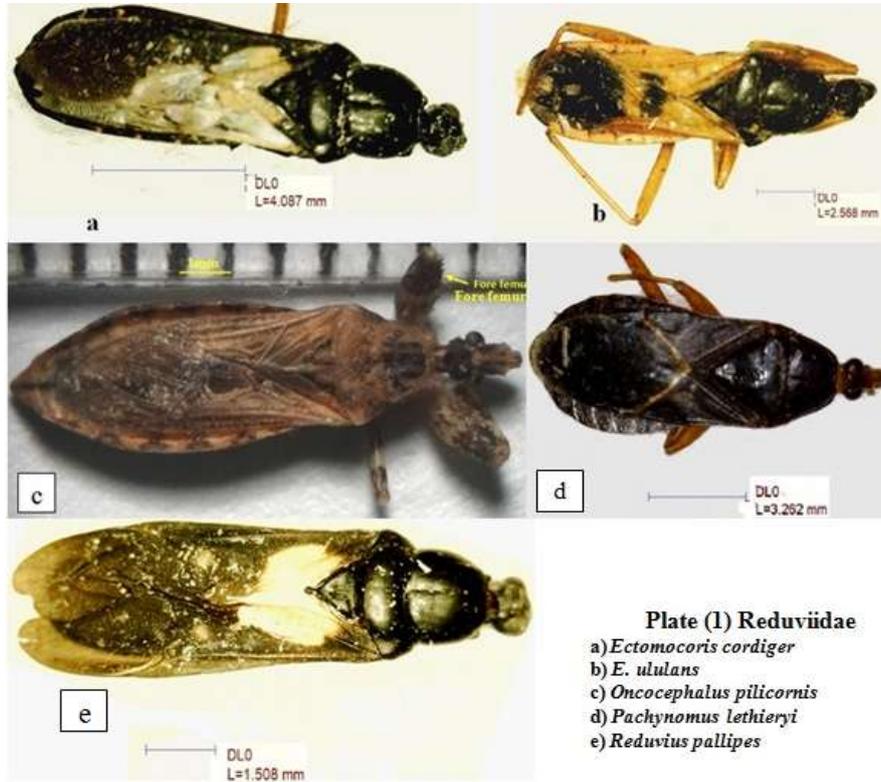




Plate (3) Habit of *Riptortus linearis* (fam. Coreidae)

In the present study; the families and species were a little numbers compared with other same studies may be due to the short period, different season, the lack of the areas covered by the study and the different fauna.

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