



ADDENDA TO THE KNOWLEDGE OF BUPRESTIDAE FAUNA IN ERBIL PROVINCE, KURDISTAN REGION-IRAQ

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ABSTRACT

A total of 33 species of metallic wood borers in the Buprestidae family were recorded, during the seasonal survey with collecting of both immature and adult beetles in numerous locations in Erbil province, Iraq during 2016–2018. *Acmaeodera* (*Acmaeodera*) *pilosellae* (Bonelli, 1812); *Acmaeoderella* (*Carininota*) *farinosa* (Reiche, 1856); *Latipalpis* (*palpilatis*) *johanidesi* Niehuis, 2002; *Melanophila* *cuspidata* Klug, 1829; *Agrilus* *ulaangomiensis* Cobos, 1972, and the genus *Xantheremia* sp. are new for Iraqi fauna. The synonymy of recorded species with the host plants is given. Meanwhile, geographical distribution also has been referred.

Keywords: Coleoptera; Buprestidae; Fauna; Iraq; Erbil province

INTRODUCTION

The family Buprestidae is one of the major families of the order Coleoptera and contains nearly 15,000 species recorded in 469 genera, 48 tribes, and 6 subfamilies (Bilý *et al.*, 2011). Approximately 141 species are referred to in the Iraqi fauna (Ali, 2007). The flat-headed borers play an important role amidst orchards and wild forests, in the devastation of certain host plants. The larvae are the injurious stage; they bore stems, branches, and roots, of different trees and shrubs by slowly tunneling through the woody tissues and remaining a long time within their host. Thus they cause major economic damage (Tozlu and Özbek 2000; Vannatta *et al.* 2012; Bolu *et al.* 2018). However, a large number of its species are stem borers, and many are leaf miners, such as *Trachys* spp., and *Brachys* spp., some make galls on branches and twigs like *Agrilus* spp. and some bore through the roots of host trees as *Capnodis tenebrionis* (Trojan 2009; Bolu & Özgen 2011; Babmorad *et al.* 2014). Correct taxonomic categories of many of the species listed in the previous studies are not clear and some have been mistakenly identified. Therefore, the faunistic composition of the Iraqi fauna must be interrogated. So we aimed to correctly illustrate extra information about each species' synonymy, geographical distribution, and the larval host plants.

MATERIALS AND METHODS

Survey and specimens collection

During the seasonal surveys, the specimens were collected from forests, grassland, and orchards in different locations of the Erbil province, Kurdistan Region, Iraq, throughout years (2016 – 2018). Most of the locations were surveyed, and regarding other habitats, we have depended also upon the materials collected by most of the country's authors (Derwesh 1965; Shalaby *et al.*, 1966; Kaddou, 1967; El-Haidari *et al.*, 1971; Abdul-Rassoul 1976; Ali 2007). Various collecting methods were used; sweeping, beating of branches of trees and bushes; also various methods of trapping were used (Sakalian and Mario, 2004; Varandi *et al.*, 2009; Domingue *et al.*, 2013; Petrice *et al.*, 2013).

Identification of specimens

The specimens were identified by depending on the keys of genera and species, also samples were sent to the relevant experts, Dr. Mark G. Volkovitsh, and Dr. Svatopluk Bily. Moreover, to ascertain their identification, a number of larvae were reared on the stem of their host plants until they reached the adult stage. We also took advantage of the available literature (Obenberger 1926, 1946; Knopf 1971, 1975; Bilý 1999), for accurate geographical distribution in the present study, and the recent catalog of the family Buprestidae was

exploited, aligning to that used in the papers by (Bily and Volkovitsh 2001; Bellamy 2008; Ghahari *et al.* 2008; Varandi *et al.* 2009; Kubáň *et al.* 2014).

RESULTS AND DISCUSSION

A total number of 33 species (one identified only to the genus level) belonging to 17 genera and 5 subfamilies with representing 10 tribes were collected and determined from different locations of Erbil province, Kurdistan Region-Iraq. Most species reported here are typical taxa of the Palearctic region rather than those associated with the afro-tropical Region.

Subfamily Julodinae Lacordaire, 1857

Genus: *Julodis* Eschscholtz, 1829, type species *Buprestis fascicularis*, Linnaeus, 1758
Julodis andreae (Olivier, 1790)

Syn. *Buprestis ampliata* Marseul, 1865
Buprestis costifera Obenberger, 1919
Buprestis derasa Abeille de Perrin, 1904
Buprestis hampei J. Thomson, 1878
Buprestis lineata Kerremans, 1886
Buprestis lineigera Marseul, 1865
Buprestis sovitzii Steven, 1830
Buprestis subviolacea Abeille de Perrin, 1904
Buprestis tenuelineata Abeille de Perrin, 1904

Material Examined: Debaga, 35°52'41" N / 43°39'16" E, 365 m. 10 May 2016; Bn-Pirez, 36°10'15" N / 43°51'13" E, 212 m. 4 specimens, 4 June 2017, directly by hand. The host plant is *Acantholimon gulistanum* (Plumbaginaceae) (Sakenin *et al.*, 2008) and we collect the larval stage under *Cynodon dactylon*.

General Distribution: Iraq, Iran, Turkey, Syria, Azerbaijan, and Armenia (Bellamy, 2008; Kubáň and Volkovitsh, 2006).

Remarks: This species had a replacement name *Buprestis stevensii* E. Saunders, 1871, and also a homo name as *Buprestis setosa* Steven, 1830, according to (Löbl and Löbl, 2016), after checking the references of (Derwesh 1965; Kaddou 1967; Roberts 1972; Khalaf and Al-Omar 1974; Ali 2007) in Iraq, we face a controversy about the diagnosing of this species in which it has been incorrectly determined as *Julodis onopordi* (Fabricius, 1787), *J. onopordi andreae* Olivier, 1790 (British Museum list No. 2649, 3061), *J. onopordi ehrenbergi* Castelnau, 1835; *J. onopordi luteogramma* Marseul, 1865; *J. onopordi scovitzii* Steven, 1830; *J. onopordi stevensii* Saund, 1871, *J. onopordi sulcata*, Redtenbacher, 1843, *J. onopordi pilson* F. (subs. incorrect spelling). But during our survey we recorded the cutch grass, *Cynodon dactylon* as a host plant for the larval stage, which is the first record, so we are now positing that the entire previous name of the specimens collected by other Iraqi researchers was inaccurate and in Iraq, there is no *Julodis onopordi*.

Julodis armeniaca (Marseul, 1865)

Syn. *Buprestis cyrus* Obenberger, 1924
Buprestis Orientalis Kerremans, 1899

Material Examined: Shaqlawa, 36°24'15.585" N / 44°15'32" E, 834 m, 12 Jul. 2007, 4 specimens. The larval host plant is unknown, the adult beetles collected directly by hand on *Quercus* spp.

General Distribution: Iran, Syria, Turkey (Ghahari *et al.* 2012) and in Iraq reported by the authors (Derwesh 1965; Roberts 1972; Abdul-Rassoul 1976; Ali *et al.* 2011).

Julodis audouinii (Laporte and Gory, 1835)

Syn. *Buprestis audouinii* Laporte and Gory, 1835
Buprestis theryi Abeille de Perrin, 1900

Material Examined: Grdarasha, 36°04'46" N / 44°00'45" E, 425m, 2 Aug. 2017, 2 specimens. The larval host plant unknown and adults collected directly by hand.

General Distribution: Iran, Turkey (Kubáň and Volkovitsh 2006; Ghahari *et al.* 2015), and in Iraq reported by (Holdhous 1919; Al-Ali 1977; Bily 1982; Ali 2007; Ali *et al.* 2011).
Julodis intricata L. Redtenbacher, 1843

Syn. *Julodis cupreacaelata* Marseul, 1865
Julodis ruginota Marseul, 1865

Material Examined: Garawan-Rawanduz, 36°03'22" N / 44°36'16" E, 490m, 1 May 2016, 2 specimens. As well as a specimen borrowed from the insect museum of the Ministry of Agriculture/ Erbil. The adult collected by hand on the wild quince *Pyrus* spp.

General Distribution: Iran, Turkey, Syria, Israel (Bellamy, 2008; Kubáň *et al.*, 2014), and in Iraq was reported by (Holdhous 1919; Derwesh 1965; Abdul-Rassoul *et al.* 1988)

Julodis laevicostata Gory, 1840

Material Examined: Harir-Fatawa, 36°28'15" N / 44°22'53" E, 738m, 27 Apr. 2007, 2 specimens. Larval host plant unknown and the adult collected on *Avena sativa*.

General distribution: Iran, West Azerbaijan, Turkmenistan (Bellamy, 2008; Kubáň and Volkovitsh, 2006), and in Iraq reported by Obenberger (1926a).

Julodis speculifer Laporte, 1835

Syn. *Julodis iranica* Obenberger, 1923
Julodis monstrosa Abeille de Perrin, 1904

Material Examined: Shaqlawa 36°26'08" N/44°16'05" E, 930m, 4 May 2017, 3 specimens. Larval host plant unknown and adults were captured directly by hand.

General distribution: Iran, Jordan, Kuwait, Saudi Arabia (Bily *et al.*, 2011; Kubáň *et al.*, 2014; Makhan, 2012), and there are numerous authors who mentioned it in Iraq such as (Holdhous 1919; Roubal 1932; Al-Uthman 1970; Abdul-Rassoul 1976; Bily 1990)

Julodis syriaca (A. G. Olivier, 1790)

Syn. *Buprestis syriaca* A. G. Olivier, 1790

Julodis balthasari Obenberger, 1934

Julodis loeffleri Mandl and Pochon, 1957

Julodis philistina Obenberger, 1934

Material Examined: Korek Village, 36°15'51"N/44°07'41"E, 634m, 2 Jul. 2017, 3 specimens. Larval host plant unknown, the adults were collected directly on the grass land.

General distribution: Jordan, Syria, Iraq (Kubáň and Volkovitsh 2006; Ghahari *et al.* 2015).

Remarks: this species has many sub-species *Julodis syriaca anatolica* Kerremans, 1903, *Julodis syriaca distincta* Gory, 1840, *Julodis syriaca palmyrensis* Obenberger, 1923, based on the original description of *Buprestis syriaca* A. G. Olivier, 1790 (Löbl and Smetana 2006), and in Iraq this species has been reported under the name *Julodis distincta* Gory, 1840 by Holdhaus (1919); Derwesh (1965) and Khalaf and Al-Omar (1974) in which we believe it is represented as the subspecies.

Subfamily Polycestinae Lacordaire, 1857

Tribe Acmaeoderini Kerremans, 1893

Genus: *Acmaeodera* Eschscholtz, 1829, type species *Buprestis cylindrica* Fabricius, 1775

Acmaeodera (s.str.) brevipes (Kiesenwetter, 1858)

Material Examined: Sreshma-Choman, 36°40'05"N/44°42'35"E, 876m, 1 May 2017, 6 specimens. The larval host plant is *Amygdalus communis* and adults were collected by hand on *Convolvulus arvensis*.

General distribution: this species is distributed in south Europe in Albania, Bulgaria, Greece, Macedonia, Montenegro, Turkey, Iran as *brevipes brevipes* Kiesenwetter, 1858, and in Iraq, Syria, Jordan, Lebanon, and Israel as *Acmaeodera brevipes saducaea* Obenberger, 1946 (Volkovitsh 2004; Löbl & Smetana 2006; Löbl & Löbl 2016).

Remarks: this species has a replacement name as *Acmaeodera brevipes abeilleana* Obenberger, 1940 and homonym as *Buprestis abeillei* Obenberger, 1914, and also it has two sub-species *Acmaeodera brevipes brevipes* Kiesenwetter, 1858 (Syn. *B. praecox* Marseul, 1865); and *Acmaeodera brevipes saducaea* Obenberger, 1946 (Löbl and Löbl, 2016).

Acmaeodera (s.str.) pilosellae (Bonelli, 1812)

Syn. *Buprestis pilosellae* Bonelli, 1812

Material Examined: Chewa upper-Betwata, 36°20'47"N/44°34'22"E, 849m, 5 Aug. 2016, Julamerg-Khalifan 36°35'01"N / 44°23'58"E, 772, 1 May 2017, 3 specimens. Larval host plant unknown and the adult collected on *Convolvulus arvensis*.

General distribution: the species is distributed in South Europe, Turkey, Algeria as *Acmaeodera pilosellae pilosellae* Bonelli, 1812, and in Iraq, Israel, Syria, S Turkey as *Acmaeodera pilosellae syriaca* Abeille de Perrin, 1900; and in

Transcaucasia, Turkmenistan, Turkey, and Iran as *Acmaeodera pilosellae persica* Mannerheim, 1837,

Remarks: This species is reported by Derwesh (1965) as *Acmaeodera araxicola* Reitter, 1890 (British Museum No. 3462) which is actually a synonym for *A. pilosellae persica*.

Acmaeoderella (Carininota) farinosa (Reiche, 1856)

Syn. *Acmaeodera farinosa* Reiche, 1856

Acmaeodera dermestoides Frivaldszky, 1845

Acmaeodera lisae Bellamy, 1998

Material Examined: Pirumar-Choman, 36°37'31"N/44°52'55"E, 682m, 9 July 2007, 5 specimens. Larval host plant is *Quercus* spp. and the adults collected directly by hand on *Ammi majus*.

General distribution: Europe, Greece, and it was reported in Asia in the countries: Cyprus, Israel, Syria, Turkey (Löbl and Löbl, 2016; Löbl and Smetana, 2006; Volkovitsh, 2006a), and in Iraq reported as a new record by Ali (2007).

Genus: *Xantheremia* Volkovitsh, 1979, type species *Acmaeodera koenigi* Ganglbauer, 1888
Xantheremia sp.

Material Examined: Piran, 36°54'40" N / 44°21'24" E, 1153m, 3 specimens. The larval host plant unknown, the adults were collected on globe thistles *Echinops* spp.

General distribution: Asia in the Arab Emirates, Israel, Qatar, Saudi Arabia, and it is recorded in North Africa in Egypt (Volkovitsh, 2006 b, 2011).

Remark: after determination we concluded that this species belongs to *Xantheremia flavipennis* (Klug, 1829) group, and it is very similar to the species of *Xantheremia jelinki* Bily, 1983 from west Iran, *Xantheremia philistina* (Marsuel, 1865) and *Xantheremia freidbergi* Volkovitsh 2004 from Palestine, and *Xantheremia pantherinan* Bily 1979 from Saudi Arabia, but our species is different from all of them depending on the diagnostic characters. The genus is a new record and the species could be also new for Iraqi fauna.

Tribe: Ptosimini Kerremans, 1903

Genus *Ptosima* Dejean, 1833, type species *Buprestis novemmaculata* Fabricius, 1775

Ptosima undecimmaculata (Herbst, 1784)

Syn. *Buprestis confusa* A. Villa & G.B. Villa, 1833

Buprestis cyclops Marseul, 1865

Buprestis flavoguttata Illiger, 1803

Buprestis intermedia Demaison, 1904

Buprestis sexmaculata Herbst, 1784

Buprestis sexpunctata Villers, 1789

Buprestis tredecimmaculata Baudi di Selve, 1870

Buprestis volucris Gistel, 1857a

Material Examined: Mergasur, 36°51'54" N/44°15'55" E, 960m, 2 Aug. 2016, Pirumar-Choman, 36°41'06"N /

44°43'36"E, 876 m, 1 May 2017, 9 specimens were collected, included 4 adult beetles with 5 larvae on *Prunus domestica*. *P. microcarpa*, and *P. mahaleb*.

General distribution: it is widely distributed in Europe, North Africa, Neo-tropical region and Asia: Iraq, Iran, Cyprus, Israel, Jordan, Lebanon, Turkey, and Syria (Löbl and Smetana 2006; Löbl and Löbl 2016; Volkovitsh 2014).

Remark: this species had been recorded in Iraq as *Ptosima flavoguttata* Illiger, 1803 and *Ptosima undecimmaculata*; (Abdul-Rassoul *et al.* 1988; Knopf 1975; Al- Ali 1977).

Subfamily Chrysochroinae Laporte, 1835

Tribe: Chalcophorini Laporte, 1835

Genus: *Chalcophorella* Kerremans, 1903, type species *Buprestis stigmatica* Dalman, 1817

Chalcophorella (Chalcophorella) stigmatica (Dalman, 1817)

Syn. *Chalcophorella balcanica* Obenberger, 1936

Chalcophorella biimpresa Pic, 1916

Buprestis lefebvrei Laporte & Gory, 1836

Buprestis marseuli Garbiglietti, 1867

Chalcophora quadrimaculata L. Redtenbacher, 1850

Buprestis quadrinotata Klug, 1829

Material Examined: Shaqlawa, 36°24'22"N / 44°20'59"E, 638m, 21 Aug. 2016, 2 specimens, larval host plant is *Morus* sp. and *Pinus* sp., adult collected by hand on the same host plants.

General distribution: this species is widely distributed in Europe (Albania, Bosnia Herzegovina, Bulgaria, Greece, Macedonia), North Africa (Egypt, Lebanon) and Asia (Iran, Turkey, Cyprus, Israel, Jordan, Syria) (Löbl and Löbl 2016), and in Iraq reported by (Derwesh 1965; Roberts 1972; Kheri 1974; Abdul-Rassoul *et al.* 1988; Ali 2007, 2010).

Chalcophorella (Stigmatophorella) bagdadensis (Laporte and Gory, 1836)

Syn. *Chalcophorella amarensis* Obenberger 1942

Chalcophorella aureoscripta Mandl and Pochon 1957

Chalcophorella berthauti Mandl and Pochon 1957

Material Examined: Birisiya-Mergasur 36°53'40" N/44°18'21" E, 1153m, 6 Sept. 2017, 5 specimens, larval host plants are *Prunus armeniaca* and *Ficus* spp. the adults were collected directly by hand on the same host plant.

General distribution: Known in Europe in Armenia and widely distributed in Asia: Turkey, Syria and it is recorded from localities in Iran as *bagdadensis freyi* Obenberger 1942 (Kubáň 2006), and in Iraq (Derwesh 1965; Roberts 1972; Abdul-Rassoul *et al.* 1988; Ali 2007, 2010).

Chalcophorella (Stigmatophorella) quadrioculata (L. Redtenbacher, 1843)

Syn. *Chalcophorella akbesiana* Cobos, 1957

Material Examined: Chewa-Betwata 36°20'47" N /44°34'22" E, 849m, 5 Oct. 2017, 6 specimens, larval host plants are *Amygdalus communis*, *Malus domestica*, *Prunus armeniaca*, *Punica granatum*, *Pyrus domestica*, and *Salix* spp., the adults were captured directly by hand and air net.

General distribution: this species is closely distributed in Europe (Georgia), and in Asia: Syria (Obenberger 1926), Turkey (Niehuis, 1989), and Iraq reported by (Derwesh 1965; Knopf 1971; Kheri 1974; Al- Ali 1977; Saad and Ameen 1983; Abdul-Rassoul *et al.* 1988).

Tribe: Dicerini Gistel, 1848

Genus: *Capnodis* Eschscholtz, 1829, types species *Buprestis tenebricosa* A.G. Olivier, 1790

Capnodis cariosa (Pallas, 1776)

Syn. *Buprestis bruttia* V. Petagna, 1787

Capnodis iranica Bogatchev, 1947

Material Examined: Choman 36°40'06" N / 44°42'36" E, 933m, 1 May 2016, 2 specimens. Larval host plants are unknown; the adult was collected by air net on the turpentine tree *Pistacia mutica*.

General distribution: Southern Europe (Azerbaijan, Albania, Armenia, Bosnia Herzegovina, Bulgaria, Croatia, Georgia, Greece, Italy, Macedonia, Montenegro, Romania), South European Territory Ukraine. In Northern Africa (Egypt), it is also widely distributed in central Asia (Israel, Jordan, Syria, Turkey, Lebanon)(Löbl and Löbl, 2016), and in Iraq was reported by the authors (Sage 1961; Derwesh 1965; Kheri 1974; Ali 2007, 2012).

Remarks: this species has two subspecies *Capnodis cariosa cariosa* Pallas, 1776 and *Capnodis cariosa hauseri* Obenberger, 1928, the previous one is more widely distributed in Europe, North Africa and Asia (Iraq), while the other subspecies is restricted to Iraq, Iran, and Turkey (Löbl and Smetana 2006; Löbl and Löbl 2016).

Capnodis miliaris (Klug, 1829)

Syn. *Buprestis daedalea* Steven, 1830

Material Examined: Julamerg-Khalifan, 36°35'1" N/44°23'58" E, 996m, 26 April 2016, Shaqlawa, 36°24'22" N / 44°20'59" E, 872 m, 5 May 2017, 6 specimens, larval host plant is *Populus nigra* and *Populus alba*, and adults represent on their same host trees.

General distribution: Europe in the countries of Azerbaijan, Armenia, Georgia, Greece, Italy, South European Territory, and it is also, widely distributed in Asia Iran, Israel, Jordan, Kyrgyzstan Kazakhstan, Lebanon, Syria, Turkmenistan, Turkey, Uzbekistan, and it recorded in Iraq by (Derwesh 1965; Kaddou 1967; Abdul-Rassoul 1976; Abdul-Rassoul *et al.* 1988).

Capnodis porosa (Klug, 1829)

Syn. *Buprestis hypocrita* Géhin, 1855

Buprestis mannerheimii Faldermann, 1835

Material Examined: Rawanduz, 36°03'02" N/44°36'16" E, 490m, 1 May 2017, 6 specimens. The larval host plants are unknown, and the adult was collected on *Rhus* sp., and *Rumex* trees.

General distribution: Europe (Azerbaijan, Albania, Armenia, Bosnia Herzegovina, Bulgaria, Croatia, Georgia, Greece, Macedonia, Montenegro, South European Territory), and it is widely distributed in Asia: Iran, Cyprus, Israel, Jordan, Lebanon, Syria, and Turkey (Löbl and Smetana, 2006), in Iraq reported by (Khalaf and Al-Omar 1974; Kheri 1974; Ali 2007, 2012).

Capnodis tenebricosa (A.G. Olivier, 1790)

Syn. *Buprestis alternata* Obenberger, 1945

Buprestis anomala Fairmaire, 1895

Buprestis aurosparsa Abeille de Perrin, 1891

Buprestis lugens Küster, 1846

Buprestis occidentalis Obenberger, 1945

Buprestis simulatrix Obenberger, 1916

Material Examined: Shaqlawa 36°26'08" N/44°16'05" E, 930m, 20 May 2007, 8 specimens, larval host plants are *Prunus dulcis*, *Prunus armeniaca*, and the adults were collected directly on the host trees by hand.

General distribution: this species is announced and widely distributed in Europe in the countries: Azerbaijan, Albania, Armenia, Bosnia Herzegovina, Bulgaria, Croatia, France, Georgia, Greece, Italy, Kazakhstan, Malta, Macedonia, Moldavia, Montenegro, Portugal, Romania, Spain, Russia or South European Territory, Ukraine and distributed in North Africa in Algeria, Morocco, Tunisia and also it is commonly distributed in most countries of Asia such as Iran, Israel, Jordan, Kazakhstan, Lebanon, Syria, Turkey, and Turkmenistan (Löbl and Löbl, 2016) and it is recorded in Iraq by many authors (Holdhous 1919; Obenberger 1945; Derwesh 1965; Knopf 1971; Roberts 1972; Abdul-Rassoul 1976; Al-Ali 1977).

Capnodis tenebrionis (Linnaeus, 1760)

Syn. *Buprestis aerea* Laporte and Gory, 1836

Buprestis naevia Gmelin, 1790

Buprestis tenebrioides Pallas, 1781

Buprestis variegata Goeze, 1777

Material Examined: Grdarasha 36°06'46" N/44°00'45" E, 415m, 2 June 2016, Korek Village 36°15'51" N/44°07'41" E, 634m, 29 April 2017, 6 specimens. The larval host plants are *Prunus armeniaca*; *Prunus persica*, and *Prunus cerasus*, adults were collected directly under the host trees.

General distribution: This species is widely distributed in Europe in Azerbaijan, Albania, Armenia, Austria, Bosnia Herzegovina, Bulgaria, Croatia, Russia, Czech Republic, France, Germany, Georgia, Greece, Hungary, Italy, Kazakhstan, Malta, Macedonia, Moldavia, Montenegro, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, South European Territory, Sweden, Ukraine and it was recorded in North Africa in the countries Algeria, Morocco,

Tunisia, and it is recorded in most countries among Asia too, such as Iran, Turkey, Cyprus, Israel, Jordan, Lebanon, Syria, Turkmenistan (Löbl and Smetana 2006; Löbl and Löbl 2016) and in Iraq was reported by (Kheri 1974; Knopf 1975; Ali 2007, 2012).

Capnodis carbonaria (Klug, 1829)

Syn. *Buprestis lefebvrei* Laporte & Gory, 1836

Material Examined: Grdarasha 36°06'46" N/44°00'45" E, 415m, 22 April 2016, Khabat 36°15'24" N/43°39'29" E, 709m, 2 May 2016, 5 specimens. The larval host plants are *Prunus armeniaca*, *Prunus avium*, *Prunus amygdalus*; the adults were collected near the base and the stem of the host trees, and obtained by keeping and larval rearing within the branches of infected trees.

General distribution: it is widely distributed in Europe (Azerbaijan, Armenia, Bosnia Herzegovina, Bulgaria, Georgia, Greece, Macedonia, Russia or South European Territory, Ukraine) and distributed in North Africa in Algeria, also it is distributed in most countries of Asia, such as Israel, Jordan, Cyprus Lebanon, Syria, and Turkey (Löbl and Löbl, 2016).

Remarks: this species has not been recorded in Iraq according to Löbl and Löbl (2016), yet it has been locally cited by (Derwesh 1965; Kheri 1974; Abdul-Rassoul 1976 ; Ali 2007, 2012).

Genus: *Cyphosoma* Mannerheim, 1837, type species *Buprestis tatarica* Pallas, 1771

Cyphosoma euphraticum (Laporte and Gory, 1839)

Syn. *Coeculus escaleraei* Obenberger, 1913

Material Examined: Malakan 36°21'48" N / 44°35'24" E, 848m, 5 May 2007, 2 specimens. Larval host plant unknown, the adult was collected directly by hand on the wild plants.

General distribution: This species is closely distributed in Asia in the countries of Iraq, Iran, Israel, and Syria (Kubáň 2006; Ghahari *et al.* 2015).

Remarks: in Iraq this species has been reported for the first time by Derwesh (1965) in (British Museum list No. 3462), followed by it being reported as *Cyphosoma escaleraei* Obenburger, 1913 by Shalaby *et al.* (1966); Abdul-Rassoul *et al.* (1988), which is actually regarded as a synonym for *Cyphosoma euphratica* (Laporte and Gory, 1839).

Genus: *Latipalpis* Solier, 1833, type species *Buprestis plana* A.G. Olivier, 1790

Latipalpis (Palpilatis) johanidesi Niehuis 2002

Material Examined: Garawan-Rawanduz 36°03'02" N / 44°36'16" E, 490m, 1 May 2017, 8 specimens. The larval host plant is *Quercus* spp, the adult was collected on the same host.

General distribution: This species is closely distributed in the world, only being recorded in some countries such as Iran,

and Turkey (Ghahari, Volkovitsh, and Bellamy, 2015; Löbl and Löbl, 2016). While in Iraq it has been recorded by (Niehuis 2002).

Genus: *Perotis* Dejean, 1833, type species *Buprestis lugubris* Fabricius, 1777

Perotis cuprata (Klug, 1829)

Syn. *Aurigena capnodiformis* Reitter, 1883

Buprestis cuprea Hampe, 1852

Aurigena orientalis Laporte and Gory, 1836

Material Examined: Fatawa-Harir 36°28'15" N / 44°72'53" E, 890m, 5 June 2007, 3 specimens, larval host plant unknown, and the adult collected by air net on *Euphorbia* spp.

General distribution: In Europe distributed in Azerbaijan, Armenia, and it is widely distributed in Asia (Iran, Jordan, Lebanon, Syria, Turkey), while in Iraq it is recorded by (Derwesh 1965; Abdul-Rassoul et al. 1988 and Ali 2007).

Perotis lugubris (Fabricius, 1777)

Syn. *Aurigena subcostata* Reitter, 1889

Material Examined: Shaqlawa 36°24'22"N / 44°20'59"E, 872 m, June and July 2007, 15 specimens, the larval host plants unknown, but the adults were collected directly by hand and light trap on many different trees namely, *Crataegus* spp., *Fraxinus* sp., *Malus domestica*, *Prunus armeniaca*, *Pyrus communis*, and *Robus sanctus*.

General distribution: in Europe (Azerbaijan, Armenia, Georgia), and in Asia it is distributed in Iran, Turkmenistan, and Turkey (Bellamy, 2008; Ghahari, Volkovitsh, and Bellamy, 2015; Kubán et al., 2014), while in Iraq it has been reported by (Roberts 1972; Khalaf and Al-Omar 1974; Kheri 1974; Knopf 1975; Al- Ali 1977; Abdul-Rassoul et al. 1988; Ali 2007).

Remarks: this species has six sub-species *Perotis lugubris aereiventris* Reiche, 1861, *P. lugubris lugubris* Fabricius, 1777, *P. lugubris meridionalis* Izzillo and Sparacio, 2011, *P. lugubris mutabilis* Abeille de Perrin, 1896, *P. lugubris transcaspica* Semenov, 1891; and only *P. lugubris longicollis* Kraatz, 1880, had been recorded in Iraq (Löbl and Löbl, 2016).

Tribe: Poecilonotini Jakobson, 1913

Genus: *Lampetis* Dejean, 1833, type species *Buprestis bioculata* A.G. Olivier, 1790

Lampetis (Spinthoptera) mimosae (Klug, 1829)

Syn: *Buprestis interrupta* Laporte and Gory, 1837

Material Examined: Bn-Pirez, 36°10'15" N / 43°51'13" E, 212m, 8 May 2016, 8 specimens. The larval host plant is unknown and the adults were collected directly on Pine tree.

General distribution: Europe in Greece, and it is distributed in North Africa in Algeria, Egypt, Libya, Morocco, and Tunisia, and also it is widely distributed in Asia in most of the countries such as Iran, Israel, Jordan, Lebanon, Oman, Pakistan, Saudi Arabia, Syria, Turkey, Yemen, and Afro tropical Region (Bellamy, 2008; Bily, 1984; Bílý et al., 2011).

Remarks: three homonyms (*Buprestis catenulata* Laporte and Gory, 1837; *Buprestis rugosa* Palisot de Beauvois, 1807; *Psiloptera cyanea* Alfieri, 1976) with two replacement name (*Psiloptera composita* Marseul, 1865; *Lampetis kubani* Bellamy, 2007) reference was made to this type without any sign of their distribution in Iraq (Löbl and Löbl, 2016). While this species was recorded in Iraq under different names, *Lampetis catenulata rubra* Obenberger, 1924; *Lampetis mimosae* Klug, 1829; *Lampetis rugosa* Beauvais, 1807; *Psiloptera catenulate* Klug, 1829, *Psiloptera catenulate rubra* Obenberger, 1923 (Holdhaus 1919; Obenberger 1923, 1926; Roubal 1932; Abdul-Rassoul et al. 1988).

Tribe: Sphenopterini Lacordaire, 1857

Sphenoptera (Trobeopeltis) servistana Obenberger, 1929

Syn. *Sphenoptera kambyes* Obenberger, 1930

Sphenoptera dhiaahmedi Cobos, 1956

Material Examined: Grdarasha 36°06'46" N / 44°00'45" E, 415m, 20 June 2016, Goratu- Mergasur 36°51'54" N / 44°15'55" E, 960 m, 6 Sept. 2017, 36 specimens. The larval host plants are *Prunus armeniaca*, *Prunus vulgaris*, *Prunus persica*, *Pyrus communis*, *Prunus avium*, *Cydonia vulgaris*, and the adult was collected directly by hand and through rearing.

General distribution: this species spread only in Asia in Iraq, Iran, and Turkmenistan (Kalashian and Volkovitsh, 2006; Löbl and Löbl, 2016)

Remarks: this species belong to the subgenus *Trobeopeltis* which are quite limited in their distribution (Kalashian and Karagyan, 2016), and it is reported in Iraq under *Sphenoptera dhiaahmedi* Cobos, 1956 (Al- Ali 1977; Cobos 1956; Derwesh 1965; Kheri 1974).

Subfamily Buprestinae Leach, 1815

Tribe: Anthaxiini Gory and Laporte, 1815

Genus: *Anthaxia* Eschscholtz, 1829, type species *Buprestis nitida* P. Rossi, 1794

Anthaxia (Haplanthaxia) cichorii (A.G. Olivier, 1790)

Syn. *Buprestis azurea* Abeille de Perrin, 1909

Buprestis chamomillae Mannerheim, 1837

Buprestis gibbicollis Rey, 1891

Buprestis parthica Obenberger, 1914

Buprestis turcomanica Obenberger, 1938

Material Examined: Choman, 36°41'06" N / 44°43'36" E, 876 m, 1 May 2017, 2 specimens. The larval host plant is unknown and adults were collected on the weed's flower by

air net.

General distribution: this species is widely distributed in Europe in Azerbaijan, Albania, Armenia, Austria, Belgium, Bosnia Herzegovina, Bulgaria, Croatia, Russia: Central European Territory, Czech Republic, France, Georgia, Germany, Greece, Hungary, Italy, Macedonia, Moldavia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, South European Territory, Switzerland, Ukraine and in Asia distributed in Iraq, Iran, Israel, Jordan, Lebanon, Syria, and Turkey (Bellamy 2008; Bílý 1995; 2016; Kubáň *et al.* 2014).

Anthaxia (Anthaxia) truncata (Abeille de Perrin, 1900)

Syn. *Anthaxia adiyamana* Svoboda, 1994

Anthaxia lgoeckii Obenberger, 1917

Anthaxia talyshensis Bílý, 1991

Material Examined: Garawan-Rawanduz 36°03'02" N / 44°36'16" E, 490m, 15 April 2007, Piran, 36°54'40" N / 44°21'24" E, 1153m, 6 May 2017, 3 specimens, the larval host plant is unknown, adults were collected directly on the flower of wild plants.

General distribution: this species is distributed in Europe in Azerbaijan, Armenia, and Russia: South European Territory; and it is dispersing in Asia, Iraq, Iran, Israel, Syria, and Turkey (Bílý 1995, 2006; Bílý *et al.* 2011; Löbl & Löbl 2016)

Tribe: Chrysobothrini Gory and Laporte, 1938

Genus: *Chrysobothris* Eschscholtz, 1829: type species *Buprestis chrysostigma* L., 1758

Chrysobothris (Chrysobothris) affinis (Fabricius, 1794)

Syn. *Buprestis congener* Paykull, 1799

Chrysobothris materculae Holyński, 1975

Material Examined: Khabat 36°15'24" N / 43°39'29" E, 709m, 5 specimens. The larval host plant is *Eucalyptus* sp., and the adult was collected by rearing the branches of *Eucalyptus* sp.

General distribution: it is widely distributed in Europe in Albania, Austria, Belgium, Bosnia Herzegovina, Bulgaria, Belarus, Croatia, Russia: Central European Territory, Czech Republic, Denmark, Finland, France, Germany, Georgia, Greece, Hungary, Italy, Kosovo, Kazakhstan, Latvia, Liechtenstein, Luxembourg, Macedonia, Moldavia, Montenegro, The Netherlands, Norway, Northern Territory, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Russia: South European Territory, Sweden, Switzerland, Ukraine and distributed in Asia: Turkey, Cyprus, Syria, Iran (Kubáň and Volkovitsh 2006; Varandi *et al.* 2009; Bílý *et al.* 2011; Löbl and Löbl 2016), and in Iraq recorded by (Knopf, 1975).

Chrysobothris (Chrysobothris) parvipunctata Obenberger, 1914

Syn. *Chrysobothris beelsoni* Obenberger, 1928

Chrysobothris kheirii Cobos, 1970

Chrysobothris zarudniana Semenov & Richter, 1934

Material: Grdarasha 36°06'46" N / 44°00'45" E, 415m, 5 July 2016, Korek Village 36°11'48" N / 44°09'39" E, 642m, 12 June 2017, 9 specimens. The larval host plants are *Prunus domestica*, *P. persicae*, *Punica granatum*, *Pyrus communis* the adult was obtained by keeping and rearing the larvae within the branches and stems of the infected host trees.

General distribution: Asia in Iraq, Iran, Arab Emirates, Afghanistan, Pakistan, Turkmenistan, and India Bílý, 2000; Bílý *et al.*, 2011; Knopf, 1971; Kubáň *et al.*, 2014)

Remarks: this species had been reported in Iraq under the name *Chrysobothris beelsoni* Oben., 1928; *Chrysobothris beelsoni kheirii* Cobos, 1970 Cobos 1970(; Kheri 1974; El-Haidari *et al.* 1971).

Tribe: Melanophilini Bedel, 1921

Genus: *Melanophila* Eschscholtz, 1829, type species *Buprestis acuminata* De Geer, 1774

Melanophila cuspidata (Klug, 1829)

Syn. *Buprestis acutespina* Reitter, 1893

Buprestis aequalis Mannerheim, 1837

Buprestis aerata A. Costa, 1883

Buprestis jakovlevi Semenov, 1900

Buprestis oxyura Marquet, 1874

Material: Kani-linja, Mergasur 36°59'34" N/44°19'30" E, 734 m, 6 Sept. 2017; Harir-Shinawa, 36°28'15" N/44°72'53" E, 890m, 20 June 2016, 11 specimens. The larval host plant is *Salix* spp. and *Pinus* ssp., and the adults collected by rearing the larvae within the infected host.

General distribution: In Europe distributed in Azerbaijan, Albania, Armenia, Bosnia Herzegovina, Bulgaria, Croatia, France, Georgia, Greece, Italy, Malta, Macedonia, Montenegro, Portugal, Slovenia, Spain, and also recorded in North Africa in the countries of Algeria, Egypt, Libya, Morocco, and Tunisia. In Asia distributed in Afghanistan, Cyprus, Iran, Israel, Jordan, Kyrgyzstan, Kazakhstan, Lebanon, Syria, Tajikistan, Turkmenistan, Turkey, Uzbekistan, and Afro-tropical Region (Kubáň *et al.*, 2014) in Iraq it has been reported by (Khalaf and Al-Omar, 1974).

Genus: *Trachypteris* Kirby, 1837, type species *Buprestis decostigma* Fabricius, 1787

Trachypteris picta (Pallas 1773)

Syn. *Buprestis picta* Pallas, 1773

Material: Khalifan, 36°35'1" N/44°23'58" E, 996m, 26 April 2016, Chewa-Betwata 36°22'24" N / 44°34'27" E, 812m, 5 June 2017, 8 specimens. The larval host plant is *Populus nigra*, and the adults were collected on the same host.

General distribution: it is widely distributed in many regions except the Antarctica, in Europe distributed in Azerbaijan, Albania, Armenia, Austria, Bosnia Herzegovina, Bulgaria, Belarus, Croatia, Czech Republic, France, Georgia, Greece, Hungary, Italy, Macedonia, Moldavia, Montenegro, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, and

Russia: South European Territory, Switzerland and Ukraine. It is also distributed in North Africa from Algeria, Morocco, and Tunisia. It is distributed in Asia from the countries of Iraq, Iran, Israel, Cyprus, Turkey, Syria, and Neotropical Region (Löbl and Smetana 2006; Ghahari *et al.* 2015; Löbl and Löbl 2016).

Remarks: according to the Catalogue of Palearctic Coleoptera this species had three sub-species *Buprestis picta decostigma* Fabricius, 1787, *Melanophila picta indica* Théry, 1930, and *Buprestis picta picta* Pallas, 1773 in which for Iraq only the subspecies *Buprestis picta decostigma* Fabricius, 1787 had been referred (Löbl and Löbl, 2016), while the local papers had mentioned and determined this species as *Melanophila picta* Pall; *Melanophila picta* ssp. *decastigma* (Derwesh 1965; Shalaby *et al.* 1966; Roberts 1972; Ali 2007).

Subfamily Agrilinae Laporte, 1835

Tribe: Agrilini Laporte, 1835

Genus: *Agrilus* Curtis, 1825, type species *Buprestis viridis* Linnaeus, 1758

Agrilus ulaangomiensis Cobos, 1972

Syn. *Agrilus emeljanovi* Alexeev, 1975

Agrilus subelegans Cobos, 1972

Material: Julamerg- Khalifan 36°35'01" N / 44°23'58" E, 996m, 1 May 2017, 3 specimens, larval host plant unknown, but adults collected on Acer tree.

General distribution: this species is just distributed in the continent of Asia, and recorded in the countries of Mongolia, Russia: West Siberia (Bellamy, 2008; Löbl and Löbl, 2016).

Remark: this species had been reported by Ali (2007) as a new record for Iraq.

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