

## DESCRIPTION OF MEDITERRANEAN RED BUG, *SCANTIUS AEGYPTIUS* LINNAEUS, 1758 (HEMIPTERA: PYRRHOCORIDAE) FROM KURDISTAN REGION- IRAQ

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### ABSTRACT

Mediterranean red bug, *Scantius aegyptius* Linnaeus, 1758 had been described for the first time from Kurdistan Region -Iraq. Distinctive characteristics for this species are; Mandibles and maxilla needle like and nearly same length. Labrum short, stylet shaped, 1/3 as long as the mandible. Antennae four segmented, nearly geniculate type, three times as long as head, 4<sup>th</sup> antennomere elongated oval, 1.8 times as long as 3<sup>rd</sup> once. Pronotum red, trapezoidal shaped, rectangular black patch at the middle. Fore wings are hemelytra type, coriaceous red, middle surface with circular black patch. The habitus with important parts were photographed. Localities, host plants and date of collection were mentioned.

**Key words:** Description; *Scantius aegyptius*; Hemiptera; Pyrrhocoridae; Iraq.

### INTRODUCTION

Pyrrhocoridae (Amyot & Serville, 1843) is a small family with nearly 33 genera and 340 species worldwide, but only 15 genera, subgenera and 44 species are found in the Palearctic Region, mostly in transitional areas with Afrotropical and Oriental Regions (Southern China, Yemen) (Kerzhner, 2001; Stehlík and Jindra, 2006; Henry, 2009). The family is primarily granivorous or frugivorous, and is commonly referred to as cotton strainers due to their feeding activities leaving an indelible brownish yellow stain on cotton crops (Triplehorn and Johnson, 2005). The majority of the family's species live on low plants; a few old world species live on the ground-inhabiting and are thought to feed on fallen mature seeds (Cassis and Gross, 2002). Some pyrrhocorid bugs are serious cotton pests (Dolling, 1991; Schaefer and Ahmad, 2000). Other species feed on Linden (*Tilia* spp.) and other Malvaceae seeds, as well as *Robinia pseudoacacia* (Kristenová *et al.*, 2011). The family characteristics by, the medium to large body, brightly red in color; ocelli are absent; antennae are four segmented; scutellum shorter and smaller than the clavus, and a distinct claval commisure present; Hemelytra membrane is has two basal cells and containing (7 to 8) branching longitudinal veins extending to the apical margin; trichobothria present (China and Miller, 1959; Ross, 1965; Chinery, 1986; Triplehorn and Johnson, 2005). The family is phytophagous, gregarious and hibernates as adults. Pyrrhocorids are sometimes predaceous (Moulet, 1995; Kohno *et al.*, 2002; Kohno, 2003). In some cases, occasional predation and cannibalism may occur (Essig, 1954). *Scantius* Stal, 1866 is significant genus within the

mentioned family, which characterized by the 1<sup>st</sup> segment of its antennae which is shorter than the 2<sup>nd</sup> segment. The prosternum is not reached by the 1<sup>st</sup> segment of the rostrum's apex. Ventral of abdomen is red, with black patches; middle femora with subapical spines (Awad and Onder, 1997; Robertson, 2004). The genus of this insect distributes in many areas of the world especially in Mediterranean zone and central Asia (Puchkov, 1974 and Kerzhner, 2001). Mediterranean red bug, *Scantius aegyptius* (Linnaeus, 1758), is important species of the family, that is a pest of many plant in the family Malvaceae. In Turkey, it has been recorded on beans, *Phaseolus* Linnaeus (Fabaceae), Pistacio, *Pistacia* Linnaeus (Anacardiaceae) and relatives of marshmallow, *Althaea* Linnaeus (Malvaceae), as well as on grasses and wheat in Pakistan (Ahmad and Abbas, 1986). The nymphs of the species are therefore of a suitable size that makes them adequate prey for the spider, *Evarcha arcuata* (Clerck) which prefers prey that is between half to three quarters the length of its own body (Nentwig and Wissel, 1986). Some species of Pyrrhocoridae are listed in Iraqi fauna. Al-Ali (1977) mentioned *Pyrrhocorora apterus* (L.) where the adults and nymphs attack flowers and fruit of alfalfa.

The main objectives of this study are a detailed description of the new record of Mediterranean red bug, *Scantius aegyptius* Linnaeus, and photographing the very important characters.

## MATERIALS AND METHOD

The samples were obtained from different locations within the Erbil governorate (Qushtappa & Shaqlawa); Sulimani (Kalar and Bakrajo) and Duhok (Akre and Semel) in Kurdistan Region of Iraq, between April and December of 2022, by light trap and hand picking. Some samples were gathered of different species of grasses and removed from sweeping net using aspirators. Other specimens were collected from cotton and oleander. Before dissecting the collected specimens are preserved in bottles and deposited in freezer. These agents have the property of keeping the specimens flexible. The specimens were immersed in boiling water to soften their body parts of species for (10-15) minutes. The mouthparts and abdomen were separated and clarified for 24 hours in a hot solution of 10% KOH. The body parts were examined using a microscope before being immersed in distilled water (Abdulla *et al.*, 2020; Mawlud *et al.*, 2022). A digital camera was used to capture photographs of habitus and essential parts (Ucmas series microscope camera). The body length was measured from apex of clypeus to apex of elytra by eye piece linear micrometer, and also the body width was measured at the base of pronotum (with the dorsal view of sample). The genus and species were identified using the available key (Robertson, 2004; Ghahari and Moulet, 2013; Mata *et al.*, 2013). The body parts chosen for identification are those that easily observed and depend on male genitalia. As described below, we decided on the alternative method of preserving all specimens in ethyl alcohol. The samples were deposited in the insect museum at the Plant Protection Department, College of Agricultural Engineering Science, Salahaddin University- Erbil, Iraq.

## RESULTS and DISCUSSION

### Description

*Scantius aegyptius* Linnaeus, 1758

Synonym: *Cimex aegyptius* Linnaeus, 1758

### Body

Bright red with characteristic black markings. Length 6.9- 8.1mm and width are 2.0-2.6 mm.

### Head

The head is of opisthognathous type, black with red Y-shaped marking. Vertex black slightly convex. Frons is dark brown, shiny with very fine punctuations. Clypeus red, slightly concave, longer than the head; juga are triangular in shape; compound eyes are black, round and strongly protruded. Ocelli absent. Mouthparts (Fig.1b) brown-dark brown; piercing sucking type with elongate proboscis extending between middle coxae of middle pair of legs. Labrum (Fig. 1c) short, stylet shaped, 2.2- 2.5 mm length, 1/3 as long as the mandible. Mandible (Fig.1d) needle shaped, 3.3 -3.5 mm long, apical part with fine denticles and slightly curved. Maxilla (Fig.1e) needle shaped, 3.2-3.3 mm long, apical part hook like. Rostrum (Fig.1f) tubular shaped; four segmented reaching middle coxae, 1<sup>st</sup> segment 0.9 as long the 2<sup>nd</sup>, 2<sup>nd</sup> as long the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> segment, 3<sup>rd</sup> and 4<sup>th</sup> segments are of same length, apical part of 4<sup>th</sup> segment spear like. Antennae (Fig.1g) four segmented, dark brown – black, nearly geniculate type, length 3.2-3.6 mm; its length 3 times as long as head. 1<sup>st</sup> antennomere is clavate, about 0.9 times as long as 2<sup>nd</sup>, 2<sup>nd</sup> antennomere tubular, 1.2 as long as 3<sup>rd</sup> antennomere , 4<sup>th</sup> antennomere elongated oval, 1.8 times as long as 3<sup>rd</sup> once.

### Thorax

Pronotum (Fig.1 h) trapezoidal shaped, red with rectangular black patch at the middle, with two round spots near posterior margin. Its posterior border partly overlaps the second thoracic segment. Scutellum black, triangular. Fore legs (Fig. 1i) are brown – dark brown, covered with hairs, spines; tibia much hairy than femur. Fore coxae are nearly cone shaped; trochanter nearly triangular; Femur cylindrical, large and expanded at the middle, ventral surface with two very short spines at the 1/3 of the base; tibiae tubular shaped, as long as the femur, ventral surface with a row of very short black spines, apical part with ring of very short black spines; fore tarsus three segmented, 1<sup>st</sup> segment 2.1 as long as the 2<sup>nd</sup>, lateral margins with a row of short black spines, 3<sup>rd</sup> segment as long as the 2<sup>nd</sup>; claws sickle shaped with two distinct pulvilli. Middle legs similar to the forelegs except, the femur smaller and not expanded at the middle, 1<sup>st</sup> segment of tarsi 3 times as long as the second. Hindlegs resemble to forelegs, except length which longer, the metafemur smaller and not expanded at the middle and 1<sup>st</sup> tarsus segment four times as long as the 2<sup>nd</sup>. Fore wings (Fig.1 j) hemielytron type, corium red triangular shaped with dark round spot at the middle, clavus dark brown, rectangular; subcostal vein unbranched, radius branched at the middle into radius 1 and radius sector, pterostigmata small and dark brown, medial veins united with radius nearly at the middle surface and formed cross-vein (r-m). The hind wings are membranous, triangular shaped and characterized by having an oblong discal cell and vannal fold.

### Abdomen (Fig.1k)

The abdomen consists of 10 segments. 1<sup>st</sup>- 6<sup>th</sup> abdominal sternites entirely orange-red and nearly rectangular shaped, with various black marking laterally, the spots of 6<sup>th</sup> sternite larger than the others, apical margins of each sternite moderately convex. The 3<sup>rd</sup> abdominal sternite 1.2 times as long as 4<sup>th</sup> and 4 times as long as 1<sup>st</sup> once. The 7<sup>th</sup> sternite is strongly sclerotized, hairy and developed into lobe. The sternite 8<sup>th</sup> is also much sclerotized but smaller than the 7<sup>th</sup> and remains telescoped in the socket of the later. The 9<sup>th</sup> segment is capsular in form and hairy. Abdominal tergites low sclerotized, 1<sup>st</sup>- 6<sup>th</sup> abdominal tergites nearly rectangular shaped.

### Male genitalia

Pygophore (Fig.1l) dark brown, nearly circular shaped, moderately sclerotized, sparsely short brown setose. Subgenital plates (Fig.1m) pale brown, hook shaped, bare and low sclerotized. Aedeagus (Fig.1n) dark brown. Blade small bear four knife-like process, nearly similar long. Parameres (Fig.1 o) brown, nearly L- shaped, slightly sclerotized.

### Examined samples

Samples were obtained from various areas in the governorate of Erbil (Qushtappa & Shaqlawa); Sulimani (Kalar and Bakrajo) and Duhok (Akre and Semel) in Kurdistan Region– Iraq during April till December of 2022. The samples were collected by light trap and hand picking, some samples collected from many plant species, including, cotton, oleander and the weeds.

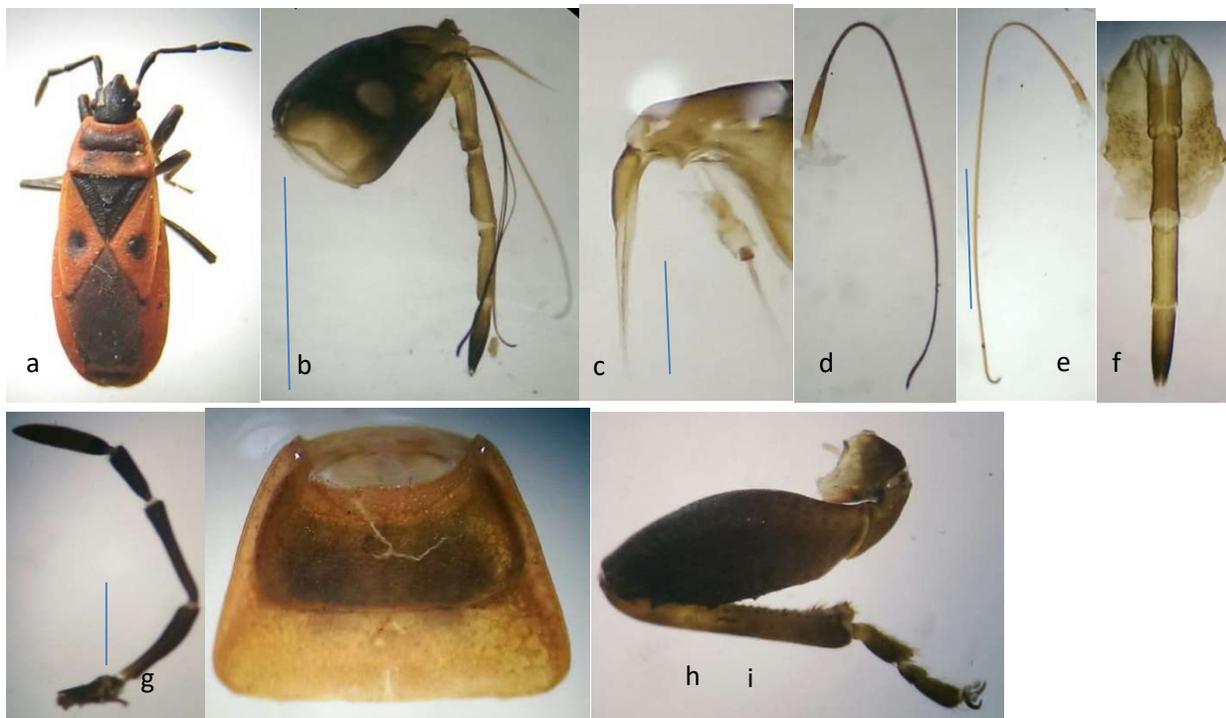




Fig. 1 *Scantius aegyptius*

a. Habitus (Dorsal view) 5X    b. Mouthparts    c. Labrum    d. Mandible  
e. Maxillae    f. Rostrum    g. Antennae    h. Pronotum    i. Fore leg  
j. Fore wing    k. Abdomen    l. Pygophore    m. Subgenital plate  
n. Aedeagus    o. Parameres

Scale bar: All images= 1mm accept, k and o = 2mm.

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