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ORIGINAL ARTICLE

CRABRONID WASPS: AN UPDATED CHECKLIST FROM IRAQ



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ABSTRACT

The checklist of Iraqi crabronid wasps has been updated due to this work. A total of 67 species are listed belonging to 29 genera, across 10 tribes within five subfamilies. The species distribution is also provided, and an identification key was developed to differentiate the high taxa.

Keywords: Apoid wasps, Hymenoptera, Iraqi fauna, Square-headed, Iraq, Taxa.

INTRODUCTION

The family Crabronidae, is commonly referred to as square-headed wasps, was defined by Bohart and Menke (1976). This family is traditionally placed within the superfamily Apoidea, which includes bees, sphecoid wasps, and apoid wasps. Historically, it was classified under the group Spheciformes, which also includes Ampulicidae, Sphecidae, Crabronidae, and Heterogynaidae (Melo, 1999).

In Iraq, several taxonomic studies have been conducted on this family. For instance, Antropov (2007) described *Guichardus assyriacus* Antropov, 2007, and Schmid-Egger (2007) recorded *Lithium baghdadensis* Schmid-Egger, 2007. Augul (2017) developed a key to the species of *Cerceris* Latreille, 1802. Later Hamodee *et al.* (2023) recorded two new species of *Cerceris*, including *Cerceris dorsalis* Eversmann, 1849 and *Cerceris priesneri* Mochi, 1939. Furthermore, Hamodee and Shafeeq (2023) described and illustrated a new taxon, *Oxybelochardus iraqensis*; as well as the female of this taxon was described and illustrated by Augul and Hamodee (2025).

This investigation has potential ecological significance, serving as an indicator of biodiversity health. Therefore, the study aims to provide valid names, update the Crabronidae list, and present synonyms and distribution data.

Crabronid wasps

MATERIALS AND METHODS

Sampling: An irregular survey of the crabronid wasps was conducted from March 2023 to May 2024 across various areas, including the following provinces: Baghdad, Diyala, Wasit, Al-Anbar, and Salahaddin. Surveys were performed in both cultivated and wild fields, including plants, land, and potential nesting sites such as dry tree branches. Collections were made by the team from the Iraq Natural History Research Center and Museum, University of Baghdad using aerial and sweep nets.

Examination of Specimens: Wasps were preserved after drying and pinning, accompanied by the collection date, location, and taxonomic information. Morphological analysis was performed using a dissecting microscope (OPTIKA) and an iPhone X-Max camera, with illustrations produced using a Camera Lucida. Scale bars were included in the images for reference.

Identification: The subfamilies, tribes and genera were identified applying the keys of Bohart and Menke (1976), adapted for Iraqi specimens obtained in this study. The scientific nomenclature was updated and cross-checked with Pulawski (2003), GBIF Secretariat (2024), and other catalogues, relevant checklists, and articles referenced under the distribution of species sections.

Terminology and abbreviations: The morphological terminology used in the identification follows the framework established by Bohart and Menke (1976). The abbreviations used in the current paper are as follows:

INHRCM- Iraq Natural History Research Center and Museum –University of Baghdad; S- sternum; SMC- submarginal cell of forewing; T- tergum.

RESULTS AND DISCUSSION

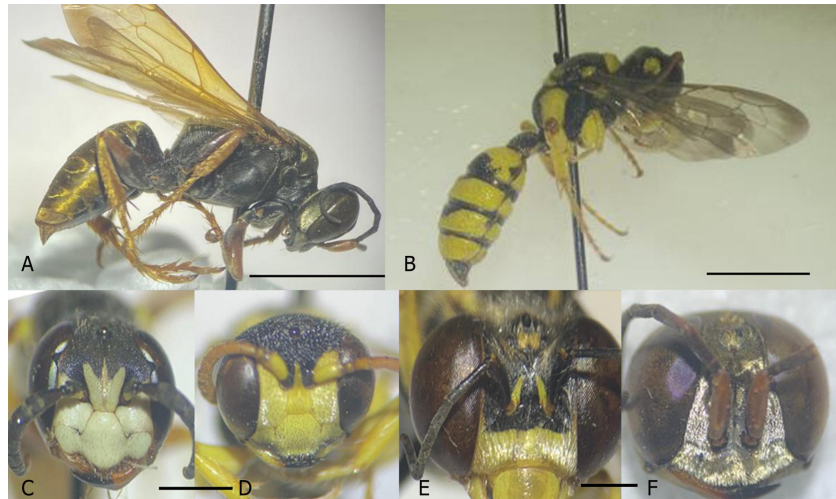
This study reports 67 species of crabronid wasps from 10 tribes, 5 subfamilies, and 29 genera. The distribution of these species is also provided.

Key to subfamilies and tribes of Crabronidae:

- 1- Gaster petiolate, composed of sternum I only (Fig.A)
 Pemphredoninae Forewing with three SMC
 (Fig.B) Psenini
 - Gaster variable, sessile (Pl. A); if petiolate composed of T and S (Pl. B) 2
- 2- Clypeus tripartite (Pl. C, D) Philanthinae 3
 - Clypeus not divided (Pl. E, F) 4
- 3- Inner orbit of compound eye notched (Pl. C) Philanthini
 - Inner orbit of compound eye complete (Pl. D)..... Cercerini
- 4- Inner orbits strongly converging above or holoptic (Fig. C); midtibiae with two apical spurs
 (Fig. D) Astatinae Eyes holoptic in males (Fig. C) Astatini

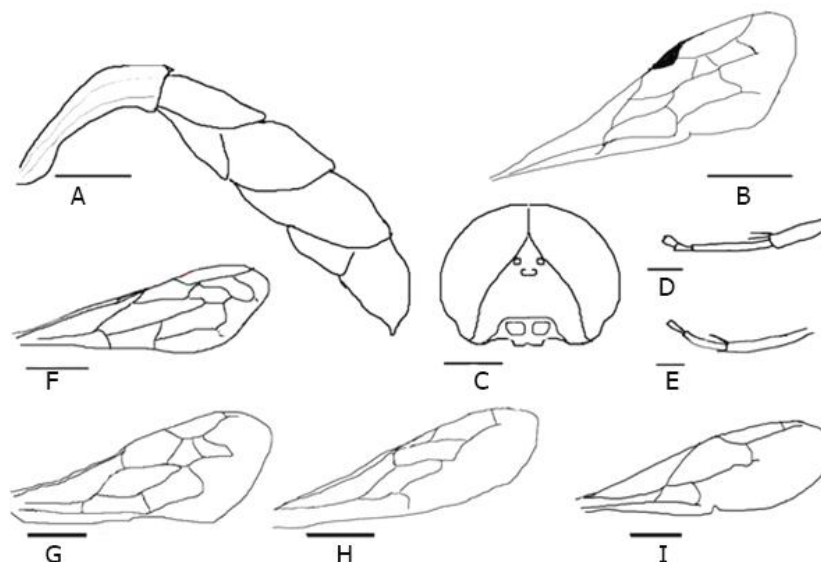
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- Inner orbits variable, parallel, converging below; if converging above, midtibiae with one apical spur (Fig.E) 5
- 5- Antennal sockets entry way above frontoclypeal suture (Pl.E) Bembicinae
 Prestigmal distance of SMC in forewing markedly longer than half total cell distance (Fig. F) Bembicini
- Basal scape insertion just above or contiguous with frontoclypeal suture (Pl. F) Crabroninae..... 6
- 6- Forewing with three SMC (Fig. G)..... Larini
- Forewing with one or two SMC (Fig. H, I)7
- 7- SMC separate from discoidal cell (Fig.H) Crabronini
- SMC merged with discoidal cell (Fig.I) Oxybelini



Plates (1): Main characters of Crabronidae family; (A) ♀ *Liris haemorrhoidalis* (Lateral view), (B) ♂ *Cerceris bupresticida* (Lateral view), (C) Head of ♂ *Philanthus triangulum* (Frontal view), (D) Head of ♂ *Cerceris bupresticida* (Frontal view), (E) Head of ♂ *Bembix oculata* (Frontal view), (F) Head of ♀ *Liris haemorrhoidalis*. [Scale bar (A) 5mm, (B-F) 1mm].

Crabronid wasps



Figures (1): Main characters of Crabronidae family; (A) ♀ Gaster of *Mimumesa unicolor* (Lateral view), (B) Forewing of *M. unicolor*, (C) Head of ♂ *Astata boops* (Frontal view), (D) Midtibia of ♂ *A. boops*, (E) Midtibia of *Ammatomus rufonodis*. Forewings of (F) ♂ *Ammatomus rufonodis*, (G) ♀ *Liris haemorrhoidalis*, (H) ♀ *Lindenius* sp., (I) ♂ *Oxybelus lamellatus*. [Scale bar: 0.5mm (A-E, 8, 9); 1mm (F-G)].

(A) Subfamily: Pemphredoninae

Tribe, Psenini

Genus, *Ammoplanus* Giraud, 1869

Ammoplanus marathroicus (De Stefani Perez, 1887)

Distribution: Iraq (Mokrousov, 2017). Austria, Bulgaria, Cyprus, France, Germany, Greece, Hungary, Italy, Russia, Spain, China, Iran, Jordan, Kyrgyzstan, Mongolia, Syria, and Türkiye, Morocco, and Tunisia (Jahantigh *et al.*, 2017).

Genus, *Diodontus* Curtis, 1834

Diodontus minutus (Fabricius, 1793)

Distribution: Iraq (de Beaumont, 1961). Austria, Belarus, Bulgaria, Croatia, Denmark, France, Germany, UK, Greece, Hungary, Italy, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Türkiye, Ukraine, Afghanistan, China, Cyprus, Iran, Kazakhstan, Korea, Kuwait, Mongolia, Syria, Turkmenistan, Uzbekistan, Sudan, Tunisia, and USA (Antropov, 2017).

Genus, *Mimumesa* Malloch, 1933

Mimumesa unicolor (Vander Linden, 1829)

Materials (2♀): Wasit Province, Al-Suwaira City, 32°52'20.9"N 44°57'16.2"E, 21. x.2023.

Distribution: Iraq (Nemkov, 2009). Austria, Belarus, Bulgaria, Croatia, Czech Republic,

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Denmark, Cyprus, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Türkiye, UK, Sudan and Tunisia, and USA (Jahantigh *et al.*, 2017). Afghanistan, Iran, Korea, Pakistan, Kazakhstan, Tajikistan, Turkmenistan, Kuwait, Mongolia, Syria, China, and Uzbekistan (Antropov, 2017).

Genus, *Psenulus* Kohl, 1897

Psenulus meridionalis de Beaumont, 1937

Distribution: Iraq (de Beaumont, 1961). Austria, Bulgaria, Croatia, France, Germany, Greece, Hungary, Italy, Poland, Romania, Russia, Serbia, Slovakia, Spain, Switzerland, Türkiye, Ukraine, Afghanistan, Azerbaijan, China, Iran, Jordan, Kazakhstan, Pakistan, Syria, and Uzbekistan (Jahantigh *et al.*, 2017).

Genus, *Psen* Latreille, 1796

Note: This genus was recorded in Iraq as *Psen* sp. by Khalaf and Al-Omar (1974).

Tribe, **Pemphredonini**

Genus, *Pemphredon* Latreille, 1796

Pemphredon lethifer (Shuckard, 1837)

Distribution: Iraq (Khalaf And Al-Omar, 1974). Austria, Belarus, Belgium, Bulgaria, Cyprus, Russia, Croatia, Denmark, Finland, France, Germany, UK, Greece, Hungary, Ireland, Italy, Malta, Netherlands, Poland, Portugal, Romania, Türkiye, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Canada, and USA (Jahantigh *et al.*, 2017). Azerbaijan, China, Iran, Japan, Kazakhstan, Korea, Mongolia, Tajikistan, Kyrgyzstan, Afghanistan, and Uzbekistan (Antropov, 2017).

(B) Subfamily: **Philanthinae**

Tribe, **Cercerini**

Genus, *Cerceris* Latreille, 1802

Cerceris arenaria (Linnaeus, 1758)

Distribution: Iraq (Kaddou, 19670). Albania, Croatia, Czech Republic, Germany, Greece, Italy, Slovakia, Türkiye, Ukraine, Japan, Kazakhstan, Kyrgyzstan, and Mongolia (Tsuneki, 1971).

Cerceris dorsalis Eversmann, 1849

Distribution: Iraq (Hamodee *et al.*, 2023). Türkiye, Russia, Ukraine, Iran, Afghanistan, China, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, and Mongolia (Jahantigh *et al.*, 2017).

Cerceris bupresticida Dufour, 1841

Materials (2♂♂, 1♀): 1♂, 1♀: Iraq, Wasit Prov., Al-Suwaira City, 32°52'18.2"N 45°01'19.4"E, 1.v.2023. 1♂: Wasit Prov., Al-Suwaira City, 32°52'20.9"N 44°57'16.2"E, 21. x.2023.

Distribution: Iraq (Morice, 1921). Iran, Afghanistan, Kazakhstan, Mongolia, China (Tsuneki, 1971). Tunisia (Ben Khedher and Erol, 2024).

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Cerceris chlorotica Spinola, 1839

Distribution: Iraq (Morice, 1921). North Africa and Sudan (Schmidt, 2000).

Cerceris hortivaga Kohl, 1880

Materials (4♂♂, 2♀♀): 2♂♂, 2♀♀: Wasit Prov., Al-Suwaira City, 32°52'18.2"N 45°01'19.4"E, 1. v.2023. 2♂♂: Wasit Prov., Al-Suwaira City, 32°52'20.9"N 44°57'16.2"E, 21.x.2023.

Distribution: Iraq (Kaddou, 1967). France, Russia, Siberia, Japan, China, and Korea (Schmidt, 2000).

Cerceris luxuriosa Dahlbom, 1845

Distribution: Iraq (Morice, 1921). Egypt, Sudan, and Libya (Guiglia, 1932).

Cerceris pallidula Morice, 1897

Distribution: Iraq (Morice, 1921). Egypt, Morocco, Algeria, and Tunisia (Schmidt, 2000).

Cerceris priesneri Mochi, 1939

Distribution: Iraq (Hamodee *et al.*, 2023). UAE, Yemen, KSA, Oman, and Egypt (Gadallah and Brothers, 2020)

Cerceris quadricincta (Panzer, 1799)

Distribution: Iraq (de Beaumont, 1961), UK, Germany, Türkiye, Iran, Afghanistan, Kazakhstan, Tunisia, and Morocco (Schmidt, 2000).

Cerceris rubida (Jurine, 1807)

Distribution: Iraq (Derwesh, 1965). Slovakia, Hungary, Türkiye, Cyprus, Ukraine, Russia, Syria, Iran, Afghanistan, Mongolia, China, Japan, and Morocco (Schmidt, 2000).

Cerceris sabulosa (Panzer, 1799)

Materials (2♀♀): Wasit Prov., Al-Suwaira City, 32°52'18.2"N 45°01'19.4"E, 1. v.2023.

Distribution: Iraq (Morice, 1921). UK, Austria, Bulgaria, France, Germany, Hungary, Italy, Spain, Russia, Ukraine, Türkiye, Armenia, Iran, Mongolia, China, Korea, Tajikistan, and Egypt (Gadallah and Assery, 2004).

Cerceris spinipectus F. Smith, 1856

Distribution: Iraq (Morice, 1921). Cyprus, Greece, Iran, Palestine, Uzbekistan, Turkmenistan, Afghanistan, and Egypt (Schmidt, 2000).

Cerceris straminea Dufour, 1854

Distribution: Iraq, Oman, UAE, Yemen, Kazakhstan, Uzbekistan, Algeria, Egypt, and Morocco (Gadallah *et al.*, 2013).

Cerceris tricolorata Spinola, 1839

Distribution: Iraq (Morice, 1921). Oman, UAE, Yemen, Kazakhstan, KSA, Uzbekistan, Algeria, Egypt, and Morocco (Gadallah *et al.*, 2013).

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Tribe, **Philanthini**

Genus, ***Philanthus*** Fabricius, 1790

Philanthus coarctatus Spinola, 1839

Material (1♂): undiagnosed specimen among undiagnosed specimens obtained from INHRCM collection.

Distribution: Iraq (Morice, 1921). Italy, Türkiye, Jordan, Oman, KSA, UAE, Algeria, Chad, Egypt, Ethiopia, Libya, Mauritania, and Sudan (Jahantigh *et al.*, 2017).

Philanthus triangulum (Fabricius, 1775)

Materials (6♂♂, 2♀♀): 2♂♂, 2♀♀: Wasit Prov., Al-Azizyah, 32°54'06.2"N 45°03'07.8"E, 1. v.2023. 3♂♂, Diyala Prov., Kan'an Forests (33°38'22.1"N 44°51'59.2"E, 8.iii.2024. 1 ♂ undiagnosed specimen among undiagnosed specimens obtained from INHRCM collection.

Distribution: Iraq (de Beaumont, 1961). Malagasy, Malta, Morocco, Russia, Georgia, Azerbaijan, Syria, Jordan, Yemen, Iran, Afghanistan, and Kazakhstan (Antropov, 2017). Albania, Austria, Bulgaria, Croatia, Czech, Denmark, France, Germany, UK, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Ukraine, Sweden, Cyprus, Tajikistan and Turkmenistan, Algeria, Burundi, Egypt, Eritrea, Ethiopia, Libya, South Africa, Sudan, Tanzania, and Tunisia (Gadallah, and Brothers, 2020).

Philanthus variegatus Spinola, 1839

Distribution: Türkiye, Iraq, Armenia, Russia, Azerbaijan, Syria, KSA, Kuwait, UAE, Oman, Iran, Afghanistan, Pakistan, Kazakhstan, and China (Antropov, 2017).

(C) Subfamily, **Astatinae**

Tribe, **Astatini**

Genus, ***Astata*** Latreille, 1797

Astata boops (Schrank, 1781)

Distribution: Iraq (de Beaumont, 1961). Kuwait, Oman, and KSA (Gadallah *et al.*, 2013).

(D) Subfamily, **Bembicinae**

Tribe, **Bembicini**

Genus, ***Ammatomus*** A. Costa, 1859

Ammatomus mesostenus (Handlirsch, 1888)

Distribution: Iraq (Roche, 2007). Iran, Afghanistan, Kazakhstan, Oman, Russia, Tajikistan, Turkmenistan, UAE, Uzbekistan, Algeria, Egypt, Libya, Morocco, and Sudan (Jahantigh *et al.*, 2017).

Genus, ***Bembecinus*** A. Costa, 1859

Bembecinus asiaticus Gussakovskij, 1935

Distribution: Türkiye, Iraq, Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, KSA, Tajikistan, Turkmenistan, and Uzbekistan (Gadallah *et al.*, 2013).

Bembecinus iranicus Schmid-Egger, 2004

Distribution: Iraq (Rezaei and Fallahzadeh, 2015).

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Bembecinus schwarzi de Beaumont, 1967

Distribution: Iraq (Schmid-Egger, 2009). Türkiye and Iran (Jahantigh *et al.*, 2017).

Genus, ***Bembix*** Fabricius, 1775

Bembix bicolor Radoszkowski, 1877

Distribution: Iraq (Morice, 1921). Bulgaria, Greece, Italy, Russia, Türkiye, Afghanistan, China, Cyprus, Iran, Kazakhstan, Kyrgyzstan, Mongolia, Oman, Russia, Tajikistan, Turkmenistan, and Uzbekistan (Jahantigh *et al.*, 2017).

Bembix oculata Panzer, 1801

Distribution: Iraq (Khalaf and Al-Omar, 1974). Pakistan, KSA, and Mongolia (Gadallah and Brothers, 2020).

Bembix transcaspica Radoszkowski, 1893

Distribution: Iraq (de Beaumont, 1961). Iran, Kazakhstan, Tajikistan, and Turkmenistan (Jahantigh *et al.*, 2017).

Genus, ***Nysson*** Latreille, 1802

Nysson rufus Handlirsch, 1895

Distribution: Iraq (Morice, 1921). Egypt (Bohart and Menke, 1976).

Genus, ***Stizoides*** Guérin-Ménéville, 1844

Stizoides melanopterus (Dahlbom, 1845)

Distribution: Iraq (Nemkov, 2012). Greece, Türkiye, Oman, Cyprus, Kazakhstan, Palestine, Tajikistan, and Uzbekistan (Gadallah and Brothers, 2020).

Genus, ***Stizus*** Latreille, 1802

Stizus bizonatus Spinola, 1839

Distribution: Iraq (Morice, 1921). Azerbaijan, Iran, Russia, Syria, Tajikistan, Turkmenistan, Uzbekistan, Egypt, and Ethiopia (Gadallah, and Brothers, 2020).

Stizus pubescens (Klug, 1835)

Distribution: Iraq (de Beaumont, 1961). Greece, Italy, Malta, Portugal, Romania, Spain, Türkiye, Armenia, Cyprus, Iran, Tajikistan, Turkmenistan, Uzbekistan, Egypt, and Libya (Jahantigh *et al.*, 2017).

Stizus vespiformis (Fabricius, 1775)

Distribution: Iraq (El-Haidari *et al.*, 1971). Spain, Bangladesh, India, Iran, and Sri Lanka (Jahantigh *et al.*, 2017).

Genus, ***Crossocerus*** Lepeletier de Saint Fargeau & Brullé, 1835

Note: This genus was recorded in Iraq as *Crossocerus* sp. by Khalaf and Al-Omar (1974).

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(E) Subfamily, CrabroninaeTribe, **Larrini**Genus, *Gastrosericus* Spinola, 1839*Gastrosericus waltlii* Spinola, 1839

Distribution: Iraq (Antropov *et al.*, 2017). Greece, Russia, Türkiye, Armenia, China, Cyprus, India, Iran, Jordan, Kazakhstan, Mongolia, Pakistan, Russia, Sri Lanka, Syria, Tajikistan, Turkmenistan, Algeria, Angola, Chad, Egypt, Eritrea, Ghana, Senegal, Sudan, Tunisia, and Zimbabwe (Gadallah and Brothers, 2020).

Genus, *Larra* Fabricius, 1793*Larra anathema* (Rossi, 1790)

Material: 1♀ Al-Anbar Prov., Al-Fallujah, Halabsa, 33°20'12.5"N 43°43'08.5"E, 24.v.2023.

Distribution: Iraq (Khalaf, 1961). Austria, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Portugal, Switzerland, Türkiye, Ukraine, Romania, Slovenia, Spain, Azerbaijan, Bahrain, China, Iran, Macedonia, Kazakhstan, Tajikistan, Turkmenistan, Russia, Egypt, Algeria, Morocco, South Africa, and Tunisia (Kaplan and Yildirim, 2021).

Larra transcaspica F.Morawitz, 1894

Distribution: Iraq (Antropov *et al.*, 2017). KSA, UAE, Iran, Kyrgyzstan, Tajikistan and Turkmenistan (Gadallah and Brothers, 2020).

Genus, *Liris* Fabricius, 1804*Liris atratus* (Spinola, 1805)

Distribution: Iraq (Roche, 2007). Iran and KSA (Gadallah and Brothers, 2020).

Liris haemorrhoidalis (Fabricius, 1804)

Materials (12♂♂, 15♀♀): 3♂♂, 2♀♀ Al-Anbar Prov., Al-Fallujah, Halabsa, 33°20'12.5"N 43°43'08.5"E, 24. v.2023. 2♂♂, 1♀: Wasit Prov., Al-Suwaira City, 32°52'20.9"N 44°57'16.2"E, 21. x.2023. 3♂♂, 3♀♀ Diyala Prov., Kan'an Forests, 33°38'22.1"N 44°51'59.2"E, 8.iii.2024. 4♂♂, 7♀♀, Baghdad Prov., Bab Al-Moatham 33°21'16.7"N 44°23'34.7"E, 3. x.2023. 2 ♀♀ undiagnosed specimens that obtain from collection of INHRCM.

Distribution: Iraq (Morice, 1921). Italy, and Spain, Afghanistan, Canary Island, India, Iran, Kazakhstan, Oman, Palestine, Qatar, KSA, UAE, Yemen, Cameroon, Canary Island, Egypt, Eritrea, Ethiopia, Guinea, Kenya, Libya, Morocco, South Africa, Sudan, Tanzania, Tunisia, and Democratic Republic of the Congo (Rezaei *et al.*, 2020).

Liris niger (Fabricius, 1775)

Distribution: Iraq (Morice, 1921). Austria, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Malta, Portugal, Romania, Slovakia, Slovenia, Spain, Türkiye, Ukraine, Afghanistan, Cyprus, China, India, Iran, Kazakhstan, Malaysia, Malta, Mongolia, Russia, Sri Lanka, Syria, Tajikistan, Turkmenistan, Canary Islands, and Sudan (Gadallah and Brothers, 2020).

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Liris nigricans (Walker, 1871)

Distribution: Iraq (de Beaumont, 1961). Greece, Spain, Türkiye, Afghanistan, China, India, Iran, Kazakhstan, Russia, Tajikistan, Uzbekistan, Algeria, Canary Islands, Cameroon, Chad, Central African Republic, Republic of the Congo, Ethiopia, Libya, Madagascar, Morocco, and Tunisia (Gadallah and Brothers, 2020).

Liris subtessellatus (F.Smith, 1856)

Materials (4♂♂, 3♀♀): 2♂♂, 1♀ Al-Anbar Prov., Al-Fallujah, Halabsa, 33°20'12.5"N 43°43'08.5"E, 24.v.2023. 2♂♂, 2♀♀: Baghdad Prov., Bab Al-Moatham 33°21'16.7"N 44°23'34.7"E, 3. x.2023.

Distribution: Iraq (de Beaumont, 1961). Afghanistan, Bangladesh, China, India, Indonesia, Iran, Japan, Kazakhstan, Pakistan, Philippines, Sri Lanka, Taiwan, and Thailand (Li *et al.*, 2007).

Genus, ***Prosopigastra*** A.Costa, 1867

Prosopigastra insignis E.Saunders, 1910

Distribution: Iraq (de Beaumont, 1961). Egypt (Roche, 2007).

Genus ***Tachysphex*** Kohl, 1883

Tachysphex buyssoni Morice, 1897

Distribution: Iraq (de Beaumont, 1961). UAE and Chad (Straka and Schmid-Egger, 2017).

Tachysphex desertorum F.Morawitz, 1894

Distribution: Iraq (de Beaumont, 1961). Egypt (Roche, 2007).

Tachysphex graecus Kohl, 1883

Distribution: Iraq (Morice, 1921). Bulgaria, Greece, Türkiye, Yugoslavia, Azerbaijan, Lebanon, and Tunisia (Ben Khedher *et al.*, 2020).

Genus, ***Tachytes*** Panzer, 1806

Tachytes argyreus (F.Smith, 1856)

Distribution: Iraq (Roche, 2007). Türkiye, Russia, KSA, UAE, Bahrain, Iran, Pakistan, Turkmenistan, Tajikistan, and India (Antropov, 2017).

Tachytes freygessneri Kohl, 1881

Distribution: Iraq (Morice, 1921). Russia, Türkiye, Iran, Tajikistan, Uzbekistan, Kazakhstan, China, and Tunisia (Ben Khedher *et al.*, 2019).

Tachytes illabefactus Pulawski, 1962

Distribution: Iraq (Pulawski, 1962).

Tachytes obsoletus (Rossi, 1792)

Distribution: (Eu): Türkiye, Iraq, Tajikistan, Uzbekistan, Kazakhstan, and China (Antropov, 2017).

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Tachytes vestitus (F.Smith, 1873)

Distribution: Iraq (Khalaf and Al-Omar, 1974). India and Pakistan (Pulawski, 1962).

Tribe, **Crabronini**

Genus, *Ectemnius* Dahlbom, 1845

Ectemnius confinis (Walker, 1871)

Distribution: Iraq (Antropov, 2017). Austria, Bulgaria, Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, Malta, Montenegro, Poland, Romania, Slovakia, Slovenia, Spain, Switzerland, Türkiye, Ukraine, Afghanistan, China, Cyprus, India, Iran, Jordan, Kazakhstan, Korea, Kyrgyzstan, Malta, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan, Egypt, and Tunisia (Jahantigh *et al.*, 2017).

Ectemnius crassicornis (Spinola, 1808)

Distribution: Iraq (Rezaei and Fallahzadeh, 2015). Albania, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Italy, Portugal, Romania, Slovakia, Spain, Switzerland, Türkiye, Ukraine, Azerbaijan, Iran, Jordan, Kazakhstan, Kyrgyzstan, Russia, Syria, Tajikistan, Turkmenistan, and Uzbekistan (Jahantigh *et al.*, 2017).

Ectemnius continuus (Fabricius, 1804)

Distribution: Iraq (de Beaumont, 1961). Albania, Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, Turkmenistan, Ukraine, Cyprus, China, Iran, Japan, Jordan, Kazakhstan, Korea, Kyrgyzstan, Mongolia, Russia, Syria, Tajikistan, Uzbekistan, Canary Islands, Algeria, Egypt, Morocco, Tunisia, Canada, USA, Cuba, Guatemala, and Venezuela (Jahantigh *et al.*, 2017).

Ectemnius crassicornis (Spinola, 1808)

Distribution: Iraq (Leclercq, 1993). Albania, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Italy, Portugal, Romania, Slovakia, Spain, Switzerland, Türkiye, Ukraine, Azerbaijan, Iran, Jordan, Kazakhstan, Kyrgyzstan, Russia, Syria, Tajikistan, Turkmenistan, and Uzbekistan (Jahantigh *et al.*, 2017).

Genus, *Lindenius* Lepeletier de Saint Fargeau & Brullé, 1835

Note: This genus was recorded in Iraq as *Lindenius* sp. by Khalaf (1961).

Genus, *Lestica* Billberg, 1820

Lestica clypeata (Schreber, 1759)

Distribution: Iraq (Antropov, 2017). Albania, Austria, Belarus, Belgium, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland, France, Germany, UK, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, Ukraine, Iran, Cyprus, Kazakhstan, Kyrgyzstan, Lebanon, Palestine, Syria, Turkmenistan, Uzbekistan, and Russia (Jahantigh *et al.*, 2017). Algeria, Egypt, Morocco, and Tunisia (Ben Khedher *et al.*,

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2019).

Tribe, **Oxybelini**

Genus, *Oxybelus* Latreille, 1797

Oxybelus lamellatus Olivier, 1811

Materials (2♂♂): Al-Anbar Prov., Al-Fallujah, Halabsa, 33°20'12.5"N 43°43'08.5"E, 24.v.2023.

Distribution: Iraq (Morice, 1921). Greece, Portugal, Spain, Afghanistan, China, Cyprus, India, Iran, Jordan, Kazakhstan, Kuwait, Oman, Pakistan, KSA, Syria, Tajikistan, Turkmenistan, UAE, Uzbekistan, Algeria, Cameroon, Eritrea, Ethiopia, Libya, Mauritania, Morocco, Somalia, Sudan, and Tunisia (Jahantigh *et al.*, 2017).

Oxybelus mucronatus (Fabricius, 1793)

Distribution: Iraq (Antropov, 2017). Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, UK, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, Türkiye, Ukraine, Afghanistan, China, Cyprus, Iran, Jordan, Kazakhstan, Kyrgyzstan, Russia, Syria, Tajikistan, Turkmenistan, and Uzbekistan, Morocco, and Tunisia (Jahantigh *et al.*, 2017).

Genus, *Oxybelochardus* Hamodee and Shafeeq, 2023

Oxybelochardus iraqensis Hamodee and Shafeeq, 2023

Materials (3♂♂): Baghdad Province, Al Moshahda, 33°36'10.7"N 44°14'13.6"E, 3.xi.2023.

Distribution: Iraq (Hamodee and Shafeeq, 2023).

Tribe, **Palarini**

Genus *Palarus* Latreille, 1802

Palarus fulviventris Latreille, 1812

Distribution: Iraq (Antropov, 2017). Iran, Kazakhstan, Oman, KSA, Syria, Tajikistan, Turkmenistan, UAE, Algeria, Egypt, and Libya (Jahantigh *et al.*, 2017).

Palarus laetus Klug, 1845

Distribution: Iraq (de Beaumont, 1961). India, Iran, Kuwait, Oman, KSA, UAE, Algeria, Djibouti, Egypt, Morocco, and Tunisia (Jahantigh *et al.*, 2017).

Tribe, **Trypoxylini**

Genus, *Trypoxylon* Latreille, 1796

Note: This genus was recorded in Iraq as *Trypoxylon* sp. by Kaddou (1967).

CONCLUSIONS

In conclusion, the fauna of crabronid wasps in Iraq is highly diverse presenting intriguing and unresolved challenges regarding their identification and distribution across various environments. Nevertheless, we anticipate that this revised checklist will serve as a crucial foundation for addressing most of the problems related to this group of species in Iraq. We

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recommend further research on of these in the various parts of Iraq.

CONFLICT OF INTEREST STATEMENT

The author states that there are no conflicts of interest associated with the investigation presented in this manuscript.

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دباير الكابرونيد، قائمة محدثة من العراق

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الخلاصة

حدثت قائمة دباير الكابرونيد العراقية خلال هذه الدراسة. حيث إدراج 67 نوعًا ينتهي إلى 29 جنسًا، موزعة على 10 قبائل ضمن خمس عائلات. كما تم ذكر توزيع الأنواع مع تصميم مفتاح تشخيصي لعزل الاصنوفات العليا.