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First record of *Leucospis bifasciata* Klug (Hymenoptera: Leucospidae) in Iraq

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ABSTRACT. The family Leucospidae (Hymenoptera: Chalcidoidea) are the largest chalcidoid wasps with some distinct morphological characters. During insect collection of the Faculty of Agriculture in Karbala, *Leucospis bifasciata* Klug, 1814 was collected in 2019. It was collected using sweep nets. This is the first record of *L. bifasciata* from Iraq. Including previously recorded *L. dorsigera* Fabricius, Leucospidae of Iraq reaches to two species.

Key words: Leucospidae, Karbala, new record, taxonomy, fauna

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Introduction

The Leucospidae (Hymenoptera: Chalcidoidea) is a small family with 142 species in four genera (*Leucospis* Fab., *Polistomorpha* West., *Micrapion* Kriechbaumer and *Neleucospis* Bouček) (Ye et al., 2017; Noyes, 2020). It is a monophyletic group in the superfamily Chalcidoidea, with having some remarkable morphological characters and widely distributed in tropical and subtropical regions (Goulet & Huber, 1993; Madl & Schwarz, 2012, 2014). Most members of this family are ectoparasitoids of aculeate Hymenoptera (Grissell & Schauff, 1990; Hesami et al., 2005; Schmid-Egger, 2010), but still, host information is unknown for some species (Burks, 1961; Habu, 1962; Bouček, 1974; Cooperband et al., 1999; Schmid-Egger, 2010; Noyes, 2020). Based on the Universal Chalcidoidea Database of the Museum Natural History in London (Noyes, 2020) there is not any report of this family from Iraq. Lotfalizadeh & Fakhrzadeh (2012) reporting Lecospidae of Iran, mentioned the presence of *Leucospis dorsigera* Fabricius, 1775 in Iraq.

So far, 62 species in 40 genera of Chalcidoidea have been reported from Iraq (Noyes, 2020). The family Leucospidae is very poorly known in Iraq, with only one species (Lotfalizadeh & Fakhrzadeh, 2012). In the course of a faunistic study on Chalcidoidea in the central part of Iraq, the first occurrence of one species the genus *Leucospis* was documented, which is the aim of the present research.

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Material and methods

Specimens were collected using the sweeping net from agricultural areas in Al-Husayniya district of Karbala Governorate in December 2019. Specimens were point-mounted using the pin and primarily examined with a Zoom Stereo Microscope at magnifications up to 80x. Images were acquired using a microscope adapter for iPhone® 6s (LabCam US). Assemblage and edition of illustrations in the plate were done in Adobe Photoshop® CS4 software (Adobe systems Inc., San Jose, USA). The specimens were identified by the second author (HL). Identifications were done using the keys in [Baur & Amiet \(2000\)](#), [Bouček \(1959, 1974\)](#), [Nikolskaya \(1960\)](#), [Pagliano \(1998\)](#). The specimens are deposited in the HMIM (Hayk Mirzayans Insect Museum, Tehran, Iran) and the University of Kerbala, Insect Collection, Iraq.

Results

Leucospis bifasciata Klug, 1814 (Fig. 1)

Leucospis gibba Klug, 1814; Synonymy by Bouček 1974: page 146.

Material examined: Iraq, Karbala Governorate, Al Husayniya district, Faculty of Agriculture, 32°31'08.00" N, 45°36'31.00" E, 4.xii.2019, 2♀♀, leg. R. K. Aljaafari.

Diagnosis. Such as outlined in [Lotfalizadeh & Fakhrzadeh \(2012\)](#), it has subquadrate or slightly transverse basal flagellar segments; long and subhorizontal ovipositor; ovipositor sheaths reaching hind margin of first tergite; the ovipositorial furrow narrow, tapering forwards; the hind femur is relatively broader, at most 1.6× as long as broad, and more densely punctured, with narrow gap between basal teeth; mostly yellow scutellum. It belongs to the *dorsigera*-group. Based on [Darling & Cardinal \(2005\)](#) this group shares following combinations of characters: hind femur with large basal tooth (at least as large as femoral teeth); pronotum with marginal and premarginal carinae (not strongly recurved); propodeum short (not distinctly longer than dorsellum).

Note. Based on available literatures, this species has not been reported from Iraq. But it is widely distributed in Europe, Central Asia, Middle East countries, China and Caucasus ([Lotfalizadeh & Fakhrzadeh, 2012](#); [Ye et al., 2017](#); [Gadallah et al., 2018](#); [Noyes, 2020](#)).

Discussion

Our findings showed two species of the genus *Leucospis* occurs in Iraq ([Table 1](#)). In the Middle East, [Bouček \(1974\)](#) reported *Leucospis elegans* Klug, 1834 and *Leucospis insularis* Kirby, 1900 from Saudi Arabia and Yemen, respectively. [Schmid-Egger \(2010\)](#) reported three species from the United Arab Emirates (UAE), i.e., *Leucospis* sp. aff. *Namibica* Bouček, 1974; *Leucospis vanharteni* Schmid-Egger, 2010 and *L. elegans*. [Lotfalizadeh & Fakhrzadeh \(2012\)](#) recorded four species from Iran, *L. bifasciata*, *L. biguetina* Jurine, 1807; *L. dorsigera* Fabricius, 1775 and *L. gigas* Fabricius, 1793. Most recently, some species reported from Saudi Arabia ([Gadallah et al., 2018](#)). The presence of *L. bifasciata* and *L. dorsigera* in Iraq confirms the affinity of Leucospids of Iraq with Iranian fauna. Further expeditions need to reveal further species of the family in this country.

Table 1. Known *Leucospis* species in Iraq and their distribution.

Species	Collection locality	Collection	Reference
<i>Leucospis bifasciata</i> Klug	Al-Husayniya of Karbala	Swept on herbs	Present study
<i>Leucospis dorsigera</i> Fabricius	Karzi	on <i>Ficus carica</i>	Lotfalizadeh & Fakhrzadeh (2012)

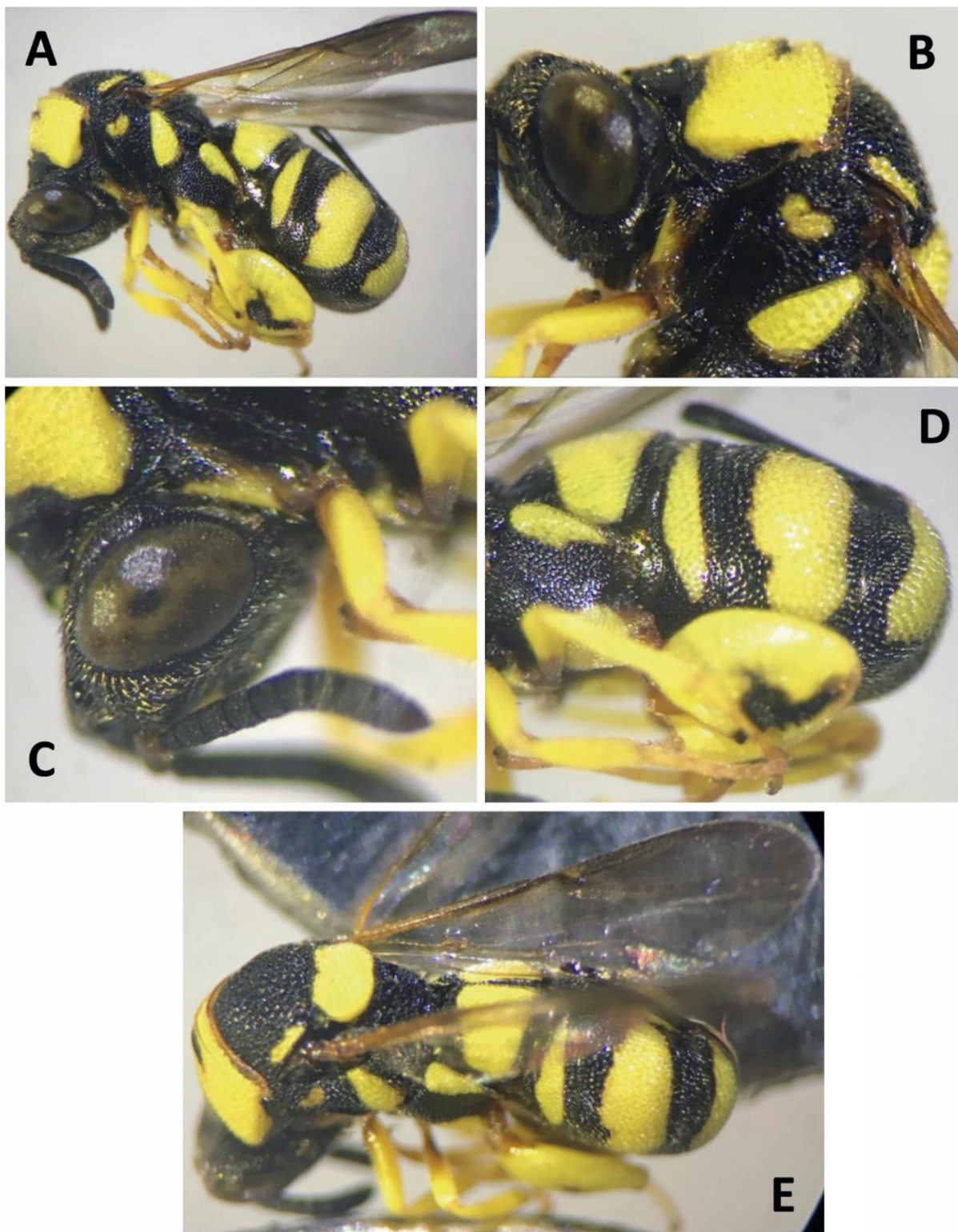


Figure 1. *Leucospis bifasciata* Klug, 1814, A. lateral view (Female). B., C. head, lateral and frontal view; D. metasoma in lateral view, E. mesosoma and metasoma, latero-dorsal view.

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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اولین گزارش *Leucospis bifasciata* Klug (Hymenoptera: Leucospidae) از عراق

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چکیده: خانواده Leucospidae (Hymenoptera: Chalcidoidea)

درشت‌ترین زنبورهای کلسیدوئید با خصوصیات مورفولوژیک متمایز هستند. در کلکسیون حشرات دانشکده کشاورزی در کربلا، گونه *Leucospis bifasciata* Klug, 1814 در سال ۲۰۱۹ با استفاده از تور حشره‌گیری جمع‌آوری شده بود. این گونه برای اولین بار از عراق گزارش می‌شود. با در نظر گرفتن گونه‌ی *L. dorsigera* Fabricius که قبلاً گزارش شده، تعداد گونه‌های خانواده Leucospidae در عراق به دو گونه می‌رسد.

واژگان کلیدی: Leucospidae، کربلا، گزارش جدید، رده‌بندی، فون