



## A new record of glaphyrid scarab beetles , *Eulasia vitatta* ( Fabricius , 1775) (Coleoptera, Glaphyridae) From Erbil Kurdistan region-Iraq

Nabeel A. Mawlood<sup>1\*</sup> Muzafar I. Hamad<sup>2</sup> and Yaseen M. Abdullah<sup>2</sup>

1 College of Agriculture , Salahaddin University-Erbil, Iraq

2 Erbil Polytechnical Univ. Technical Institute / Khabat

### ARTICLE INFO

#### Article History:

Received: 04/10/2015

Accepted: 08/12/2015

Published: 18/06/2016

#### Keywords:

Coleoptera , Glaphyridae,  
New record , *Eulasia vitatta*,  
Kurdistan region-Iraq

#### \*Corresponding Author:

Nabeel A. Mawlood<sup>1\*</sup>

Email:

### ABSTRACT

A new record of glaphyrid scarab beetles *Eulasia vitatta*(Fabricius ,1775) was described in Erbil Kurdistan region-Iraq. The important taxonomic parts , labrum , mandibles , antenna and male genitalia have been drawn . Localities, plant hosts and date of the collection have been mentioned .

### 1. Introduction

Glaphyridae MacLeay, 1819 is one of small family of Scarabaeoidea. There are some 215 species in six genera, mainly found in the Old World (Hawkins ,2006). Most Glaphyridae genera are restricted to the Palaearctic (Medvedev ,1960) . The family includes five genera and approximately 190 species in the Palaearctic region, and one genus with nine species in the Nearctic region (Löbl and Smetana ,2006). Several species of these beetles, which rely strongly on visual cues to find flowers, are dominant pollinators of plants with red bowl-shaped flowers in the Eastern Mediterranean region (Shmida, 1981; Dafni et al. , 1990). Adults of many species are brightly colored and hairy and often possess markings and coloration resembling bees and bumble bees. The member of this group are elongated and brownish and have a very hairy body , the elytra are short exposing two or three

abdominal terga . They taper posteriorly and are separate at the apex . These beetles are 13-18 mm in long ( Triplehorn and Johnson, 2005 ) . They are strong fliers and are often observed hovering near flowers or foliage or flying over sandy area ( Borer and Delong , 1954) . Glaphyridae generally feed on a large variety of flowers. Some species of the genus *Eulasia* feed on Compositae (including Asteraceae). *Eulasia* subgenus *Trichopleurus* species feed mainly on violet spiny flower heads such as *Onopordum* and on yellow *Centaurea* (both Asteraceae) ( Keasar, et al., 2010) . Larvae are free-living in sandy areas (riparian and coastal dunes) where they feed decaying leaf litter and detritus that is layered in the sand ( Borer and Delong , 1954 ; Carlson , 2002 ) . The *Eulasia* *Truqui*, 1848 is one of the

most widespread genus of the family include 57 species distributed from Turkey and Iran in the north and reaching Israel in the south

(Baraud ,1990) . Nikodym and Kral (1998) listed 18 species of Iran . Montreuil and Serri (2007) described two species from Iran, *Eulasia azerbaijanica* (Petrovitz), and *Eulasia chrysopyga* (Faldermann). In Iraq there are not enough taxonomic studies of the family species except; Derwesh (1965) indicated five species and Al-Ali (1977) recorded four species .

## Materials and Methods

The specimens were collected from the period of April until June / 2014 from the flowers of some weeds in different localities of Erbil Kurdistan region - Iraq. The specimens were placed in boiling water for 10-15 minutes to soften their parts. Then the parts were separated and put in 10% KOH, placed on fire with shaking for about (4-5) minutes for dissolving of lipids materials of the body and destroying the muscles. After that placed in distilled water for 2-3 minutes in order to neutralize the alkali. The parts are placed in ethyl alcohol 25% and dissected under microscope, then transferred to ethyl alcohol 50%, 75% and 100% respectively for two minutes for each concentration to dehydration of water, then placed in xylol for two minutes, for translucency, finely placed in Canada balsam to support slides for subsequent examination under microscope. The species identified by using taxonomic key of (Baraud ,1990).

## Results and Dissection

*Eulasia vitatta* (Fabricius , 1775)

**Body:** Oval , black .Length: 14.2-17.0mm .

**Head:** black , purple reflections ,densely long pal yellow setae . Eyes black, kidney shaped, half divided by a canthus . Canthus visible, densely long, dark brown setose. Clypeus black rectangular shaped ,anterior margin straight, posterior margin slightly convex , anterior angles oval , posterior angles acute . Labrum( Fig.1 a ) dark brown , rectangular shaped,anterior and posterior margins straight ,

surface sparsely dark brown setae , lateral margins densely brown setose, anterior sparsely setose. Mandible ( Fig.1b ) high sclerotized , apical part with three acute denticles ,inner denticles is the shorter , median denticles slightly longer than the outer , upper margin of mandibles densely long dark brown setae , molar area densely yellow setose. Labium dark brown , Labial palps ( Fig. 1c ) densely long , dark brown setose . 1st and 2nd segments cup shaped,2nd segment 1.2 times as long as 1st segment , 3rd segment cylindrical shaped 1.1 as long as 2nd segment. Maxilla ( Fig. 1d )dark brown , cardo triangular shaped , sparsely very long dark brown setae , stipes black triangular shaped,densely very long , black setae ,galea yellow densely long yellow setae , 1st-3rd segments of maxillary palps cup shaped , sparsely dark brown setae , 2nd segment 1.2 as long as 3rd segment,4th segment elongate oval , bare 2times as long as 3rd segment.Antenna ( Fig. 1e ) dark brown - black , consist of ten segments, 1st segment is the longest 4 times as long as 2nd segment , densely black , long setae , 2nd segments rounded densely, black setae,3rd and 4th segments tubular shaped , 3rd segment 1,1 times as long as the fourth, 8th-9th segments cup shaped , sub equal in length , 10th segment oval slightly longer than 10th segment .

**Thorax :** Pronotum black nearly cup shaped , purple reflections ,1.4 time as long as head , densely long pale yellow setae. Scutellum black, triangular shaped sparsely long yellow setae .Elytra black , purple reflections,surface with five bands of yellow setae, Hind wing yellow, well-developed , M-Cu loop present with 1 apical , veins dark yellow ,upper margin with row of short black setae extend into the middle, r4 and r2 absent . Legs dark brown -black , procoxae oval elongate ,forefemur thick ,slightly shorter than tibia , outer margin with three strong spines , dorsal and ventral surface densely setose , apical with one spur . Protarsal segment 1.8 as long as 2nd segment, 2nd – 4th segments nearly equal in length , 5th segment 1.2 times as long as protarsal segment ,Foreclaws moderately curved . Midlegs resemble to the forelegs

except ,mesocoxae conical, mesofemur slender , mesotibia without spines ,apically with two long spurs . Hind legs resemble to the midlegs except ,coxae plate shaped .

**Abdomen:** Consist of six black visible segments , densely pale yellow setose. 1st -5th abdominals sternites transverse , 1st segment 0.8 times as long as 2nd segment , 2nd – 5th segments nearly equal in length , 6th sternite cup shaped . 1st – 5th abdominal tergites transverse , anterior

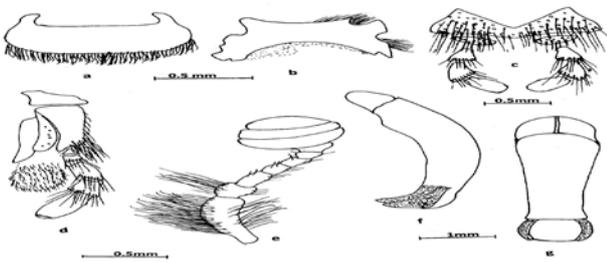


Figure (1): *Eulasia vitatta* ( Fabricius )

a. Labrum b. Mandible c. Labial palp d. Maxilla e. Antenna

f. Male genitalia (Lateral view) g. Male genitalia (Dorsal view)

and posterior margins straight , 5th tergite is the longest . surface of tergites sparsely yellow setose . 1st – 5th tergites transverse , anterior and posterior margins straight . 6th tergite cup shaped .

Male genitalia ( Fig. 1f , g ): Male genitalia with well sclerotized, strongly arched basal piece. Adegeuse dark yellow nearly cylindrical shaped , moderately curved, length 2.8-3.4 mm . paramerse , brown , triangular 1/4 times as long as adegeuse .

Examined specimens :The specimens were collected from the flower of some weeds , Mallow, *Malva rotundifolia* , ; Haory cress , *Lepidium draba* ; and Dwarf rocket , *Diplotaxis* sp. in different localities of Erbil governorate :Girdarasha ,20.4.2014 ; Shaqlawa,28. 4.2014 ; Salahhaden

,30.4.20;Kasnazan , 12.5.2014 and Sefin ,14.6.2014 .

## References

Al-Ali, A. S.(1977). Phytophagous and entomophagous insects and mites of Iraqi Natural History Research Center, Publishing 33:142 pp.

Baraud, J. (1990).Contribution a la connaissance du genre *Eulasia* Truqi (Coleoptera: Scarabaeoidea: Glaphyridae). *Revue Suisse de Zoologie* . 97, 107-138.

Borror, D.J. and D.M. DeLong (1954). An introduction to study of insects.Holt, Rinehart and Winston, New York. 1030.

Carlson ,D. C. (2002). Glaphyridae MacLeay (1819) In: Arnett, R.H.,

Thomas, M.C.; Skelley, P.E.; Frank. J.H .(Eds) .American Beetles. Volume 2.Polyphaga: Scarabaeoidea through

Curculionoidea.CRC Press, Boca Raton, 37–38.

Dafni ,A ; P. Bernhardt ; A. Shmida ; Y. Ivri ; S. O. Greenbaum ; C. Toole and L. Losito ( 1990 ). Red bowl-shaped flowers: convergence for beetle pollination in the Mediterranean region. *Israel J. Bot.*, 39: 81–92.

Derwesh, A.I.(1965). A preliminary list of identified insects and arachnids of Iraq. *Direct. Gen. Agri. Res. Proj. Baghdad. Bull.*, No. 121-123.

Hawkins, S. J.( 2006 ). A revision of the Chilean tribe Lichniini Burmeister, 1844 (Coleoptera: Scarabaeidae: Melolonthinae). *Zootaxa*,1266:1-63.

Keasar, T. ; A. Harari ; G. Sabatinell ; K. Keith ; A. Dafni ; O. Shavit; A. Zylbertal and A.Shmida, A.( 2010 ) . Red anemone guild flowers as focal places for mating and feeding by Levant glaphyrid beetles .*Biolog. J. Linn. Soc.*, 99, 808–817.

Löbl, I. and A. Smetana (2006 ). Catalogue of Palaearctic Coleoptera, Vol. 3. Scarabaeoidea – Scirtoidea – Dascilloidea – Buprestoidea – Byrrhoidea. Apollo: Stenstrup.

Medvedev , S.I. (1960) . Fauna SSSR , tome x , fase. 4. Scarabaeidae:

Euchirinae , Dynastinae , Glaphyrinae , Trichiinae . Moscou , p.1-398 .

Nikodym, M. and I. D. Kral (1998) . Results of the Czech biological expedition to Iran. Part 3. Coleoptera: Glaphyridae and Scarabaeidae: Sericinae. Acta Societatis Zoologicae Bohemoslovenicae, 62, 343-351.

Montreuil , O. and S. Serri ( 2007) . Description of a new *Pygopleurus* species (Col.: Glaphyridae), with a list of

recorded species of the genera *Pygopleurus* and *Eulasia* from Iran . J. Entomolo. Soc. Iran . 26(2): 1- 6 .

Shmida, A. ( 1981 ) . Red display flowers of the Mediterranean. Israel Land and Nature , 6: 106–115.

Triplehorn , C.A. and Johnson, N.F. ( 2005 ) . Borror and Delon, introduction to study of insects. 7th ed . Brooks /Cole,

Cengage Learning . Australia . 411 pp.

### **Acknowledgment**

We sincerely thank the specialist Dr. Cosmin Mancu , from Wildlife Management Consulting in Romania for their kind help in identifying of this species. We greatly indebted to the specialists in German museum of technology who confirmed the identification . We deeply express my gratitude to Prof. Dr. Mohammed S. Abdul Rassoul in Division of Entomology, Natural History Research Center

– University of Baghdad / Iraq for his kind help and continuous encouragement to this work