

FAUNISTIC REVIEW OF THE GENUS *CHAITOPHORUS* KOCH, 1854  
(APHIDIDAE, CHAITOPHORINAE, CHAITOPHORINI) WITH NEW  
RECORD SPECIES FOR IRAQ APHID FAUNA

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ABSTRACT

A faunistic review of the genus *Chaitophorus* Koch, 1854, including four species in Iraq is given; the distribution data of each species and their hosts have been recorded. In this investigation the poplar leaf aphid *Ch. populiabae* (Boyer de Fonscolombe, 1841) is recorded here for the first time in Iraq on popular trees *Populus euphratica* Oliv. during the period from November 2016 to April 2017 in Baghdad province.

A brief description for apterous viviparous female of this species is given; and a key to the species of the genus *Chaitophorus* is constricted.

Key words: Aphid fauna, Aphididae, Chaitophorinae, *Chaitophorus*, Iraq.

INTRODUCTION

The subfamily Chaitophorinae (Homoptera: Aphididae) divided into two tribes Chaitophorini and Siphini, comprises about 170 species within 12 genera (Wieczorek *et al.*, 2017); the distribution range of this subfamily is mainly in the Palaearctic (about 80% of species), and Nearctic region (Wieczorek, 2010; Zhu *et al.*, 2017).

Most of the species of the tribe Chaitophorini are monoecious holocyclic and infest plant families which belong to Salicaceae (*Populus* and *Salix*) and Aceraceae (Blackman and Eastop, 1994), there is a difficulty to distinguish between species of Chaitophorinae based on their morphological characteristics, although the tribe Chaitophorini has clear morphological differences between genera; separating between *Chaitophorus* species using morphology has always been problematic because of the fact that the morphological differences between species within these genera are relatively slight (Hille Ris Lambers, 1960; Pintera, 1987; Zhu *et al.*, 2017).

*Chaitophorus* is a typical genus of the Chaitophorinae: it is the largest genus in the subfamily and is well known from Europe and Asia (Pintera, 1987); This genus consists of about 109 valid species (Zhu *et al.*, 2017) and distribution in the Palaearctic and Nearctic zoogeographical regions; in addition to the species of plant family Salicaceae as a host some *Chaitophorus* species infest limited host belongs to Vitaceae, Daucaceae and Compositae (Pintera, 1987).

### Faunistic review of the genus *Chaitophorus* Koch

Very little attention had been given to the study of this group in Iraq; a total of four species are now known from the genus *Chaitophorus* in Iraq, these species are *Ch. euphraticus* Hodjat, *Ch. leucomelas* Koch and *Ch. nigrinus* Hille Ris Lambers (Kaddou, 1966; Daoud and El-Haidari, 1968; Al-Ali, 1977); in addition to *Ch. populiabae* (Boyer de Fonscolombe, 1841) which recorded here as new record species to aphid fauna of Iraq which are listed in the present study.

### MATERIALS AND METHODS

Aphid specimens infested Euphratic – Poplar *Populus euphratica* Oliv.; the trees were collected from various locations of Baghdad province, over a period from November 2016 to April 2017.

Aphids were collected from their host plants with a fine brush and put in a tube which contained 70% alcohol, the collecting and preserving technique was based mainly on van Emden (1972) method.

The aphids were systematically classified according to the catalog of Remaudière and Remaudière (1997); all measurements of the aphid are with millimeter (mm), the parameters measured are as in Ilharco and van Harten (1987), except for body length (BL) which is always measured to the base of the Cauda and does not include any projecting cauda.

Aphid specimens were deposited in the collection of Iraq Natural History Research Center and Museum, University of Baghdad.

### RESULTS AND DISCUSSION

During the current investigation, four species of the genus *Chaitophorus* Koch have been recorded to Iraq aphid fauna; the records information for these species is compared with previous checklists as above in addition to our collection; the key to the species of this genus is designed as follows:

#### **Key to *Chaitophorus* species on Iraq popular trees (apterous viviparae in spring):**

- 1- Body oval, color in life dark green, blackish-brown to black..... *Ch. Nigrinus*.  
- Body short-bodied, to elongate oval, color in life pale green to yellowish white.....2
- 2- Dorsum pale or with green irregular markings, siphunculi black..... *Ch. Leucomelas*.  
- Dorsum with black or dark green longitudinal pleural stripes, siphunculi pale .....3
- 3- Antennal segment VI processus terminalis (ANT PT) / base of antennal segment VI base 2.4-3.0, ultimate rostral segment (URS) 1.0-1.28 × second segment of hind tarsus HT II,.....*Ch. populiabae*.  
- Antennal segment VI processus terminalis ANT PT / base of antennal segment VI base 1.5-2.0, ultimate rostral segment (URS) 0.9-1.0 × second segment of hind tarsus HT II, .....*Ch. euphraticus*.

#### ***Chaitophorus populiabae* (Boyer de Fonscolombe, 1841)**

Diagnostic characters:

Apterous viviparous female: color in life pale green to yellowish white, often with small green spots, head and tips of antennal segments and tarsi light brown (Pl. 1).

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Body 1.2-2.4 mm long (Pl. 2A); antennae pale 0.80-1.0 mm long with six segment, 0.50-0.85 X as long as the body, third antennal segment (ANT III) 0.18-0.30 mm long with blunt or acuminate at apices hairs longest one 0.03- 0.05 mm long.

Processus terminalis (ANT PT) 0.22-0.31 mm long, 2.4-3.0 as long as base of antennal segment VI (ANT VI b) (Pl. 2B) which is 0.085-0.12 mm long; rostrum reaches hind coxae, ultimate rostral segment (URS) (Pl. 2C) 0.095-0.138 mm long; 1.0-1.28 X as long as second segment of hind tarsus (HT II) (Pl. 2D) and bears 3-4 accessory hairs.

Abdominal dorsum faintly nodulose, hairs on dorsum of abdomen acuminate or furcated at apices; legs pale, hairs on tibiae fine, longest one on hind tibiae 0.070-0.080 mm long, 2.5-3.1 X as long as diameter at middle of hind tibiae, HT II 0.09-0.128 mm long, first tarsal segments with 5, 5, 5 hairs. Siphunculi (Pl. 2E) pale, reticulated; 0.05-0.08 mm long; 0.035-0.055 X as long as body; cauda (Pl. 2F) pale, distinctly knobbed; 0.08-0.18 mm long; 0.05-0.08 X as long as body with 6-7 hairs.



**Plate (1):** *Ch. populialbae* (Boyer de Fonscolombe) color variation in life.

**Comments:**

As far as in diagnostic characters between our description of this study and previous literature related to this species, there are many differences, with respect to measurement of body length, Ghosh (1980) determined smaller size than our specimens, as for the length of the antenna, Pintera (1987) described longer antenna, while Ghosh (1980) recorded shorter antenna, and other differences as length of second segment of hind tarsus (HT) that our specimens are significantly longer than that determined by Ghosh (1980) and less clearly by Hodjat (1981). The other characteristic, such as the length of siphunculi and cauda showed minor differences that do not count importantly in taxonomy, and perhaps they are due to geographical variation between different populations of this species.

**Material examined:** sixteen apterous viviparous female and several nymphs, Baghdad province: Al-Jadiriya, 22.XI.2016, 28.II.2017; Taji, 08.III.2016; Abu Ghraib, 25.III.2017; Al-Zaifraniya, 02.IV.2017.

Faunistic review of the genus *Chaitophorus* Koch

**Global Distribution:** Palaearctic region, parts of Africa, and are introduced and widespread in North America (Blackman and Eastop, 1994), this species is new for the Iraqi aphid fauna.

*Chaitophorus euphraticus* Hodjat, 1981

**Global Distribution:** Iran (Hodjat, 1981), in Iraq Daoud and El-Haidari (1968) recorded this species feed on Euphrates poplar at Baghdad province during April and July.

*Chaitophorus leucomelas* Koch, 1854

(= *Chaitophorus versicolor* Koch, 1854)

**Global Distribution:** Widely distributed in Europe (Pintera, 1987; Blackman and Eastop, 2015); North Africa (Boukhris-Bouhachem *et al.*, 2007; Laamari *et al.*, 2013); Asia including Kazakhstan, Mongolia, East Siberia (Pashchenko, 1988); North and South America (Rubín de Celis and Ortiz, 1992; Ramirez *et al.*, 2004); in Iraq Daoud and El-Haidari (1968) and Al-Ali (1977) recorded this species on *Populus euphratica* in Baghdad at August; Diyala and Baquba at October.

*Chaitophorus nigrinus* Hille Ris Lambers, 1966

**Global Distribution:** India (Ghosh, 1980); Pakistan and Iran (Pintera, 1987); Turkey and Iraq (Blackman and Eastop, 2015; Güçlü *et al.*, 2015).



**Plate (2):** *Chaitophorus populiabae*: (A) Mounted body, (B) Sixth antennal segment (ANT VI), (C) Ultimate rostral segment (URS), (D) Second segment of hind tarsus (HT II), (E) Siphunculi SIHP, (F) Cauda.

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### مراجعة لفونا الجنس

*Chaitophorus* Koch, 1854 (Aphididae, Chaitophorinae, Chaitophorini)

مع تسجيل جديد لأحد أنواع الجنس لفونا المَن العراقية

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### الخلاصة

اجريت مراجعة لفونا الجنس *Chaitophorus* Koch, 1854، بما في ذلك اربعة أنواع في العراق، وقد تم تسجيل بيانات توزيع كل نوع مع مضافها. خلال هذا التحري، سجلت حشرة مَن أوراق شجرة الحور (Boyer de Fonscolombe, 1841) على اشجار *Populus euphratica* Oliv. خلال الفترة من تشرين الثاني 2016 إلى نيسان 2017 في محافظة بغداد للمرة الأولى كإضافة للفونا الحيوانية العراقية.

اعطي وصف موجز للأنثى العذرية غير المجنحة من هذا النوع، مع مفتاح لعزل انواع الجنس *Chaitophorus* في العراق.