

To the knowledge of the genus *Sphecodes* Latreille (Hymenoptera: Halictidae) of Caucasus

К познанию фауны пчел рода *Sphecodes* Latreille (Hymenoptera: Halictidae) Кавказа

Yu.V. Astafurova*, M.Yu. Proshchalykin**
Ю.В. Астафурова*, М.Ю. Прошчалыкин**

* Zoological Institute, Russian Academy of Sciences, Universitetskaya Nab. 1, St.-Petersburg 199034 Russia. E-mail: Yulia.Astafurova@zin.ru.

* Зоологический институт Российской академии наук, Университетская наб. 1, Санкт-Петербург 199034 Россия.

** Institute of Biology and Soil Sciences, Russian Academy of Sciences, Far East Branch, Prosp. 100 let Vladivostoku 159, Vladivostok 690022 Russia. E-mail: proshchalikin@biosoil.ru.

** Биолого-почвенный институт ДВО РАН, просп. 100 лет Владивостоку 159, Владивосток 690022 Россия.

Key words: bees, Apiformes, Abkhazia, Georgia, Armenia, Azerbaijan, fauna.

Ключевые слова: пчелы, Apiformes, Абхазия, Грузия, Армения, Азербайджан, фауна.

Abstract. An annotated list of 28 species of the genus *Sphecodes* Latreille from Caucasus is given. Eight species, *Sphecodes alternatus* Smith, 1853, *S. anaticus* Warncke, 1992, *S. crassus* Thomson, 1870, *S. longulus* Hagens, 1882, *S. majalis* Pérez, 1903, *S. pingiculus* Pérez, 1903, *S. pseudofasciatus* Blüthgen, 1925, and *S. scabricollis* Wesmael, 1835, are newly recorded from this region.

Резюме. Приведен аннотированный список 28 видов пчел рода *Sphecodes* Latreille Кавказа. Восемь видов — *Sphecodes alternatus* Smith, 1853, *S. anaticus* Warncke, 1992, *S. crassus* Thomson, 1870, *S. longulus* Hagens, 1882, *S. majalis* Pérez, 1903, *S. pingiculus* Pérez, 1903, *S. pseudofasciatus* Blüthgen, 1925 и *S. scabricollis* Wesmael, 1835 — впервые указываются для этого региона.

Introduction

The genus *Sphecodes* Latreille currently includes 320 described species and widespread on all continents except Australia, where it is known only from the northeast. In recent years significant progress has been made towards a better knowledge of the species of *Sphecodes* from the Palaearctic Region, and especially the territories of the Europe [Bogusch, Straka, 2012; Proshchalykin, Astafurova, 2012; Astafurova et al., 2014], Asian part of Russia [Astafurova, Proshchalykin, 2014, 2015b, c], Mongolia [Astafurova, Proshchalykin, 2015a; Astafurova et al., 2015], and Turkey [Özbek et al., 2015]. Sixty seven species are known from the Palaearctic Region [Astafurova, Proshchalykin, 2015b], but a little has been known about the *Sphecodes* fauna of Caucasus.

The Caucasus region is a mountain area lying between the Black Sea and the Caspian Sea, considered part of the natural boundary between Europe and Asia.

Geographically it is usually considered part of Western Asia, adjacent to northeastern Turkey and northwestern Iran. The northern edge of the Caucasus is known as the Ciscaucasus and the southern portion as the Transcaucasus. The Ciscaucasus contains a large majority of the Greater Caucasus Mountain range, also known as the Major Caucasus mountains. It includes South part of European Russia and northern parts of Georgia and Azerbaijan. The Transcaucasus is bordered on the north by Russia, on the west by the Black Sea and Turkey, on the east by the Caspian Sea, and on the south by Iran. It includes the Caucasus Mountains and surrounding lowlands. All Armenia, Azerbaijan (excluding the northern parts) and Georgia (excluding the northern parts) are in South Caucasus.

Among the bees from Caucasus, *Sphecodes* is one of the least-studied genus. To date, 20 species of *Sphecodes* were recorded from this area [Morawitz, 1876, 1877; Meyer, 1920, 1922, 1925; Blüthgen, 1934; Skhirtladze, 1979, 1981; Warncke, 1992; Aliyev et al., 2007; Bogusch, Straka, 2012; Levchenko, 2014; Kirkitadze, Japoshvili, 2015; Özbek et al., 2015]. The current paper is a further step towards a better documentation of the species of *Sphecodes* from Armenia, Georgia, Azerbaijan and Abkhazia and their distribution patterns in the Palaearctic Region. We list here 28 Caucasian species, including eight newly recorded species.

Material and methods

The results presented in this paper are based on 400 specimens were collected mainly in the last few decades in the Armenia, Georgia, Azerbaijan and Abk-

hazia, that are currently housed in the Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia (ZISP) and Zoological Museum of the Moscow State University, Russia (ZMMU). The distribution of *Sphecodes* species generally follows Astafurova and Proshchalykin [2015b] and Özbek et al. [2015]. For detailed synonymy of *Sphecodes* species see Warncke [1992], Bogusñh and Straka [2012], Astafurova and Proshchalykin [2014, 2015b]. We have used the following abbreviations for the collectors: DK — D. Kasparyan, GV — G. Viktorov, LZ — L. Zimina, VR — V. Richter, YP — Yu. Pesenko. The square brackets are used when information is added to specimen label information (e.g. current name of an old place name). A new distributional records are asterisked (*).

List of species

Sphecodes albilabris (Fabricius, 1793)

Meyer, 1925: 3 [as *S. fuscipennis* (Germar, 1819), Armenia]; Skhirtladze, 1979: 127 (as *S. fuscipennis*; Azerbaijan, Georgia); 1981: 45 (Georgia, Armenia, Azerbaijan); Aliyev et al., 2007: 256 (Azerbaijan); Levchenko, 2014: 32 (Georgia, Armenia, Azerbaijan); Kirkitadze, Japoshvili, 2015: 25 (Georgia); Ascher, Pickering, 2015 (Georgia).

Material. *Abkhazia*: Nizhnaya Eshera, 27.VI.1978, Zagulyaev (ZISP), 1♀; *Armenia*: Erevan, 16–17.VI.1914, Andrievskiy (ZISP), 1♀; Megri, 5–7.VI.1957, LZ (ZMMU), 3♀; Ashtarak, 11.VI.1960, GV (ZMMU), 1♀; *Georgia*: 16 km N Bakhmaro, 10.VII.1967, VR (ZISP), 1♀; *Azerbaijan*: Lenkoran, 2.VII.1929, 29.VI.1930, 12.V.1930, 1.VIII.1931, Shestakov, Alekseev (ZISP), 15♀, 35♂; Adzhikend, VII.1909, Babadzhanidi (ZISP), 2♂; Vel', 13.V.1959, V. Zaytzev (ZISP), 1♀; Zengelyash, 22.VII.1964, Zagulyaev, Pastukhov (ZISP), 1♀; Milakh, 35 km ENE Nakhichevan [Naxcivan], 7.VII.1982, YP (ZISP), 1♀; Gosmalyan, 1800 m, 20.V.1986, Pisanenko (ZISP), 1♀; Gandzha [Gāncā], 19.VIII.1933, M. Vinovskiy (ZISP), 1♀.

Distribution. Caucasus (*Abkhazia, Georgia, Armenia, Azerbaijan); Europe (north to Finland and Sweden), Russia, Turkey, Israel, Central Asia, North Africa, India.

Sphecodes alternatus Smith, 1853

Material. *Georgia*: Signakhi, VII.1895, Mlokosevich, 1♂; *Armenia*: 7 km E Malishka, 16.VI.1960, GV (ZMMU), 1♀; Karabakhlar, 29.VI.1959, GV (ZMMU), 1♂; *Azerbaijan*: Lenkoran, 13–29.VI.1930, 20.VIII.1930, 1931, Shestakov, Alekseev (ZISP), 36♂, 10♀; Sabir-Abad, 26.V.1928, Bocharnikov (ZISP), 1♀; Zakataly, 25.VII.1928, Bocharnikov (ZISP), 1♀; Vel', 13.V.1959, VR (ZISP), 1♀; Akulis, 5 km W Ordubad, 13.V.1982, DK (ZISP), 2♀; Margushevan [Maraga], VI.1935, Vel'tishchev (ZISP), 3♀, 1♂; Hirkan National Park, 18.VII.1964, Zagulyaev (ZISP), 2♀; "Milskaia", 26.V.1934, P. Lehr (ZISP), 2♀; Kakhi, 31.V.1978, VR (ZISP), 1♀; Gosmalyan, 19.VI.1969, LZ (ZMMU), 1♀; Kuduly, 29.VI.1928, Bocharnikov (ZISP), 1♂; Gandzha [Gāncā], 25.VII.1928, S. Tarbinskiy (ZISP), 1♂; Zuvand, 12.VII.1983, Zvantsov (ZISP), 1♂.

Distribution. *Caucasus (Georgia, Armenia, Azerbaijan); South and Central Europe, Russia, Turkey, Iran, Central Asia, North Africa.

Sphecodes anatolicus Warncke, 1992

Material. *Georgia*: Kodzgori, 15.VIII.1913 (ZISP), 1♂; *Armenia*: Karabakhlar, 29.VI.1959, GV (ZMMU), 1♂.

Distribution. *Caucasus (Georgia, Armenia); Turkey, Italy.

Sphecodes crassus Thomson, 1870

Material. *Georgia*: Mta-Tushetia Nature Park, 12.IX.1959, V. Zaytzev (ZISP), 1♂; Batumi, 20.VI.1974, V. Tobias (ZISP), 1♂; Tbilisi, 11.IX.1959, V. Zaytzev (ZISP), 1♂; *Armenia*: Amberd, 12.VIII.1969, VR (ZISP), 1♂.

Distribution. *Caucasus (Georgia, Armenia); Europe (north to 64°), Russia, Turkey, Iran, Mongolia, Japan, North Africa.

Sphecodes cristatus Hagens, 1882

Warncke, 1992: 24 (Azerbaijan); Levchenko, 2014: 32 (Azerbaijan).

Material. *Azerbaijan*: Lenkoran, 1931, A. Shestakov (ZISP), 1♂.

Distribution. Caucasus (Azerbaijan); Europe (north to Sweden), Russia, Turkey, Mongolia, China (Beijing).

Sphecodes croaticus Meyer, 1922

Ascher, Pickering, 2015 (Azerbaijan).

Material. *Azerbaijan*: Khok, 30 km WNE Nakhichevan [Naxcivan], 6.VII.1982, YP (ZISP), 1♂.

Distribution. Caucasus (Azerbaijan); South and Central Europe, Turkey; Russia (south of European part), Morocco.

Sphecodes ephippius (Linné, 1767)

Morawitz, 1876: 63 (as *Sphecodes similis* Wesmael, 1835; Georgia); Skhirtladze, 1981: 45 (Georgia); Warncke, 1992: 42, map (Georgia, Armenia, Azerbaijan); Levchenko, 2014: 32 (Georgia, Armenia, Azerbaijan); Kirkitadze, Japoshvili, 2015: 25 (Georgia); Ascher, Pickering, 2015 (Georgia).

Material. *Georgia*: 7 km W Goderzi Pass, 17.VI.1978, VR (ZISP), 1♀; Tiflis [Tbilisi], 29.VI.1901, K. Satunun (ZISP), 2♀; Kintrishskiy Nature Reserve, 14.V.1973, V. Tobias (ZISP), 1♀; Borzhomi Nature Reserve, 1000–1300 m, 29.VI–11.VII.2011, M. Sergeev (ZISP), 1♀; Tbilisi, 11.IX.1959, V. Zaytzev (ZISP), 4♂; Mta-Tushetia Nature Park, 12.IX.1959, V. Zaytzev (ZISP), 1♂; *Armenia*: Megri, 26.V.1977, YP (ZISP), 1♀; Megri, 18.VI.1959, GV (ZMMU), 4♀; Amberd, 12.VIII.1969, VR (ZISP), 1♀, 1♂; Gosmalyan, 24.V.1969, LZ (ZMMU), 1♀; Dzharvezh, near Erevan, 5.VI.1959, GV (ZMMU), 1♀; Karabakhlar, 20.VI.1959, E. Antonova (ZMMU), 1♀, 1♂; Idzhevan, 22.V.1955, LZ (ZMMU), 1♀; Kokhb, 22.VII.1960, E. Antonova (ZMMU), 1♀; Ankvan, 21.VIII.1969, VR (ZISP), 1♂; *Azerbaijan*: Kakhi, 24.V.1978, VR (ZISP), 1♀; Margushevan [Maraga], 25.V.1935, Vel'tishchev (ZISP), 1♀; Elisavetopol [Gāncā], 26.VI.1909, Babadzhanidi (ZISP), 3♀; Akulis, 5 km W Ordubad, 13.V.1982, DK (ZISP), 1♀; Milakh, 35 km ENE Nakhichevan [Naxcivan], 7.VII.1982, YP (ZISP), 1♂; Kusary, 29.VI.1927, Tarbinskiy (ZISP), 1♂; Gosmalyan, 20 km SW Lerik, 13.X.1968, Tanasiychuk (ZISP), 1♂; Adzhikend, VII.1909, Babadzhanidi (ZISP), 1♂.

Distribution. Caucasus (Georgia, Armenia, Azerbaijan); Europe (north to 62°), Russia, Turkey, Central Asia, Mongolia, North Africa.

Sphecodes ferruginatus Hagens, 1882

Warncke, 1992: 50, map (Azerbaijan); Levchenko, 2014: 32 (Azerbaijan); Ascher, Pickering, 2015 (Azerbaijan).

Material. *Georgia*: near Tbilisi, 12.IX.1959, V. Zaytzev (ZISP), 1♂; *Armenia*: Amberd, 12.VIII.1969, VR (ZISP), 1♀; 25 km ENE Vedi, 1900 m, 4.VI.1977, YP (ZISP), 1♀; *Azerbaijan*: Lenkoran, 16.V.1936, Gussakovskij's coll. (ZISP), 1♀; Kumbashi, 9–10.V.1933, Lukyanovich (ZISP), 1♀; Mishna, 1700 m, 13.VI.1980, M. Volkovich (ZISP), 1♀.

Distribution. Caucasus (*Georgia, *Armenia, Azerbaijan); Europe (north to 66°), Russia, Turkey, Japan.

Sphecodes geoffrellus (Kirby, 1802)

Morawitz, 1877: 93 (Georgia); Warncke, 1992: 55, map (Abkhazia); Levchenko, 2014: 32 (Abkhazia); Ascher, Pickering, 2015 (Azerbaijan).

Material. Georgia: Tbilisi, 11.IX.1959, V. Zaytzev (ZISP), 1♀.

Distribution. Caucasus (Abkhazia, Georgia, Azerbaijan); Europe (north to 66°), Russia, Turkey, Near East, Kazakhstan, Mongolia, Japan, North Africa.

Sphecodes gibbus (Linnaeus, 1758)

Meyer, 1920: 113 (Azerbaijan); Skhirtladze, 1981: 45 (Georgia); Warncke, 1992: 49, map (Georgia, Armenia, Azerbaijan); Levchenko, 2014: 32 (Georgia, Armenia, Azerbaijan); Kirkitadze, Japoshvili, 2015: 25 (Georgia); Ascher, Pickering, 2015 (Georgia).

Material. Georgia: Mta-Tushetia Nature Park, 12.IX.1959, V. Zaytzev (ZISP), 1♂; Batumi, 21.VI.1974, Korolev (ZISP), 2♂; Armenia: Megri, 13.V.1957, L. Zmina (ZMMU), 2♀; Gosmalyan, 19.VI.1969, LZ (ZMMU), 1♀; Inaklu [Antarut], 2.VII.1960, E. Antonova (ZMMU), 2♀; Areni, 10.VI.1956, LZ (ZMMU), 1♀; Amberd, 12.VIII.1969, VR (ZISP), 1♂; Alexandropol [Gyumri], F. Morawitz's coll. (ZISP), 1♀; Karabakhlar, 29.VI.1959, GV (ZMMU), 1♂; Azerbaijan: Alekseevka, 29.IV.1936, P. Lehr (ZISP), 1♀; Lenkoran, VI–VII. 1930, 1931, Shestakov, Alekseev (ZISP), 17♀, 58♂; Gandzha [Gāncā], 15.VII.1933, Lukyanovich (ZISP), 1♀; Kalakhan, 22.V.1959, VR (ZISP), 1♀; Khanaga, 25 km E Nakhichevan [Naxcivan], 17.VII.1982, YP (ZISP), 1♀; Zuvand, 12.VII.1983, Zvantzev (ZISP), 1♀; Ordubad, 16.VII.1982, YP (ZISP), 1♀; Lenkoran distr., Lyulyakeran, 15.V.1909, Kirichenko (ZISP), 1♀, 1♂; 10 km NW Dzhu'fa [Culfa], 5.VII.1982, YP (ZISP), 5♂; Chagla-dara, near Kanudzhikh, 1933, Znoyko (ZISP), 1♀; Adzhikend, VII.1909, Babadzhanidi (ZISP), 1♂; «Milskaja», 15.VI.1934, P. Lehr (ZISP), 1♂.

Distribution. Caucasus (Georgia, Armenia, Azerbaijan); Europe (north to 63°), Russia, Turkey, Pakistan, Israel, Central Asia, Mongolia, China (Xinjiang), North Africa, India.

Sphecodes hyalinatus Hagens, 1882

Warncke, 1992: 51, map (Abkhazia); Levchenko, 2014: 32 (Abkhazia).

Material. Georgia: Batumi, 21.VI.1974, Korolev (ZISP), 2♂; 3 km S Zekarskiy Pass, 22.VI.1977, VR (ZISP), 1♀; Armenia: Ankavan, 21.VIII.1969, VR (ZISP), 1♀; near Erevan, 31.VII.1969, VR (ZISP), 1♀.

Distribution. Caucasus (Abkhazia, *Georgia, *Armenia); Europe (north to 68°), Russia.

Sphecodes intermedius Blüthgen, 1923

Blüthgen, 1934: 64 (Caucasus); Warncke, 1992: 31 (Caucasus); Özbek et al., 2015: 1101 (Caucasus).

Material. Armenia: Helenowka [Sevan], F. Morawitz's coll. (ZISP), 1♂; Etsmiazdin [Vagarshapat], F. Morawitz's coll. (ZISP), 1♀.

Distribution. Caucasus (*Armenia); Europe (east to Ukraine), Central Asia; Russia (Rostov and Volgograd prov.), Turkey, North Africa.

Sphecodes longulus Hagens, 1882

Material. Armenia: Arevik, 2.VIII.1965, VR (ZISP), 1♀.

Distribution. *Caucasus (Armenia); Europe (north to Finland, Sweden, Denmark, England), Russia, Turkey, Syria, Tajikistan, Japan.

Sphecodes majalis Pérez, 1903

Material. Armenia: between Demidzhan and Idzhavan, 21.V.1959, GV (ZMMU), 1♀; Azerbaijan: Kusary, 23.V.1928, Bocharnikov (ZISP), 1♀.

Distribution. *Caucasus (Armenia, Azerbaijan); Europe (east to Ukraine), Iran, Algeria.

Sphecodes miniatus Hagens, 1882

Ascher, Pickering, 2015 (Azerbaijan); Özbek et al., 2015: 1106 (Azerbaijan).

Material. Georgia: near Bakhmaro, 10.VII.1967, VR (ZISP), 1♀.

Distribution. Caucasus (*Georgia, Azerbaijan); Europe (north to 62°), Russia, Mongolia.

Sphecodes monilicornis (Kirby, 1802)

Morawitz, 1876: 63 (as *S. subquadratus* Smith, 1845; Georgia, Armenia); Meyer, 1920: 128 (as *S. subquadratus*; Caucasus).

Sphecodes caucasicus Meyer, 1920: 124 (type locality: Georgia); 1922: 166 (Georgia) (**syn.**).

Material. Georgia: Lagodekhi, 30.VI.1913, Mlokosevich (ZISP), 1♂; Tiflis [Tbilisi], 29.VI.1901, K. Satunin (ZISP), 1♂; Batumi, 21.VI.1974, Korolev (ZISP), 2♀; Taleri, 3–6.VII.2011, M. Sergeev (ZISP), 1♀; Armenia: Amberd, 12.VIII.1969, VR (ZISP), 2♂, 1♀; Erevan, 25.VIII.1962, VR (ZISP), 1♂; Erevan, F. Morawitz's coll. (ZISP), 1♀; Alexandropol [Gyumri], F. Morawitz's coll. (ZISP), 1♀; Megri, 5.VI.1957, LZ (ZMMU), 1♀; Azerbaijan: Adzhikend, VII.1909, Babadzhanidi (ZISP), 2♂, 1♀; Zakataly, 25.VII.1928, Bocharnikov (ZISP), 3♂; Lenkoran, 22–29.VI.1930, Alekseev, Shestakov (ZISP), 1♂, 2♀; Dosta, 9 km W Ordubad, 24.V.1982, DK (ZISP), 1♀; Elizavetopol [Gāncā], 10.V.1901, Babadzhanidi (ZISP), Paraga NW Ordubad, 25.VI.1933, Znoyko (ZISP), 1♀; 1♀; Kakhi, 31.V.1978, VR (ZISP), 1♂; Margushevan [Maraga], 25.V.1935, Vel'tishchev (ZISP), 1♀.

Distribution. Caucasus (Georgia, Armenia, *Azerbaijan); Europe (north to 64°), Russia, Turkey, Pakistan, Central Asia, Mongolia, North Africa.

Sphecodes olivieri Lepeletier de Saint Fargeau, 1825

Özbek et al., 2015: 1102 (Caucasus).

Material. Armenia: Erevan, 22.VIII.1965, VR (ZISP), 1♂; Tsakhkashen, 27.IV.1959, GV (ZMMU), 1♀; Azerbaijan: Karaganly, 7.VI.1935, P. Lehr (ZISP), 1♀; Adzhikend, VII.1909, Babadzhanidi (ZISP), 1♀.

Distribution. Caucasus (*Armenia, *Azerbaijan); Russia (Volgograd); South Europe, Turkey, Iran, Israel, Arabian Peninsula, Pakistan, Turkmenistan, North Africa.

Sphecodes pellucidus Smith, 1845

Warncke, 1992: 43, map (Azerbaijan); Levchenko, 2014: 36 (Azerbaijan).

Material. Abkhazia: Azhary, near Sukhumi, 22.VII.1905, Kalishev (ZISP), 1♀; Armenia: 10 km SE Vedi, 1500 m, 31.V.1977, YP, 1♀; Vedi, 6.V.1969, GV (ZMMU), 2♀; Megri, 28.V.1977, YP (ZISP), 1♂; Amberd, 12.VIII.1969, VR (ZISP), 1♂; Georgia: Bogdanovka, 28.VI.1967, VR (ZISP), 1♀; 16 km N Bakhmaro, 10.VII.1967, VR (ZISP), 1♀; Tiflis [Tbilisi], 15.VIII.1905, Satunin (ZISP), 1♂; Azerbaijan: Lenkoran, 31.VI–2.VII.1930, Alekseev, Shestakov (ZISP), 2♀, 5♂; Elizavetopol [Gāncā], 5–11.V.1909, Babadzhanidi (ZISP), 2♀; Dustair, 27.VI.1963, Zagulyaev (ZISP), 1♀; Dosta, 9 km W Ordubad, 24.V.1982, DK (ZISP), 1♀; Lenkoran distr., Lyulyakeran, 15.V.1909, Kirichenko (ZISP), 1♀; Nakhichevan [Naxcivan], 15.VII.1982, YP (ZISP), 1♂; Sabir-Abad, 23.VII.1928, Bocharnikov (ZISP), 1♂.

Distribution. Caucasus (*Abkhazia, *Georgia, *Armenia, Azerbaijan); Europe (north to 66°), Russia, Turkey, Iran, Central Asia, Mongolia, North China, North Africa.

Sphecodes pinguiculus Pérez, 1903

Material. Armenia: Alexandropol [Gyumri], Morawitz's coll. (ZISP), 1♀.

Distribution. *Caucasus (Armenia); South Europe, Russia (Volgograd, Tuva), Turkey, Iran, Israel, Central Asia, Mongolia, North Africa, Cape Verde Islands.

Sphecodes pseudofasciatus Blüthgen, 1925

Material. Georgia: Taleri, 3–6.VII.2011, M. Sergeev (ZISP), 1♀.

Distribution. *Caucasus (Georgia); Europe (east to Ukraine), Turkey, Morocco.

Sphecodes puncticeps Thomson, 1870

Özbek et al., 2015: 1103 (Armenia).

Material. Armenia: Amberd, 12.VIII.1969, VR (ZISP), 1♂, 1♀; Dilijan, VII.1926, Bocharnikov (ZISP), 2♀; Azerbaijan: Martuni, 19.IX.1927, Kostandyan (ZISP), 2♂; Lirik, 14.V.1909, Kirichenko (ZISP), 1♂; 5 km E Ordubad, 13.V.1982, DK (ZISP), 1♀; Kakhi, 31.V.1978, VR (ZISP), 1♀.

Distribution. Caucasus (Armenia, *Azerbaijan); Europe (north to Finland and Sweden), Russia, Turkey, Israel, Central Asia, Mongolia, North Africa.

Sphecodes reticulatus Thomson, 1870

Morawitz, 1876: 63 (Georgia); Meyer, 1920: 144 (Azerbaijan); Skhirtladze, 1979: 127 (Azerbaijan); 1981: 45 (Georgia, Azerbaijan); Warncke, 1992: 47, map (Georgia, Armenia, Azerbaijan); Kirkitadze, Japoshvili, 2015: 25 (Georgia); Levchenko, 2014: 37 (Georgia, Armenia, Azerbaijan); Ascher, Pickering, 2015 (Georgia).

Material. Abkhazia: Leselidze, 11.VII.1954, GV (ZMMU), 1♀; Georgia: Mta-Tushetia Nature Park, 12.IX.1959, V. Zaytzev (ZISP), 1♂; Armenia: Ankavan, 21.VIII.1969, VR (ZISP), 2♂; Azerbaijan: Lenkoran, VI.1930, Shestakov (ZISP), 1♂.

Distribution. Caucasus (*Abkhazia, Georgia, Armenia, Azerbaijan); Europe (north to 62°), Russia, Turkey, Central Asia.

Sphecodes rubicundus Hagens, 1875

Bogusch, Straka, 2012: 17 (Armenia); Özbek et al., 2015: 1104 (Armenia); Ascher, Pickering, 2015 (Armenia).

Material. Armenia: Shatin, N Mikoyan, 11.VI.1956, LZ (ZMMU), 1♀; Azerbaijan: Margushevan [Maraga], near Terter, 4.V.1935, Vel'tishchev (ZISP), 1♀.

Distribution. Caucasus (Armenia, *Azerbaijan); Europe (north to 56°), Russia (south of European part), Turkey, North Africa.

Sphecodes ruficrus (Erichson, 1835)

Özbek et al., 2015: 1104 (Armenia); Ascher, Pickering, 2015 (Armenia).

Material. No material examined.

Distribution. Caucasus (Armenia); Europe (north to Germany), Turkey, North Africa, India.

Sphecodes rufiventris (Panzer, 1798)

Meyer, 1920: 125 (as *S. subovalis* Schenck, 1853, Azerbaijan).

Material. Abkhazia: Gadautskiy distr., Novyi Afon, 1.V.2015, M. Mokrousov (ZISP), 1♀; Georgia: Lagodekhi, 30.VI.1913, Mlokovich, 1♂; Armenia: Erevan, Morawitz's coll. (ZISP), 2♂; Megri, 4.VII.1956, LZ (ZMMU), 1♂; Amberd, 12.VIII.1969, VR (ZISP), 2♂; near Erevan, 28.V.1959, GV (ZMMU), 1♀; Azerbaijan: Lenkoran, 20.VIII.1930, A. Shestakov (ZISP), 4♂.

Distribution. Caucasus (*Abkhazia, *Georgia, *Armenia, Azerbaijan); Europe (north to 57°), Russia (south of European part), Turkey, Central Asia, North Africa.

Sphecodes scabricollis Wesmael, 1835

Material. Abkhazia: Khenkara, 26.VIII.1976, A. Zagulyaev (ZISP), 1♂; Leselidze, 11.VII.1954, GV (ZMMU), 1♀; Armenia: Dilijan, 4.VII.1931, V. Popov (ZISP), 1♀; Azerbaijan: Lenkoran, 20.VIII.1930, Shestakov, 4♂; Nakhichevan [Naxcivan], 2.VII.1974, M. Volkovich (ZISP), 1♂; SW Lenkoran, 7.VII.1932, Znojko (ZISP), 1♀.

Distribution. *Caucasus (Abkhazia, Armenia, Azerbaijan); Europe (north to S England and Latvia), Russia, Turkey, Japan.

Sphecodes schenckii Hagens, 1882

Meyer, 1920: 114 (as *S. caspicus* Meyer, 1920; Azerbaijan); Ascher, Pickering, 2015 (Azerbaijan).

Material. Abkhazia: Leselidze, 15.VII.1954, GV (ZMMU), 1♂; Georgia: near Bakhmaro, 10.VII.1967, VR (ZISP), 1♀; Kazakh Mts., 30.VIII.1923, S. Tarbinskij (ZISP), 1♂; Armenia: Megri, 12.V.1957, LZ (ZMMU), 2♀; near Byurakan, 2.VI.1956, LZ (ZMMU), 1♀; 20 km N Dilijan, 30.V.1955, LZ (ZMMU), 1♀; 25 km ENE Vedi, 1900 m, 4.VI.1977, YP (ZISP), 1♀; Azerbaijan: Kusary, 3.VI.1928, Bocharnikov (ZISP), 1♀.

Distribution. Caucasus (*Abkhazia, *Georgia, *Armenia, Azerbaijan); Europe (north to Hungary), Russia (Rostov prov.), Turkey, Iran.

Sphecodes spinulosus Hagens, 1875

Meyer, 1920: 132 (Caucasus).

Material. Armenia: 25 km ENE Vedi, 1500 m, 31.V.1977, YP (ZISP), 6♂; Spitak, 27.VI.1956, LZ (ZMMU), 1♀; Azerbaijan: Gosmalyan, 25.V.1953, GV (ZMMU), 1♂; Lenkoran distr., Lyulyakeran, 15.V.1909, Kirichenko (ZISP), 5♂; Gosmalyan, 1800 m, 20.V.1969, V. Tanasiychuk (ZISP), 1♂.

Distribution. Caucasus (*Armenia, *Azerbaijan); Europe (north to 56°), Russia (east to Altai), Turkey, Central Asia, North Africa.

Acknowledgements

We thank A.V. Antropov (ZMMU) for loans of material and T.V. Levchenko (Darwin Museum, Moscow) for comments and suggestions that helped to improve this article. YVA study was supported by the Russian Foundation for Basic Research (grant No 16–04–00197), the Russian State Research Project No 01201351189, and the program of Presidium RAS «Biodiversity of Nature Systems»; MYP study was supported by the Russian Foundation for Basic Research (grant Nos 14–04–00649, 15–29–02466 офи_m and 16–54–00041 Бел_a).

References

- Aliyev Kh.A., Guseinzade G.A., Magerramov M.M. 2007. [Towards the knowledge of the bee fauna of the family Halictidae (Hymenoptera: Apoidea) of Nakhichevan Autonomous Republic of Azerbaijan] // Kavkazskiy Entomologicheskii bulletin'. Vol.3. No.2. P.251–256. [In Russian].
- Ascher J.S., Pickering J. 2015. Discover life bee species guide and world checklist (Hymenoptera: Apoidea: Anthophila). Available from: http://www.discoverlife.org/mp/20q?guide=Apoidea_species (accessed 22 March 2016)

- Astafurova Yu.V., Proshchalykin M.Yu. 2014. The bees of the genus *Sphecodes* Latreille 1804 of the Russian Far East, with key to species (Hymenoptera: Apoidea: Halictidae) // Zootaxa. No.3887(5). P.501–528.
- Astafurova Yu.V., Proshchalykin M.Yu. 2015a. New and little known bees of the genus *Sphecodes* Latreille (Hymenoptera: Halictidae) from Mongolia // Far Eastern Entomologist. No.289. P.1–9.
- Astafurova Yu.V., Proshchalykin M.Yu. 2015b. Bees of the genus *Sphecodes* Latreille 1804 of Siberia, with a key to species (Hymenoptera: Apoidea: Halictidae) // Zootaxa. No.4052(1). P.65–95.
- Astafurova Yu.V., Proshchalykin M.Yu. 2015c. [The bees of the genus *Sphecodes* Latreille, 1804 (Hymenoptera: Halictidae) of the Eastern Palaearctic Region] // Trudy Russkogo Entomologicheskogo Obshchestva. Vol.86. No.2. P.17–21. [In Russian].
- Astafurova Yu.V., Proshchalykin M.Yu., Schwarz M. 2015. New data on the genus *Sphecodes* Latreille (Hymenoptera: Halictidae) from Mongolia // Far Eastern Entomologist. No.302. P.1–9.
- Astafurova Yu.V., Proshchalykin M.Yu., Shlyakhtenok A.S. 2014. Contribution to the knowledge of bee fauna of the genus *Sphecodes* Latreille (Hymenoptera: Halictidae) of the Republic of Belarus // Far Eastern Entomologist. No.280. P.1–8.
- Blüthgen P. 1934. Die Wirte der Palaarktischen *Sphecodes*-Arten // Zeitschrift für wissenschaftliche Insektenbiologie. Bd.27. Ht.3/4. S.33–42. Ht.5/6. S.61–66.
- Bogusch P., Straka J. 2012. Review and identification of the cuckoo bees of Central Europe (Hymenoptera: Halictidae: *Sphecodes*) // Zootaxa. No.3311. P.1–41.
- Kirkitadze G.J., Japoshvili G.O. 2015. Renewed checklist of bees (Hymenoptera: Apoidea) from Georgia // Annals of Agrarian Science. Vol.13. No.1. P.20–32.
- Levchenko T.V. 2014. [Contributions to the fauna of bees (Hymenoptera, Apoidea) of Moscow Province. 5. Family Halictidae (excluding *Lasioglossum* s.l.)] // Eversmannia. No.40. P.18–40. [In Russian].
- Meyer R. 1920. Apidae-Sphecodinae // Archiv für Naturgeschichte. Bd.85A. Ht.1/2. S.79–242.
- Meyer R. 1922. Nachtrag I zur Bienengattung *Sphecodes* Latr. // Archiv für Naturgeschichte. Bd.88A. Ht.8. S.165–174.
- Meyer R. 1925. Zur Bienengattung *Sphecodes* // Archiv für Naturgeschichte. Bd.90A. Ht.12. S.1–12.
- Morawitz F.F. 1876. Zur Bienenfauna der Caucasusländer // Horae Societatis Entomologicae Rossicae. Vol.12. No.1. P.3–69.
- Morawitz F.F. 1877. Nachtrag zur Bienenfauna Caucasiens // Horae Societatis Entomologicae Rossicae. Vol.14. No.1. P.3–112.
- Özbek H., Bogusch P., Straka J. 2015. A contribution to the kleptoparasitic bees of Turkey: Part I., the genus *Sphecodes* Latreille (Hymenoptera: Halictidae) // Turkish Journal of Zoology. No.39. P.1095–1109.
- Proshchalykin M.Yu., Astafurova Yu.V. 2012. [Halictid bees (Hymenoptera, Apoidea: Halictidae) of Ukraine: fauna and zonal distribution] // Chleniya pamyati A.I. Kurentsova. Vol.23. P.93–113. [In Russian].
- Skhirtladze I.A. 1979. [Contributions to the fauna of bees (Hymenoptera Apoidea) in arid areas of Transcaucasus] // Gegechkori A.M. (ed.): Nekotorye Gruppy Zhivotnykh Aridnykh Raionov Zakavkaz'ya. Tbilisi: Metsniereba. P.115–145. [In Russian].
- Skhirtladze I.A. 1981. [The bees of the Transcaucasus (Hymenoptera, Apoidea)]. Tbilisi: Metsniereba. 148 p. [In Russian].
- Warncke K. 1992. Die westpalaarktischen Arten der Bienengattung *Sphecodes* Latr. // Bericht der Naturforschenden Gesellschaft Augsburg. Bd.52. S.9–64.

Поступила в редакцию 30.03.2016