

New record of *Dichrogaster modesta* (Gravenhorst, 1829) (Hymenoptera: Ichneumonidae: Cryptinae) in Iraq

Ali Abdulhusien Kareem¹, Raad Kareem Aljaafari¹, Siena Muslim Al-Zurfi^{1,2}, Muntather M. Almosawy¹ and Zeina M. Mouhsan¹

¹Plant Protection Department, College of Agriculture, University of Kerbala, Iraq

²School of Natural and Environmental Sciences, Newcastle University, United Kingdom

(Received 10 August, 2019; accepted 15 October, 2019)

ABSTRACT

This study has reported *Dichrogaster modesta* (Gravenhorst, 1829) in Iraq as a new record. The specimens studied was collected from Al-Al Husayniya city, Karbala at coordinates 32°31'08.00"N 45°36'31.00"E, 14 April 2019, 2 @&@&. The ichneumon wasp is essential to control pest insects worldwide. It is fundamental to understand more about was ps in Iraqi fauna. Further study needed understanding the host range of *Dichrogaster modesta* in Iraq.

Key words : *Dichrogaster modesta*, *Cryptinae*, *Ichneumonidae*, Iraq

Introduction

A natural resource such as benefit insect enemies can successfully be used to control many insect pests and reduce the yield damage of crops (Grifo, 1999) their populations to reduce the yield damage of crops (Grifo, 1999). The genus *Dichrogaster* Doumerc, which belongs to the tiny subfamily Cryptinae, is wide recognised by a short, deep propodeum and broad head, and (Clancy, 1946; Judd, 1949; Schwarz and Shaw, 2011). This genus has been recorded from all zoogeographic regions, and 42 species have been recognised (Townes, 1983; Bordera, 1995). *Dichrogaster modesta*, which consider solitary ectoparasitic wasp, has been reported in Europe, Turkey and Israel (Kolarov and Bordera Sanjuán, 2007; Kolarov and Yurtcan, 2008). This species of Ichneumonidae has not reported in Iraq yet. Therefore, the recently collected specimens are proven to represent a new record for Iraq. This

record will help to build up and update the checklist of important parasitic wasps in Iraq.

Material and Methods

This study is based on the examination of specimens collected using sweep nets from a greenhouse in Al-Husayniya district, Kerbala province, Iraq in April 2019. Specimens were point-mounted using water-soluble glue (Seccotine©) and examined with a binocular microscope at magnifications up to 80x. Specimens were preserved in the Entomology Laboratory of the College of Agriculture at Kerbala University. Images were taken in school Agriculture, Newcastle University using Leica S9 E stereo microscope camera. The specimens were examined according to the identification key to species of the subfamily Cryptinae as described in Broad *et al.* (2018). The specimens were sent to Dr Gavin Broad in Natural History Museum London to confirm the species.

*Corresponding author's email: ali.kareem@uokerbala.edu.iq

Furthermore, the specimens were deposited at Insect Collection Agriculture College, University of Kerbala.

Results

No male has been found in the area of study. The taxonomic characteristics of female species such as deep propodeum and broadhead were identified (Fig. 1A-H) (Clancy, 1946; Judd, 1949; Schwarz and Shaw, 2011). This is first report of *D. modesta* in kerbala- Iraq.

Species account in Natural history museum/ London

<https://www.nhm.ac.uk/our-science/data/uk->

[species/species/dichrogaster_modesta.html](https://www.nhm.ac.uk/our-science/data/uk-species/species/dichrogaster_modesta.html)(Accessed, September 2019)

General distribution of this species

Dichrogaster modesta (Gravenhorst, 1829) =*Hemiteles modesta* (Gravenhorst, 1829).

Material: Karbala, Iraq, GPS:32.6068° N, 44.0104° E, 14 April 2019, 2 ♀ ♀

Distribution: *Dichrogaster modesta* can be found in Europe, Turkey and Israel (Kolarov and Bordera ♀ Sanjuán, 2007), Iraq (new record).

Host records

The *D. modesta* has been informed linked with a cocoon of Chrysopidae (Yoshida and Konishi, 2008).

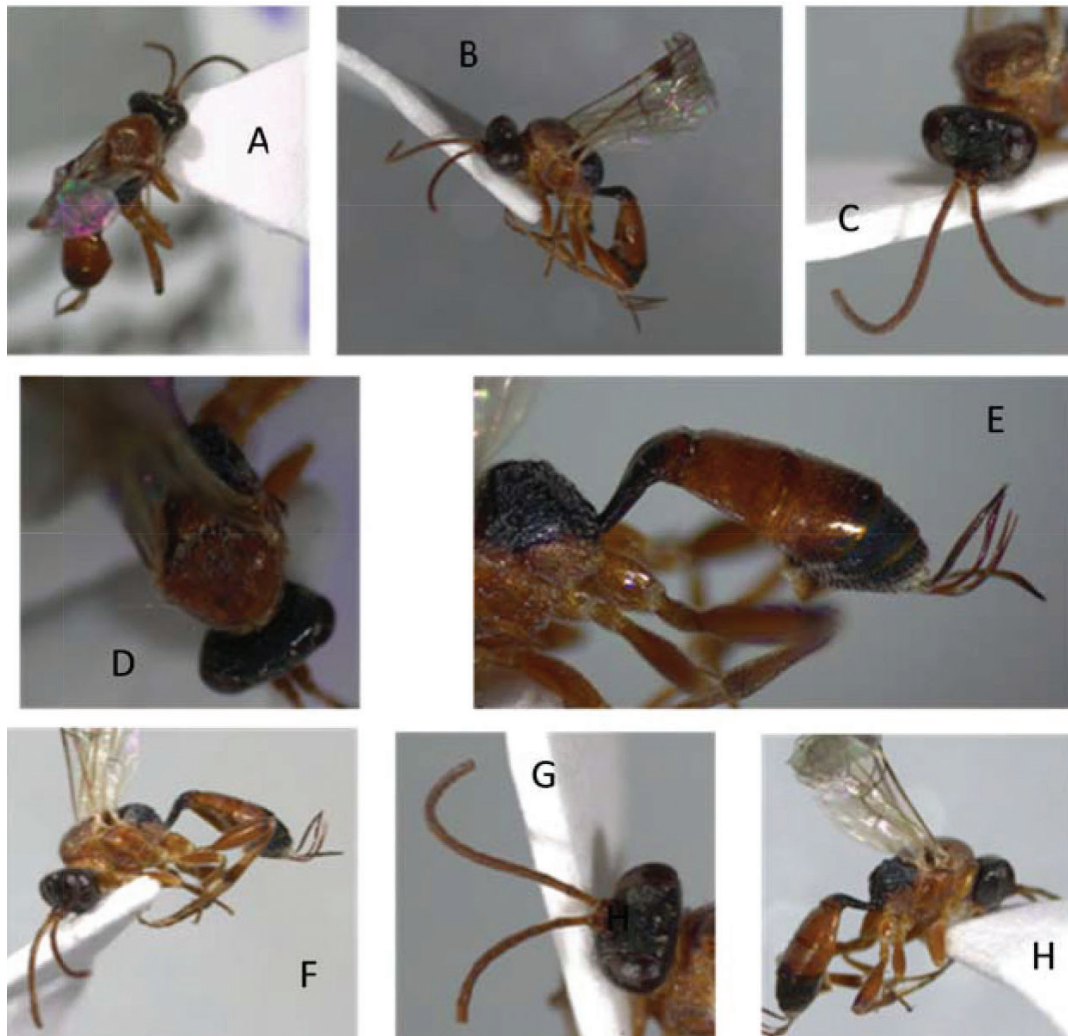


Fig. 1. Adult female of *D. modesta* A, D: Dorsal, B, F, H: Lateral C, G: Head E: Abdomen.

Acknowledgement

The first author would like to thank Dr Andrew Polaszek (Natural History Museum, London, UK) for help to access to the Ichneumonidae identification key and help to contact Dr Gavin Broad in Natural History Museum London for confirming this species. The authors would like to thank the Plant Protection Dept., Faculty of Agriculture, Kerbala University for using the Entomology Laboratory facilities. The second author would like to thank School of Agriculture, Newcastle University, for using its facilities to photo the insect.

References

- Bordera, S. 1995. Two new species of the genera *Dichrogaster* and *Zoophthorus* from Spain. *Nachrichtenblatt der Bayerischen Entomologen*. 44 : 6-10.
- Broad, G.R., Shaw, M.R. and Fitton, M.G. 2018. *Ichneumonid wasps (Hymenoptera: Ichneumonidae): their classification and biology*. London, UK: Royal Entomological Society.
- Clancy, D.W. 1946. Insect parasites of the Chrysopidae (Neuroptera). *University of California Publications Berkeley*. 7 : 403-496.
- Judd, W. 1949. Emergence of the lacewing, *Chrysopa harrisii* Fitch (Neuroptera) and three hymenopterous parasites from the cocoon. *Annals of the Entomological Society of America*. 42(4) : 461-464.
- Kolarov, J. and Bordera Sanjuán, S. 2007. Fauna and distribution of Bulgarian Phygadeuontini (Hymenoptera: Ichneumonidae: Cryptinae). *Boletín de la Asociación Española de Entomología*. 31 (1-2) : 157-169.
- Kolarov, J. and Yurtcan, M. 2008. A study of the ichneumonidae (Hymenoptera) of the north Anatolia (Turkey). Brachycyrtinae, Cryptinae and Xoridae. *Acta Entomologica Serbica*. 13 (1/2) : 89-91.
- Schwarz, M. and Shaw, M.R. 2011. Western Palaearctic Cryptinae (Hymenoptera: Ichneumonidae) in the National Museums of Scotland, with nomenclatural changes, taxonomic notes, rearing records and special reference to the British checklist. Part 5. Tribe Phygadeuontini, subtribe Phygadeuontina, with descriptions of new species. *Entomologist's Gazette*, 62(3) : 175-210.
- Townes, H. 1983. Revisions of twenty genera of Gelini (Ichneumonidae). *Memoirs of the American Entomological Institute*. 35 : 1-281.
- Yoshida, T. and Konishi, K. 2008. Taxonomic study of the genus *Dichrogaster* Doumerc (Hymenoptera: Ichneumonidae: Cryptinae) in Japan. *Entomological Science*. 11(2) : 247-258.
- Yu, D. 2005. *World Ichneumonidea 2004-Taxonomy, biology, morphology and distribution*. Available at: <http://www.taxapad.com>.