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ORIGINAL ARTICLE

NEW RECORDS OF HALICTID BEES (HYMENOPTERA, HALICTIDAE, HALICTINAE) FROM IRAQ

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ABSTRACT

The checklist of the species belonging to the Halictinae of Iraq is presented. Totally, 27 species under 3 genera belonging to Halictinae (Hymenoptera, Halictidae) are listed, of which *Sphecodes cristatus* Hagens, 1882, and *Lasioglossum zunaga* Sakagami, 1995, are documented as new records for Iraqi entomofauna. They were described and illustrated, as well as the distribution, basionyms, and synonyms of genera and species are provided.

Keywords: Distribution, Halictid bees, Iraq, New record, *Sphecodes*.

INTRODUCTION

Halictidae is considered the second largest assemblage of bees, comprising around 4890 documented species across the Global Biodiversity Information Facility Secretariat (2023). Sweat bees include some of the commonest species, they are found in many moderate regions of the world and in different ecosystems, they have a significant contribution to the pollination of other insects, for 87 out of the 115 major world food crops to produce vegetables, fruits, and seeds, animal pollination is essential (Klein *et al*., 2007). According to Kirkitadze and Japoshvili (2015), a significant proportion of agricultural production, approximately 75%, is reliant on the intensity of pollination; the members of this family exhibit a global distribution across tropical and temperate regions, with the exception of Antarctica (Ascher *et al*., 2017). It is considered the second largest assemblage of bees. Halictid bee community lives on orchard fields; in contrast, this group is maintains wild farms that provide food and nesting areas (Akoijam *et al*., 2021).

The most important morphological features of this family include: laciniae small, hairy lobe on the anterior surface of the labio-maxillary tube above the rest of the maxilla; single subantennal suture below each antennal socket; a distinct stigma; the 1st flagellomere segment is clearly shorter than the scape (Michener, 2007). In addition to, Saini and Vikram (2012) found that the bees belonging to this particular family exhibit a short tongue and a prominently curved basal vein in their fore wing.

Based on Michener (2007), this family contains four subfamilies; including Rophitinae, Nomioidinae, Nomiinae, and Halictinae. The most important morphological features are: episternal sulcus is distinct and directed strongly downward below the scrobal sulcus; when there are three SMC, SMC3 shorter than SMC1 and less than twice as long as SMC2, apex of MC cell pointed or minutely truncate; prepygidial fimbria of female divided by a longitudinal median zone/or triangle of very fine. The members of the frequently common subfamily Halictinae nest in burrows in banks or soil; Halictinae are classified into two tribes, including Augochlorini and Halictini; the most important morphological characters include: longitudinal median specialized area of T5 of females of nonparasitic forms not divided by a notch or cleft; parasitic forms non-metallic or with dull greenish coloration; seventh tergite of male with a transverse ridge, usually carinate, forming a false apex beneath which the tergum is strongly reflexed to the apical margin; surface above the transverse ridge usually with an identifiable hairless pygidium.

Regarding to the available literature, it was observed that this particular group has received limited attention from researchers in Iraq, with only a few scattered studies obtainable; for example, Augul (2018) conducted a general survey of the diversity of bees, including Halictidae, while Ahmed (2015) focused on the taxonomic aspects of this guild's species in Northern Iraq. Despite the significance of Halictidae as pollinators for numerous plants, the studies on this group have been comparatively fewer than those on Apidae species, particularly honey bees in Iraq (Glaiim *et al*., 2008; Glaiim ,2009; Hussin, 2015; Shaher and Nasrallah, 2018; Dagher and Shaher, 2023; Awwad and Shaher, 2023; Sahood *et al*., 2023).

The studies about this family, especially those related to taxonomical aspects in Iraq, are insufficient and scattered, hence, the current study aimed to update the data on these bees, especially the Halictinae subfamily.

MATERIALS AND METHODS

Specimens collecting: Bees were collected from Salahaddin, and Duhok Provinces, then labeled, and deposited at Iraq Natural History Research Center and Museum- University of Baghdad.

Specimens examined: Specimens were examined by Dissecting microscope, Altay), and photographed by digital microscope. They were identified using the different keys: Kirkitadze and Japoshvili (1995); Michener (2007); BWARS (2012); Astafurova and Proshchalykin (2014); also the identification assured by Prof. Dr. Razzaq Shalan Augul, Iraq Natural History Research Center and Museum. The synonyms and basionyms are provided according to EL-Akkad and BibarsI (2015), Augul (2018), Astafurova and Proshchalykin (2020), and GBIF Secretariat (2023).

Abbreviations

2r-m: Second radio– medial cross vein
2m-cu: Second medio– cubital cross vein
A: Distances between ocelli and compound eyes

AX: Axilla
B: Distant between posterior and anterior ocellus
C: Distant between posterior and occiput
Sc: Scutum
S.H: Silky-hairs
SMC2: Second submarginal cells
T: Tegula

RESULTS AND DISCUSSION

In the current work, there were 27 species, and 4 genera within Halictinae are listed; these taxa are given as follow:

Genus, *Halictus* Latreille, 1804

Halictus asperulus Perez, 1895

Synonym: *H. Lampralictus* Pesenko, 1984

Distribution: This species is listed in Iraq by Bluthgen (1955). Armenia, Austria, Azerbaijan, Cyprus, Georgia, Iran, Spain, Syria, Turkey, and Ukraine (Pesenko, 2005); France, Italy, Albania, and Eastern Europe (Varnava *et al*., 2020).

Halictus cephalicus Morawitz, 1874

Synonyms: *Lasioglossum cephalicus* (Morawitz, 1874)
Seladonia cephalica (Morawitz, 1873)

Distribution: This species is listed in Iraq by Bluthgen (1955). Bulgaria, and Cyprus (Polaszek, 2004); Greece (Pauly, 2007); Afghanistan, Caucasus, Iran, Syria, Russia, and Turkey (Astafurova *et al*., 2017); Eastern Europe, and Western Asia (Varnava *et al*., 2020).

Halictus fatsensis Blüthgen, 1936

Synonym: *Halictus dissidens* Pérez, 1903

Distribution: Iraq (Bluthgen, 1936). Cyprus, Jordan, and Turkey (Pesenko, 2005); Egypt (Ebmer, 2014); Syria (Varnava *et al*., 2020).

Halictus leucaheneus Ebmer, 1972

Synonyms: *Halictus arenosus* Ebmer, 1976
Seladonia leucahenea (Ebmer, 1972)

Distribution: Iraq (Morice, 1921). Turkey (Ebmer, 1972); Eastern Asia from Lake Balkhash to northeastern China: Eastern Kazakhstan, Kyrgyzstan, Mongolia, northern and northeastern China (Pesenko, 2006).

Halictus senilis (Eversmann, 1852)

Synonyms: *Halictus fucosus* Morawitz, 1876
Hylaeus senilis Eversmann, 1852

Distribution: Iraq (Bluethgen, 1955). Jordan, Libya, and Turkey (Grace, 2010); Eurasia from southeast Russia to Pakistan, Egypt, Iran, Mongolia, Spain, and Tunisia (Pauly *et al*., 2016); North Africa, South and East Europe, Russia, Caucasus, and China (Astafurova and

Proshchalykin, 2017); Kazakhstan, Kyrgyzstan, Turkmenistan, and Uzbekistan (Murao *et al*., 2017).

Halictus mongolicus Morawitz, 1880
Distribution: This species is listed in Iraq by Morice (1921). China, Turkistan, and Mongolia (Niu *et al*., 2004).

Halictus quadricinctus (Fabricius, 1776)
Basionym: *Apis quadricincta* Fabricius, 1777
Synonyms: *Apis hortensis* Geoffroy, 1785
A. quadricincta Fabricius, 1777
H. ecaphosus Walckenaer, 1817
H. quadristrigatus Latrielle, 1805
Distribution: Iraq (Morice, 1921). Turkey (Özbek, 1979). Cyprus, Denmark, Finland, Afghanistan, Iran, China, and Mongolia (Varnava *et al*., 2020).

Halictus scabiosae (Rossi, 1790)
Basionym*: Apis scabiosae* Rossi, 1790
Distribution: Iraq (Derwesh, 1965). Turkey (Warncke, 1975); Western Palaearctic with Western Mediterranean Regions (Ebmer, 1988); Europe, and Northern Africa (Polaszek, 2004), and Greece (Grace, 2010).

Halictus tectus Radoszkowski, 1875
Synonym: *H. sogdianus* Morawitz, 1876
Distribution: It was recorded in Iraq by Derwesh (1965) under the synonym *H. sogdianus* Morawitz. Eurasia Region from Southern France, also Iberia to Mongolia (Ebmer, 1988), and Greece (Grace, 2010).

Halictus tetrazonius (Klug, 1817)
Basionym: *Hylaeus tetrazonius* Klug, 1817
Distribution: Iraq (Morice, 1921). Austria, Bulgaria, Croatia, Georgia, Greece, Hungary, Italy, Iran, Macedonia, Moldova, Romania, Slovenia, Turkey, and Ukraine (Pesenko, 2005).

Halictus tetrazonianellus Strand, 1909
Synonym: *H. leucognathus* Morice, 1921
Distribution: It was listed in Iraq by Morice (1921) under the name of *Halictus leucognathus*. Turkey (Özbek, 1979); Azerbaijan, Caucasia, and Lebanon (Polaszek, 2004); Bulgaria, Greece, Jordan, Moldova, Ukraine, and Turkmenistan (Ebmer, 2014); Cyprus, Ukraine, and Russian (Varnava *et al*., 2020).

Halictus vestitus Lepeletier, 1841
Synonyms: *Vestitohalictus vestitus* (Lepeletier, 1841)
V. vestitus tectus (Radoszwkowski, 1875)

Distribution: Iraq (Derwesh, 1965). China, Mongolia, former USSR, Austria, and France (Niu *et al.*, 2007).

Halictus vulgaris Morawitz, 1876
Distribution: Afghanistan, Caucasus, Russia, Turkey, Syria, Jordan, Iraq, Iran, Pakistan, Kazakhstan, North India, and Nepal; Europe (except North), and North Africa (Astafurova and Proshchalykin, 2017).

Seladonia Robertson, 1918
Seladonia lucidipennis Smith, 1853
Synonyms: *H. varipes* Morawitz, 1876
Lasioglossum varipes (Morawitz, 1876)
Halictus(Seladonia) lucidipennis (Smith)
Distribution: It was listed In Iraq by Derwesh (1965) under the name *Halictus varipes* Morawitz, 1876. Algeria, Chad, Djibouti, Egypt, Ethiopia, Jordan, Iran, Libya, Morocco, Tunisia, Senegal, Gambia, Mali, Burkina-Faso, Niger, Cameroon, Sudan, Eritrea, Kenya, KSA, Oman, Yemen, Turkey, Afghanistan, Bhutan, Burma, Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan, India, Pakistan, Sri Lanka, Nepal, Thailand, and China (Pauly *et al*., 2002); Myanmar (Pesenko, 2006); Bangladesh (Murao *et al.*, 2013).

Halictus pollinosus Sichel, 1860
Synonyms: *Halictus cariniventris* Sichel, 1860
Halictus cariniventris Morawitz, 1876
Seladonia (*Vestitohalictus*) *pollinosa* (Sichel, 1860) Robertson, 1918
Vestitohalictus pollinosus (Sichel, 1861)
Vestitohalictus pollinosus subsp. cariniventris (Morawitz, 1876)
Vestitohalictus pollinosus subsp. cyrnosardicus Pauly, 2017
Distribution: Iraq (Kaddou, 1967). Kyrgyzstan, Tajikistan, China and Uzbekistan (Murao *et al*., 2017). Cyprus, France, Germany, Austria, Northern Africa, Turkey, Jordan, Iran, Afghanistan, and Pakistan (Varnava *et al*., 2020).

Genus, *Lasioglossum* Curtis, 1833
Lasioglossum aegyptiellum (Strand, 1909)
Basionym: *Halictus aegyptiellum* Strand, 1909
Distribution: It was recorded in Iraq under the name of *Halictus platysectus* Dours by Derwesh (1965). Turkey (Warncke, 1975); Morocco to Iran and Turkmenistan, and Croatia (Ebmer, 1988); Spain (Ornosa *et al*., 2013); Egypt (Pauly, 2016); Bulgaria, Cyprus, Greece, Libya, Western Asia, China, and Turkmenistan (Varnava *et al*., 2020).

Lasioglossum mandibulare (Morawitz, 1866)
Synonyms: *Lasioglossum carneiventre* Dours, 1872
Halictus mandibular Morawitz, 1866
Halictus carneiventris Blüthgen, 1925
Distribution: Algeria, Egypt, Iran, Iraq, and Syria (Ebmer, 2014).

Lasioglossum leucozonium (Schrank, 1781)
Basionym: *Apis leucozonia* Schrank, 1781
Synonyms: *Halictus leucozonius* (Schrank, 1781)
Lasioglossum similis (Smith, 1853)
Distribution: In Iraq, this species was listed as *Halictus leucozonius* Kirby by Derwesh (1965). Holarctic region (McGinley, 1986; and Ebmer, 1988); Turkey (Warncke, 1975); Greece, Iran, Cyprus (Grace, 2010); Kyrgyastan and Uzbekistan (Murao *et al*., 2017); Cyprus, Widespread in Europe, Northern Africa, Western Asia, Central Asia, Iran, Mongolia, and China (Varnava *et al*., 2020).

Lasioglossum malachurum (Kirby, 1802)
Basionym: *Melitta malachura* Kirby, 1802
Synonyms: *Halictus longulus* Smith, 1848
H. malachurus (Kirby, 1802)
Hylaeus apicalis Schenck, 1853
Distribution: Iraq (as *Halictus longulus* Smith) (Derwesh, 1965). North Morocco to England and Denmark, and Iran (Ebmer, 1988); Cyprus, Greece, Palestine, Turkey, Jordan, and Egypt. Georgia, Azerbaijan, Sardinia, and Sicily (Balzan *et al.*, 2016); Morocco, Tunisia, Egypt, Syria, and Jordan (Pauly, 2007); Widespread in Europe, Northern Africa, Western Asia, and Turkmenistan (Varnava *et al*., 2020).

Lasioglossum mandibulare (Morawitz, 1866)
Basionym: *Hylaeus mandibulare* Morawitz, 1866
Synonym: *Halictus mandibularis* Morawitz, 1866
Hylaeus mandibulare Morawitz, 1866
Halictus carneiventris Dours, 1872
Halictus carneiventris Dours, 1872
Distribution: Austria, Romania, Ukraine, France, Portugal, Iraq, Turkmenistan, and Kazakhstan (Ebmer, 2014); Uzbekistan (Murao, 2017); Cyprus, Switzerland, Spain, Greece, Romania, Bulgaria, Russian Federation, and Western Asia (Varnava *et al*., 2020).

Lasioglossum marginatum (Brullé 1832)
Basionym: *Halictus marginatus* Brullé, 1832
Synonyms: *Halictus kervilleanus* Perez, 1910
H.vulgaris Morawitz, 1876
Distribution: Iraq (Morice, 1965). Western Asia, Czech, France, Germany, Greece, Hungary, Italy, Poland, Slovenia, Spain, Switzerland, and East Palaearctic (Polaszek, 2004); Armenia (Pauly, 2007); Greece, Cyprus, Turkey, Syria, Lebanon, Jordan and Iran (Grace, 2010); Europe (except North), North Africa, Caucasus, Russia, Afghanistan, Pakistan, Kazakhstan, North India, and Nepal (Astafurova and Proshchalykin, 2017).

Lasioglossum picipes (Morawitz, 1876)
Synonym: *Halictus amaranus* Morice, 1921

Distribution: In Iraq, it was listed by Derwesh (1921) under the synonym *Halictus amaranus*. Iran (Grace, 2010). Turkey, Afghanistan, Turkmenistan, Uzbekistan, and Tajikistan (Pesenko 1986; Ascher and Pickering, 2020).

Lasioglossum politum Schenck 1853

Synonyms: *Halictus politus* (Schenck, 1853)
Hylaeus politus Schenck, 1853

Distribution: Iraq, Greece, Turkey, Iran, Jordan, and Egypt (Grace, 2010).

Lasioglossum scheherezade Ebmer, 2000

Distribution: Grace (2010) was reported this species in Iraq.

Lasioglossum vagans (Smith, 1857)

Basionym: *Halictus vagans* Smith, 1857

Synonyms: *H. blepharophorus* Strand, 1914
H. luteitarsellus Strand, 1914
H. micado Strand, 1914
H. vagans Smith, 1857
H. chaldaeorum Morice, 1921
H. cattulus Vachal Blüthgen (1933)

Distribution: Iraq (as *Halictus chaldaeorum*) (Derwesh, 1965). Egypt and North Sudan to East through Arabian Peninsula, and Iran; India, Nepal, South-East Asia including the Philippines, from North to China, and Southern Japanese Islands (Ebmer, 2004). Jordan, Lebanon, and Turkey (Grace, 2010); India (Saini *et al.*, 2012).

Lasioglossum zunaga Sakagami, 1995

Materials Examined: Duhok Province, Veen resort 1♀ 37°02'05.2"N 43°44'36.5"E, 25.ix.2022

General description: Total body length, 12mm (Pl. 1A, B, C). Head: length greater than width, black color, paraocular hairs, and genal area with moderate density erect, long white, poorly plumose hairs. Scape reach anterior ocellus; distance C >A and B, A > B (Pl. 2). Mandible color reddish brown cleft, without teeth (Pl. 3). Mesosoma: Pronotum convex without tomentum. Scutum convex, black color with small, and somewhat closely punctures, with carina on parallel side tugulae nearby axilla disdained, shiny and rounded shape with short white hairs (P1. 4). Scutellum slightly convex, dull and punctate, with a line of hairs on posterior margin. Metanotum dull and punctate, covered with several short hairs decumbent. Dorsal surface of propodeum shinny with longitudinal carina, declivity delimited by circular carina, which divide by a medio-longitudinal furrow, with reticulate sculpture, as well as covered by moderately dense, branched, and medium length erect hairs (Pl. 5). Forewings are transparent with a smoky tinge, marginal cell are elongated with a tapered apex, SMC1 is much longer than SMC2 and SMC3 submarginal cells; and basal vein curved and semi-right angled. Cross-veins 2r-m and 2m-cu fine and less obviously pigmented than adjacent longitudinal veins (Pl. 6). Coxae black right triangle when connected toward sternum; trochanter small cylindrical-shaped and swallow medially; femur cylindrical, acuminate at apex; first three parts covered by densely and erect hairs ventrally, whereas less and short

dorsally. Tibia cylindrical, enlarge at apex with elongate spur dorsally, which exceeds 1/2 long of basitarsus claws with tooth basally with arolium distinct (Pl. 7). Metasoma: T1-T4 with a semi-circular zigzag transverse line with sparse separates area into two halves, upper region a clear punctuate between which spaces fine, lower region with a heavy punctuate, hairs that are inconspicuous, pubescence absent; hairs on pleural of thorax not much plumose. T1virtually glabrous with white, short, plumose, and erect hairs; tergites 2-3 with hairs on disc and post-marginal area very scattered; T3 without marginal fine hairs; T4 with sporadic long hairs cream color; T5 densely covered hairs, Pygidial plate clear brown (Pl. 8).

Distribution: Japan (Sakagami, 1995), newly record for Iraq.
Diagnostic characters: Pronotal and propodeal tomentum absent, terga 2-3 without fine marginal hairs.

Genus, *Sphecodes* Latreille, 1804
Sphecodes gibbus (Linnaeus, 1758)
Basionym: *Sphex gibba* Linnaeus, 1758
Synonyms: *Sphecodes picea* (Kirby, 1802)
S. sphecoides (Kirby, 1802)
S. tadauchi Mitai, 2012
Distribution: This species was registered in Iraq by Morice, 1921 South and Western Europe: Spain, France, Switzerland, Italy, Germany, Hungary, and Russia (Westrich, 1989; Warncke, 1992); Europe, North Africa, Turkey, Iran, Pakistan, Russia, and India (Astafurova, 2018); Europe, Western Asia, Central Asia, Southern Asia, and China (Varnava *et al*., 2020).

Sphecodes cristatus Hagens, 1882
Material Examined: Salahaddin Province, Al-Ishaqi, 1♂, 34° 16′ 59.88″ N, 43° 46′ 0.12″ E, 27.VI.2022.
General description: Body length 10mm (Pl. 9 A, B, C). Head weakly transverse, wider than long; vertex wide, strongly elevated with irregular distances among them with longitudinal carina and black color (Pl. 10A). Ocelli brown, A almost equal to C, A and C> B (Pl. 10B). Scape cylindrical with widened apex end covered with sparsely with whitish hairs. Pedicel weakly developed, narrow, and semicircular.

Mesosoma reddish brown color, scutum convex with large scattered puncture covered with white hairs on anterior part and end poster part, scutellum rectangular with same mesoscutum puncture. Metanotum black color slightly convex with a crescent shape, short transversely, covered with branched hairs on front edge. Propodeum red color half rugose and with white hairs on sides, tegulae small with creamy gradually towards black (Pl. 11A). Mesosternum with convex with large and dense punctures, so that surface can be seen coarsely with long white silky hairs tending to downward which more densely toward posterior part. Axillae translucent with white hairs recommend (Pl. 11B).

Forewings elongated, and similar to hind wings in color, translucent with dark smoky tips, veins dark brown; apex marginal cell long pointed or minutely truncate, extending along wing

edge; three submarginal cells (SMC), SMC3shorter than SMC1; SMC2 shorter than SMC3, basal vein (M) distinctly curved and semi-right angled. Hind wings with basal (M) vein weakly curved (Pl. 12A); hind wing with 10 hamuli (Pl. 12B).

Legs brownish ferruginous colour, coxae cylindrical with silky white hairs, trochanter cylindrical with white hairs recommend, femur and tibia same height, tarsus red, first and fourth tarsomeres equal in length, covered densely and creamy setae dorsally; ventrally, with brownish setae. Claws forked and arolium distinct.

Metasoma T1-T5 with very small fine punctures that well-spaced T2-T5 with a transparent band; T6-T7with densely white hairs, white hair sparse laterally, extending transversely along length, less dense at middle (Pl. 13).

Diagnostic characters: head transverse, wider than long. Scutum with sparsely punctate, and punctures (at least medially) which spaced by more as puncture diameter. Hind wing with basal vein (M) weakly curved, as well as 7–14 hamuli. T1 with distinctly coarse and dense punctures.

Distribution: Russia, European, Mongolia, Tajikistan, Europe (north to Sweden), Turkey (Astafurova and Proshchalykin, 2014); Kazakhstan, Central Asia, China, and Caucasus (Astafurova *et al*., 2018).

Plate (1): *L. zunaga* (♀); (A) Lateral, (B), Dorsal and (C) Frontal view.

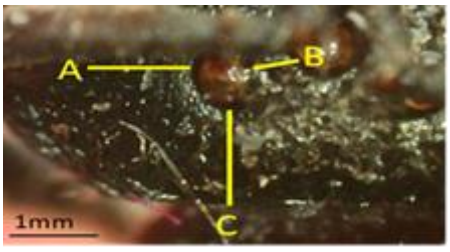

Plate (2): *L. zunaga* (♀); Upper part of head.

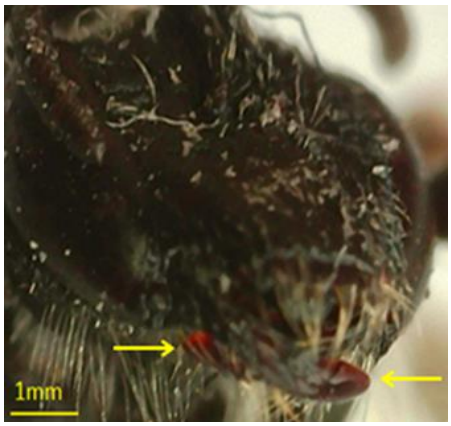

Plate (3): *L. zunaga* (♀); Mandible with color reddish (frontal view).

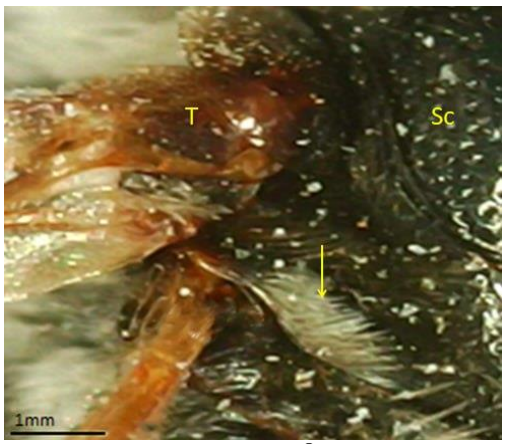

Plate (4): *L. zunaga* (♀); Axillae.

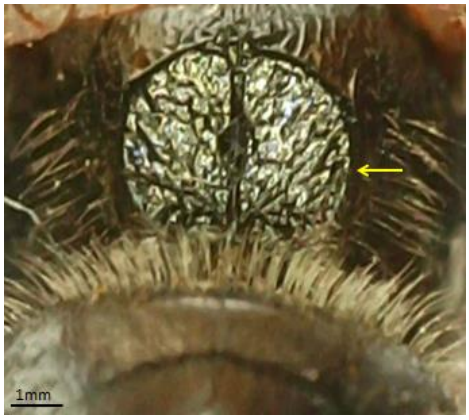

Plate (5): *L. zunaga* (♀); Propodeal declivity (shinny with longitudinal carina).

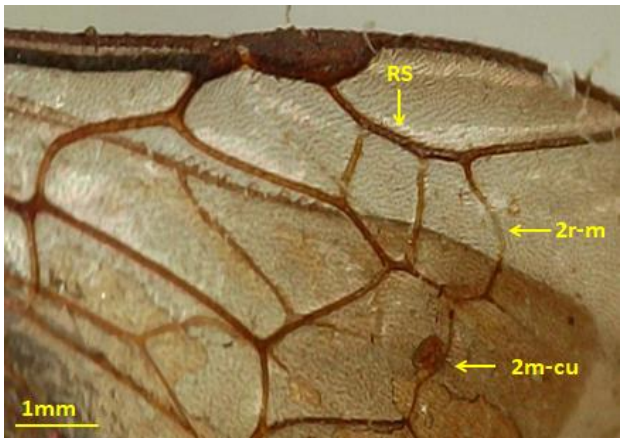

Plate (6): *L. zunaga* (♀); Fore wing.

Pate (7): *L. zunaga* (♀); Hand leg.

Plate (8): Metasoma; *L. zunaga* (♀).

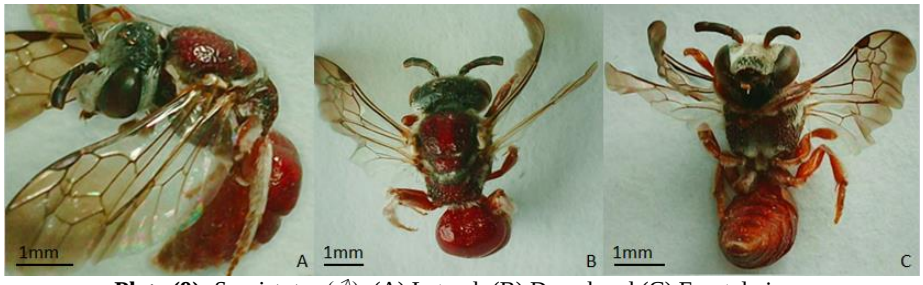

Plate (9): *S. cristatus* (♂); (A) Lateral, (B) Dorsal and (C) Frontal view.

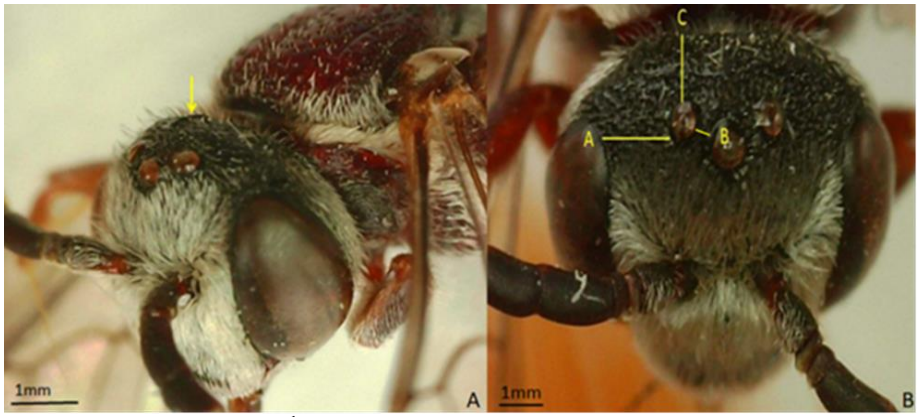

Plate (10): *S. cristatus* (♂); (A) Lateral view of head (see carina yellow arrow), (B) Upper part of head.

Plate (11): *S. cristatus* (♂); (A) Mesosoma (dorsal view), (B) Mesosoma (ventral view).

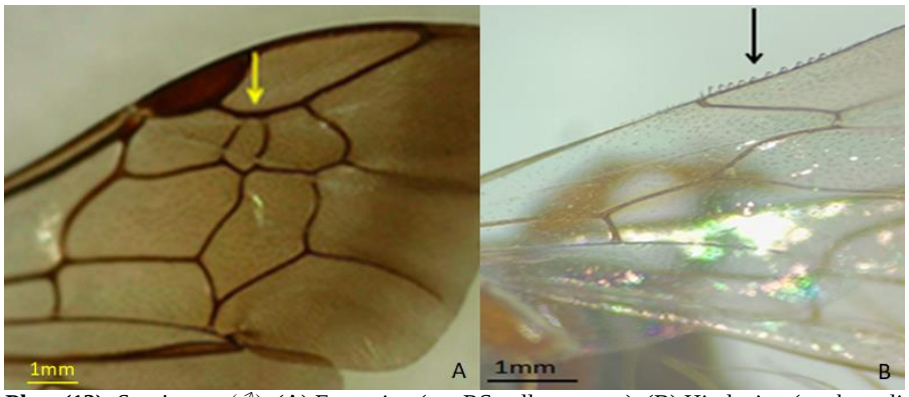

Plate (12): *S. cristatus* (♂); (A) Fore wing (see RS yellow arrow), (B) Hind wing (see hamuli, black arrow).

Plate (13): *S. cristatus* (♂); Dorsal view of metasoma.

CONCLUSIONS

The diversity of bees is great, and we need more studies to investigate the presence of other new species for science or as a new record in Iraq and on the other hand, the possibility of studying it at the molecular level due to the similarity of species belonging to the same genus to confirm the morphological diagnosis is remarkable.

The current study has provided an updated checklist for Halictinae species supported by basionyms and synonyms to avoid confusion in future studies. Furthermore, the study of the remaining species of the family Halictidae and preparation an updated checklist that includes the basionyms and their synonyms is necessary for the importance of the ecosystem and the sustainability of food sources.

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CONFLICT OF INTEREST STATEMENT

The current results are a part of M.Sc. thesis in Plant Protection, College of Agricultural Engineering Sciences- University of Baghdad for the first author. Further, we, the authors of this manuscript, confirm no other consent relationship with any official institution.

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تسجيلات جديدة لنحل العَرَق
(Hymenoptera, Halictidae, Halictinae)
من العراق

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الخلاصة

قدمت هذه الدراسة قائمة مرجعية للأنواع التي تنتمي إلى عويلة Halictinae (عائلة نحل العرق Halictidae، رتبة غشائية الاجنحة Hymenoptera) في العراق. إذ تم حصر 27 نوعًا تنتمي الى 3 أجناس، منها النوعان *Sphecodes cristatus* Hagens, 1882 و *Lasioglossum zunaga* Sakagami, 1995 تسجل لاول مرة للمجموعة الحشرية العراقية.

تم اعطاء وصف دقيق وموجز للأنواع الجديدة، علاوة على تدقيق وتصحيح الاسماء العلمية مع ذكر الاسماء الأساسية و المرادفة للأجناس و الأنواع مع أضافة معلومات حول الانتشار والتوزيع الجغرافي.