

**Bees of the genus *Lasioglossum* subgenus *Pyghalictus* Warncke, 1975
and the *Lasioglossum* (*Dialictus*) *mandibulare* species group
(Hymenoptera, Halictidae) from Central Asia**

**Пчелы рода *Lasioglossum* подрода *Pyghalictus* Warncke, 1975
и группы видов *Lasioglossum* (*Dialictus*) *mandibulare*
(Hymenoptera, Halictidae) из Средней Азии**

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Ключевые слова: фауна, новые находки, Anthophila, Палеарктика.

Abstract. The three species of the *Lasioglossum* (*Pyghalictus*) and two species of *Lasioglossum* (*Dialictus*) *mandibulare* species group from Central Asia are reviewed. An identification key of members of this both group including species known from Turkey, Iran, Mongolia and China is presented. The male of *Lasioglossum anguligularie* (Blüthgen, 1929) is here described for the first time and a lectotype is designated for *L. kozlovi* (Friese, 1913).

Резюме. Приведен обзор трех видов *Lasioglossum* (*Pyghalictus*) и двух видов группы *Lasioglossum* (*Dialictus*) *mandibulare* из Средней Азии. Даны определительные таблицы представителей этих двух групп, включая виды известные из Турции, Ирана, Монголии и Китая. Описан ранее неизвестный самец *Lasioglossum anguligularie* (Blüthgen, 1929) и обозначен лектотип для *L. kozlovi* (Friese, 1913).

Introduction

The present paper is part of a series of our studies dealing with the bees of the genus *Lasioglossum* of the territory of the Palaearctic region [Astafurova, Proshchalykin, 2023, 2024, 2025, 2026; Astafurova et al., 2024a, b; Astafurova, 2026].

The global genus *Lasioglossum* Curtis, 1833 currently includes 1,841 described species [Ascher, Pickering, 2026], with the highest known diversity in the Holarctic region [Michener, 2007]. A total of 450 species are known from the Palaearctic region [Astafurova, Proshchalykin, 2025], of which 184 species occur in Europe [Ghisbain et al., 2025; Flaminio et al., 2026],

134 species from the Caucasus, 163 species from Russia [Astafurova, Proshchalykin, 2025], and approximately 150 species for Central Asia.

The subgenus *Pyghalictus* was described by Warncke [1975: 103] within the genus *Halictus* Latreille s.l. The composition of the subgenus was listed by Pesenko [2007] and included fifteen Palaearctic species. This composition also corresponds to the *L. politum* group of Ebmer [1976a: 262; 1976b: 405; 1982: 223]. The subgeneric status of these species is controversial. Michener [2000: 361] synonymized *Pyghalictus* with the subgenus *Dialictus* Robertson of the genus *Lasioglossum* Curtis. Pesenko [2007: 17] considered *Pyghalictus* to be a valid subgenus of the genus *Evyllaes* Robertson. According to molecular studies conducted by Gibbs et al. [2013], the type species of the subgenus, *Lasioglossum politum* (Schenk, 1853), represents a separate subgenus within the genus *Lasioglossum*.

Based on male structure, Ebmer [1976a: 262] noted that this group is paraphyletic, and that the distinct shape of the female head with a wide clypeus arose independently in different groups of Halictidae. Indeed, molecular studies by Zhang et al. [2022] show that *L. mandibulare* belongs to the subgenus *Dialictus*. Consequently, the species belonging to the *L. mandibulare* group (see below for composition) previously classified by Pesenko [2007] as part of the subgenus *Pyghalictus* should now be considered part of the subgenus *Dialictus*. The remaining species we consider in this publication as belonging to the subgenus *Pyghalictus*. However, the inclusion of some species in this subgenus is provisional

and requires further research. The subgeneric classification of European species corresponds to that listed in Ghisbain et al. [2025].

The species of the subgenus *Pyghalictus* and the *Lasioglossum* (*Dialictus*) *mandibulare* species group have a distinctively square-shaped female head with a very short clypeus, as well as other morphological characteristics (Table 1). Due to the unclear subgeneric status of some *Pyghalictus* species, and their morphological similarity to species in the *L. (Dialictus) mandibulare* group, a single key has been provided for both groups.

The present work is registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:D0E7192C-4079-4CF2-AF8D-850D167F45F4

Material and methods

The results presented in this paper are based on 659 specimens collected in Central Asia and currently housed in the Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia, ZISP).

The subgeneric classification of *Lasioglossum* is based on the conclusions of Gibbs et al. [2013] and follows Zhang et al. [2022], Ghisbain et al. [2025] and Proshchalykin et al. [2023]. Morphological terminology follows that of Michener [2007]. We have used the following abbreviations for collectors: AS — A. Shestakov; MP — M. Proshchalykin; VG — V. Gussakovskij, VR — V. Rudolf; VT — V. Tobias; YP — Yu. Pesenko; and the following abbreviations to represent museums acting as depositaries for types: OLBL — Oberösterreichisches Landesmuseum, Biologiezentrum Linz, Austria; ZMHB — Museum für Naturkunde, Berlin,

Germany; ZMMU — Zoological Museum of Moscow University, Russia.

Specimens were studied with an Olympus SZ51 stereomicroscope, and photographs were taken with a combination of stereomicroscope (Olympus SZX10) and digital camera (Olympus OM-D). Final images are stacked composites generated using Helicon Focus v. 8.5.3 Pro. All images were post-processed for contrast and brightness using Adobe Photoshop. New distributional records are noted with an asterisk (*).

Taxonomy

Lasioglossum Curtis, 1833

Lasioglossum (*Pyghalictus*) Warncke, 1975

Type species: *Halictus pygmaeus* sensu Warncke, 1975 (non *Andrena pygmaea* Fabricius, 1804, nomen dubium) = *Hylaeus politus* Schenck, 1853, fixed by Pesenko [2007: 17].

Composition. *L. anguligulare* (Blüthgen 1929), *L. apriarium* (Warncke, 1982), *L. betomarium* (Blüthgen, 1925), *L. castilianum* (Blüthgen, 1931), *L. euryale* Ebmer, 1982, *L. glabriusculum* (Morawitz, 1872), *L. politum* (Schenck, 1853), *L. pulicarium* (Warncke, 1975), *L. trichopygum* (Blüthgen, 1923), *L. yakourense* (Saunders, 1908), and *L. zostaceum* (Warncke, 1982).

Distribution. Palaearctic region.

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Lasioglossum (*Pyghalictus*) *anguligularie* (Blüthgen, 1929)

Figs 3–5, 8–12.

Halictus anguligularis Blüthgen, 1929: 72, fig. 5, ♀. Holotype: ♀, Turkmenistan, Firyuza; ZMHB.

Table 1. Diagnostic characteristics of the subgenus *Pyghalictus* and the *Lasioglossum mandibulare* species group (based on diagnosis of *Pyghalictus* by Pesenko [2007], with modifications)

Таблица 1. Диагностические характеристики подрода *Pyghalictus* и группы видов *Lasioglossum* (*Dialictus*) *mandibulare* (на основе диагноза *Pyghalictus* по Песенко [2007], с изменениями)

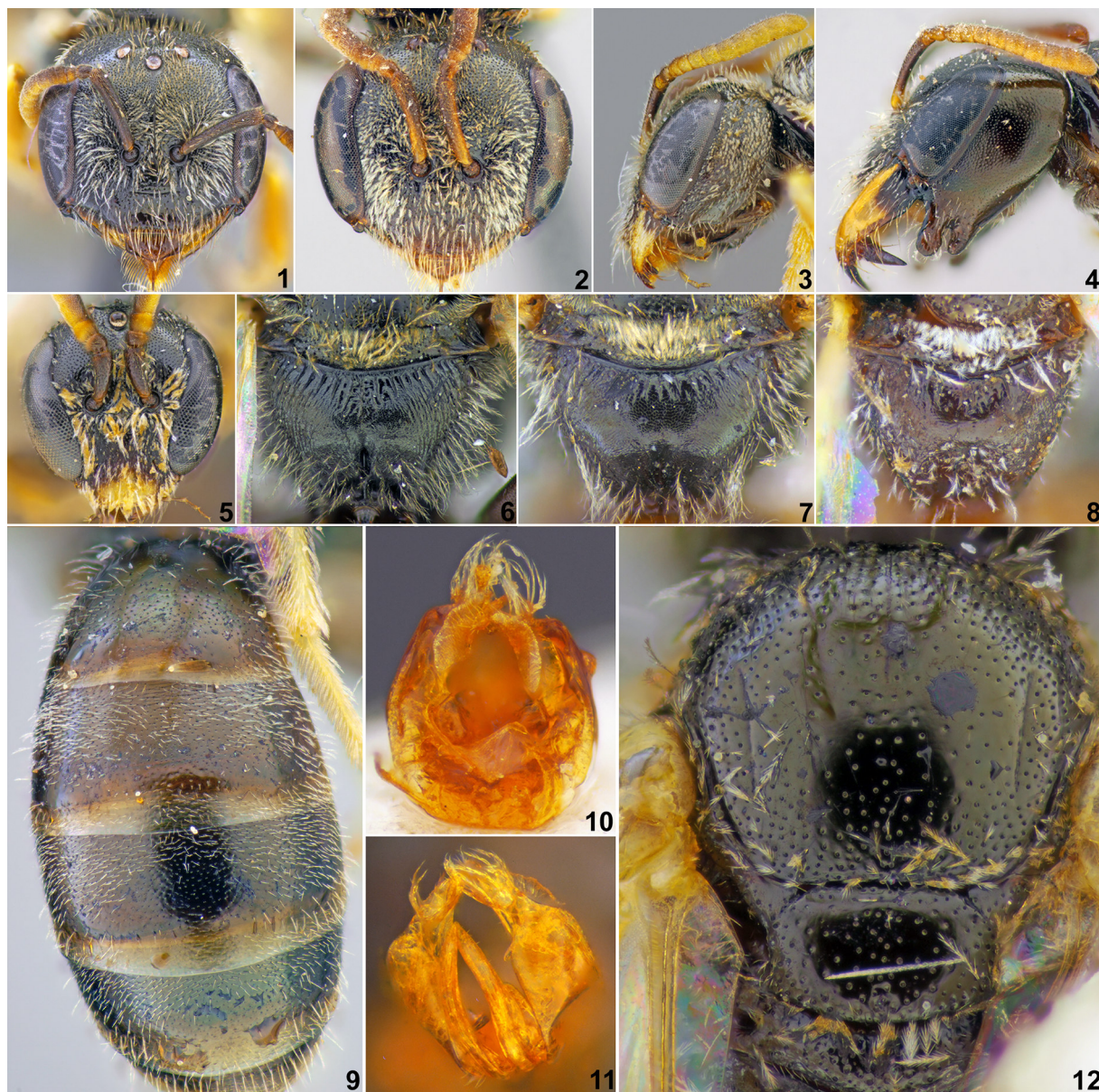
Features	subgenus <i>Pyghalictus</i>	<i>L. mandibulare</i> species group
Both sex		
Body length	3.5–5.5 mm	4.0–7.0 mm
Coloration of head and mesosoma	black or with green/blue metallic tint	at least with weak green/blue metallic tint (due to intraspecific variability sometimes almost absent)
Structure of mesepisternum	distinctly punctate	
Structure of posterior vertical surface of propodeum	without lateral carina on upper half, gradually curved onto both posterior vertical and lateral surfaces	
Structure of metapostnotum	with longitudinal wrinkles usually not reaching posterior margin of dorsal surface of propodeum (in male of <i>L. kozlovi</i> entirely rugose)	
Female		
Head	nearly square as seen in frontal view; clypeus very short, 2–3 times as wide as long	
Inner metatibial spur	pectinate, with 3–4 long processes	
Mandible	long, sabreshaped	
Male		
Antenna	relatively long, reaching metanotum or propodeum	
Gonostylus	usually short, shape and pubescence variable	elongate with short setae
Membranous lobe of gonocoxite	relatively small	relatively small or large

Taxonomy. Blüthgen in Popov [1935: 362]; Ebmer [1972: 605; 1982: 223] (*Lasioglossum anguligulare*).

Material. **Kazakhstan.** 71♀♀, 4♂♂ — Balkhash Lake, northern shore, 90 km E of Balkhash, sands, 5.IX.1986, YP; 1♀ — 32 km SE of Kyzyl-Orda, Syr-Darja River, on *Tamarix* sp., 2.VI.1979, YP; 4♀♀ — Ili River, near the mouth of the Karasu River, tugai, 21.V.1970, Marikovskaya; 1♀ — Perovsk, 15.V.1928, Olenov, Popov [*Halictus anguligularis*, P. Blüthgen det.]. **Uzbekistan.** 5♀♀ — 1 km S of Shandakazyk, on *Tamarix ramosissima*, 23.V.2023, A. Fateryga, MP. **Turkmenistan.** 1♂ (paratype) — Ashkhabad, Feryuza, 5, 6.VI.1925, VG; 1♀ — Repetek, 25.IV.1987, VT; 1♀ — Serax [Sarakhs], coll. F. Morawitz [*Halictus anguligularis*, P. Blüthgen det.]; 1♂ — Dzhebel, 10.VII.1934 [*Halictus anguligularis*, P. Blüthgen det. 1935]. — **China.** 1♂ oasis Sachzhou, Gashunskoe Gobi [Dunhuang], 30.VII.1895, Roborobsky, Kozlov

[*Halictus anguligularis* P. Blüthgen det.]; 1♂ — idem, 7.VIII.1895, Roborobsky, Kozlov [*Halictus anguligularis* P. Blüthgen det.].

Description of hitherto unknown male. Total body length 4.0–4.5 mm. **Structure and sculpture.** Head (Fig. 5) round, about as long as wide. Frons and vertex finely punctate with shiny and smooth interspaces ca a puncture diameter, near lateral ocelli impunctate. Gena microscopically and sparser punctate. Antennae reaching metanotum. Mesoscutum and mesoscutellum smooth and shiny, finely (ca 5 µm) and sparsely punctate with punctures separated by several puncture diameters (Fig. 12). Metapostnotum (horizontal part of propodeum) with coarse longitudinal wrinkles on depressed anterior surface, posterior surface smooth (Fig. 8); lateral sur-



Figs 1–12. *Lasioglossum mandibulare* (Morawitz), female (1, 2, 6, 7) and *L. anguligularie* (Blüthgen), female (3, 4), male (5, 8–12). 1–5 — head, frontal (1, 2, 5) and lateral (3, 4) view; 6–8 — propodeum, dorsal view; 9 — metasoma, dorsal view; 10, 11 — genitalia, ventral (10) and dorsal (11) view; 12 — mesoscutum and mesoscutellum, dorsal view.

Рис. 1–12. *Lasioglossum mandibulare* (Morawitz), самка (1, 2, 6, 7) и *L. anguligularie* (Blüthgen), самка (3, 4), самец (5, 8–12). 1–5 — голова, спереди (1, 2, 5) и сбоку (3, 4); 6–8 — проподеум сверху; 9 — метасома сверху; 10, 11 — гениталии снизу (10) и сверху (11); 12 — мезоскутум и мезоскутеллум сверху.

face of propodeum finely granulate. Terga (Fig. 9) shiny and smooth, with tiny punctures (ca 5 µm), in average separated by 1–3 puncture diameters; marginal zones almost impunctate, distinctly depressed on tergum 1. Gonostylus short with long setae; membranous lobe of gonocoxite triangular with wide basal part (Figs 10, 11). *Coloration and pubescence.* Head and mesosoma black or brownish with weak green metallic tint. Clypeus, labrum, mandibles (brown basally), tegulae, antennae on lower surface, tibiae (except brown spot) and tarsi yellow. Wings yellowish infuscated. Metasoma brownish to reddish. Lower half of face with denser plumose pubescence obscuring integument.

Remarks. Although P. Blüthgen identified the males of this species (see material), this sex has not yet been described in the literature.

Females exhibit considerable intraspecific variation in the degree of development of their genital processes, ranging from extremely developed to weakly developed (see Figs 3, 4), which is similar to that observed in males of *Lasioglossum sexstrigatum* (Schenck, 1869) and *L. clypeiferellum* (Strand, 1909). This rare species was collected in a large sample and, like other representatives of the subgenus, is probably a primitively eusocial species.

Distribution. Turkmenistan [Blüthgen, 1929], *Kazakhstan, *Uzbekistan, *China (Gansu).

Lasioglossum (Pygahictus) betomarium
(Blüthgen, 1925)

Halictus betomarius Blüthgen, 1925: 122, ♂. Holotype: ♂, Kazakhstan: “Baigakum bei Djulek” [near Arys (Chimkent [Shymkent] Province)]; ZMHB.

Taxonomy. Blüthgen [1931a: 214; 1931b: 321 (= *Halictus atomarius*)]; Ebmer [1978: 83 (♀), figs 66–68 (*Lasioglossum betomarium*)].

Material. **Turkmenistan.** 1♂ — Farab, 28.V.1929, AS; 14♀♀ — Uzboy, Yashkon River, on *Tamarix* sp., 16.IV.1951, Steinberg, Kryzhanovskiy; 1♂ — Kara-Kala, 26.V.1953, Gornovskaya; 1♀ — Beshkent Valley, Chiluchorchashma, 5.IV.1964, VT; 15♀♀, 47♂♂ — Malý Delili Lake, 50 km E of Gasan-Kuli, on *Tamarix* sp., 22.V.1977, YP; 25♀♀ — 8 km W of Kyzyl Imam, Chendyr River, on *Tamarix* sp., 5.V.1979, YP; 4♀♀ — Chilmamedkum, 35 km W of Yashkan, sands, on *Anmodeddron* sp., 12.V.1979, YP. **Tajikistan.** 4♂♂ — Tigrovaya Balka NR, 17.IV.1989, M. Volkovich.

Distribution. Southern Kazakhstan, Turkmenistan, Iran [Ebmer, 1978], *Tajikistan.

Remarks. This rare spring species was collected in larger series and probably, like other representatives of the subgenus, is a primitively eusocial species.

Lasioglossum (Pygahictus) politum ssp. *atomarium*
(Morawitz, 1876)

Fig. 20.

Halictus atomarius Morawitz, 1876: 218 (key), 254. ♀. Lectotype: ♀, Uzbekistan: Tashkent; designated by Ebmer [1985: 290]; ZMMU; examined.

Lasioglossum (Evyllaesus) politum ssp. *aramaeum* Ebmer in Bytinski-Salz, Ebmer, 1974: 193 (material), 211 (description). ♀♂. Holotype: ♀, Israel: Tel-Aviv; OLBL. Synonymized by Ebmer [1985: 290].

Taxonomy. Blüthgen in Popov [1935: 362] (*Halictus politus*); Warncke [1982: 132] (*H. pygmaeus* ssp. *aramaeus*); Ebmer [1982: 223] (*Lasioglossum politum* ssp. *aramaeum* and ssp. *atomarium*); [1985: 290; 1988: 667] (synonymy) (*L. politum* ssp. *atomarium*).

Material. **Uzbekistan.** 1♀ — Farab, Bukhara, 23.IV.1913, A. Golbek; 1♀ — Tashkent, AS; 28♀♀ — 25 km SE of Kabakla, Amu-Darja River, on *Elaeagnus angustifolia*, 8.V.1978, YP; 1♀ — 90 km NW

of Chardzhou, Ispaz, 2.V.1980, Kasparyan; 1♀ — Karshi, Khudoyzot, 13.V.2015, MP. **Tajikistan.** 3♀♀, 2♂♂ — Stalinabad [Dushanbe], 22.VIII.1935, VG; 1♀ — Dzili-Kul, Vakhsh River, 12.VI.1936, VG; 5♀♀ — Kondara, 1100 m, Varzob River, 18.VII.1938, VG; 50♀♀, 4♂♂ — Stalinabad [Dushanbe], Botanical garden, 16. IV–I.VII.1943. V. Popov, Romadina; 1♀ — 15 km NW of Ramit, Sardoi-Miena Gorge, 11.VI.1974, YP; 2♀♀ — 15 km E of Komsomolobad [Mekhrobod], on *Melilotus officinalis*, 11.VII.1975, YP; 60♀♀, 1♂ — 15 km SE of Tavit-Dary, Obikhingou River, dry steppe slope, 3.VIII.1979, YP; 3♀♀ — Qorategin (Rash-ton) Range [part of Hissar Range, 15 km NNW of Garm], Komarou Gorge, 1500 m, 8.VIII.1985, YP; 4♀♀, 32♂♂ — Hissar Mts., Karadag River valley, 15 km N of Shakh-rinov, 1600 m, 12.IX.1985, YP.

Distribution. North Africa, Near East, Turkey, Azerbaijan, Georgia, Uzbekistan, Tajikistan, Kyrgyzstan, Iran. Nominate subspecies occurs in Europe (except north), Russia (North Caucasus, east to the Urals) and ssp. *pekingense* [Blüthgen, 1925] in Eastern China and Japan [Astafurova, Proshchalykin, 2024].

Remarks. A common species in forest and steppe areas.

Lasioglossum (Dialictus) Robertson, 1902

Dialictus Robertson, 1902: 48. Type species: *Halictus anomalus* Robertson, 1892, by original designation.

Lasioglossum (Dialictus) mandibulare (Morawitz, 1866) species group

Composition. *L. aglyphum* (Pérez, 1895), *L. kozlovi* (Friese, 1913), *L. mandibulare* (Morawitz, 1866), and *L. submandibulare* Niu, 2020.

Distribution. Palaearctic region.

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Lasioglossum (Dialictus) kozlovi (Friese, 1913)

Figs 13–18.

Halictus kozlovi Friese, 1913: lx, ♀, ♂. Lectotype: ♂ (designated here), golden circle // р. Сулейхэ у Сачжоу Гашуны Гоби [China, Gunsu, Sule River, oasis Sachzhou (=Dunhuang)] РобКозлов [V. Roborovskiy and P. Kozlov], 7.VIII.[18]95 // *Halictus kozlovi* Friese det. 1908 // Lectotypus *Halictus kozlovi* Friese, design. Astafurova // INS HYM_0002714; ZISP, examined.

Taxonomy. Blüthgen [1925: 116, 117; 1931b: 323]; Ebmer [1982: 223] (combination; *Lasioglossum kozlovi*).

Type material. **China.** 30♀♀, 13♂♂ (paralectotypes) — the same label as in the lectotype, but dated from 30.VII.[18]95 to 7.VIII.[18]95; 25♀♀, 7♂♂ (paralectotypes) — Bugas, near Khami, SE from Tyan-Shan [50 km NE of Khami], 21.VIII–5.IX.[18]95, Roborovsky, Kozlov.

Other material. **Kazakhstan.** 1♂ — Tartugay, 3–5.VI.1929, AS [*Halictus kozlovi*, P. Blüthgen det.]; 2♀♀ — Perovsk [Kyzyl-Orda], 15.V.1928, VP [*Halictus kozlovi* Friese, P. Blüthgen det.]; 2♀♀ — Baigakum near Zhulek, 19.IV.1908, S. Malyshev [*Halictus kozlovi*, P. Blüthgen det.]; 3♀♀ — Ili River, 50 km lower of Bakanas, 11.V.1953, G. Viktorov [ZMMU]; 1♀ — 70 km NNW of Kyzyl-Orda, on *Tamarix* sp., 8.VI.1979, YP; 1♀, 3♂♂ — Ili River, 14.VI.1992, K. Denes [*Lasioglossum kozlovi*, A. Ebmer det.]. **Turkmenistan.** 6♀♀ — Farab, Bukhara, 17–23. IV.1913, A. Golbek [*Halictus kozlovi* Friese, P. Blüthgen det.].

Distribution. Russia (Buryatia), Kazakhstan, China (Gansu, Xinjiang) [Friese, 1913; Blüthgen, 1925, 1931b, 1934], *Turkmenistan.

Remarks. Information on the type specimens of *Halictus kozlovi* Friese, 1913 was missing from Astafurova and Poshchalykin [2018]. The species was described based on specimens collected during expeditions led by V. Roborovskiy and P. Kozlov (1893–1901) in Mongolia and China and deposited in the ZISP collection. The information on types in Friese [1913: lx] were noted as “Mongolei, im August un September; ♀ auch von Kashgar (Turkest)”. The type series deposited in the ZISP consists of 14♂♂, 29♀♀ (Sachzhou) and 25♀♀, 7♂♂ (Bugas, Hami), which are also labelled with a golden circle and “Hal-

ictus kozlovi 1908 Friese det.". We have not found the female specimen from Kashgar [=Kashi, China: Xinjiang]. We designate one male from Sachzhou as a lectotype here (Figs 13–16). Blüthgen [1925: 117] redescribed *Halictus kozlovi* Friese based on male and female non-type (!) specimens from the Friese's collection labelled as "Monda, Mongolei" [Russia, Buryatia] and deposited in ZMHB.

Lasioglossum (Dialictus) mandibulare
(Morawitz, 1866)

Figs 1, 2, 6, 7, 19.

Halictus mandibularis Morawitz, 1866: 23, ♀. Holotype: ♀, Russia, Sarepta [=Volgograd]; ZISP, examined.

Halictus carneiventris Dours, 1872: 311, ♀. Holotype: ♀, Algeria, Corfou; lost. Synonymized by Warncke [1975: 104].

Halictus coloratus Morawitz, 1873: 167, ♀. Lectotype: ♀, Russia, Derbent (Dagestan); designated by Proshchalykin and Astafurova [2016: 10]; ZISP, examined. Synonymized by Blüthgen [1931a: 212].

Halictus czekelii Friese, 1916: 30, ♀. ?Holotype: Romania, "Salzburg in Siebenbürgen" [Ocna Sibiui]; ZMHB. Synonymized by Blüthgen [1921: 301].

Halictus sareptanus Blüthgen, 1923: 290, ♂. Syntypes: 2♂♂, Russia, Sarepta [=Volgograd]; ZMHB. Synonymized by Blüthgen [1931a: 212].

Taxonomy. Blüthgen [1921: 301; 1922: 57 (*Halictus mandibularis*); 1923: 290 (*H. sareptanus*); 1924: 397 (♂),



Figs 13–20. *Lasioglossum kozlovi* (Friese), male, lectotype (13–16), male from Kazakhstan, Ili River (18), female (17), *L. mandibulare* (Morawitz), male (19), and *L. politum* (Schenck), male (20). 13 — habitus, dorsal view; 14 — head, frontal view; 15 — metasoma, ventral view; 16 — propodeum, dorsal view; 17 — T4, dorsal view; 18–20 — genitalia, dorsal (18, 19) and lateral (20) view.

Рис 13–20. *Lasioglossum kozlovi* (Friese), самец, лектотип (13–16), самец из Казахстана, р. Или (18), самка (17), *L. mandibulare* (Morawitz), самец (19) и *L. politum* (Schenck), самец (20). 13 — общий вид сверху; 14 — голова спереди; 15 — метасома снизу; 16 — проподеум сверху; 17 — Т4 сверху; 18–20 — гениталии сверху (18, 19) и сбоку (20).

470 (key), 543 (key); 1925: 116, 118; 1926: 391 (*H. carnei-ventris*); 1925: 116, 120 (*H. atomarius*); 1931: 212; 1931: 321 (*H. mandibularis*); Ebmer [1971: 69 (key), 89 (key), 125 (combination, synonymy), fig. 100; 1988: 667 (synonymy) (*Lasioglossum mandibulare*)]; Ebmer in Bytinski-Salz and Ebmer [1974: 194 (*Lasioglossum carneiventris*)]; Warncke [1973: 288 (synonymy, *Halictus mandibularis*); 1982: 132 (subspecific status; *H. mandibularis* ssp. *mandibularis*)].

Material. Kazakhstan. 31♀♀ — Kharkin, Ural River, 13.V–31.VII.1951, on *Roripa austriaca* (7♀♀), on *Tamarix ramosissima* (10♀♀), on *Dodartia orientalis* (1♀), on *Euphorbia palustris* (6♀♀), on *Peganum harmala* (2♀♀), on *Limonium gmelini* (3♀♀), on *Potentilla bifurca* (1♀), on *Galium humifusum* (1♀), VR [ZISP]; 2♀♀ — Mergenevo, Ural River, on *Limonium gmelini*, 8.VII.1951, Steinberg; 14♀♀ — Akmol, Kokshetau Mts., Terisakkan River, on *Melilotus albus* (2♀♀), on *Taraxacum* sp. (2♀♀), on *Ferula tatarica* (1♀), on *Valeriana tuberosa* (1♀), on *Ranunculus polyrhizos* (2♀♀), 27.VI.1958, 22.V–12.VII.1957, VR; 2♀♀ — Bayzhanzhai, on *Limonium caspicum*, 11.VII.1957, VR; 2♀♀ — 40 km S of Zhana-Ark, on *Stellaria graminea*, 30.V.1959, VT; 4♀♀ — Koksengir, S Zhana-Arka [Atasu], 8, 9.VIII.1969, VR; 2♀♀ — Dzhanibek, dry steppe, 19.VI.1977, Kasparyan; 1♀ — 21 km NW of Kyzyl-Orda, Syr-Darja River, on *Tamarix* sp., 3.VI.1979, YP; 3♀♀ — 15 km NW of Ashchikol Lake [W Kokshetau], on *Goniolimon tataricum*, 11.VI.1979, YP [ZISP]; 2♀♀ — 16 km NE of Chilli, sands, *Ammodendron* sp., 1.VI.1979, YP; 1♀ — Ulanbel', Chu River, on *Crambe tatarica*, 19.VI.1979, YP; 2♀♀, 3♂♂ — Chelkar, 1–7.X.1983, Malysheva; 3♀♀ — 10 km W of Khromtau, 360 m, dry steppe, 28.VIII.1987, YP; 2♀♀, 1♂ — 110 km ESE of Dzhambeyty, 160 m, sands, 30.VIII.1987, YP. Uzbekistan. 7♀♀, 18♂♂ — Maly Delili Lake, 50 km E of Gasan-Kuli, on *Tamarix* sp., 22.V.1977, YP; 4♀♀, 38♂♂ — Kugitang-Tau Mts., 10 km NW of Sharebad, 6.IX.1985, YP; 1♂ — Babatang Mts., 30 km SES of Uzun, 1400 m, 15.IX.1985, YP; 10♀♀ — Karshi, Khudoyzot, 13.V.2015, MP; 14♀♀ — 1 km S of Shandakazyk, on *Tamarix ramosissima* (2♀♀), on *Limonium otolepis* (2♀♀), 23.V.2023, A. Fateryga, MP. Tajikistan. 1♀ — Khiva, Kosh-Kuty, 17.V.1927, L. Zimin; 37♀♀, 1♂ — Kurgan-Tube, on *Halocharis hispida* (17♀♀), on *Tamarix* sp. (7♀♀), on *Climacoptera transoxana* (5♀♀), on *Convolvulus arvensis* (1♀), 27.VIII–9.IX.1948, V. Popov, VR; 4♀♀ — Staraya Pristan, Vakhsh River, IX.1948, VR; 2♀♀ — Chilmamedkum, 35 km W of Yaskhan, sands, on *Ammodendron* sp., 12.V.1979, YP; 1♀ — Garavuti, on *Tamarix* sp., 25.IV.1989, M. Volkovich. Turkmenistan. 2♀♀ — Farab, 12–28.V.1929, AS; 1♀ — Kuzyl-Artek, on *Vicia* sp., 9.V.1951, Steinberg; 1♀ — Kara-Kala, 20.VII.1953, Ponomareva; 2♀♀ — Chendyr River, 8 km W of Kyzyl-Imam, 5.V.1979, Narchuk; 4♀♀ — Tedzhen, on *Tamarix* sp., 23.V.1979, YP; 1♀ — Bayram-Ali, 30.VI.1983, Budris; 2♂♂ — Kugitang-Tau Mts., 15 km E of Karlyuk, desert, 7.IX.1985, YP.

Distribution. Russia (North Caucasus, Crimea, south of the European part); southern Europe, North Africa, Turkey, Azerbaijan, Armenia, Israel, Iraq, Kazakhstan, Turkmenistan [Astafurova, Proshchalykin, 2024], *Uzbekistan, *Tajikistan. The record of the species (under the name *Halictus coloratus*) from Gansu Province of China (4♀♀, Chodta-tschai; ZISP) by Morawitz [1889: 366] belongs to *L. kozlovi* (not *L. euryale* as Ebmer [2005: 352] suggested).

Remarks. Females of this species exhibit considerable intraspecific variation. Body size varies from 5.0 to 7.0 mm. Shape of the head of most studied specimens is distinct square-shaped, rounded-rectangular on upper margin (Fig. 1) and the propodeum is striate (with parallel wrinkles) on lateral parts (Fig. 6). However, in smaller female specimens, the head has more rounded shape (Fig. 2) and the propodeum is smoother, weakly sculptured (Fig. 7). The head and the mesosoma are usually with weak green/blue metallic tint, but this tint is sometimes almost absent in individuals of both sexes, coloration of the metasoma varies from brown to red.

This species is common in the steppes and deserts of Central Asia.

KEY TO SPECIES OF THE SUBGENUS *Pygmalictus* AND THE *Lasioglossum (Dialictus) mandibulare* SPECIES GROUP OF CENTRAL ASIA

(Additionally including species known from Turkey, Iran, Mongolia and China)

FEMALES

1. Tergum 1 entirely smooth 2
- Tergum 1 shagreened or tessellate at least on anterior part 6
2. Head transverse, rather rounded on upper margin and oval, with lateral parts of vertex not visible as seen in frontal view 3
- Head as long as wide or longer than wide, rounded-rectangular on upper margin, distinct square-shaped, with lateral parts of vertex well visible as seen in frontal view 5
3. Metapostnotum entirely with wrinkles *Lasioglossum euryale* (Mongolia)
- Metapostnotum at least on posterior half tessellate, without wrinkles 4
4. Head and mesosoma without metallic tint, metasoma brownish. Tergum 1 impunctate or with few punctures .. *Lasioglossum politum* ssp. *atomarium*
- Head and mesosoma with weak (rarely not expressed) green/blue metallic tint, metasoma reddish. Tergum 1 finely punctate *Lasioglossum betomarium*
5. Head and mesosoma with green metallic tint. Pronotum well developed, strongly raised. Body length 5.5–6.0 mm *Lasioglossum submandibulare* (China)
- Head and mesosoma without metallic tint. Pronotum usual. Body length 3.0–3.5 mm *Lasioglossum pulicarium* (Turkey)
6. Head transverse, rather rounded on upper margin with lateral parts of vertex weakly visible as seen in frontal view (Fig. 2) 7
- Head transverse or longer than wide, rounded-rectangular on upper margin with lateral parts of vertex well visible as seen in frontal (Fig. 1) 10
7. Body black or brownish without metallic tint *Lasioglossum apricarium* (Turkey)
- Head and mesosoma with distinct or weak green/blue metallic tint or metasoma reddish 8
8. Mesoscutum sparsely punctate with puncture separated by 2–5 puncture diameters. Metapostnotum almost entirely finely tessellate, very short wrinkles developed along anterior margin only *Lasioglossum aglyphum* (SW Palaearctic to Iran)
- Mesoscutum denser punctate. Metapostnotum usually with longer wrinkles (in smallest specimens of *L. mandibulare* wrinkles weakly developed) 9
9. In average smaller, length 4.0–6.0 mm T4 on disc with short plumose setae (Fig. 17) *Lasioglossum kozlovi*
- In average larger, length 4.5–7.0 mm. T4 on disc with simple setae *Lasioglossum mandibulare*, part

10. Mesoscutum and mesoscutellum very sparsely punctate. Gena on lower part usually with a pair of teeth of variable size (Figs 2, 4) *Lasioglossum anguligularie*
- Mesoscutum and mesoscutellum densely punctate. Gena on lower part without teeth 11
11. Head transverse or as long as wide. Larger, body length 4.5–7.0 mm. Supraclypeal area and scutellum smooth. Metapostnotum flat *Lasioglossum mandibulare*, part
- Head longer than wide. Smaller, body length 4 mm. Supraclypeal area and scutellum finely shagreened. Metapostnotum with deep semicircular impression on posterior surface *Lasioglossum zostaceum* (Turkey)

MALES

(Unknown for *L. euryale*, *L. submandibulare* and *L. zostaceum*)

1. Metapostnotum coarsely rugose (Fig. 16). Sterna 3 and 4 with lateral brushes of long setae (Fig. 15). Gonostylus as on Fig. 18 *Lasioglossum kozlovi*
- Metapostnotum with longitudinal wrinkles usually developed only on anterior half. Sterna without lateral brushes of setae 2
2. Head distinctly longer than wide. Head and metasoma black, without metallic tint. Gonostylus short, with numerous short setae *Lasioglossum pulicarium* (Turkey)
- Head transverse or as long as wide 3
3. Head and metasoma black/dark brown, without metallic tint. Gonostylus with long setae near basal margin; membranous lobe of gonocoxite short, with long apical setae (Fig. 20) 4
- Head and metasoma with green/blue metallic tint (in some specimens weakly developed). Gonostylus without long setae near basal margin; membranous lobe of gonocoxite longer, without long apical setae 5
4. Metasoma coarsely punctate. Gonostylus with 6–7 long setae near basal margin *Lasioglossum apricarium*
- Metasoma finely punctate. Gonostylus with 2–4 long setae near basal margin *Lasioglossum politum* ssp. *atomarium*
5. Large, body length 5.0–6.0 mm. Gonostylus elongate, with short apical setae; membranous lobe of gonocoxite large, well visible in dorsal view (Fig. 19) *Lasioglossum mandibulare*
- Smaller, body length 3.5–5.0 mm. Gonostylus short, with very long apical setae; membranous lobe of gonocoxite smaller (Figs 10, 11) 6
6. Head as long as wide (Fig. 5). Mesoscutum and mesoscutellum sparsely punctate (Fig. 12). Membranous lobe of gonocoxite triangular *Lasioglossum anguligularie*
- Head transverse. Mesoscutum and mesoscutellum denser punctate. Membranous lobe of gonocoxite elliptical *Lasioglossum betomarium*

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