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## New records of *Cerceris* LATREILLE, 1802 (Hymenoptera, Spheciformes) from the United Arab Emirates

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**Abstract:** New records of 18 species of *Cerceris* LATREILLE, 1802 (Hymenoptera, Crabronidae) from the United Arab Emirates are given. The following species are new to the fauna of the UAE: *Cerceris fischeri* SPINOLA, 1839, *Cerceris pharaonum* KOHL, 1898, *Cerceris priesneri* MOCHI, 1938, *Cerceris sabulosa* (PANZER, 1799) and *Cerceris solitaria* DAHLBOM, 1845. *Cerceris pharaonum* is also new to the fauna of the Arabian Peninsula.

**Keywords:** Hymenoptera, Crabronidae, *Cerceris*, United Arab Emirates

### Introduction

Members of the genus *Cerceris* LATREILLE, 1802 are small to medium sized Apoid wasps, which hunt mainly bees or beetles as a provision for their larvae. They occur in large number of species and specimens, especially in dry and hot areas. The genus was revised by SCHMIDT (2000) for western Palaearctic species, and by GUICHARD (1993) for species of the Arabian Peninsula. Both authors list 186 species for the western Palaearctic region including the Arabian Peninsula. Species list and the distribution of the 870 world species are actualized in a web database (PULAWSKI 2021).

SCHMID-EGGER (2011) already published a few records of *Cerceris* from the UAE, but the majority of specimen from the large samples of Tony v. Harten and CSE remained unidentified due to the problematic taxonomy of the genus of the Arabian Peninsula. (See below for further details of origin of species and generalities of the UAE Insect Project.)

In the meantime, Herrmann Dollfuss was working on World *Cerceris*, and could identify the whole sample of *Cerceris* specimens from the UAE, including the specimens already mentioned by SCHMID-EGGER (2011). The results are listed below. For the present contribution, 327 *Cerceris* specimens from the UAE were examined, belonging to 18 species.

Apoid wasps (or digger wasps, or Sphecids) are traditionally divided into four different families, the Ampulicidae, Crabronidae, Heterogynaidae, and the Sphecidae. Together with the bees (Anthophila, consisting of seven families) they are usually subsumed under the superfamily Apoidea. Although recent research suggests a new classification based on a phylogenomic analysis of the Apoidea with ten separate families (SANN et al. 2018), the present study uses the term "Spheciformes" for the apoid wasps. *Cerceris* belongs to the new family Philanthidae suggested by SANN et al. (2018).

Until now, the following contribution about Spheciformes of the UAE were published

under the project "Arthropod Fauna of the UAE", edited by A.v. Harten: Spheciformes I by SCHMID-EGGER (2011), Ampulicidae by OHL (2001), *Trypoxylon*, *Pseudomicroides* & *Belomicroides* by ANTROPOV (2011), Spheciformes II by SCHMID-EGGER (2014), *Harpactus* by LIJUBIMIROV & SCHMID-EGGER (2014), *Nitela* by GAYUBO & SCHMID-EGGER (2014) and *Tachysphex* by STRAKA & SCHMID-EGGER (2017). The Spheciformes fauna of the Arabian peninsula was recently listed by GADALLAH (2020).

## Materials and Methods

This chapter is based on material collected by the UAE Insect Project, by Antonius v. Harten and collaborators between 2005 and 2020; and on material collected by Christian Schmid-Egger (CSE) during two visits in March 2009 and in January 2011 in the UAE. Also, some material from other origins could be examined (see species list). For further information about material and methods see SCHMID-EGGER (2011, 2014). The material is mainly deposited the authors collection (CSE). Photos were taken by a Nikon SMZ18 stereo microscope and a Nikon DS-Fi3 camera, from specimens originating from the UAE. The body length (L) of the photographed specimens is given.

## Systematic Account

### *Cerceris* LATREILLE, 1802

#### *Cerceris albicincta* KLUG, 1845 (Figs 1-2)

**Material examined:** 60♂♂, 24♀♀. Flight period Januar-December. 10 km E Ras Alkhaymah Airport; 30 km SEE Ruwais, Houbara Protected Area; 40 km NW Al Ain, Sweihan, bird aviary; Abu Dhabi, Al Wathba Wetland Reserve; Al Ajban; Dubai/Al Awir; Dubai/Nakhalai; Jebel Hafit/S Al Ain; Khor al-Khwait; Liwa Oasis, 4 km SE Sabkha; Liwa Oasis, Arada; Sharjah Desert Park; Wadi Bih (dam).

**Geographic distribution:** North Africa, Israel, (SCHMIDT 2000), Arabian Peninsula including UAE; one of the commonest species in Arabia (GUICHARD 1993). UAE (SCHMID-EGGER 2011, DOLLFUSS 2018, 2021).

#### *Cerceris alboatra* MOCHI, 1938 (Figs 3-4)

**Material examined:** Wadi al Helo/near Tunnel 2♂♂ 19.iii.2009 leg. CSE; Wadi Bih (dam) 1♂ 19.iii.2009 leg. CSE; Wadi Shawkah 1♂ 26.iii.2007 leg. Stark; Wadi Wurayah 8♂♂ 3♀♀ 19.iii.2009 leg. CSE.

**Geographic distribution:** Egypt, Israel, Libya, Sudan (SCHMIDT 2000), Saudi Arabia, UAE (GUICHARD 1993, DOLLFUSS 2018, 2021).

#### *Cerceris chromatica* SCHLETTERER, 1887 (Figs 5-6)

**Material examined:** 10 km E Ras Alkhaymah Airport 1♂ 17.iii.2009 leg. Berg; 1♂ 17.iii.2009 leg. Scheuchl; Abu Dhabi, Al Wathba Wetland Reserve 1♀ 15.v.2015 leg. AvH; Mahafiz 1♂ 1♀ 19.iii.2009 leg. CSE; North of Ajman 2♂♂ 19.iii.2009 leg. CSE; Ra's al-Khaimah x Dibba 1♂ 14.iv.2009 leg. AvH.

**Geographic distribution:** North Africa, Israel (SCHMIDT 2000), Saudi Arabia, UAE (GUICHARD 1993, DOLLFUSS 2021).



**Figs 1-6:** (1-2) *Cerceris albicincta* KLUG, 1845. (1) Female. L = 9.0 mm. (2) Male. L = 7.0 mm; (3-4) *Cerceris alboatra* MOCHI, 1938. (3) Female. L = 14.0 mm. (4) Male. L = 13.0 mm; (5-6) *Cerceris chromatica* SCHLETTERER, 1887. (5) Female. L = 9.5 mm. (6) Male. L = 9.0 mm.

***Cerceris difficilis* GUICHARD, 1993 (Fig. 7)**

Material examined: Hatta 1♂ 01.viii.2006 leg. AvH; Khor al-Khwair 2♂♂ 05.viii.2009 leg. AvH; Khor Fakkan 1♂ 20.iii.2008 leg. AvH; Wadi Bih (dam) 1♂ 08.iii.2009 leg. AvH; 2♂♂ 1♀ 19.iii.2009 leg. CSE; Wadi Hayl 4♂♂ 19.iii.2009 leg. CSE.

Geographic distribution: UAE (GUICHARD 1993, DOLLFUSS, 2021).

***Cerceris fischeri* SPINOLA, 1839** (Figs 8-9)

**Material examined:** Al Wasit protected area 1♂ 31.v.2010 leg. AvH; Wadi Bih (dam) 9♂♂ 13♀♀ 29.xi.2009 leg. AvH; Wadi Wurayah 1♂ 13.i.2011 leg. CSE.

**Geographic distribution:** North Africa, Israel (SCHMIDT 2000), African Sahel, Saudi Arabia, Oman (GUICHARD 1993). New to the UAE.

***Cerceris fitzgeraldi* EMPEY, 1973** (Figs 10-11)

**Material examined:** 10 km E Ras Alkhaymah Airport 2♂♂ 19.iii.2009 leg. CSE; 30 km SEE Ruwais, Houbara Protected Area 1♀ 30.vi.2016 leg. AvH; 1♂ 31.v.2017 leg. AvH; Al Ajban 2♀♀ 28.xii.2005 leg. AvH; 1♂ 16.iv.2006 leg. AvH; 1♂ 02.v.2006 leg. AvH; 1♀ 22.v.2006 leg. AvH; Dubai/Al Awir 1♀ 26.v.1984 leg. Sudgen; Dubai/Nakhalai 1♂ 1♀ 15.iv.1984 leg. Sudgen; Mahafiz 8♂♂ 1♀ 19.iii.2009 leg. CSE; 3♂♂ 2♀♀ 25.iii.2009 leg. AvH.

**Geographic distribution:** UAE, Oman (GUICHARD 1990). UAE (SCHMID-EGGER 2011, DOLLFUSS 2021).

***Cerceris hameri* GUICHARD, 1993** (Figs 12)

**Material examined:** Dubai, Desert Conservation Reserve 1♀ 20.v.2015 leg. AvH. Barg al-Saqoor 3xm 10.ix.20109 leg. AvH.

**Geographic distribution:** UAE (GUICHARD 1993).

***Cerceris hathor* PULAWSKI, 1883** (Figs 13-14)

As *Cerceris eugenia* SCHLETTERER, 1887, in GUICHARD (1993)

**Material examined:** Jebel Hafit/S Al Ain 4♂♂ 19.iii.2009 leg. CSE; 1♂ 04.iii.2014 leg. Roberts; 1♂ 24.iii.2014 leg. Roberts; 1♂ 02.iii.2015 leg. Roberts; 1♀ 15.iii.2015 leg. Roberts; 1♀ 24.iii.2015 leg. Roberts; 1♂ 13.iv.2015 leg. Roberts; 1♀ 20.iv.2015 leg. Roberts; Wadi al Helo/near Tunnel 28♂♂ 2♀♀ 19.iii.2009 leg. CSE; Wadi Bih (dam) 3♂♂ 19.iii.2009 leg. CSE; Wadi Hayl 1♀ 15.iii.2008 leg. Hauser; 2♂♂ 15.iii.2008 leg. Hauser; 11♂ 19.iii.2009 leg. CSE; Wadi Madaq 1♀ 19.iii.2009 leg. CSE; Wadi Tarabat 1♂ 14.iii.2010 leg. AvH; Wadi Wurayah 2♂♂ 19.iii.2009 leg. CSE.

**Geographic distribution:** North Africa, Israel, Jordan, Syria (SCHMIDT 2000), Saudi Arabia, UAE (GUICHARD 1993), UAE (DOLLFUSS 2018, 2021).

***Cerceris pharaonum* KOHL, 1898** (Figs 15-16)

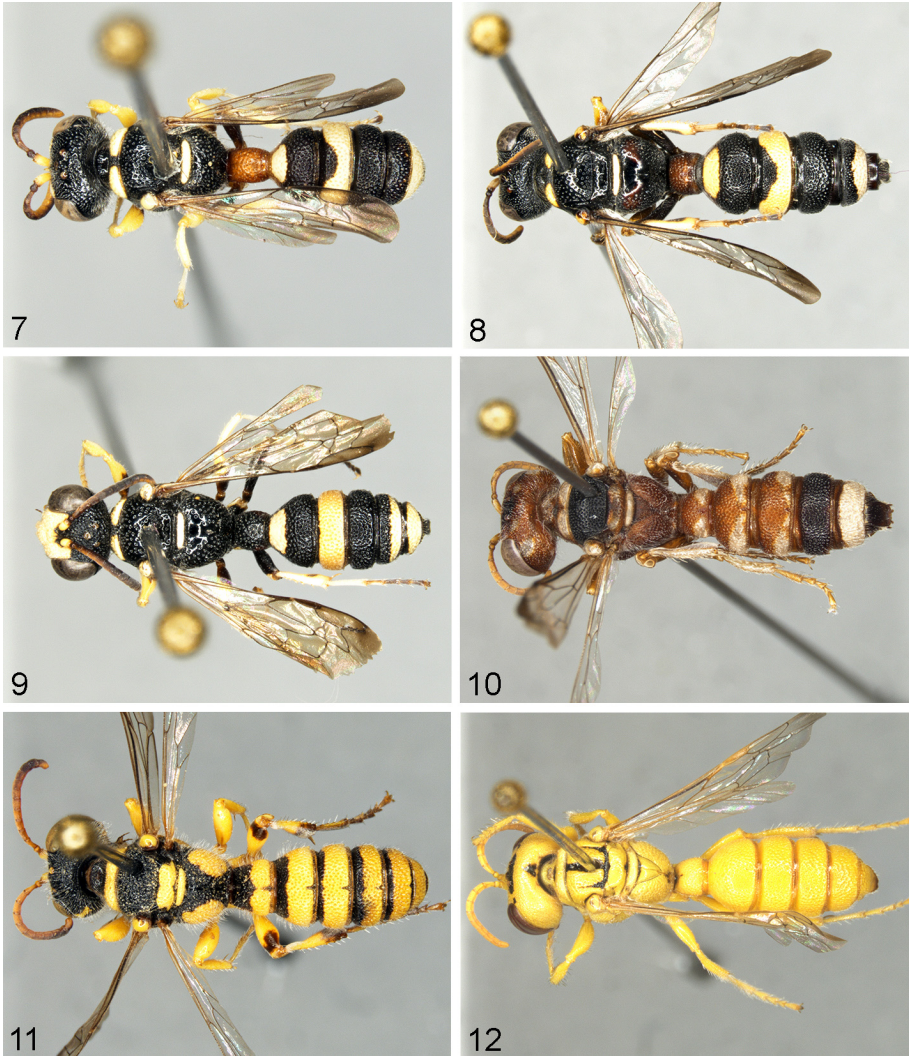
**Material examined:** Mahafiz 1♂ 25.iii.2009 leg. AvH; Wadi Hayl 1♀ 19.iii.2009 leg. CSE.

**Geographic distribution:** North Africa, Chad, Israel, Jordan, Iran (SCHMIDT 2000). New the the UAE and Arabian Peninsula, also mentioned by DOLLFUSS 2021).

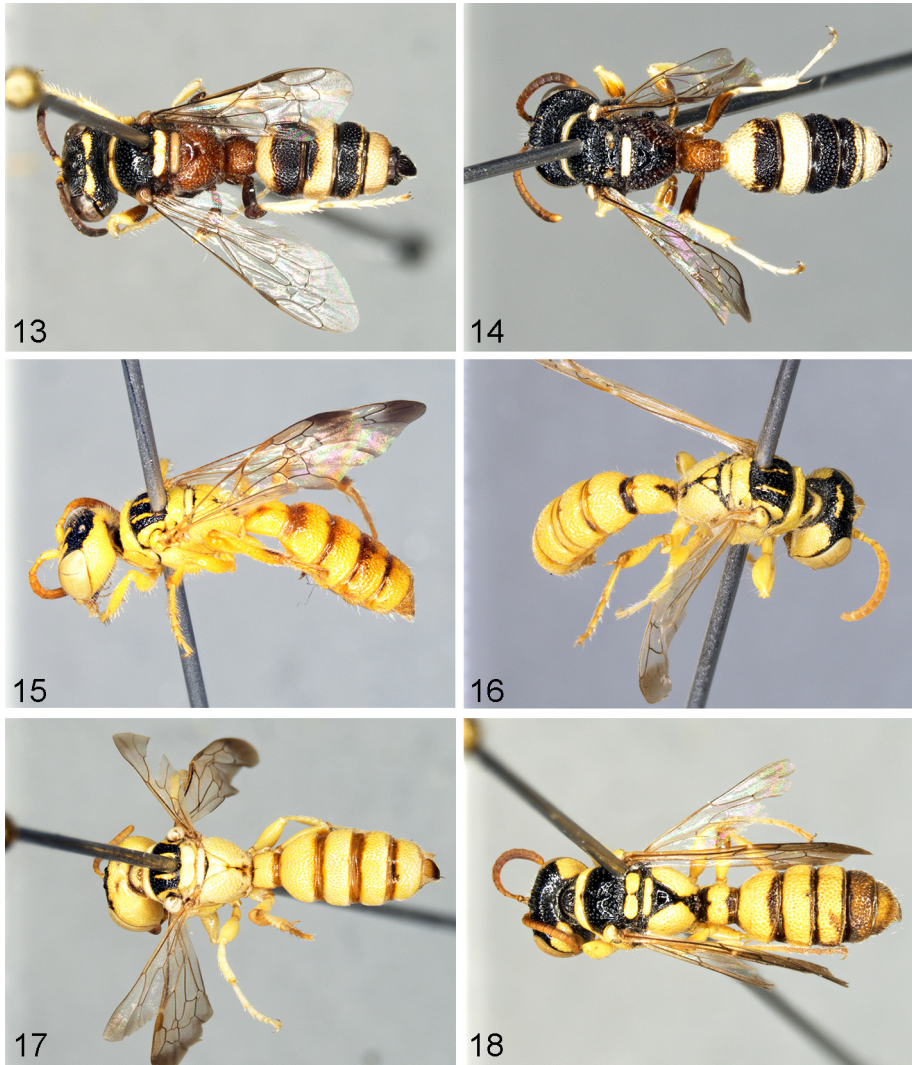
***Cerceris priesneri* MOCHI, 1938** (Figs 17-18)

**Material examined:** Jebel Hafit/S Al Ain 1♂ 13.iv.2015 leg. Roberts; Wadi Hayl 1♂ 19.iii.2009 leg. CSE; Wadi Shawkah 1♂ 12.v.2017 leg. AvH; Wadi Tarabat 1♀ 14.iii.2010 leg. AvH.

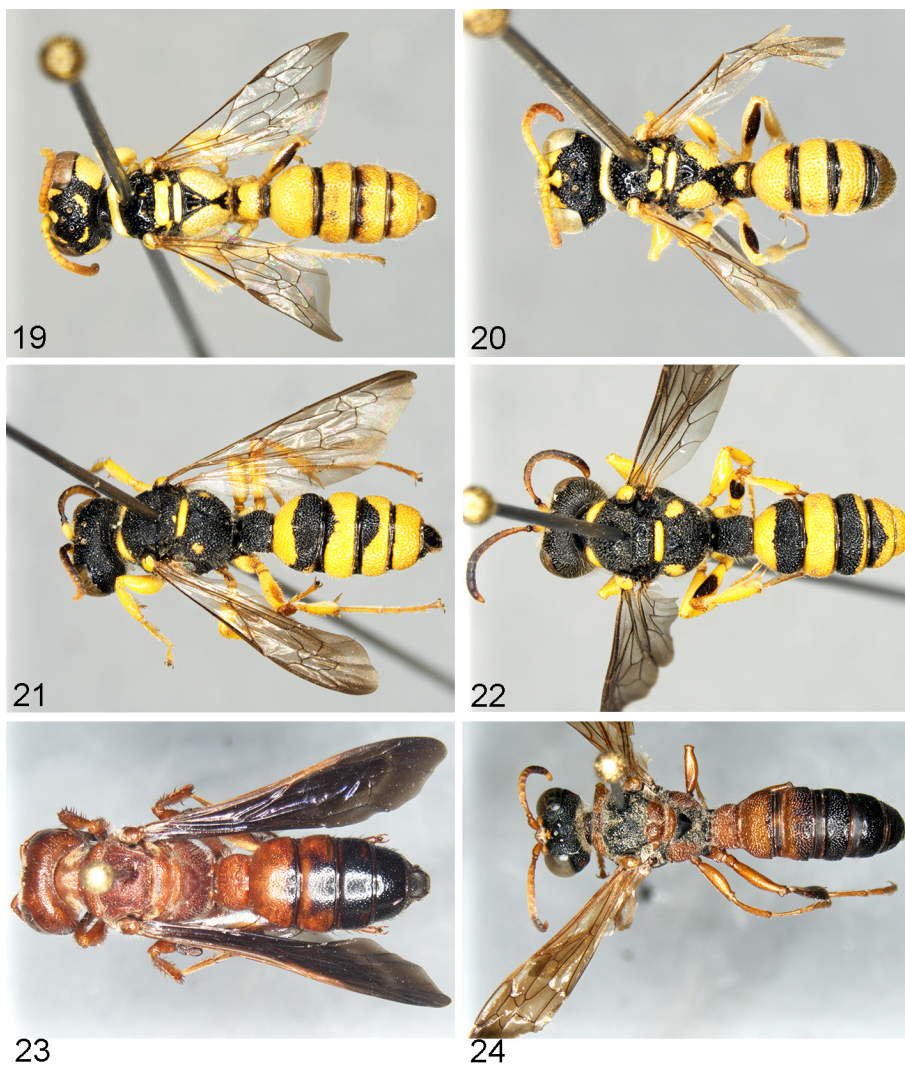
**Geographic distribution:** North Africa, Yemen (SCHMIDT 2013), Saudi Arabia (GUICHARD 1993), Oman (GUICHARD 1980). New to the UAE, also mentioned by DOLLFUSS 2021).



**Figs 7-12:** (7) *Cerceris difficilis* GUICHARD, 1993. Male. L = 7.0 mm; (8-9) *Cerceris fischeri* SPINOLA, 1839. (8) Female. L = 11.8 mm. (9) Male. L = 9.5 mm; (10-11) *Cerceris fitzgeraldi* EMPEY, 1973. (10) Female. L = 11.2 mm. (11) Male. L = 10.2 mm; (12) *Cerceris hameri* GUICHARD, 1993. Female. L = 10.5 mm.



**Figs 13-18:** (13-14) *Cerceris hathor* PULAWSKI, 1983. (13) Female. L = 10.0 mm. (14) Male. L = 8.5 mm; (15-16) *Cerceris pharaonum* KOHL, 1898. (15) Female. L = 9.0 mm. (16) Male. L = 8.5 mm; (17-18) *Cerceris priesneri* MOCHI, 1938. (17) Female. L = 9.5 mm. (18) Male. L = 8.0 mm.



**Figs 19-24:** (19-20) *Cerceris pulchella* KLUG, 1845. (19) Female. L = 9.0 mm. (20) Male. L = 8.0 mm; (21-22) *Cerceris sabulosa* (PANZER, 1799). (21) Female from Turkey. L = 10.5 mm. (22) Male. L = 11.0 mm; (23-24) *Cerceris solitaria* DAHLBOM, 1845. (23) Female from Oman. L = 18.0 mm. (24) Male. L = 16.0 mm.

***Cerceris pulchella* KLUG, 1845 (Figs 19-20)**

**Material examined:** Mahafiz 3♀♀ 19.iii.2009 leg. CSE; 1♂ 25.iii.2009 leg. AvH; Sharjah Desert Park 3♂♂ 2♀♀ 19.iii.2009 leg. CSE; Umm al Qaywayn 1♀ 15.iii.2008 leg. Hauser; 1♀ 19.iii.2009 leg. CSE.

**Geographic distribution:** North Africa, Israel, Syria, Jordan (SCHMIDT 2000), Saudi Arabia (GUICHARD 1993), Oman (GUICHARD 1980), UAE (DOLLFUSS 2021).

***Cerceris sabulosa* (PANZER, 1799)** (Figs 21-22)

**Material examined:** Wadi Madaq 1♂ 08.iii.2011 leg. AvH; Wadi Wurayah 2♂♂ 19.iii.2009 leg. CSE.

**Geographic distribution:** Palaearctic region (SCHMIDT 2000), Saudi Arabia (GUICHARD, 1993), Oman (GUICHARD 1980). New to the UAE.

***Cerceris solitaria* DAHLBOM, 1845** (Figs 23-24)

**Material examined:** Umm al Qaywayn 1♀ 07.vi.2009 leg. AvH.

**Geographic distribution:** North and subsaharian Africa, Israel (SCHMIDT 2000), Saudi Arabia (GUICHARD 1993), Oman (GUICHARD 1980). New to the UAE.

***Cerceris straminea* DUFOUR, 1853** (Figs 25-26)

**Material examined:** 30 km SEE Ruwais, Houbara Protected Area 1♂ 4♀♀ 16.vi.2016 leg. AvH; Umm al Qaywayn 1♀ 15.iii.2008 leg. Hauser; Wadi Bih (dam) 2♂♂ 19.iii.2009 leg. CSE; 2♂♂ 26.iii.2009 leg. AvH; Wadi Tarabat 1♂ 1♀ 14.iii.2010 leg. AvH.

**Geographic distribution:** North Africa to Central Asia (SCHMIDT 2000), Saudi Arabia, UAE (GUICHARD 1993), Oman (GUICHARD 1980). UAE (SCHMID-EGGER 2011, DOLLFUSS 2021).

***Cerceris tricolorata* MOCHI, 1938** (Figs 27-28)

**Material examined:** Abu Dhabi, Al Wathba Wetland Reserve 1♀ 10.v.2017 leg. AvH; Al Ajban 2♂♂ 1♀ 12.ix.2006 leg. AvH; Dubai/Al Awir 1♂ 26.v.1984 leg. Sudgen; Wadi Wurayah 1♀ 19.iii.2009 leg. CSE, Barg al-Saqoor 3xf 17.v.2019 leg. AvH.

**Geographic distribution:** North Africa, Sudan, Chad, Israel, Iraq, Pakistan (SCHMIDT 2000), Saudi Arabia, UAE (GUICHARD 1993, SCHMID-EGGER 2011, DOLLFUSS 2018, 2021).

***Cerceris vagans* RADOSZKOWSKI, 1877** (Figs 29-30)

As *Cerceris turkestanica* RADOSZKOWSKI, 1893 in GUICHARD (1993), and as *Ceceria rufonodis* RADOSZKOWSKI, 1877 in SCHMIDT (2000).

**Material examined:** Wadi Bih (dam) 2♂♂ 19.iii.2009 leg. CSE; Wadi Hayl 1♂ 15.iii.2008 leg. Hauser; 2♂♂ 19.iii.2009 leg. CSE; Wadi Madaq 1♂ 13.iii.2008 leg. Hauser; Wadi Wurayah 22♂♂ 1♀ 19.iii.2009 leg. CSE.

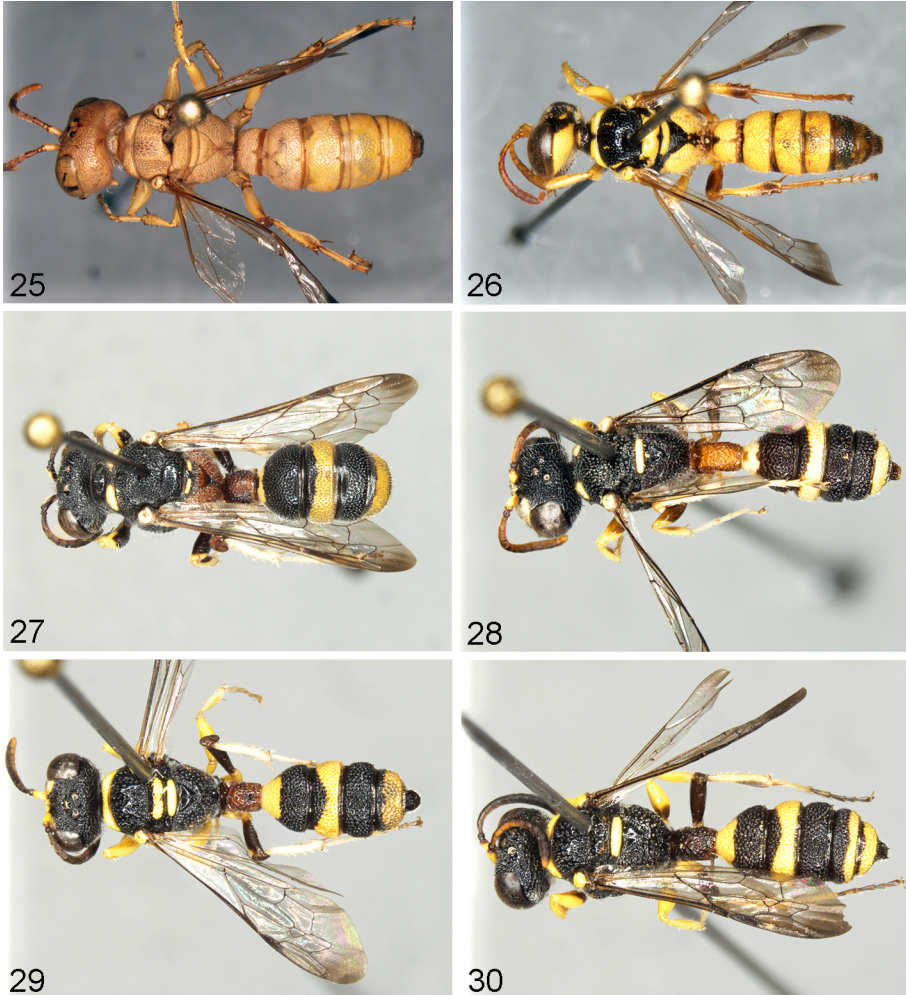
**Geographic distribution:** Eastern Mediterranean area, Central Asia, Iran (SCHMIDT 2000), UAE (GUICHARD 1993).

***Cerceris vagula* KOHL, 1906** (Figs 31-32)

**Material examined:** Khor Fakkan 1♂ 18.vi.2008 leg. AvH; Wadi Bih (dam) 1♂ 24.iii.2008 leg. AvH; 1♂ 18.vi.2008 leg. AvH; 2♀♀ 19.iii.2009 leg. CSE; 4♂♂ 19.iii.2009 leg. CSE; 2♂♂ 11.ii.2010 leg. AvH; 2♀♀ 13.i.2011 leg. CSE; Wadi Hayl 2♀♀ 19.iii.2009 leg. CSE; 2♂♂ 19.iii.2009 leg. CSE; Wadi Shawkah 2♀♀ 13.i.2011 leg. CSE; Wadi Wurayah 1♀ 26.xii.2006 leg. AvH; 1♀ 19.iii.2009 leg. CSE; 2♂♂ 19.iii.2009 leg. CSE.

**Geographic distribution:** Yemen, Saudi Arabia, Oman, UAE (GUICHARD 1993, DOLLFUSS 2021).



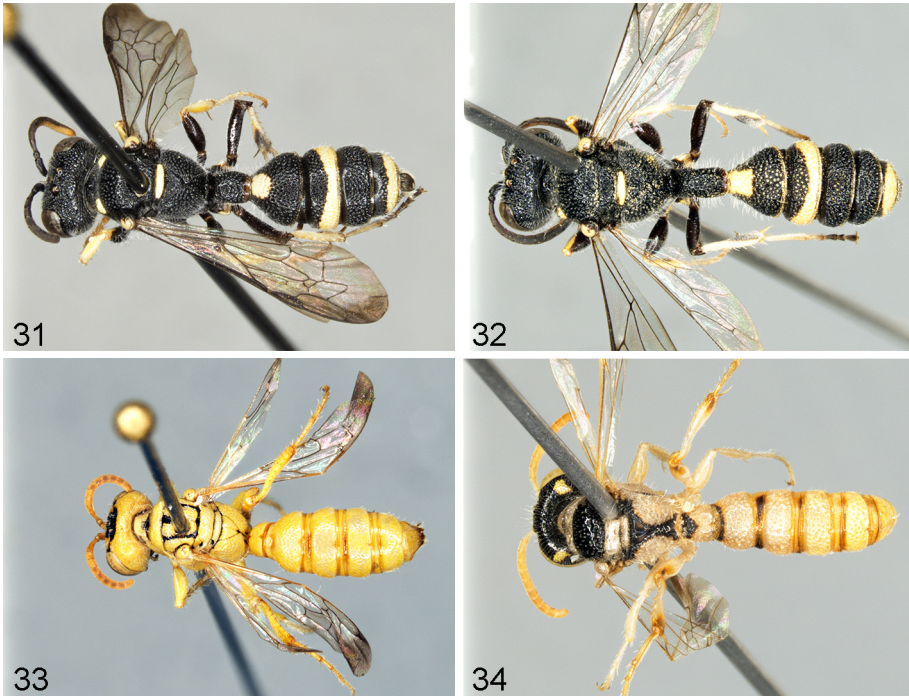


**Figs 25-30:** (25-26) *Cerceris straminea* DUFOUR, 1853. (25) Female. L = 14.5 mm. (26) Male. L = 13.0 mm; (27-28) *Cerceris tricolorata* MOCHI, 1938. (27) Female from Oman. L = 10 mm. (28) Male. L = 9.0 mm; (29-30) *Cerceris vagans* RADOSZKOWSKI, 1877. (29) Female. L = 8.7 mm. (30) Male. L = 9.0 mm.

***Cerceris vittata* LEPELETIER de SAINT FARGEAU, 1845 (Figs 33-34)**

**Material examined:** Abu Dhabi, Al Wathba Wetland Reserve 1♀ 15.ii.2015 leg. AvH; Mahafiz 1♂ 25.iii.2009 leg. AvH; Sharjah Desert Park 1♀ 19.iii.2009 leg. CSE; Umm al Qaywayn 1♂ 19.iii.2009 leg. CSE.

**Geographic distribution:** The species is known by three subspecies: ssp. *vittata* in the mediterranean area of Morocco, Algeria and Tunisia, ssp. *eurypyga* KOHL, 1898 in southern Morocco and Algeria, and ssp. *littorea* de BEAUMONT, 1951 of the Atlantic coast in southwestern Morocco (SCHMIDT 2000). Specimens from Saudi Arabia and UAE belongs to the ssp. *eurypyga* (GUICHARD, 1993).



**Figs 31-34:** (31-32) *Cerceris vagula* KOHL, 1906. (31) Female. L = 8.5 mm. (32) Male. L = 9.0 mm; (33-34) *Cerceris vittata* LEPELETIER, 1845. (33) Female. L = 8.0 mm. (34) Male. L = 7.0 mm.

### Changes in the *Cerceris* fauna of the UAE

The following species were incorrectly mentioned by SCHMID-EGGER (2011), the records base on misidentifications: *Cerceris hausa* (ARNOLD, 1931), *Cerceris nugax* ARNOLD, 1931, and *Cerceris rufocincta* GERSTÄCKER, 1858. *Cerceris hausa* and *Cerceris rufocincta* have to be removed from the checklist of species of the UAE.

DOLLFUSS (2018, 2021) published new records also from the UAE, based on material by J. HALADA, stored in the "Biologiezentrum Linz" collection. These citations are mentioned above under the "distribution section". The following species from the UAE are not recorded here and are additionally included in the paper of DOLLFUSS (2021). They represent new findings for the UAE fauna and have to be added to the checklist of the country: *Cerceris amakosa* BRAUNS, 1926, *Cerceris chlorotica* SPINOLA, 1839, *Cerceris histrionica* KLUG, 1845 (as spec. aff.), *Cerceris lateriproducta* MOCHI, 1938, *Cerceris palmatorum* DE BEAUMONT, 1951, *Cerceris songhai* GUICHARD, 1993.

### Zusammenfassung

Neue Nachweise von 18 Arten der Grabwespengattung *Cerceris* LATREILLE, 1802 (Hymenoptera, Crabronidae) aus den Vereinigten Arabischen Emiraten werden vorgestellt. Die folgenden Arten sind neu für die Fauna der VAE: *Cerceris fischeri* SPINOLA, 1839, *Cerceris pharaonum* KOHL, 1898,

*Cerceris priesneri*, MOCHI, 1938, *Cerceris sabulosa* (PANZER, 1799) und *Cerceris solitaria* DAHLBOM, 1845. *Cerceris pharaonum* ist gleichzeitig ein Neunachweis für die Fauna der Arabischen Halbinsel. Weitere aktuell in der Literatur genannte Arten werden genannt, darunter auch weitere Neunachweise für die UAE.

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We particularly thank Antonius van Harten for sending the material and for his constantly constructive and pleasant collaboration on the project. We also thank Martin Hauser from Sacramento/California, Erwin Scheuchl from Landshut/Germany and Huw Roberts from Al Ain/UAE for sending specimens for further identification.

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STRAKA J. & C. SCHMID-EGGER C. (2017): Order Hymenoptera, family Crabronidae. Genus *Tachysphex* Kohl, 1883. — Arthropod fauna of the UAE **6**: 417-461. Abu Dhabi.

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