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Taxonomic notes and new data on clearwing moths (Lepidoptera: Sesiidae) from the South of the West Siberian Plain and Southern Kazakhstan

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Abstract

The article provides information on five species of clearwing moths from the South of the West Siberian Plain and Southern Kazakhstan. A differential diagnosis of the *Bembecia lavrovi* Knyazev 2025 **stat. resurr.** is given and the species is resurrected from synonymy under closely related *Bembecia turanica* (Ershoff, 1874). The female genitalis of both species are depicted. Two species, *Bembecia eversmanni* O. Gorbunov 2024 and *Pyropteron cirgisa* (Bartel, 1912), are reported as new to the Asian part of Russia. *Bembecia bestianaeli* Căpușe, 1973 is recorded in Western Siberia for the first time. For all mentioned species, images of collected specimens and males' genitalis are provided, as well as information about biology and general distribution. The molecular data for all listed species are given.

Key words Lepidoptera, Sesiidae, *Bembecia lavrovi*, *Bembecia turanica*, *Bembecia eversmanni*, *Pyropteron cirgisa*, West Siberia, Omsk Region, South Kazakhstan, fauna, new records.

Introduction

The fauna of Lepidoptera in the south of Western Siberia has been actively studied in recent years. One of the regions where intensive research on Lepidoptera is conducted is the Omsk Region, located in the south of the West Siberian Plain and bordering Kazakhstan in the south. Over the past two decades, this region has become one of the well-studied in terms of Lepidoptera fauna in Western Siberia (Knyazev 2009, 2020, 2022; Knyazev et al. 2010, 2012, 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2022, 2024; Anikin et Knyazev 2012; Knyazev et Ustjuzhanin 2013; Efetov et Knyazev 2014; Knyazev et Mironov 2015; Anikin et Knyazev 2016; Sinev et Knyazev 2021; Shapoval et al. 2021). Some data on the family of Sesiidae was published in the catalogue of Macrolepidoptera of the Omsk Region (Knyazev 2020)

and in subsequent additions to it (Knyazev et Ivonin 2025). Recently, a new species of clearwing moth was described from the Omsk Region - *Bembecia lavrovi* (Knyazev 2025), which was later synonymized (Gorbunov et Ivanov 2025) with the Turanian species *Bembecia turanica* (Ershoff, 1874). The neotype (female) of *B. turanica* has poor preservation and a damaged abdomen, which did not allow the authors to establish reliable differences between *B. turanica* and *B. lavrovi*. Thus, the inability to dissect and study the genitals of the *B. turanica* neotype (due to the damaged abdomen) and compare them with the genitals of *B. lavrovi* (due to the lack of material from the authors) led to a hasty decision and erroneous synonymization of these taxa.

The first author of this article undertook an expedition to the Southern Kazakhstan, in Turkestan in late May and early June and collected several topotype specimens of *Bembecia turanica*. Also, additional material was collected at the type locality of *Bembecia lavrovi*. This allowed us to thoroughly examine the external morphology, compare genitalia of females in both species, and conduct a genetic analysis of the collected material. Moreover, extra material was collected in the Omsk Region on other species of clearwing moths from the genus *Bembecia* Hübner, 1819 [“1816”] and *Pyropteron* Newman, 1832, which were first discovered in the Asian part of Russia and in Western Siberia.

Material and Methods

All material processed within the framework of this article was collected on the territories of Omsk Region (Russia) and Southern Kazakhstan by the first author using standard method of collecting by butterfly net and by attracting of males at pheromones. All collected specimens are deposited in the collection of Svyatoslav Knyazev (CSKO, Omsk, Russia). The photos of pinned specimens were taken using a Canon EOS 5D Mark II camera with a Canon EF-100mm macro lens and Canon MP-E 65mm lens. Photographs of genitalia were taken using a Nikon stereomicroscope (model: SMZ25) coupled with a Nikon digital camera (model: DS-Ri2) and processed with NIS-Elements BR software, as well as an AmScope binocular microscope with RS-500C portable camera. Photos of habitats were taken using Xiaomi Redmi Note 10Pro smartphone camera.

For DNA extraction, two legs from each dry specimen were removed and placed in lysis solution overnight. Genomic DNA was extracted using the HiPure Insect DNA Kit (Magen, China), following the manufacturer’s protocol. DNA was eluted using 150 µL distilled water. A 658-base pair fragment of the mitochondrial cytochrome c oxidase subunit I (*COI*) gene was amplified using the standard primer pair HCO2198 (5’-TAAACTTCAGGGTGACCAAAAAATCA-3’) and LCO1490 (5’-GGTCAACAAATCATAAAGATATTGG-3’) (Folmer et al. 1994). The polymerase chain reaction (PCR) cycling profile consisted of an initial denaturation at 95°C for 3 minutes, followed by 34 cycles of 95°C for 30 seconds, 53°C for 45 seconds, and 72°C for 1 minute with a final extension at 72°C for 5 minutes. The PCR products were sequenced at the Center for Molecular and Cell Technologies of the Research Park of St. Petersburg State University. *COI* sequences were aligned using BioEdit software (Hall 1999) and manually edited. The uncorrected genetic *p*-distances were calculated using MEGA X software (Kumar et al. 2018). All sequences obtained were uploaded to GenBank (<https://www.ncbi.nlm.nih.gov/genbank/>); their accession numbers are given next to the corresponding samples in the ‘Material examined’ section.

Results

Order **Lepidoptera**

Family **Sesiidae**

Subfamily **Sesiinae**

Tribe **Synanthedonini**

Genus ***Bembecia*** Hübner, 1819 [“1816”]

***Bembecia lavrovi* Knyazev 2025 stat. resurr.**

(Figs. 1, 2, 9, 10, 21)

“*Bembecia lavrovi* sp. n.”: Knyazev 2025: 260, figs. 1–12, 14. Type locality: “Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 53°54'46.46″N, 73°57'51.32″E”.

“*Bembecia turanica* (Ershoff, 1874)”: Gorbunov et Ivanov 2025: 133, figs. 3-9.

Material examined. 7♂♂, 1♀ (GenBank ID: PX696977), Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 53.911713, 73.948744, 27-29.VI.2025, S.A. Knyazev, S.M. Saikina (CSKO); 24♂♂, same locality, 1-2.VII.2025, at pheromones, S.A. Knyazev (CSKO).

Description. The species was described in detail in the original description (Knyazev 2025), so here we only give a description of the female's genitals which were not known at the time of the species description.

Female genitalia. (Fig.21, Slide SK0203) Palpilla anales short and wide, trapezoidal in shape, covered with setae. 8th tergite short, broad with short setae. Posterior apophysis about as long as anterior apophysis. Lamellae antevaginalis and postvaginalis undeveloped. Ostium bursae tube-shaped, situated at ventro-anterior edge of 8th tergite. Antrum relatively narrow, long, about 1.5 times shorter than posterior apophysis, well-sclerotized. Ductus bursae membranous, slightly broader than antrum, relatively long, about as long as antrum. Corpus bursae pear-shaped, gradually widening from rounded base, without signum.

Differential diagnosis. Differences from *B. sareptana* (Bartel, 1912) and *B. aktashica* O. Gorbunov, 2018 were provided in the first description (Knyazev 2025). Females of *B. lavrovi* (Figs. 1, 2) differs well from the closely related species *B. turanica* (Ershoff, 1874) (Figs. 3-6) by the predominance of orange scales in the apical area on the forewing (Figs. 9, 10) and along the veins without spraying of dark scales in comparison with abundant deposition of brownish-black scales in the apical area on the forewing and along the veins in *B. turanica* (Figs. 11, 12). The degree of darkening of the apical area may vary slightly in *B. turanica* but it is almost completely absent in *B. lavrovi* (Figs. 9-12). The anterior transparent area is solid, not divided into parts in *B. lavrovi* (Figs. 9, 10), while in *B. turanica* anterior transparent area divided into two parts by the narrow line covered with dark scales (Figs. 11, 12). In female genitalia, *B. lavrovi* (Fig. 21) differs well from *B. turanica* (Fig. 22) by the length of the posterior apophyses (posterior apophysis about as long as anterior apophysis in *B. lavrovi*, while posterior apophysis about 1.5 times longer as anterior apophysis in *B. turanica*); lamellae antevaginalis and postvaginalis undeveloped in *B. lavrovi*, in contrast to the presence of rounded structures in *B. turanica*; the shape of corpus bursa differs well – pear-shaped, rounded at the base in *B. lavrovi*, and oval-elongated in *B. turanica*.

Molecular data. Three specimens of this species were sequenced previously, and their DNA barcodes are available in the BOLD database (<https://boldsystems.org/>) under accession numbers GWOUP190-25, GWOUP189-25 and GWOUP188-25. The barcode sequence we obtained in this study from the above female differs from the published ones by 10-11 nucleotide substitutions, that is, the genetic distance in *COI* between them is about 1.5%. This value is significantly lower than the ‘standard’ DNA barcoding threshold of 2.7–3.0% commonly used as a tentative indicator for species distinctness of the taxa compared (Lambert et al. 2005; Lukhtanov et al. 2015). The mentioned female was collected together with a series of *B. lavrovi* males in the same location and on the same dates, and by all indications is conspecific with them, being, however, a carrier of a rather diverged mitochondrial haplotype.

Bionomics. Larval host plants unknown. The putative host plant for the caterpillars of this species may be *Glycyrrhiza uralensis* Fisch. ex DC., 1825, which grows in bulk in the type locality (Fig. 36) of *B. lavrovi* and is the only big legume plant (Fabaceae) whose roots could be inhabited by the caterpillars of this big *Bembecia* species, which is also found in bulk in its habitat. Both females caught in a type locality were found among thickets of *G. uralensis*, which is a common and widespread species in the steppes of the West Siberian Plain. Moths fly from the second decade of June to the second decade of July. Males are easily attracted to artificial sex pheromones. Imagoes are active mainly in the morning. The mass flight of males to pheromones begins around 8:00 a.m.; their activity subsides after 10:00-10:30 a.m., with the onset of heat. Occasionally, single males may arrive during the day. Females are



1

Bembecia lavrovi, ♀, PT, Omsk Region, Russia



2

Bembecia lavrovi, ♀, Omsk Region, Russia



3

Bembecia turanica, ♀, Turkestan, S Kazakhstan



4

Bembecia turanica, ♀, Turkestan, S Kazakhstan



5

Bembecia turanica, ♀, Turkestan, S Kazakhstan



6

Bembecia turanica, ♀, Turkestan, S Kazakhstan



7

Bembecia bestianaeli, ♂, Omsk Region, Russia



8

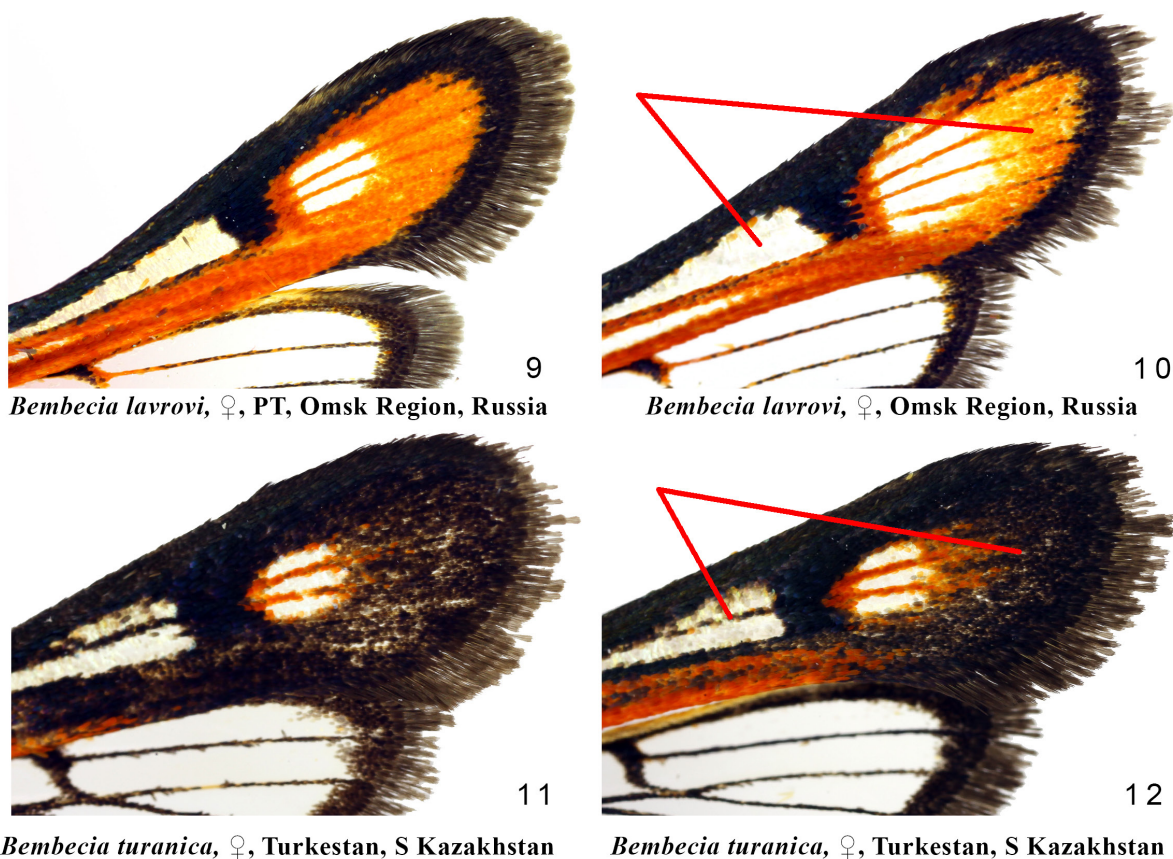
Bembecia bestianaeli, ♂, Omsk Region, Russia

Figures 1-8. Variability of *Bembecia* spp., dorsal view: 1. *Bembecia lavrovi*, ♀, Paratype, Russia, Omsk Region, Buzan, 26.VI.2024; 2. *Bembecia lavrovi*, ♀, Russia, Omsk Region, Buzan, 27-29.VI.2025; 3-6. *B. turanica*, ♀♀, South Kazakhstan, Turkestan, 31.V-1.VI.2025; 7. *Bembecia bestianaeli*, ♂, Russia, Omsk Region, Buzan, 20.VII.2020; 8. *Bembecia bestianaeli*, ♂, Russia, Omsk Region, Tleusai, 5-6.VIII.2021.

also active in the morning, and can be observed sitting on the plants of *G. uralensis* or flying among them.

Distribution. South-Siberian species. Currently, the species is known from the South of Omsk Region in West Siberia (Russia).

Remark. The recently described species *B. lavrovi* has been synonymized with *B. turanica* (Ershoff, 1874) in (Gorbunov et Ivanov 2025), however, these species differ well both in the details of the external characteristics and in the structure of the female genitals. In addition, our genetic analysis showed a 4–4.5% distance between these species, which confirms the independence of the *B. lavrovi* taxon. Furthermore, the type localities of these species are 1250 km apart from each other in the north-south direction and are located in completely different geobotanical zones: *B. lavrovi* lives in the steppes in Western Siberia (Fig. 36), while *B. turanica* lives in the Turanian semideserts and desert river valleys in Southern Kazakhstan (Fig. 37). Thus, *Bembecia lavrovi* Knyazev 2025 **stat. resurr.** is restored by us to the status of a distinct species.



Figures 9-12. Variability of the wing pattern in apical area of the forewings of *Bembecia* spp., dorsal view: 9-10. *Bembecia lavrovi*, Russia, Omsk Region, Buzan; 11-12. *Bembecia turanica*, South Kazakhstan, Turkistan.

Bembecia turanica (Ershoff, 1874)

(Figs. 3–6, 11, 12, 22)

“*Sesia chrysidiformis* Esp. ... var. *turanica* nov. Ersch.”: Ershoff 1974a: 26, pl. V, fig. 74. Type locality: Turkistan, Turkistan Region, South Kazakhstan (by neotype, designated in Gorbunov et Ivanov 2025: 133).

“*Bembecia turanica* (Ershoff, 1874)”: Gorbunov et Ivanov 2025: 133, figs. 1-2.

Material examined. 4♀♀ (GenBank ID: PX696976), Topotypes, South Kazakhstan, Turkistan Region, 35 km SW of Turkistan, Otrar district, 6 km NW of Zhalantos village, Syrdarya river, 43.176300, 67.840508, 31.V.2025 and 1.VI.2025, S.A. Knyazev (CSKO).

Description. All morphological features of the species are described in detail in a recent publication (Gorbunov et Ivanov 2025), so here we provide only a description of the female's genitals, which were not known due to damage of the abdomen of the neotype and the inability to study them.

Female genitalia. (Fig. 22, Slide SK0204) Palpillae anales short, rhomboid dorsally, covered with setae. 8th tergite slightly elongated, broad with short setae. Posterior apophysis about 1.5 times longer as anterior apophysis. Lamellae antevaginalis and postvaginalis rounded. Ostium bursae tube-shaped, situated at ventro-anterior edge of 8th tergite. Antrum is long, narrowed medially, about 2 times shorter than posterior apophysis, well-sclerotized. Ductus bursae membranous, about same width and length as antrum. Corpus bursae oval-elongated shape, without signum.

Differential diagnosis. For differences from the related species *B. pallasi*, O. Gorbunov, 2020, *B. viguraea* (Püngeler, 1912) and *B. alaica* (Püngeler, 1912), see (Gorbunov et Ivanov 2025). Differences from *B. lavrovi* Knyazev 2025, see above in this text.

Molecular data. The *Bembecia turanica* topotype we sequenced clearly falls into BIN BOLD:ABA8591, differing from the most similar sequence by only 2 substitutions. In general, intragroup uncorrected *p*-distances within the mentioned BIN fluctuate in the range of 0.5–1.8% (n=6), which is comparable with the corresponding values of *COI* variability in the *B. lavrovi* population (0.2–1.8%, n=4). The specimens included in the specified BIN are identified as ‘*Bembecia cf. turanica*’ (2 samples from Kyrgyzstan) and ‘*Bembecia elena*’ (3 samples from Uzbekistan). The relationships between these taxa remain unclear: it is possible that *B. elena* is synonymous with *B. turanica*, but this is the subject of a separate taxonomic revision. In the context of this study, it is important to emphasize that the genetic distance between individuals of the South Siberian *B. lavrovi* and the Turanian *B. turanica* significantly exceeds the values of intragroup *COI* gene variability in both of these taxa and is clearly greater than the conventional interspecific threshold.

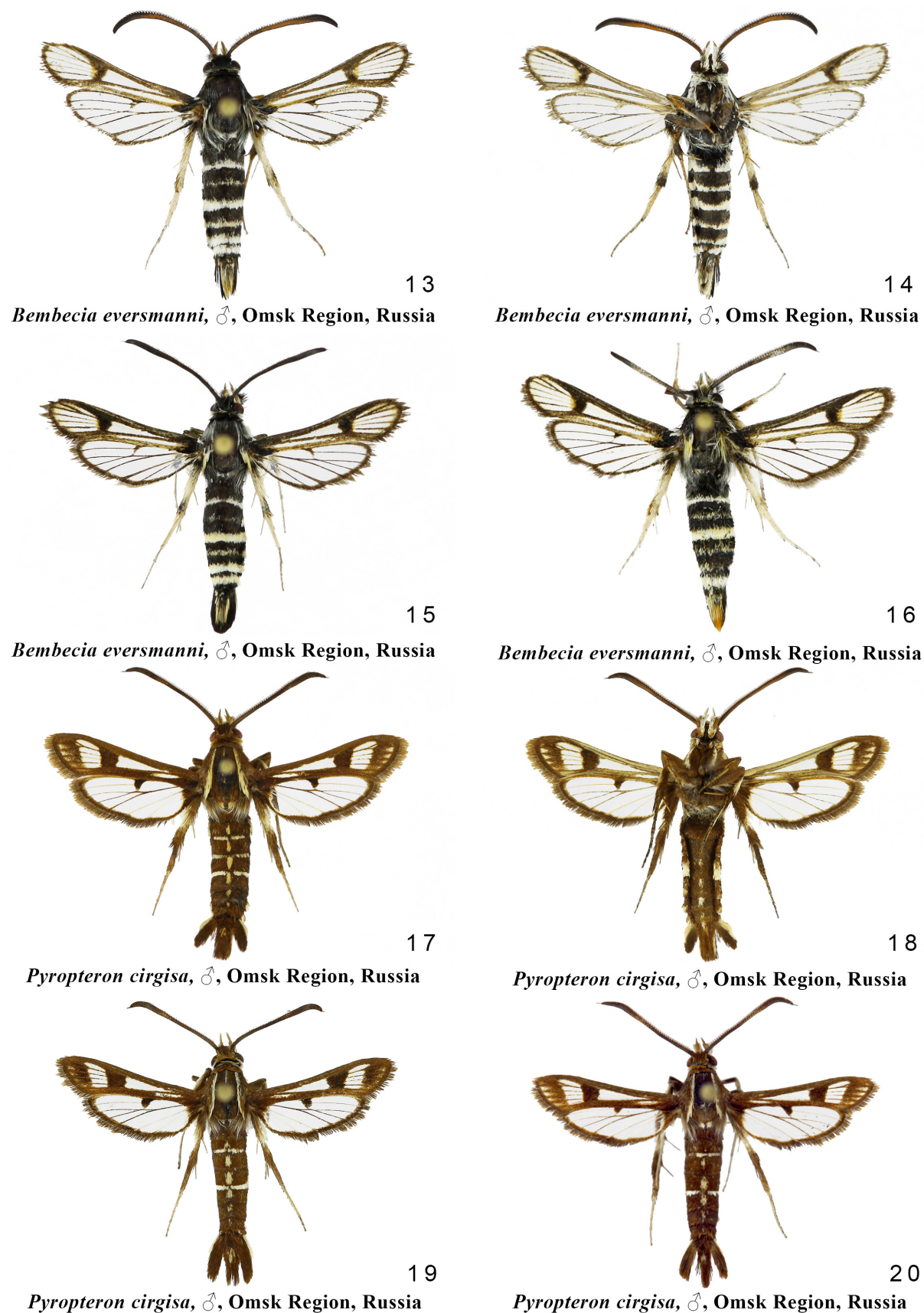
Bionomics. Larval host plants unknown. The putative host plant for the caterpillars of this species may be *Sophora alopecuroides* L., which forms large plantations at the location of the capture of *B. turanica* females. Females are active throughout the day and are found flying among plants of *S. alopecuroides* sometimes sitting on them. Moths fly in the end of May and in the beginning of June. No one male were attracted to artificial sex pheromones.

Distribution. This Turanian species is distributed in Southern Kazakhstan and at this moment is known only from Turkestan vicinities (Fig. 37). It was erroneously reported for the fauna of Russia (Gorbunov et Ivanov 2025), but this record belongs to another species of *B. lavrovi* Knyazev 2025. Thus, *B. turanica* is excluded from the Russian fauna of Sesiidae.

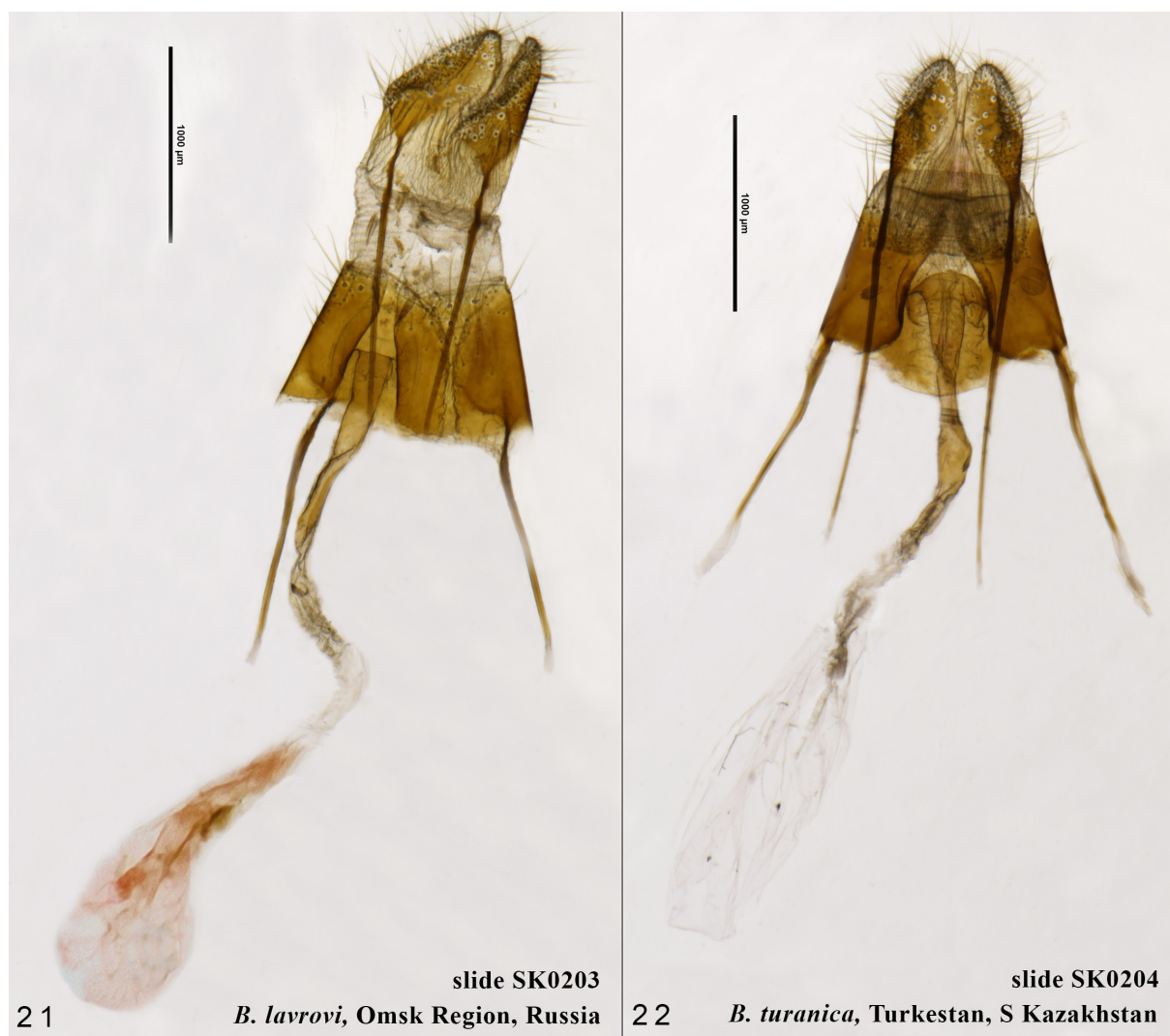
***Bembecia bestianaeli* Căpușe, 1973**
(Figs. 7–8, 23–26)

“*Dipsosphesia bestianaeli* n. sp.”: Căpușe 1973a: 121, Abb. 6, Abb. 8, Fig. I. Type locality: “Mongolei, Chentej aimak, 7 km NO von Somon Mörön, 1200 m, ...” [= Mongolia: Khentii Prov., 70 km NE of Mörön].

Material examined. 1♂, Russia, Omsk Region, Omsk City, Victory Park, 54.967160, 73.368663, 19.VII.2007, A.A. Poteiko (CSKO); 1♂, Russia, Omsk Region, Moskalensky district, 7 km SW of Gvozdevka village, Amrinskaya Balka, 54.540386, 71.795122, 9.VIII.2014, at pheromones, S.A. Knyazev (specimen missing); 1♂, Russia, Omsk Region, Cherlacksky district, 3 km SW of Krasnyi Oktyabr' village, 54.112408, 74.964978, 4.VIII.2014, at pheromones, S.A. Knyazev (CSKO); 2♂♂, Russia, Omsk Region, Cherlacksky district, 4 km SE of Nikolaevka village, the shore of the lake Ul'zhai, 54.239223, 75.079049, 8.VI.2020, at pheromones, S.A. Knyazev (CSKO); 1♂, Russia, Omsk Region, Cherlacksky district, 2 km N of Malyi Atmas village, 54.013224, 74.945051, 26.VI.2024, at pheromones, S.A. Knyazev (CSKO); 1♂, Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 53.911713, 73.948744, 12.VI.2020, at pheromones, S.A. Knyazev (CSKO); 1♂, same locality, 20.VII.2020, at pheromones, S.A. Knyazev (CSKO); 1♂ (GenBank ID: PX696979), same locality, 1-2.VII.2025, at pheromones, S.A. Knyazev (CSKO); 1♂, Russia, Omsk Region, Russko-Polyansky district, 10 km SW of Khlebodarovka village, right bank of the river Tleusai, 53.714771, 73.359083, 5-6.VIII.2021, at pheromones, S.A. Knyazev (CSKO).



Figures 13-20. Variability of males of *Bembecia eversmanni* and *Pyropteron cirgisa*: 13-16. *Bembecia eversmanni*, Russia, Omsk Region, Buzan, 1.VII.2025; 17-20. *Pyropteron cirgisa*, Russia, Omsk Region, Buzan, 1.VII.2025; 13,15,16,17,19,20 – dorsal view; 14,18 – ventral view.

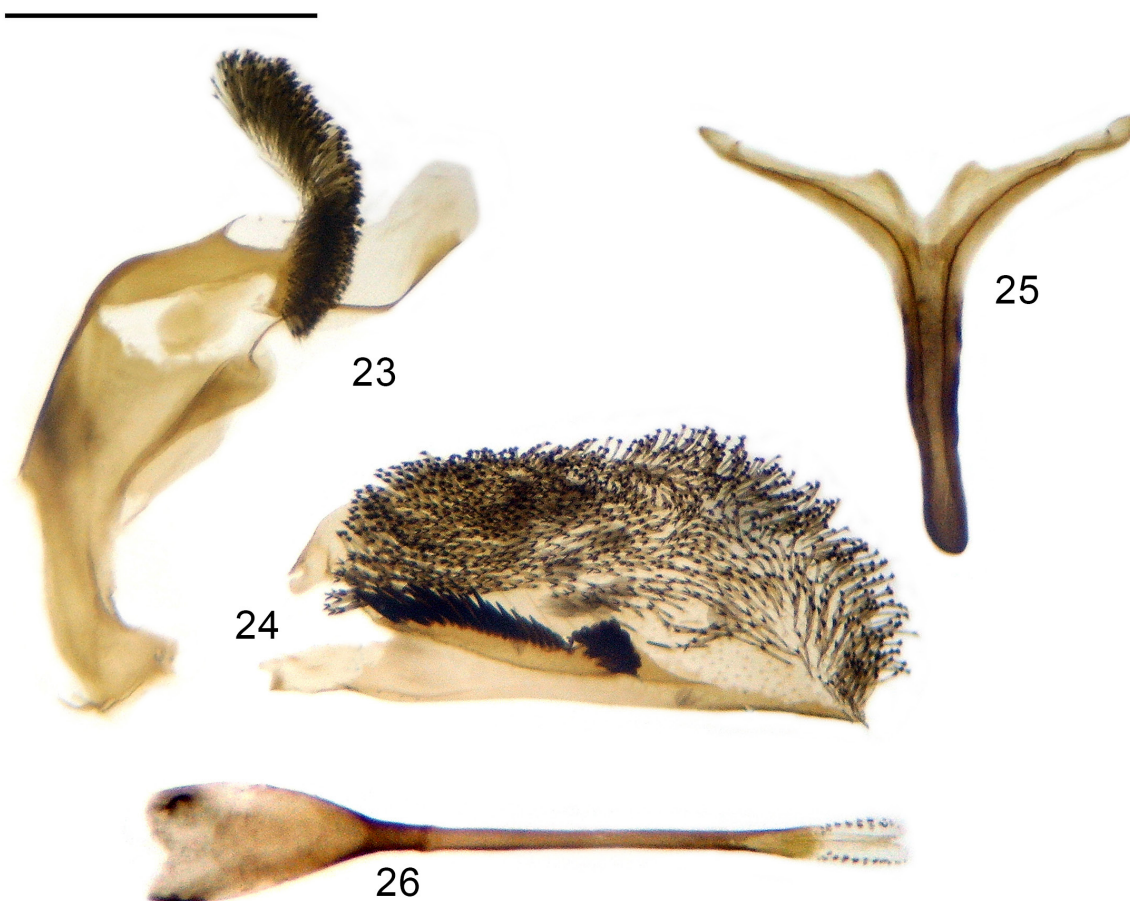


Figures 21–22. Female genitalia of the *Bembecia* spp.: 21. *Bembecia lavrovi*, slide SK0203; 22, *Bembecia turanica*, slide SK0204.

Molecular data. The specimen we sequenced is almost genetically identical to the male from the Republic of Buryatia (BOLD accession number GSCMB135-12), differing by only two substitutions. In addition to these moths, BIN BOLD:AEM8463 includes 4 more samples of *B. bestianaeli* and 5 of closely related species *B. oxytropidis* Spatenka et Lingenhölle, 2002. The maximum intragroup uncorrected *p*-distances within this BIN is 1.4% (*n*=11).

Remark. The species was described from Mongolia (Căpuşe, 1973). A study of the genitalia structure in male specimens from Omsk Region (Figs. 23–26) confirmed their conspecificity with the genitals of *B. bestianaeli* illustrated in its original description. This species of clearwing moths is found in the steppe zone in the south of the Omsk Region. Specimens are found in areas of meadow and mixed-grass steppes with the participation of various legumes (Fabaceae), including *Astragalus* spp. Males are attracted to artificial sex pheromones during the daytime, from about 11.00 to 16.00. In this publication, we reported this species as new to the Western Siberia.

Distribution. Mongolia, China, Russia: from Omsk Region in Western Siberia across South-eastern Siberia (Irkutsk Region, Republic of Buryatia and Zabaykalie Territory) to Russian Far East (Amur Region and Primorie Territory).



Figures 23–26. Male genitalia of *Bembecia bestianaeli*, Russia, Omsk Region, Ul'zhai, 8.VI.2020 (genitalia preparation SK0212): 23. Tegumen-uncus complex; 24. Valva. 25. Saccus. 26. Aedeagus. Scale bar 1 mm.

Bembecia eversmanni O. Gorbunov 2024

(Figs. 13–16, 27–30)

“*Bembecia (Opacosphecia) eversmanni* O. Gorbunov, sp. n.”: Gorbunov 2024: 388, figs 1–12, 25–31. Type locality: ‘Russia, Volgograd Region, Filonovskaya, 50°34’N, 042°45’E’.

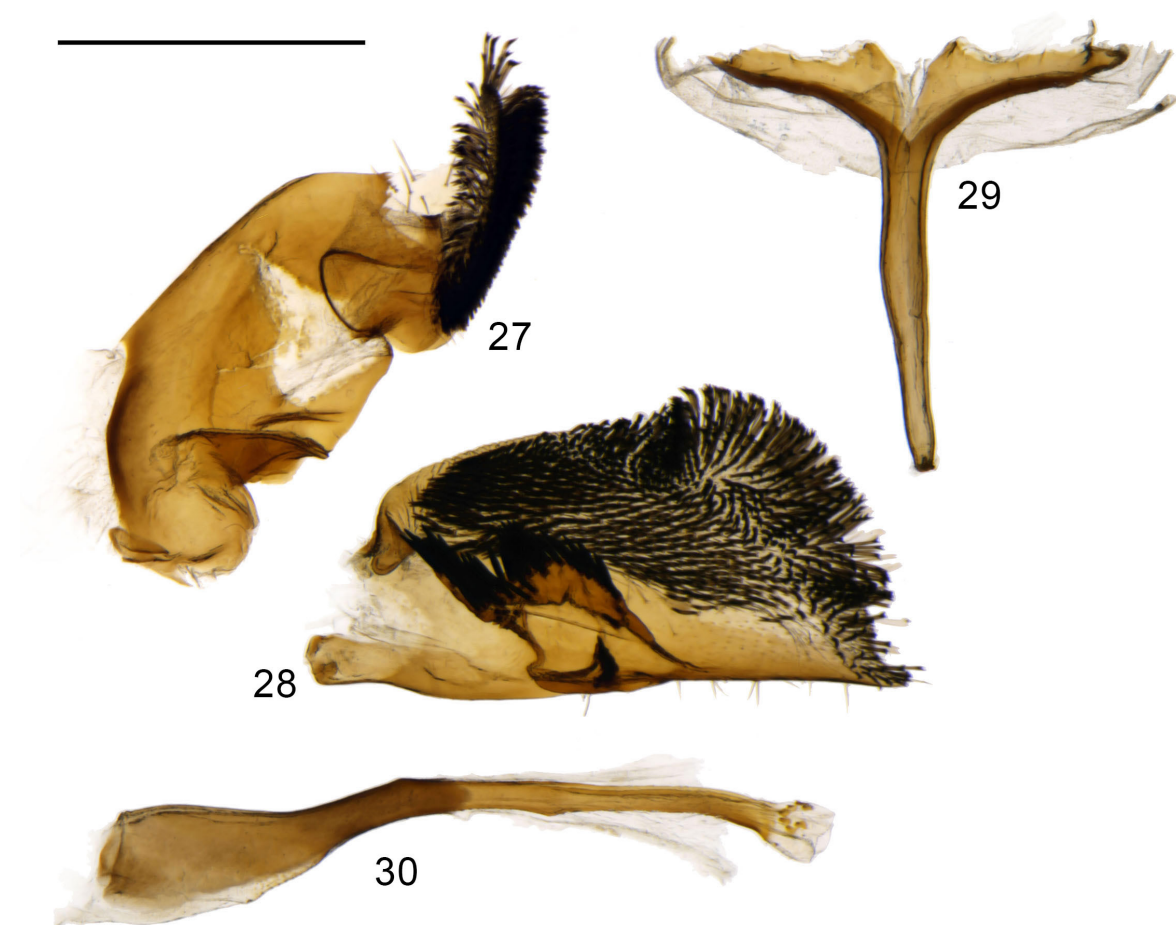
Material examined. 6♂♂ (GenBank ID: PX696978), Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 53.911713, 73.948744, 1–2.VII.2025, at pheromones, S.A. Knyazev (CSKO).

Molecular data. The sequenced sample from the Omsk Region is genetically closest to the specimen of *B. puella* from western Tarbagatai (Kazakhstan) and, together with another *B. puella* sample from Georgia, they form a single BIN BOLD: AAY8774.

Remark. This species was recently described from the Volga region in the European part of Russia (Gorbunov 2024) and later found in Crimea (Gorbunov et al. 2025). The species is similar to *B. puella* Z. Laštůvka, 1989 and *B. megillaeformis* (Hübner, 1813), but differs well by paler colour pattern, the structure and colouring of the apical area of the forewing and some minor differences in male genitalia (figures 1–12 and 25–29 in the original description (Gorbunov 2024)). A small series of this species was collected by the first author of this article on the South of Omsk Region in meadow steppe (Fig. 36) with the participation of various legumes (Fabaceae) in the composition of the herbaceous cover, including some species of *Astragalus*. All specimens were attracted to the artificial sex pheromones in the morning time from 10.00 a.m. to the midday. The appearance of the specimens from the Omsk Region (Figs. 13–16), including the details of the wing pattern, as well as the structure of the males' genitals (Figs. 27–30) completely coincides to the images of the type specimens in the original

description (Gorbunov 2024) and to Crimean specimens (Gorbunov et al. 2025). Herein, we record this species for the Asian Part of Russia and for the territory of the Western Siberia for the first time.

Distribution. Volga Region in European part of Russia, Crimea, South of the West Siberian Plain.



Figures 27-30. Male genitalia of *Bembecia eversmanni*, Russia, Omsk Region, Buzan, 1.VII.2025 (genitalia preparation SK0123, photo by I.A. Makhov IM1008): 27. Tegumen-uncus complex; 28. Valva. 29. Saccus. 30. Aedeagus. Scale bar 1 mm.

Order Lepidoptera

Family Sesiidae

Subfamily Sesiinae

Tribe Synanthedonini

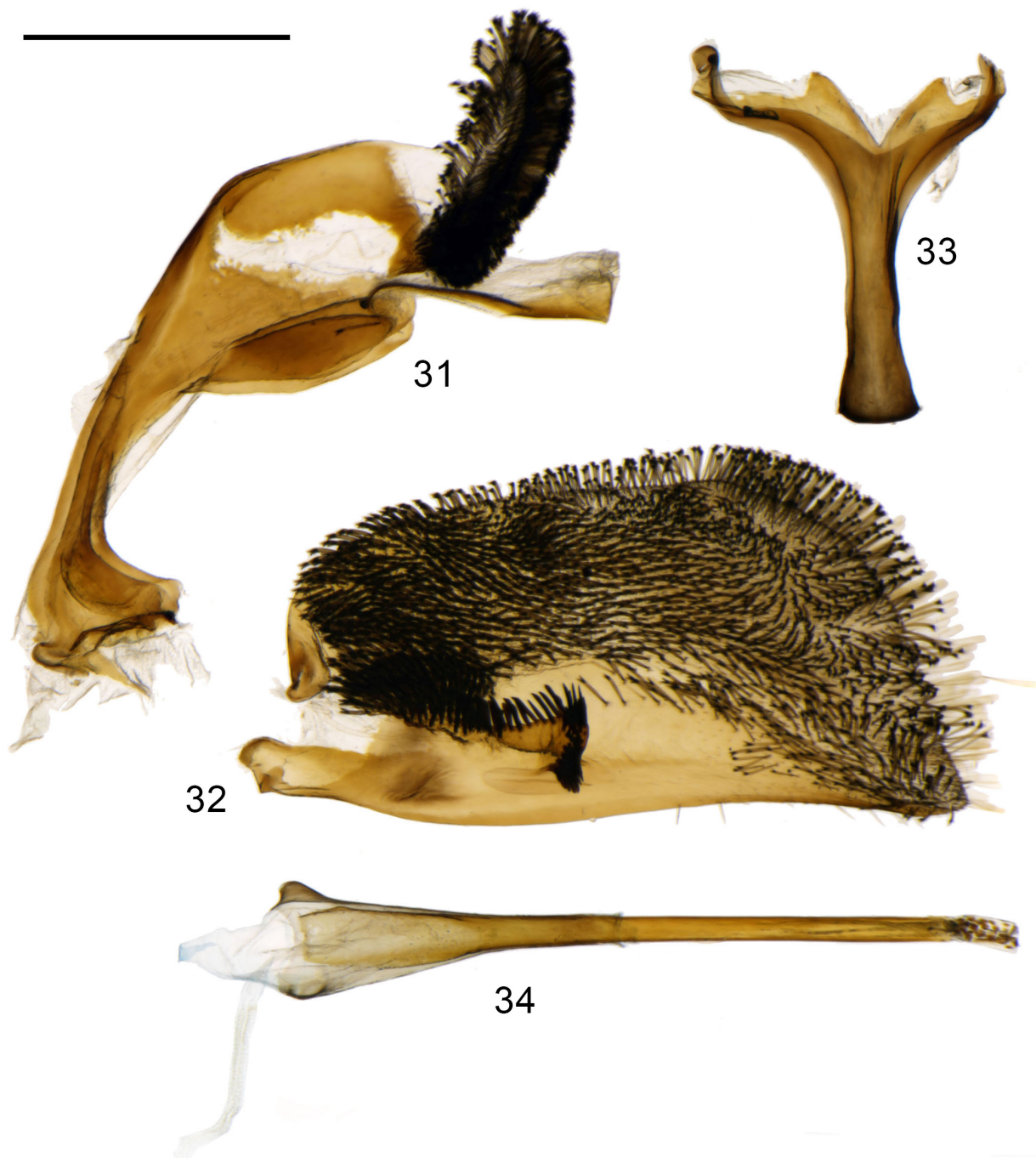
Genus *Pyropteron* Newman, 1832

Pyropteron cirgisa (Bartel, 1912)
(Figs. 17-20, 31–34)

“*Chamaesphecia cirgisa* Bartel, 1912”: in Seitz, A. (Ed.): Die Großschmetterlinge der Erde, 2, Die palaearktischen Spinner und Schwärmer: 408, pl. 50 Fig. k. Holotype: ♀, Kazakhstan, Uralsk.

Material examined. 1♂, Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 53.911713, 73.948744, 27-29.VI.2025, on *Limonium* flowers, S.A. Knyazev (CSKO); 8♂♂ (GenBank ID: PX696980), same locality, 1-2.VII.2025, at pheromones and in flight near *Limonium* flowers, S.A. Knyazev (CSKO).

Molecular data. DNA barcode isolated from the single collected male does not show sufficient similarity to any sequence in the BOLD database. The most genetically similar specimen, more than 4% distant, originates from Uzbekistan and is named '*Pyropteron koshantschikovi*'. Meanwhile, there are four sequences in the GenBank database designated as '*Pyropteron cirgisa*' with accession numbers GU661732, GU661731, HQ564687 and MW996527. All of them occur from central Turkey and the two latter are also depicted in BOLD Systems (their BOLD accession numbers are GSCMA089-10 and GSCMB664-12). *P*-distances between barcode fragments of these four samples and *COI* of our specimen are in the range of 7.6–8.7%. We believe the mentioned Turkish moths are misidentified (see comment below).



Figures 31-34. Male genitalia of *Pyropteron cirgisa*, Russia, Omsk Region, Buzan, 1.VII.2025 (genitalia preparation SK0124, photo by I.A. Makhov IM1004): 31. Tegumen-uncus complex; 32. Valva. 33. Saccus. 34. Aedeagus. Scale bar 1 mm.



Figure 35. *Pyropteron cirgisa*, adult specimen in Nature: Russia, Omsk Region, Buzan, 28.VI.2025, photo: S.A. Knyazev.



Figure 36. Habitat of *Bembecia lavrovi*, *B. eversmanni* and *Pyropteron cirgisa* in Russia, Omsk Region, Russko-Polyansky district, 2 km SE of Buzan village, 1.VII.2025, photo: S.A. Knayzev.

Remark. The species was described from Uralsk in Western Kazakhstan as *Chamaesphecia cirgisa* Bartel, 1912 and later it was considered in literature as a member of the genus *Synansphecia* Căpușe, 1973 (Sinev 2019). In the end of June, one male was photographed (Fig. 35) and collected on

the *Limonium* flowers by the first author of this article on the South of Omsk Region (Russia, Western Siberia) in meadow steppe (Fig. 36). After that, in the same locality, in the beginning of July, small series several more specimens was collected, attracted at artificial sex pheromones and flying near *Limonium* plants. All specimens were active in the morning time near 9.00-10.00 a.m. The appearance of the specimens from the Omsk Region (Figs. 17-20) is fully consistent with the holotype specimen imaged in the original description and in subsequent works (Arita et al. 2021). The male's genital structures (Figs. 31–34) are also completely identical to the depiction of *P. cirgisa* genitals in the book on European clearwing moths (Laštůvka et Laštůvka 2001). In the revision of the genus *Pyropteron* Newman, 1832 (Bartsch et al. 2021), the authors illustrated specimens from Turkey, identified as *P. cirgisa*, but with some differences in the wing pattern, abdomen and anal tuft coloration. In addition, the work did not provide images of genitals for this species. Considering this, as well as the long distance between the main range of *P. cirgisa* and Turkey (about 1500 km), which includes various climatic and geobotanical zones (despite the common larval host plant), it can be assumed that the Turkish specimens probably belong to another species that has not yet been described.

Distribution. Western Kazakhstan, South-Eastern Europe (steppe zone in European Part of Russia and Ukraine), steppes on the South of the West Siberian Plain, ?Turkey.



Figure 37. Habitat of *Bembecia turana* in South Kazakhstan, Turkestan Region, 35 km SW of Turkestan, Otrar district, 6 km NW of Zhalantos village, Syrdarya river valley, 31.V.2025, photo: S.A. Knyazev.

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