



Original Article

New Records of Aphids of the Subfamily Aphidinae (Homoptera: Aphididae) Infested Herbaceous Plants and Shrubs for Iraqi Aphid Fauna

Hayder B. ALI*¹ Basant. K. AGARWALA **² Ibrahim K. KADDOU *

Department of Biology, .College of science, University of Baghdad, Iraq,
Ecology and Biodiversity Laboratories, Department of Life Sciences, Tripura University, India
E-mail: ¹hayder.ali1130@yahoo.com, ²bkagarwala54@yahoo.co.in

ABSTRACT

This study aimed to find out aphid species belongs to Subfamily Aphidinae (Homoptera: Aphididae) infesting herbaceous plants and shrubs in different locations of Iraq through a survey during 2008-2010. As a result, total of 56 aphid species belonging to 24 genera and two tribes were determined. Of these determined species. Four genera: *Aphidura* Hille Ris Lambers, *Coloradoa* Wilson, *Nasonovia* Mordvilko, *Paczoskia* Mordvilko and twenty one species were new records for Iraqi aphid fauna. These new records include: *A. balloticola* Szelegiewicz, *A. chloris* Koch, *A. davletshinae* Hille Ris Lambers, *A. dlabolai* Holman, *A. hederæ* Kaltenbach, *A. myrsinitidis* Petrovic and Leclant, *A. passeriniana* (del Guercio), *A. salvia* Walker, *A. symphyti* Schrank, *A. terricola* Rondani, *Brachyunguis lycii* (Nevsky), *B. zygophylli* (Nevsky), *Coloradoa rufomaculata* (Wilson), *Acyrtosiphon kondoi* Shinji, *A. lactuca* (Passerini), *Macrosiphoniella papillata* Holman, *M. tuberculata* (Nevsky), *Nasonovia ribisnigri* (Mosley), *Paczoskia meridionalis* Holman, *Uroleucon chondrillae* (Nevsy). A list of host plants and their aphids is presented in this study.

Keywords: Aphid Fauna, new record, Iraq.

INTRODUCTION

More than 4700 valid species of Aphidoidea have been described, including some of the world's most important insect pests. These species are placed in about 599 currently accepted genera [1], particularly from the (Subfamily: Aphidinae), which are usually the most important pests of agriculture and horticulture worldwide, Blackman and Eastop presented an extraordinary work with important information on 3120 aphid species living on 2150 genera of herbs and shrubs throughout the world, which represents about 70% of the total aphid fauna of the world [2]. Aphid fauna of Iraq is almost poorly known, they are known mainly by few surveillance lists. Bodenheimer & Swirski published the first records of Iraqi aphids, they listed 42 aphid species from Iraq belongs to Superfamily Aphidoidea, 21 species of them were belonged to Subfamily Aphidinae [3]. After that, some Iraqi researchers published papers on aphid fauna of Iraq, e. g., Kaddou who listed 36 aphid species with their host plants and the distribution of each species in Iraq [4]. And Daoud and El-Haidari listed 74 aphid species with their host plants belongs to Aphididae 19 were a new record for Iraq [5,6]. While Abdul-Rassoul reported seven aphid species from Baghdad [7]. In addition to Al-Ali who listed 90 species belongs to Aphidoidea collected from different provinces of Iraq with their host plants, forty five species were belonged to subfamily Aphidinae [8]. In this study 24 aphid species and four genera were recorded as new record to the Iraqi aphid fauna

MATERIAL AND METHODS

Aphid samples on various herbaceous and shrub plants were collected from various locations of Iraqi provinces {Baghdad, Babylon, Kerbala, Najaf, Erbil, Sulaimaniya, Dohok, Diyala and Mosul (Sinjar Mountain)}, over a period of two years (from 19.01.2008 to 10.01.2010).

Aphids were collected from their host plants with a fine brush and put in to a tube which contained 70% alcohol. The collecting and preserving technique was based mainly on Eastop & Van Emden

method [9]. The aphids were systematically classified from the catalog of Remaudière and Remaudière [1]. Identification keys from Blackman & Eastop were principally referred for the identification of collected species [2]. All measurements of the aphid are with millimeter (mm) unless otherwise status. Aphid specimens were deposited in the collection of Iraq Natural History Research Center and Museum / University of Baghdad / Baghdad / Iraq.

RESULTS

As a result of the study conducted between 2008 and 2010, 59 aphid species feeding on different herbaceous plants and shrubs from various localities were determined from study area. Taxonomic status, host plants, locality and collection date were mentioned for each determined species, a list of host plants and their infected aphids are given in table (1).

Subfamily Aphidinae

Tribe Aphidini

Subtribe Aphidina

Genus *Aphis* (Linnaeus, 1758)

Previous studies on Iraqi aphid fauna recorded only 12 species from herbaceous Plants and Shrubs belongs to this genus, while this study recorded 20 species, includes all these 12 species except *A. compositellae* which recorded by Kaddou [4] and Daoud & El-Haidari [5], and *Aphis ruborum* (Börner, 1932) recorded by Daoud and El-Haidari [6], the remaining species were new record for Iraqi aphid fauna.

Aphis affinis (del Guercio, 1911)

The present study recorded this species only from north provinces.

Material examined: on *Mentha* sp Erbil/Seveen mountain and Bin Qalat 13.05.2008; Sulaimaniya/Passni and Kanaro mountain, 15.05.2008; Dohok /Zawitah and Zakho 14.06.2009.

Aphis balloticola Szelegiewicz, 1968

This species was recorded from north provinces as new record.

Material examined: on *Marrubium* sp, Erbil/ Seveen Mountain 13.05.2008; Sulaimaniya/Passni 15.05.2008

Aphis chloris Koch, 1854

This species was recorded from Dohok Mountains as new record.

Material examined: on *Hypericum* sp. Dohok/Gara and Matin Mountain 14.06.2009

Aphis craccivora Koch, 1854

The present study recorded this species from all studied provinces

Material examined: on *Acacia* sp. Baghdad / al-jadiriya 15.04.2008; on *Alhagi graecorum*. Baghdad / al-jadiriya 10.05.2008, Mosul/Sinjar Mountain 15.06.2009; on *Glycirrhiza glabra* L. Baghdad / al-jadiriya 15.04.2008, Erbil/ Hasarost 14.05.2008; on *Medicago* sp. Baghdad / al-jadiriya 22.02.2008, Najaf/Bahar al najaf 23.12.2008, Babylon/ al Neal 08.03.2009; on *Melilotus indicus* (L) Baghdad / al-jadiriya 10.03.2008; on *Onobrychis* sp. Erbil/Seveen Mountain 13.05.2008, Dohok/Matin mountain 14.06.2009; on *Silybum marianum* (L.) Baghdad / al-jadiriya 15.04.2008; on *Trifolium* sp. Kerbala/ Aal jabas 22.12.2008, Najaf/Al seniaa 23.12.2008, Diyala/ Khan Bani saad 12.03.2009; on *Vicia faba* L. Baghdad / al-jadiriya 02.03.2008, Taji 08.03.2008, Abu Ghraib 25.03.2008, Sulaimaniya /Kanaro 15.05.2008; on *Vigna sinensis* L. Baghdad / Taji 19.05.2008, Baghdad / al-jadiriya 22.05.2008.

Aphis davletshinae Hille Ris Lambers, 1966

This species was recorded from north provinces as new record.

Material examined: on *Alcea* sp. Sulaimaniya/Kanaro 12.08.2008 and Dohok /Sharanish 14.06.2009.

Aphis dlabolai Holman, 1990

Material examined: on *Euphorbia* sp Dohok /Zawitah and Zakho 13.06.2009

Aphis fabae Scopoli, 1763

Material examined: on *Anchusa* sp. Erbil/Seveen Mountain 13.05.2008; on *Atriplex* sp. Sulaimaniya/ Ahmedaoa 13.08.2008, Baghdad / al-jadiriya 18.03.2009; on *Beta* sp. Baghdad / al-jadiriya 25.01.2008, Baghdad/Abu Ghraib 25.03.2008; on *Beta vulgaris* L. Babylon / al Neal 08.03.2009, Diyala/ Khan Bani saad 12.03.2009; on *Carduus pycnocephalus* (L) Baghdad/al-jadiriya

12.03.2008, Sulaimaniya / Kanaro 15.05.2008; on *Carthamus* sp. Dohok/Matin mountain 14.06.2009; on *Chenopodium* sp. Baghdad / al-jadiriya 04.03.2008, Sulaimaniya / Passni 15.05.2008, Kerbala/ Aal jabas 22.12.2008; on *Erigeron Canadensis* L. Baghdad / al-Khazimia ; on *Fumaria parviflora* Pomel Baghdad / Taji 08.03.2008, Baghdad/Abu Ghraib 25.03.2008; on *Melilotus indicus* (L.) Diyala/ Khan Bani saad 12.03.2009; *Picris* sp. Baghdad / al-jadiriya 02.04.2008; *Polygonum* sp. Dohok/ Cani Masi 13.06.2009; on *Rosa* sp. Baghdad / al-jadiriya 02.04.2008; on *Rumex* sp. Erbil/ Hasarost 14.05.2008; on *Salsola* sp. Kerbala/ Khan alroba 22.04.2008; on *Senecio* sp. Dohok/Matin mountain 14.06.2009; on *Silybum marianum* (L.) Baghdad / al-jadiriya 19.01.2008, on *Spinacia oleracea* L.. Najaf/Bahar al najaf 23.12.2008, Baghdad / Taji 08.03.2009;

Aphis gossypii Glover, 1854

Material examined: on *Hibiscus esculentus* L. Baghdad/Abu Ghraib 25.04.2008; on *Alhagi* sp. Baghdad / al-jadiriya 11.05.2008; on *Anchusa* sp. Sulaimaniya/ penjuin 12.08.2008; on *Borago* sp. Dohok/Matin mountain 14.06.2009; on *Callendula* sp. Baghdad / al-jadiriya 01.04.2008; on *Chrysanthemum* sp. Baghdad / al-jadiriya 10.02.2008; on *Cucurbita* sp. Baghdad/Abu Ghraib 25.03.2008, Sulaimaniya/Kanaro 12.08.2008; on *Cucumis melo* L. Baghdad / Taji, 19.05.2008, on *Cucumis sativus* L. Baghdad / al-jadiriya 10.02.2008, Kerbala/ Aal jabas 22.12.2008; on *Gazania* sp. Baghdad / Taji 08.03.2008, Baghdad / al-jadiriya 15.03.2008; on *Gundelia* sp. Sulaimaniya/ Passni 15.05.2008; on *Hibiscus* sp. Baghdad / al-jadiriya 10.02.2008; on *Lycopersicon esculentum* Baghdad / al-jadiriya 29.01.2008, Baghdad / Taji 08.03.2008, Najaf/Al seniaa 23.12.2008; on *Medicago* sp. Baghdad / al-jadiriya 05.03.2009; on *Plantago lanceolata* L. sp. Baghdad / Taji 08.03.2008; on *Polygonum* sp. Erbil/Seveen mountain 13.05.2008, on *Rosa* sp. Diyala/ Khan Bani saad 12.03.2009; on *Silybum marianum* (L.) Baghdad / al-jadiriya 02.03.2008; on *Solanum melanogena* Baghdad / al-jadiriya 29.01.2008, Baghdad/Abu Ghraib, 25.03.2008, Najaf 30.03.2008; on *Spinacia oleracea* L.. Baghdad/Abu Ghraib 25.03.2008; on *Tagetis erectus* L. Baghdad / Taji 08.03.2008; on *Veronica polita* Fr. Baghdad / al-jadiriya 19.02.2008, on *Zinnia* sp. Erbil / Hasarost 14.05.2008, Sulaimaniya/ Kanaro 15.05.2008.

Aphis hederæ Kaltenbach, 1843

Material examined: on *Hedera helix* L. Dohok/Zawitah 13.06.2009.

Aphis myrsinitidis Petrovic and Leclant, 1998

Material examined: on *Euphorbia* sp. Sulaimaniya/penjuin 15.05.2008, Mosul/Sinjar Mountain 15.06.2009

Aphis nasturtii Kaltenbach, 1843

Material examined: on *Solanum tuberosum* L. Baghdad / al-jadiriya 12.03.2008, on *Polygonum* sp. Erbil/Seveen Mountain 13.05.2008.

Aphis nerii Boyer de Fonscolombe, 1841

Material examined: on *Asclepias curassavica* L. Baghdad / al-jadiriya 13.04.2008; on *Cynanchium acutum* L. Baghdad / al-jadiriya 08.10.2008; on *Nerium oleander* L. Baghdad / al-jadiriya 13.02.2008, Kerbala/Al Hussiania 20.03.2008

Aphis passeriniana (del Guercio, 1900)

Material examined: on *Salvia* sp. Erbil/Seveen Mountain 13.05.2008, Dohok/Cani Masi 13.06.2009, Mosul/Sinjar Mountain 15.06.2009.

Aphis rumicis Linnaeus, 1758

Material examined: on *Rumex* sp. Sulaimaniya/Kosha Mountain 15.05.2008, Dohok/Zakho 14.06.2009

Aphis salsolæ (Börner, 1940)

Material examined: on *Salsola* sp. Baghdad / al-jadiriya 03.04.2008, Sulaimaniya / Passni 15.05.2008

Aphis salviae Walker, 1852

Material examined: on *Salvia* sp Erbil/ Bin Qalat 14.05.2008, Sulaimaniya/Passni 15.05.2008, Dohok/Gara Mountain 13.06.2009.

Aphis solanella Theobald, 1914

Material examined: on *Solanum nigrum* L. Baghdad / al-jadiriya 12.10.2008 and 29.09.2009.

Aphis symphyti Schrank, 1801

Material examined: on *Symphytum* sp. Sulaimaniya /Kanaro 15.05.2008

Aphis terricola Rondani, 1847

Material examined: on *Sonchus oleraceus* L. Baghdad / al-jadiriya 13.02.2008

Aphis verbasci Schrank, 1801

Material examined: on *Verbascum* sp. Erbil/Seveen Mountain 13.05.2008, Sulaimaniya/Kanaro 15.05.2008; on *Scrophularia* sp. Erbil/ Bin Qalat 14.08.2008, Dohok/Zakho 14.06.2009.

Genus ***Brachyunguis*** Das, 1918

Brachyunguis harmalae Das, 1918

Material examined: on *Chenopodium* sp. Baghdad / al-jadiriya 04.03.2008, on *Polygonum* sp. Erbil / Seveen Mountain 13.05.2008, Dohok/Cani Masi 13.06.2009; on *Rumex* sp. Sulaimaniya/Knaro 15.05.2008

Brachyunguis lycii (Nevsky, 1928)

Material examined: on *Lycium barbarum* L. Baghdad / al-jadiriya 08.04.2008.

Brachyunguis zygophylli (Nevsky, 1928).

Material examined: on *Zygophyllum fabago* L. Baghdad / al-jadiriya 18.12.2008

Subtribe **Rhopalosiphina.**

Genus ***Hyalopterous*** Koch, 1854

Hyalopterus pruni (Geoffroy, 1762)

Material examined: on *Phragmites communis* Trin. Baghdad /Taji 08.03.2008, Kerbala/Al hussania, 20.03.2008, Babylon / al Neal 04.04.2008, Dohok/ Cani Masi, 13.06.2009

Genus ***Melanaphis*** van der Goot, 1917

Melanaphis donacis (Passerini, 1862)

Material examined: on *Phragmites communis* Trin. Diyala/ Khan Bani saad 12.03.2009, Dohok/Gara mountain 13.06.2009

Melanaphis sacchari (Zehntner, 1897).

Material examined: on *Phragmites communis* Trin. Baghdad/ al-jadiriya 15.02.2008, Babylon / al Neal 04.04.2008.

Genus ***Rhopalosiphum*** Koch, 1854

Rhopalosiphum maidis (Fitch, 1856)

Material examined: on *Triticum* sp. Baghdad / Taji 08.03.2008, Diyala/ Khan Bani saad 12.03.2009; on *Hordeum* sp. Baghdad/Abu Ghraib, 25.03.2008. on Unknown Gramineae Kerbala/ Aal jabas 22.12.2008

Rhopalosiphum padi (Linnaeus, 1758)

Material examined: on *Cyperus* sp. Baghdad / al-jadiriya 18.02.2008; on *Cynodon dactylon* Pers. Baghdad / Taji 08.03.2008; on *Canna indica* L. Baghdad/Abu Ghraib 25.03.2008; *Hordeum* sp. Kerbala/ Aal jabas 12.04.2008

Genus ***Schizaphis*** Börner, 1931

Schizaphis graminum (Rondani, 1852).

Material examined: on *Hordeum* sp. Baghdad/ al-jadiriya 27.03.2008, Najaf/Bahar al najaf 23.12.2008; on *Zea mays* L. Baghdad / al-jadiriya 26.05.2008; on Unknown Gramineae Baghdad / al-jadiriya 05.06.2008.

TRIBE **Macrosiphini** Wilson, 1910.

Subtribe **Anuraphidina.**

Genus ***Brachycaudus*** van der Goot, 1913.

Brachycaudus helichrysi (kaltenbach, 1843)

Material examined: on *Achillea* sp. Erbil/Seveen Mountain 13.05.2008; on *Anchusa* sp. Dohok/Gara Mountain 13.06.2009; on *Asperugo* sp. Sulaimaniya/Passni 15.05.2008; on *Brago* sp. Dohok/Cani Masi 13.06.2009; on *Cardaria* sp. Erbil / Hasarost 14.05.2008; on *Onopordon* sp. Mosul/Sinjar Mountain 15.06.2009; *Pulicaria* sp. Sulaimaniya/Kanaro 15.05.2008; on *Rumex* sp. Erbil / Hasarost 14.05.2008 ; on *Senecio* sp. Babylon / al Neal 08.03.2009.

Genus ***Dysaphis*** Börner, 1931

Dysaphis apiifolia (Theobald, 1922)

Material examined: on *Apium graveolens* L. Baghdad / Taji 08.03.2008, Kerbala/ Aal jabas 22.12.2008.

Subtribe **Liosomaphidina.**

Genus *Brevicoryne* van der Goot, 1915

Brevicoryne brassica (Linnaeus, 1758)

Material examined: on *Brassica oleracea* L. Baghdad / al-jadiriya 13.02.2008, Kerbala/ Aal jabas 22.12.2008, Babylon / al Neal 08.03.2009, Diyala/ Khan Bani saad 12.03.2009; on *Cardaria* sp. Erbil / Hasarost 14.05.2008; on *Isatis* sp. Sulaimaniya/Knaro 15.05.2008.

Genus *Coloradoa* Wilson, 1910

Coloradoa rufomaculata (Wilson, 1908)

Material examined: on *Chrysanthemum* sp. Baghdad / Taji 08.03.2008, Baghdad / al-jadiriya 27.12.2009

Genus *Hyadaphis* Kirkaldy, 1904

Hyadaphis coriandri (Das, 1918)

Material examined: on *Daucus carota* L. Baghdad / al-jadiriya 26.12.2008; on *Foeniculum vulgare* Mill, Baghdad / Taji 08.03.2008, Babylon / al Neal 08.03.2009.

Hyadaphis foeniculi (Passerini, 1860)

Material examined: on *Apium graveolens* L. Baghdad / al-jadiriya 02.03.2008, Kerbala/ Aal jabas 22.12.2008, Najaf/Al seniaa 23.12.2008, Diyala/ Khan Bani saad 12.03.2009.

Genus *Lipaphis* Mordvilko, 1928

Lipaphis lepidii (Nevsky, 1929)

Material examined: on *Cardaria* sp. Erbil / Hasarost 14.05.2008, on *Lepidium draba* L. Dohok/Gara Mountain 13.06.2009.

Lipaphis pseudobrassicae Davis, 1914

Material examined: on *Brassica oleracea* L. Baghdad / al-jadiriya 15.03.2008, Kerbala/ Aal jabas 22.12.2008; *Brassica rape* L. Baghdad / al-jadiriya 25.12.2008; on *Brassica* sp. Babylon / al Neal 08.03.2009, Diyala/ Khan Bani saad 12.03.2009; on *Raphanus sativus* L. Baghdad/Abu Ghraib 25.03.2008; on *Sisymbrium irio* L. Baghdad / al-jadiriya 27.01.2009.

Subtribe **Macrosiphina**

Genus *Acyrtosiphon* Mordvilko, 1914.

Acyrtosiphon gossypii Mordvilko, 1914

Material examined: on *Zygophyllum fabago* L. Baghdad/Abu Ghraib 25.03.2008, Baghdad /al-jadiriya 05.04.2009.

Acyrtosiphon kondoi Shinji, 1938

Material examined: on *Medicago* sp. Najaf/Al seniaa 23.12.2008, Basra / Abu alqseep 12.03.2009.

Acyrtosiphon lactucae (Passerini, 1860)

Material examined: on *Lactuca serriola* L. Baghdad / Taji 08.03.2008, Baghdad / al-jadiriya 22.05.2008, Diyala/ Khan Bani saad 12.03.2009.

Genus *Aphidura* Hille Ris Lambers, 1956.

***Aphidura* sp. ?**

Material examined: on *Silene* sp. Erbil / Hasarost 14.08.2008.

Genus *Capitophorus* van der Goot, 1913

Capitophorus elaeagni (del Guercio, 1894)

Material examined: on *Cirsium* sp. Dohok /Zawitah 13/06/2009

Genus *Hyperomyzus* Börner, 1933

Hyperomyzus lactucae (Linnaeus, 1758)

Material examined: on *Sonchus oleraceus* L. Baghdad / Taji 08.03.2008, Baghdad /Abu Ghraib 25.03.2008, Baghdad / al-jadiriya 22.05.2008, Diyala/ Khan Bani saad 12.03.2009

Genus *Macrosiphoniella* del Guercio, 1911.

Macrosiphoniella papillata Holman, (1961) 1962.

Material examined: on *Centaurea* sp. Erbil /Seveen Mountain 13.05.2008, Dohok /Cani Masi 13.06.2009, Mosul /Sinjar Mountain 15.06.2009

Macrosiphoniella sanborni (Gillette, 1908).

Material examined: on *Chrysanthemum* sp. Baghdad / Taji 08.03.2008, Baghdad /Abu Ghraib 25.03.2008, Baghdad / al-jadiriya 26.03.2008, Diyala/ Khan Bani saad 12.03.2009.

Macrosiphoniella tuberculata (Nevsky, 1928)

Material examined: on *Cousinia* sp. Erbil/ Bin Qalat 14.05.2008, Mosul/Sinjar Mountain 15.06.2009

Genus **Macrosiphum** Passerini, 1860

Macrosiphum euphorbiae (Thomas, 1878)

Material examined: on *Solanum melanogena* Baghdad / al-jadiriya 21.03.2008; on *Solanum tuberosum* L. Baghdad / al-jadiriya 30.03.2008.

Macrosiphum rosae (Linnaeus, 1758).

Material examined: on *Rosa* sp. Baghdad / Taji 08.03.2008, Baghdad / al-jadiriya 23.03.2008, Diyala/ Khan Bani saad 12.03.2009.

Genus **Myzus** Passerini, 1860.

Myzus persicae (Sulzer, 1776)

Material examined: on *Alcea* sp. Sulaimaniya /Kanaro 12.08.2008, Dohok/Zawitah 13.06.2009; on *Beta vulgaris* L. Najaf /Bahar al najaf 23.12.2008; on *Brassica deflexa* Diyala/ Khan Bani saad 12.03.2009; on *Calendula persica* C.M. Baghdad / al-jadiriya 15.02.2008; on *Cardaria* sp. Sulaimaniya/ Passni 15.05.2008; on *Convolvulus* sp. Baghdad / Taji 08.03.2008; on *Cucumis sativus* L. Baghdad / al-jadiriya 10.02.2008, on *Daucus carota* L. Baghdad/Abu Ghraib 25.03.2008; on *Dianthus caryophyllus* L. Baghdad / al-jadiriya 05.03.2008; on *Galium* sp. Baghdad / Taji 20.02.2008; on *Lactuca serriola* L. Baghdad / al-jadiriya 24.02.2008; on *Lycium barbarum* L. Baghdad / al-jadiriya 20.04.2008; on *Malva parviflora* L. Baghdad/Abu Ghraib 25.03.2008, Babylon / al Neal 29.03.2008; on *Papaver* sp. Erbil/Seveen Mountain 13.05.2008, Sulaimaniya/ Ahmedaoa 13.08.2008; on *Plantago lanceolata* L. Baghdad / Taji 08.03.2008; on *Prangos* sp. Erbil / Hasarost 14.05.2008; on *Raphanus sativus* L. Najaf/Al seniaa 23.12.2008; on *Senecio desfontinei* W. Baghdad / al-jadiriya 05.03.2008; on *Sisymbrium irio* L. Babylon / al Neal 04.04.2008, Baghdad / al-jadiriya 10.01.2010, *Sonchus oleraceus* L. Sulaimaniya/ Passni 12.08.2008; on *Spinacia oleracea* L. Kerbala/ Khan alroba 22.12.2008; on *Urtica pilulifera* L. Baghdad / al-jadiriya 05.02.2008; on *Veronica polita* Fr. Baghdad / al-jadiriya 24.02.2008.

Genus **Nasonovia** Mordvilko, 1914.

Nasonovia ribisnigri (Mosley, 1841)

Material examined: on *Lactuca sativa* L. Baghdad / al-jadiriya 29.01.2008, Kerbala/ Aal jabas 22.12.2008.

Genus **Paczoskia** Mordvilko, 1914.

Paczoskia meridionalis Holman, 1981

Material examined: on *Echinops* sp. Erbil /Hanara village 14.05.2008, Dohok /Matin Mountain 14.06.2009.

Genus **Rhodobium** Hille Ris Lambers, 1947

Rhodobium porosum (Sanderson, 1900)

Material examined: on *Rosa* sp. Baghdad / al-jadiriya 26.03.2008.

Genus **Sitobion** Mordvilko, 1914.

Sitobion avenae (Fabricius, 1775).

Material examined: on Unknown Gramineae Erbil / Hasarost 14.05.2008, on *Triticum* sp. Dohok / Cani Masi 13.06.2009.

Genus **Uroleucon** Mordvilko, 1914.

Uroleucon chondrilla (Nevsy, 1929).

Material examined: on *Chondrilla* sp. Erbil / Hasarost 14.05.2008, Sulaimaniya / Kosha Mountain 15.05.2008, Dohok /Sharanish 14.06.2009.

Uroleucon jaceae (Linnaeus, 1758)

Material examined: on *Carthamus* sp. Sulaimaniya /Kanaro 12.08.2008 , Baghdad / al-jadiriya 02.02.2009, Mosul/Sinjar mountain 15.06.2009, on *Centaurea pallescens* Del. Diyala/ Khan Bani saad 12.03.2009, Baghdad / al-jadiriya 02.05.2009.

Uroleucon sonchi (Linnaeus, 1767).

Material examined: on *Lactuca serriola* L. Baghdad / al-jadiriya 01.04.2008, Sulaimaniya/ Ahmedaoa 13.08.2008, on *Sonchus oleraceus* L. Baghdad / Taji 08.03.2008, Baghdad / al-jadiriya 01.04.2008, Erbil/ Bin Qalat 14.05.2008.

DISCUSSION

The recent studies on aphids in Iraq have shown that aphid species listed for Iraq's aphid fauna do not indicate the real number, this fact is supported when Iraq is compared with its neighbours that are located in similar geographic areas. For example, the aphid fauna of Turkey comprises more than 433 species [10], that of Iran approximately 340 species [11], Saudi Arabia 61 species (mainly in the Riyadh, Asir, Tabuk & Jizan) [12], Lebanon and Syria 167 species [13] and in Israel 194 species [14]. Since this study neglected some Iraqi areas, thus, it can be expected that with further research, in different parts of the country, the recorded Iraqi aphid fauna will be considerably increased.

Table 1: Host Plants of Aphid species found in Iraq.

Host plant species	Plant common names	Plant family	Aphids collected
<i>Acacia</i> sp.	Scented	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Achillea</i> sp.	Milfoil	Compositae	<i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Alcea rosea</i> (L.)	Hollyhoch	Malvaceae	<i>Aphis davletshinae</i> Hille Ris Lambers <i>Myzus persicae</i> (Sulzer)
<i>Alhagi</i> sp.	Thorn	Leguminosae	<i>Aphis gossypii</i> Glover
<i>Alhagi graecorum</i> .	Camle Thorn	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Anchusa italic</i>	Alkanet	Boraginaceae	<i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Anchusa</i> sp	-----	Boraginaceae	<i>Aphis fabae</i> Scopoli <i>Aphis gossypii</i> Glover <i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Apium graveolens</i> L.	Celery	Umbelliferae	<i>Dysaphis apiifolia</i> (Theobald) <i>Hyadaphis foeniculi</i> (Passerini)
<i>Asclepias curassavica</i> L.	Bloodflower	Asclepiadaceae	<i>Aphis nerii</i> Boyer de Fonscolombe
<i>Asperugo</i> sp.	Madwort	Boraginaceae	<i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Atriplex</i> sp.	Dranch	Chenopodiaceae	<i>Aphis fabae</i> Scopoli
<i>Beta</i> sp.		Chenopodiaceae	<i>Aphis fabae</i> Scopoli <i>Myzus persicae</i> (Sulzer)
<i>Beta vulgaris</i> L.	Leaf-beet	Chenopodiaceae	<i>Aphis fabae</i> Scopoli <i>Myzus persicae</i> (Sulzer)
<i>Borago</i> sp.	-----	Boraginaceae	<i>Aphis gossypii</i> Glover <i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Brassica oleracea</i> L.	Cabbage Cauliflower	Cruciferae	<i>Brevicoryne brassica</i> (Linnaeus) <i>Lipaphis pseudobrassicae</i> Davis
<i>Brassica rape</i> L.	Turnip	Cruciferae	<i>Lipaphis pseudobrassicae</i> Davis
<i>Brassica</i> sp.		Cruciferae	<i>Myzus persicae</i> (Sulzer)
<i>Calendula persica</i> C.M.	Marigold	Compositae	<i>Myzus persicae</i> (Sulzer)
<i>Canna indica</i> L.	Canna	Gramineae	<i>Rhopalosiphum padi</i> (Linnaeus)
<i>Cardaria</i> sp.		Cruciferae	<i>Brachycaudus helichrysi</i> (kaltenbach) <i>Brevicoryne brassica</i> (Linnaeus) <i>Lipaphis lepidii</i> (Nevsky) <i>Myzus persicae</i> (Sulzer)
<i>Carduus</i> sp	Thistles	Compositae	<i>Aphis fabae</i> Scopoli <i>Brachycaudus cardui</i> (Linnaeus)
<i>Carthamus</i> sp.	Saffoler	Compositae	<i>Aphis fabae</i> Scopoli <i>Uroleucon jaceae</i> (Linnaeus)
<i>Centaurea</i> sp	Thistles	Compositae	<i>Macrosiphoniella papillata</i> Holman, <i>Uroleucon jaceae</i> (Linnaeus, 1758)
<i>Chenopodium</i> sp.	Goosefoot	Chenopodiaceae	<i>Aphis fabae</i> Scopoli <i>Brachyunguis harmalae</i> Das
Host plant species	Plant common names	Plant family	Aphids collected
<i>Chondrilla</i> sp.		Compositae	<i>Uroleucon chondrilla</i> (Nevsy)

<i>Chrysanthemum</i> sp.	Chrysanthemum	Compositae	<i>Aphis gossypii</i> Glover <i>Coloradoa rufomaculata</i> (Wilson) <i>Macrosiphoneilla sanborni</i> (Gillette)
<i>Cirsium</i> sp.	-----	Compositae	<i>Capitophorus elaeagni</i> (del Guercio)
<i>Convolvulus</i> sp.	Bindweed	Convolvulaceae	<i>Myzus persicae</i> (Sulzer)
<i>Cousinia</i> sp.	-----	Compositae	<i>Macrosiphoniella tuberculata</i> (Nevsky)
<i>Cucumis melo</i> L.	Melon	Cucurbitaceae	<i>Aphis gossypii</i> Glover
<i>Cucumis sativus</i> L.	Cucumber	Cucurbitaceae	<i>Aphis gossypii</i> Glover <i>Myzus persicae</i> (Sulzer)
<i>Cucurbita</i> sp.	Squash	Cucurbitaceae	<i>Aphis gossypii</i> Glover
<i>Cynanchium acutum</i> L.	-----	Asclepiadaceae	<i>Aphis nerii</i> Boyer de Fonscolombe
<i>Cynodon dactylon</i>	Bermuda grass	Gramineae	<i>Rhopalosiphum padi</i> (Linnaeus)
<i>Cyperus</i> sp.	Nut grass	Gramineae	<i>Rhopalosiphum padi</i> (Linnaeus)
<i>Daucus carota</i> L.	Carrot	Umbelliferae	<i>Hyadaphis coriandri</i> (Das) <i>Myzus persicae</i> (Sulzer)
<i>Dianthus caryophyllus</i> L.	Carnation	Caryophyllaceae	<i>Myzus persicae</i> (Sulzer)
<i>Echinops</i> sp	Globe thistle	Compositae	<i>Paczoskia meridionalis</i> Holman
<i>Erigeron Canadensis</i> L.	Flea-bane	Compositae	<i>Aphis fabae</i> Scopoli
<i>Euphorbia</i> sp	Spurge	Euphorbiaceae	<i>Aphis dlabolai</i> Holman <i>Aphis myrsinitidis</i> Petrovic and Leclant
<i>Foeniculum vulgare</i> Mill.	Fennel	Umbelliferae	<i>Hyadaphis coriandri</i> (Das)
<i>Fumaria parviflora</i> Pome	Fumitory	Papaveraceae	<i>Aphis fabae</i> Scopoli
<i>Galium</i> sp.	Bedstraw	Rubiaceae	<i>Myzus persicae</i> (Sulzer)
<i>Gazania</i> sp.	-----	Compositae	<i>Aphis gossypii</i> Glover
<i>Glycyrrhiza glabra</i> L.	Liquorice	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Gundelia</i> sp.	-----	Compositae	<i>Aphis gossypii</i> Glover
<i>Hedera helix</i> L.	-----	Araliaceae	<i>Aphis hederæ</i> Kaltentbach
<i>Hibiscus esculentus</i> L	Okra	Malvaceae	<i>Aphis gossypii</i> Glover <i>Myzus persicae</i> (Sulzer)
<i>Hibiscus</i> sp.	-----	Malvaceae	<i>Aphis gossypii</i> Glover
<i>Hordeum</i> sp.	Barley	Gramineae	<i>Rhopalosiphum maidis</i> (Fitch) <i>Rhopalosiphum padi</i> (Linnaeus) <i>Schizaphis graminum</i> (Rondani)
<i>Hypericum</i> sp.	Wort	Guttiferae	<i>Aphis chloris</i> Koch
<i>Isatis</i> sp.	-----	Cruciferae	<i>Brevicoryne brassica</i> (Linnaeus)
<i>Lactuca sativa</i> L.	Lettuce	Compositae	<i>Nasonovia ribisnigri</i> (Mosley)
<i>Lactuca serriola</i> L.	Wild Lettuce	Compositae	<i>Acyrtosiphon lactucae</i> (Passerini) <i>Myzus persicae</i> (Sulzer) <i>Uroleucon sonchi</i> (Linnaeus)
<i>Lepidium draba</i> L.	Haory cress	Cruciferae	<i>Lipaphis lepidii</i> (Nevsky)
Host plant species	Plant common names	Plant family	Aphids collected
<i>Lycium barbarum</i> L.	Box-thorn	Solanaceae	<i>Brachyunguis lycii</i> (Nevsky) <i>Myzus persicae</i> (Sulzer)
<i>Lycopersicum esculentum</i> Mill	Tomato	Solanaceae	<i>Aphis gossypii</i> Glover
<i>Malva parviflora</i> L.	Mallow	Malvaceae	<i>Myzus persicae</i> (Sulzer)
<i>Marrubium</i> sp.	Horehound	Labiatae	<i>Aphis balloticola</i> Szelegiewicz
<i>Medicago</i> sp.	Alfalfa	Leguminosae	<i>Acyrtosiphon kondoi</i> Shinji <i>Aphis craccivora</i> Koch

			<i>Aphis gossypii</i> Glover
<i>Melilotus indicus</i> (L)	Melilot	Leguminosae	<i>Aphis craccivora</i> Koch <i>Aphis fabae</i> Scopoli
<i>Mentha royleana</i> Benth.	Mint	Labiatae	<i>Aphis affinis</i> (del Guercio)
<i>Nerium oleander</i>	Oleander	Apocynaceae	<i>Aphis nerii</i> Boyer de Fonscolombe
<i>Onobrychis</i> sp.	-----	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Onopordon</i> sp	Cotton Thistle	Compositae	<i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Papaver</i> sp.	Poppy	Papaveraceae	<i>Myzus persicae</i> (Sulzer)
<i>Phragmites communis</i> Trin	Reed	Gramineae	<i>Hyalopterus pruni</i> (Geoffroy) <i>Melanaphis donacis</i> (Passerini) <i>Melanaphis sacchari</i> (Zehntner)
<i>Picris</i> sp.	-----	Compositae	<i>Aphis fabae</i> Scopoli
<i>Plantago lanceolata</i> L.	Plantain	Plantaginaceae	<i>Aphis gossypii</i> Glover <i>Myzus persicae</i> (Sulzer)
<i>Polygonum</i> sp.	Knotgrass	Polygonaceae	<i>Aphis fabae</i> Scopoli <i>Aphis gossypii</i> Glover <i>Aphis nasturtii</i> Kaltenbach <i>Brachyunguis harmalae</i> Das
<i>Prangos</i> sp.	-----	Umbelliferae	<i>Myzus persicae</i> (Sulzer)
<i>Pulicaria</i> sp.	Flea-bane	Compositae	<i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Raphanus sativus</i> L.	Radish	Cruciferae	<i>Lipaphis pseudobrassicae</i> Davis <i>Myzus persicae</i> (Sulzer)
<i>Rosa</i> sp.	Roses	Rosaceae	<i>Aphis fabae</i> Scopoli <i>Aphis gossypii</i> Glover <i>Macrosiphum rosae</i> (Linnaeus) <i>Rhodobium porosum</i> (Sanderson)
<i>Rumex</i> sp.	Dock, Sorrel	Polygonaceae	<i>Aphis fabae</i> Scopoli <i>Aphis rumicis</i> Linnaeus <i>Brachyunguis harmalae</i> Das <i>Brachycaudus helichrysi</i> (kaltenbach)
<i>Salsola</i> sp.	Saltwort	Chenopodiaceae	<i>Aphis salsolae</i> (Börner)
<i>Salvia</i> sp	Sage	Labiatae	<i>Aphis passeriniana</i> (del Guercio) <i>Aphis salviae</i> Walker
<i>Scrophularia</i> sp.	-----	Scrophulariaceae	<i>Aphis verbasci</i> Schrank
Host plant species	Plant common names	Plant family	Aphids collected
<i>Senecio</i> sp.	Grounsel, Ragwort	Compositae	<i>Aphis fabae</i> Scopoli
<i>Silene</i> sp.	Catchfly Campion	Caryophyllaceae	<i>Aphidura</i> sp.
<i>Silybum marianum</i> (L.)	Milkthistle	Compositae	<i>Aphis craccivora</i> Koch <i>Aphis fabae</i> Scopoli <i>Aphis gossypii</i> Glover
<i>Sisymbrium irio</i> L.	Rocket	Cruciferae	<i>Lipaphis pseudobrassicae</i> Davis <i>Myzus persicae</i> (Sulzer)
<i>Solanum melanogena</i> L.	Auberginr, Brinjal	Solanaceae	<i>Aphis gossypii</i> Glover <i>Macrosiphum euphorbiae</i> (Thomas)
<i>Solanum nigrum</i> L.	Blacck Nightshade	Solanaceae	<i>Aphis solanella</i> Theobald
<i>Solanum tuberosum</i> L.	Potato	Solanaceae	<i>Aphis nasturtii</i> Kaltenbach <i>Macrosiphum euphorbiae</i> (Thomas)
<i>Sonchus oleraceus</i> L.	Sow thistle	Compositae	<i>Aphis terricola</i> Rondani <i>Hyperomyzus lactucae</i> (Linnaeus) <i>Myzus persicae</i> (Sulzer) <i>Uroleucon sonchi</i> (Linnaeus)
<i>Spinacia oleracia</i> L..	Spinach	Chenopodiaceae	<i>Aphis fabae</i> Scopoli

			<i>Aphis gossypii</i> Glover <i>Myzus persicae</i> (Sulzer)
<i>Symphytum</i> sp.	-----	Boraginaceae	<i>Aphis symphyti</i> Schrank
<i>Tagetis erectus</i> L.	Marigold	Compositae	<i>Aphis gossypii</i> Glover
<i>Trifolium</i> sp.	Clover	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Triticum</i> sp.	Wheat	Gramineae	<i>Rhopalosiphum maidis</i> (Fitch) <i>Sitobion avenae</i> (Fabricius)
<i>Urtica pilulifera</i> L.	Nettle	Urticaceae	<i>Myzus persicae</i> (Sulzer)
<i>Verbascum</i> sp.	Mullein	Scrophulariaceae	<i>Aphis verbasci</i> Schrank
<i>Veronica polita</i> Fr.	-----	Scrophulariaceae	<i>Aphis gossypii</i> Glover <i>Myzus persicae</i> (Sulzer)
<i>Vicia faba</i> L.	Broad bean	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Vigna sinensis</i> L.	Cowpea	Leguminosae	<i>Aphis craccivora</i> Koch
<i>Zea mays</i> L.	Corn	Gramineae	<i>Rhopalosiphum maidis</i> (Fitch) <i>Schizaphis graminum</i> (Rondani)
<i>Zinnea</i> sp.	-----	Compositae	<i>Aphis gossypii</i> Glover
<i>Zygophyllum fabago</i>	-----	Zygophyllaceae	<i>Acyrtosiphon gossypii</i> Mordvilko

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to members of Ecology and Biodiversity Laboratory, Dept. of Life Science (Zoology) Tripura University, India for their Kindness help and staff of Iraq Natural History Research Center and Museum / University of Baghdad / Baghdad / Iraq for their advice and encouragement

REFERENCES

1. Remaudière, G., Remaudière, M., (1997). Catalogue des aphididae du Monde/Catalogue of the worlds aphididae . Homoptera.Aphididae. INRA Edditions Versailles Paris. 478.
2. Blackman, R. L. , Eastop, V. F., (2006). Aphids on the World's Herbaceous Plants and Shrubs. (Volume 1: Host lists and keys / Volume 2: The aphids), John Wiley and Sons, Ltd., Chichester, 1024.
3. Bodenheimer F, Swirski E, (1957). Aphidoidea of the Middle East. Weizmann Science Press, Jerusalem, 378 pp.
4. Kaddou, I.K., (1966), Aphidae from Iraq. Bulletin of Biological Research Center, 2:21-35.
5. Daoud, A. K., El-Haidari, H.S., (1968), Recorded aphids of Iraq. Iraq Natural History Museum 24: 1-37.
6. Daoud, A. K., El-Haidari, H.S., (1969), New Aphid records from Iraq. Bulletin Iraq Natural History Museum IV (I): 10-14.
7. Abdul- Rassoul, M. S., (1976), Checklist of Iraq Natural History Museum Insect Collection. Natural History Research Center 30: 1-35.
8. Al-Ali, A.S., (1977), Phytophagous and entomophagous insects and mites of Iraq Natural History Research Center 33:1-142.
9. Eastop, V.F., VanEmden, H.F., (1972), The insect material. in Van Emden, H.F. (Ed.) Aphid technology. Academic press, London and New York, 1-45.
10. Kaygin, A. T, Gorur, G., Cota, F., (2010), New records of aphid fauna in Turkey. Journal of Insect Science, 10(5):1-5
11. Hodjat, S. H., (1998), A list of aphids and their host plant in Iran. - Shahid Chamran University, Ahwaz, 148.
12. Aldryhim, Y. N., Khalil, A. F., (1996). The Aphididae of Saudi Arabia. Fauna of Saudi Arabia, 15:161-195
13. Remaudière, G., Talhouk, A. S., (1999). Aphids of Lebanon and Syria with description of a new species of the genus *Brachyunguis* Das (Hemiptera, Aphididae). Parasitica 55 (4): 149-18
14. Swirski, E., Amitai, S., (1999). Annotated list of aphids (Aphidoidea) in Israel. *Israel Journal of Entomology*, 33: 1-120.