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**NEW DATA ON THE TRIBE OSMIINI (HYMENOPTERA:
MEGACHILIDAE) FROM AZERBAIJAN**

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Summary. An annotated list of 16 species and two subspecies of the osmiine bees is given. All of them are newly recorded from Azerbaijan. An updated checklist of the 47 species of Osmiini so far known from Azerbaijan is provided.

Key words: Apoidea, bees, fauna, the Caucasus, Palaearctic region.

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Резюме. Приведен аннотированный список новых для фауны Азербайджана 16 видов и двух подвидов пчел трибы Osmiini. Уточненный список Osmiini Азербайджана насчитывает в настоящее время 47 видов.

INTRODUCTION

There are currently about 700 species of bees known from Azerbaijan (Aliyev *et al.*, 2018), although this is undoubtedly a gross underrepresentation owing to the sparse sampling that has been done on the fauna, and new records and species are often discovered (Astafurova & Proshchalykin, 2016; Kuhlmann & Proshchalykin, 2016; Aliyev *et al.*, 2017; Proshchalykin & Kuhlmann, 2018).

The osmiine bees (Megachilidae: Osmiini), which comprise 15 genera and roughly 1200 species worldwide, occur in North America, Africa and Eurasia (Michener, 2007; Ungricht *et al.*, 2008; Müller, 2019; but see Gonzalez & Griswold, 2011). They are especially diverse in mediterranean and xeric climates of southern Africa, southwestern North America and the Palaearctic region.

Hitherto, four species of Osmiini have been described from Azerbaijan: *Chelostoma proximum* Schletterer, 1889 [= *Ch. rapunculi* (Lepelletier, 1841)], *Heriades ursina* Benoist, 1935 [= *Chelostoma emarginatum* (Nylander, 1856)], *Osmia caucasica* Friese, 1920 [= *Hoplitis caucasica* (Friese, 1920)] and *Osmia verruciventris* Morawitz, 1886 [= *Hoplitis verruciventris*

(Morawitz, 1886)], although today only two are considered valid, and in total 29 species have been recorded for the country (Morawitz, 1876, 1877, 1886; Maharramov *et al.*, 2014; Ascher & Pickering, 2019; Müller, 2019).

In the present study we report additional records of 16 species and two subspecies of *Osmiini* with all this taxa recorded from Azerbaijan for the first time. An updated checklist of the species of *Osmiini* known from Azerbaijan is also provided.

The results presented in this publication are based on 83 specimens collected in Azerbaijan and currently housed in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russia (FCBV), the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP), and the Institute of Bioresources of Nakhchivan Branch of National Academy of Sciences of Azerbaijan, Nakhchivan, Azerbaijan (IBNA).

Distribution of *Osmiini* species generally follows Müller (2019). For detailed synonymy of *Osmiini* species also see Müller (2019). We have used the following abbreviations for collectors: KA – Kh. Aliyev, MM – M. Maharramov, MP – M. Proshchalykin. New distributional records are noted with an asterisk (*).

LIST OF SPECIES OF THE TRIBE OSMIINI NEWMAN, 1834 RECORDED FROM AZERBAIJAN FOR THE FIRST TIME

Chelostoma (Foveosmia) garrulum (Warncke, 1991)

Osmia (Foveosmia) garrula Warncke, 1991: 23: 270 (holotype: ♀, “20 km W Sarikamis/Kars, in 2200 m”, Turkey).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, Kechili, [45°43'E 39°22'N], 1.VII 2017, 1 ♀, 1 ♂, MM [IBNA]; Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 4 ♀, 3 ♂, MP, KA, MM [FSCV]; Shakhbuz, Bichenek [45°46'E 39°31'N], 23.VII 2018, 1 ♂, MP, KA, MM [FSCV]; Julfa, Bayahmad [45°52'E 39°15'N], 27.VII 2018, 4 ♂, MP, KA, MM [FSCV]; Ordubad, Nurgut [45°53'E 39°13'N], 29.VII 2018, 2 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Armenia, *Azerbaijan, Turkey.

Hoplitis (Alcidamea) mollis Tkalčú, 2000

Hoplitis (Liosmia) mollis Tkalčú, 2000: 316 (holotype: ♂, “Erzurum”, Turkey).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Babek, Sirah [45°33'E 39°18'N], 7.VI 2018, 1 ♀, MM [IBNA].

DISTRIBUTION. Bulgaria, *Azerbaijan, Jordan, Syria, Turkey.

Hoplitis (Alcidamea) tridentata (Dufour et Perris, 1840)

Osmia tridentata Dufour & Perris, 1840: 10 (syntypes: ♀♀, ♂♂, France).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, Bichenek [45°46'E 39°31'N], 23.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Europe, Northern Africa, *Azerbaijan, Turkey, Syria, Israel, Palestine, Iran, Central Asia.

Hoplitis (Anthocopa) dalmatica (Morawitz, 1871)

Osmia dalmatica Morawitz, 1871: 207 (syntypes: ♀♀, ♂♂, “Dalmatia”, Croatia).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, Bichenek [45°46'E 39°31'N], 23.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. South Europe, *Azerbaijan, Turkey.

Hoplitis (Anthocopa) fasciculata (Alfken, 1934)

Osmia fasciculata Alfken, 1934: 26 (lectotype: ♀, designated by Zanden, 1986: 68, “Mandas”, Italy: Sardinia).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Julfa, Milakh [45°43'E 39°15'N], 27.VII 2018, 2 ♂, MP, KA, MM [FSCV].

DISTRIBUTION. South Europe, *Azerbaijan, Turkey, Syria, Jordan, Cyprus, Iran.

Hoplitis (Anthocopa) perezi (Ferton, 1895)

Osmia perezi Ferton, 1895: 205 (lectotype: ♀, designated by Tkalců, 1969: 330, “Miramas”, France).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Babek, Zeynaddin [45°28'E 39°13'N], 14.VII 2016, 1 ♀, MM [IBNA].

DISTRIBUTION. Europe, Northern Africa, Armenia, *Azerbaijan, Turkey, Israel, Palestine, Afghanistan, Central Asia.

Osmia (Erythrosmia) andrenoides Spinola, 1808

Osmia andrenoides Spinola, 1808: 61 (syntypes: ♀♀, ♂♂, “habitat prope Genuam, in loco dicto Marassi”, Italy).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 1 ♀, MP, KA, MM [FSCV]; Ordubad, Nurgut [45°53'E 39°13'N], 29.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Europe, Georgia, *Azerbaijan, Turkey, Cyprus, Syria, Jordan, Israel, Palestine.

Osmia (Helicosmia) dimidiata Morawitz, 1870

Osmia dimidiata Morawitz, 1870: 316 (syntypes: ♀♀, “Hab. in Caucaso”, Caucasus).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Babek, Nahajir [45°35'E 39°14'N], 13.VI 2018, 1 ♀, MM [IBNA]; Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Europe, Northern Africa, *Azerbaijan, Turkey, Cyprus, Jordan, Lebanon, Israel, Palestine, Iran.

Osmia (Helicosmia) dives Mocsáry, 1877

Osmia dives Mocsáry, 1877: 232 (syntypes: ♀♀, Hungary).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 1 ♀, MP, KA, MM [FSCV]; Shakhbuz, Zarnatun [45°46'E 39°31'N], 24-25.VII 2018, 4 ♀, MP, KA, MM [FSCV]; Ordubad, Aghdara [45°54'E 39°06'N], 28.VII 2018, 1 ♀, MP, KA, MM [FSCV]; Ordubad, Nurgut [45°53'E 39°13'N], 29.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. South Europe, Northern Africa, *Azerbaijan, Turkey, Cyprus, Syria, Jordan, Lebanon, Israel, Palestine.

Osmia (Helicosmia) labialis Pérez, 1879

Osmia labialis Pérez, 1879: 182 (lectotype: ♀, designated by Tkalčú: 1975: 311, “Hautes et Basses-Pyrénées”, France).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 2 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Europe, Northern Africa, *Azerbaijan.

Osmia (Helicosmia) melanogaster Spinola, 1808

Osmia melanogaster Spinola, 1808: 63 (lectotype: ♀, designated by Tkalčú, 1975: 314, Italy).

SPECIMENS EXAMINED. **Azerbaijan.** Lenkoran [48°51'E 38°45'N], 2 ♀, A. Starck [ZISP]; Kumbashi, N Lenkoran, Talysh [48°26'E 41°05'N], 1-3.VII 1910, 7 ♀, K. Satunin [ZISP]; Elizavetpol (=Gyandzha) [41°21'E 40°40'N], 2-3.IV 1909, 1 ♂, Babadzhanidi [ZISP]; Dzhevadskiy uezd, Araks River, 1.VI-1.VII 1909, 2 ♂, Babadzhanidi [ZISP]; Barda, Terter River [47°07'E 40°22'N], 22-27.VI 1933, 2 ♀, F. Luk'yanovich [ZISP].

DISTRIBUTION. Europe, Northern Africa, Armenia, *Azerbaijan, Turkey, Cyprus, Syria, Jordan, Israel, Palestine, Iran.

Osmia (Helicosmia) signata Erichson, 1835

Osmia signata Erichson, 1835: 107 (lectotype: ♀, designated by Tkalčú, 1974a: 336, “Andalusien”, Spain).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, Zarnatun [45°46'E 39°31'N], 24-25.VII 2018, 1 ♀, 1 ♂, MP, KA, MM [FSCV].

DISTRIBUTION. Europe, Northern Africa, *Azerbaijan, Turkey, Cyprus, Syria, Jordan, Israel, Palestine, Iran, Turkmenistan, China.

Osmia (Hemiosmia) difficilis Morawitz, 1875

Osmia difficilis Morawitz, 1875: 91 (syntypes: ♀♀, “in valle Sarafschan”, Tajikistan).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Shakhbuz, 4 km SE Kechili [45°45'E 39°20'N], 21.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. *Azerbaijan, Turkey, Israel, Palestine, Iran, Central Asia.

Osmia (Hoplosmia) distinguenda (Tkalčú, 1974)

Anthocopa (Odontanthocopa) distinguenda Tkalčú, 1974b: 129 (holotype: ♂, “Jerusalem”, Israel).

SPECIMENS EXAMINED. **Azerbaijan.** *Nakhichevan AR*, Julfa, Bayahmad [45°52'E 39°15'N], 27.VII 2018, 1 ♀, MP, KA, MM [FSCV].

DISTRIBUTION. Greece, Armenia, *Azerbaijan, Turkey, Syria, Jordan, Israel, Palestine.

Osmia (Osmia) bicornis globosa (Scopoli, 1763)

Apis globosa Scopoli, 1763: 300 (neotype: ♂, designated by Warncke, 1986: 74, “Klagenfurt, Kärnten”, Austria).

SPECIMENS EXAMINED. **Azerbaijan**. Elizavetpol (=Gyandzha) [41°21'E 40°40'N], 2-3.IV 1909, 1 ♀, 1 ♂, Babadzhanidi [ZISP].

DISTRIBUTION. Europe, Northern Africa, Armenia, *Azerbaijan, Turkey, Syria, Israel, Palestine, Iran, Central Asia.

***Osmia (Osmia) cornuta quasirufa* Peters, 1978**

Osmia (Osmia) cornuta quasirufa Peters, 1978: 303 (holotype: ♀, “Kingi (Maryut, sw von Alexandria) im Garten”, Egypt).

SPECIMENS EXAMINED. **Azerbaijan**. Elizavetpol (=Gyandzha) [41°21'E 40°40'N], 12.III 1909, 1 ♀, Babadzhanidi [ZISP]; idem, 2-3.IV 1909, 2 ♀ Babadzhanidi [ZISP]; *Nakhichevan AR*, Nakhichevan [45.24'E 39.13'N], 10.III 2018, 1 ♀, 3 ♂, MM [IBNA].

DISTRIBUTION. Greece, Northern Africa, Georgia, Armenia, *Azerbaijan, Turkey, Syria, Iran.

***Osmia (Osmia) mustelina* Gerstaecker, 1869**

Osmia mustelina Gerstaecker, 1869: 348 (lectotype: ♀, designated by Tkalců, 1971: 225, “Franken (bei Culmbach)”, Germany).

SPECIMENS EXAMINED. **Azerbaijan**. *Nakhichevan AR*, Ordubad [46°01'E 38°54'N], 5.VI 1934, 1 ♂, Kirshenblatt [ZISP].

DISTRIBUTION. Europe, Georgia, Armenia, *Azerbaijan, Turkey, Lebanon, Israel, Palestine, Iran.

***Osmia (Pyrosmia) versicolor* Latreille, 1811**

Osmia versicolor Latreille, 1811: 586 (neotype: ♀, designated by Zanden, 1984: 182, “Cattolica”, Italy).

SPECIMENS EXAMINED. **Azerbaijan**. *Nakhichevan AR*, Julfa, Gazanchi [45°41'E 39°13'N], 17.V 2017, 1 ♂, MM [IBNA].

DISTRIBUTION. Europe, Northern Africa, Georgia, *Azerbaijan, Turkey, Syria, Jordan, Lebanon, Israel, Palestine.

CONCLUSION

In total 47 Osmiini species are now recorded from Azerbaijan (Table 1). Some Osmiini records previously published by M. Maharramov, Kh. Aliyev and A. Bayramov (Maharramov, 2010; Aliyev & Maharramov, 2010; Maharramov *et al.*, 2014) are problematic and for *Chelostoma grande* (Nylander, 1852), *Osmia bicornis bicornis* (Linnaeus, 1758), *O. cornuta cornuta* (Latreille, 1805), *O. inermis* Zetterstedt, 1838, and *O. xanthomelana* (Kirby, 1802) Azerbaijan is outside of their known range. Thus, dubious records from these publications are not included in the checklist of Osmiini bees of Azerbaijan (Table 1).

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Table 1. An updated tabular checklist of Osmiini bees of Azerbaijan

No	Species	Reference			
		I	II	III	IV
1	<i>Chelostoma distinctum</i> (Stöckert, 1929)		+	+	
2	<i>Chelostoma emarginatum</i> (Nylander, 1856)		+	+	
3	<i>Chelostoma garrulum</i> (Warncke, 1991)				+
4	<i>Chelostoma mocsaryi</i> Schletterer, 1889	+			
5	<i>Chelostoma rapunculi</i> (Lepeletier, 1841)	+	+	+	
6	<i>Heriades crenulata</i> Nylander, 1856	+			
7	<i>Heriades truncorum</i> (Linnaeus, 1758)	+			
8	<i>Hoplitis adunca</i> (Panzer, 1798)	+			
9	<i>Hoplitis agis</i> (Benoist, 1929)		+	+	
10	<i>Hoplitis annulata crenulata</i> (Morawitz, 1871)		+	+	
11	<i>Hoplitis carinata</i> (Stanek, 1969)		+	+	
12	<i>Hoplitis caucasica</i> (Friese, 1920)		+	+	
13	<i>Hoplitis curvipes</i> (Morawitz, 1871)			+	
14	<i>Hoplitis dalmatica</i> (Morawitz, 1871)				+
15	<i>Hoplitis fasciculata</i> (Alfken, 1934)				+
16	<i>Hoplitis fulva</i> (Eversmann, 1852)		+	+	
17	<i>Hoplitis jakovlevi</i> (Radoszkowski, 1874)	+	+		
18	<i>Hoplitis laevifrons</i> (Morawitz, 1872)	+			
19	<i>Hoplitis leucomelana</i> (Kirby, 1802)	+	+	+	
20	<i>Hoplitis mollis</i> Tkalcù, 2000				+
21	<i>Hoplitis perezi</i> (Ferton, 1895)				+
22	<i>Hoplitis tridentata</i> (Dufour et Perris, 1840)				+
23	<i>Hoplitis verruciventris</i> (Morawitz, 1886)		+	+	
24	<i>Osmia andreoides</i> Spinola, 1808				+
25	<i>Osmia apicata</i> Smith, 1853	+			
26	<i>Osmia aurulenta</i> Panzer, 1799	+			
27	<i>Osmia bicornis globosa</i> (Scopoli, 1763)				+
28	<i>Osmia bidentata</i> Morawitz, 1876	+			
29	<i>Osmia brevicornis</i> (Fabricius, 1798)	+	+		
30	<i>Osmia caerulescens</i> (Linnaeus, 1758)	+	+	+	
31	<i>Osmia cephalotes longiceps</i> Morawitz, 1876		+	+	
32	<i>Osmia cerinthidis</i> Morawitz, 1876	+			
33	<i>Osmia cornuta quasirufa</i> Peters, 1978				+
34	<i>Osmia difficilis</i> Morawitz, 1875				+
35	<i>Osmia dimidiata</i> Morawitz, 1870				+
36	<i>Osmia distinguenda</i> (Tkalcù, 1974)				+
37	<i>Osmia dives</i> Mocsáry, 1877				+
38	<i>Osmia hellados</i> Zanden, 1984		+	+	
39	<i>Osmia labialis</i> Pérez, 1879				+
40	<i>Osmia leaiana</i> (Kirby, 1802)	+			

Table 1. Continue

No	Species	Reference date			
		I	II	III	IV
41	<i>Osmia melanogaster</i> Spinola, 1808				+
42	<i>Osmia mustelina</i> Gerstaecker, 1869				+
43	<i>Osmia nana</i> Morawitz, 1874	+			
44	<i>Osmia niveata</i> (Fabricius, 1804)			+	
45	<i>Osmia parietina</i> Curtis, 1828	+			
46	<i>Osmia signata</i> Erichson, 1835				+
47	<i>Osmia versicolor</i> Latreille, 1811				+
Total:		17*	15	15	18

References data source: I – Maharramov *et al.*, 2014; II – Ascher & Pickering, 2019; III – Müller, 2019; IV – current data. * – the real number of Osmiini species from Maharramov *et al.*, 2014 is 22, but some of the records are doubtful (see above).

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