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avives@orange.es
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# A new *Oncocnemis* Lederer, 1853 taxon from Europe (Lepidoptera: Noctuidae)

S. V. Beshkov

**Abstract**

A new taxon *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. is described from the Balkan Peninsula, Bulgaria. The new subspecies, in comparison with the other European members of the *Oncocnemis confusa* (Freyer, [1839]) species group, shows differences both in outward appearance and in the female and male genitalia, including the everted vesica. *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. is a local endemic race, found in three localities close to each other ca. 30 km NW of Sofia. It is abundant in the type locality.
KEY WORDS: Lepidoptera, Noctuidae, *Oncocnemis,* new subspecies, Bulgaria.

**Un nuevo *Oncocnemis* Lederer, 1853 de Europa (Lepidoptera: Noctuidae)**

**Resumen**

Se describe un nuevo taxon *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. de la Península Balcánica, Bulgaria. La nueva subespecie, en comparación con otros miembros europeos del grupo de especies de *Oncocnemis confusa* (Freyer, [1839]), ambos muestran diferencias en el aspecto externo y en la genitalia de las hembras y machos, incluyendo el vesica evertida. *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. es una raza endémica local, encontrada en tres localidades cercanas cada una de ellas a 30 kilómetros al NO de Sofía. Es abundante en la localidad de tipo.
PALABRAS CLAVE: Lepidoptera, Noctuidae, *Oncocnemis,* nueva subespecie, Bulgaria.

## Introduction

*Oncocnemis* Lederer, 1853 is a large genus containing about 20 Palaearctic and 90 Nearctic species. The majority of the species are associated with xerothermic habitats. Most of the Palaearctic species inhabit xeromontane and eremic regions in Central Asia and the Middle East. Most of the species are local, often occurring in relatively small areas of a more or less continuous biotope. On the other hand, they are regularly frequent in these places, sometimes appearing in masses. The moths are excellent flyers, coming regularly to light (RONKAY & RONKAY, 1995). In Europe there are seven species (FIBIGER *et al.,* 2011). Most of them reach Europe only in restricted areas west of the Ural Mts. *Oncocnemis exacta* Christoph, 1887 is found in the Rostov district (FIBIGER *et al.,* 2010). One subspecies of *Oncocnemis nigricula* (Eversmann, 1847) - *Oncocnemis nigricula eberti* Agenjo, 1985 occupies a small part of Northern Spain. A single female specimen of *Oncocnemis confusa* (Freyer, [1839]) has been reported from the Cluj district, Transylvania in Romania (RÁKOSY, 1998, 2000). In the Balkan Peninsula there is one species - *Oncocnemis michaelorum* Beshkov, 1997. Nominotypical *Oncocnemis michaelorum michaelorum* Beshkov, 1997 is a local endemic for the "Silver Coast" - the coastal area between Balchik Town and Cape Kaliakra, Bulgarian North Black Sea Coast (BESHKOV, 1997).

In August 2019 friends and colleagues from the Slovak Republic, Zdenko Tokár and Lubomir Srnka, sent to the present author (SB) a picture of an *Oncocnemis* species for identification. The first impression of SB was that they had found dark specimens of *Oncocnemis michaelorum* Beshkov. One male specimen was dissected, Gp.♂ Z. Tokár No 13638, vesica not everted. The large ventral cornuti field has a few very strong and long bulbed spines, as in *Oncocnemis michaelorum*, and the appearance of the moths eliminate the possibility of being conspecific with *Oncocnemis confusa*. This *Oncocnemis* was collected by the Slovak colleagues in the area between Slivnitsa and Dragoman towns, ca 420 km distant in a straight line from the only known locality of *Oncocnemis michaelorum.* Later on SB visited that area (between Slivnitsa and Dragoman towns, Tri Ushi Hills, above Aldomirovsko Blato Swamp, 745 m, N42.90339, E22.98595) on 4-IX-2019, but without finding *Oncocnemis* species. In 10-VIII-2020 and 12-VIII-2020 SB & Ana Nahirnić-Beshkova spent two nights at near the same locality. On 14-VIII-2020 SB spent a night collecting on Tchepun Hill above Dragoman Town. SB spend two more nights in August 2020 in the area between Beledie Han and the area between Slivnitsa and Dragoman towns - one alone on 16-VIII-2020 and one together with Viktor Gashtarov on 22-VIII-2020. Four different localities were covered as were used three light traps and lamps with a generator. Above Kostinbrod Town in the easternmost three (Beledie Han village surroundings, above Lyulyaka Chalet, 847 m, N42.89910, E23.16802; above Beldie Han Village, 775 m, N42.89210, E023.15772; near Ponor village, 949 m, N42.91642, E23.12922) from six localities *Oncocnemis* specimens were not collected. These localities and one additional (Buchin Prohod) were repeated in August, 2021, some of them twice. Localities where *Oncocnemis* was found are listed below.

## Material and methods

The collecting methods involved two or three portable light traps with an 8 watt "Blacklight" white tube (368 nm) and 8 watt "Blacklight" black tube, both powered by 12 volt 9Ah batteries, as well as a Finnish "tent trap" with a 160 watt MV bulb at the top of the pole and a 20 watt (368 nm) black light over the catching pot below. An additional 20 watt (368 nm) lamp was also positioned about 70m from the tent trap. The distance between the Finnish "tent trap" and the light traps, as well as between the light traps themselves, was sometime more than 1 km, as they were deployed with different outlooks wherever possible. On 16-VIII-2020 and 22-VIII-2020 four different localities were covered per night with distances between traps from 1.5 to 6 km. All traps ran throughout the night.

Genitalia were mounted on glass slides in Euparal after staining with a 2% Merbromin solution. All genitalia slides were photographed with a Zeiss stereo microscope Stemi 2000-C with Canon EOS 70D digital camera; everted vesica and female genitalia were photographed in alcohol before mounting on glass in Euparal. When two or three items are included as one figure (including Figs 59a, b; 60a, b; 61a, b; 62a, b; 63a, b; 64a, b) they were photographed together as one frame. Insects and collecting localities were photographed with a Sony DSChX400v digital camera; the scale line is 1 cm. Unless indicated otherwise, illustrated specimens were collected by S. Beshkov (SB) and together with the genitalia slides are part of the collection of the author in NMNHS. All trips were self-financed by the author and undertaken in his own time.

### *Oncocnemis michaelorum srnkai* Beshkov, ssp. n.

Type material Holotype, 1 ♂ (Fig. 1): BULGARIA, Sofia Region, Dragoman distr., Tchepun Hill, below Petrovski Krust summit, 1167 m, 14-VIII-2020, N42.94797, E022.95211 (T.L.), SB leg. at light, Gen. prep. 1./30.8.2020, SB, male genitalia (Fig. 21) with everted vesica (Figs 22-23). Holotype and genitalia slide are with additional label on red paper: "HOLOTYPE//*Oncocnemis michaelorum*//*srnkai* Beshkov, 2021// SHILAP volume 49". Paratypes: same as holotype, 77 ♂♂ (Figs 2-6), Gen. preps SB 1./28.8.2020 (Figs 24-25), 1./29.8.2020 (Figs 26-27), 2./29.8.2020 (Figs 28-29), 2./09.9.2020 (Figs 30-31), male genitalia with everted vesica, and 7 ♀♀ (Figs 7-9), Gen. preps SB 1./14.9.2020 (Figs 53-54), 1./15.9.2020 (Figs 65-66), 2./16.9.2020 (Figs 51-52); Ibid, 10-VIII-2021, SB & A. Nahimić-Beshkova leg, 30 ♂♂ and 4 ♀♀. BULGARIA, Sofia Region, between Slivnitsa and Dragoman towns, Tri Ushi Hills, above Aldomorovsko Blato Swamp, 739 m, N42.90403, E022.98705, 10-VIII-2020, S. Beshkov & Ana

Nahirnić-Beshkova leg., 1 ♂ (Fig. 10) and 1 ♀; Ibid, 12-VIII-2020, 17 ♂♂ and 7 ♀♀; Dragoman, 3 km SE, 700 m, N42º54'08", E22º59'19", 18-VIII-2019, 3 ♂♂ and 1 ♀, leg. and in coll. Lubomir Srnka, Gp. ♀ Z. Tokár No 13638, vesica not everted; Ibid, 12-VIII-2021, 4 spp.; above Kostinbrod Town, between Ponor and Bezden villages, 913 m, N42.91343, E023.09819, 22-VIII-2020, S. Beshkov & V. Gashtarov leg., 2 ♂♂ in coll. V. Gashtarov (Sofia). Ibid, 7-VIII-2021, 2 ♂♂, leg. and in coll. L. Srnka. Holotype and many paratypes are deposed in the collection of S. Beshkov in the collection of National Museum of Natural History, Sofia (NMNHS). 8 ♂♂ and 2 ♀♀ are deposited in the collection of Dr. Antonio Vives / Museo Nacional de Ciencias Naturales (Madrid, Spain). Some of the paratypes will be distributed to important European museums and collections. Paratypes and slides with their genitalia are with additional label on red paper: PARATYPE//*Oncocnemis michaelorum*//*srnkai* Beshkov, 2021// SHILAP, volume 49.

Description: Wingspan 29 mm (holotype), paratypes male and female 28-31mm, average ~29 mm. Palpi, frons, thorax and forewings grey to ash grey with ochreous and brick-like scales. Probosculus well developed, brownish. Antennae dark brown with light scales, segments almost square, ciliate in males. Length of the cilia ca 0.8 of the antennae width. Female antennae filiform with white and blackish transverse bands as the whitish ones are ca. 2 times wider than the blackish ones. Tegulae forms a brick-coloured patch of scales, at their end between the thorax and abdomen surrounded with long lighter hair (Fig. 6). Abdomen ash grey, posteriorly with ochreous scales in males and unicolour in females. Forewings with rather diffuse pattern, antemedial, medial and postmedial lines double, dark brown to blackish, sinuous with dark patches on the outer margin. Subterminal line dentate, ochreous. Terminal line well defined, ochreous, cilia the same colour or lighter than the wing colour. Basal part of the forewings in the inner part creamy, the same colour as the hindwings. Claviform stigma not well defined, just as a small light area basally below the orbicular stigma. Orbicular stigma more or less clear, rounded, unicolourous, light creamy-ochreous and the light coloration continues diffusely below to the inner margin. Reniform stigma more or less clear, irregular, unicolourous, light creamy-ochreous and the light coloration continues diffusely below to the inner margin. Orbicular and reniform stigmas separated by a blackish square patch formed by the medial line, which can continue to the outer margin. Hindwings dirty whitish to creamy in females with black veins and black scales. Transversal lines and discal spot almost indistinct. Marginal field broad, conspicuous, dark brown to blackish. Terminal line well defined yellowish-ochreous, cilia dark brown proximally and yellowish-ochreous distally. Underside (Figs 3, 5) both wings dirty creamy-whitish with conspicuous dark marginal area. Transversal lines and discal spot almost indistinct. Terminal line and cilia as above.

Male genitalia: Valvae lancetolate with almost parallel margins and slightly curved costal margin, cucullus with triangular apex, angled at ca. 45º. Harpe arcuate, relatively short, and broad, bearing a strong, claw-like extension. Holotype (Fig. 21) measures as follows in mm: harpe length/width 0.6/0.2, claw-like extension 0.15, uncus 1.1, length of the valva 3.1. In some specimens (Gen. prep. 1./28.8.2020 (Fig. 24) even shorter and wider: harpe 0.55/0.25, length of the valva 3.0, in Gen. prep. 1./29.8.2020 (Fig. 26): harpe 0.6/0.25, length of the valva 3.15. Aedeagus slightly curved sinusoidally, length 4.1-4.5, in holotype (Figs 22-23) it is 4.1. Everted vesica (Figs 22-31) slightly longer than the length of the aedeagus. In basal part it is twisted about 170º laterally and very slightly axially so lies in a plane and runs parallel to the aedeagus, slightly curved externally in its middle. In the ventral side there are several very big cornuti, 7 in holotype with large bulbous bases, followed by 6-7 more big cornuti mainly in the proximal part and many smaller ones. Dorsal part of the vesica in its outer part is covered by many small cornuti. Basal part of the vesica with one field of very small and thin cornuti and with another on the dorsal side with bigger cornuti, continuing with many smaller ones to the apex. Terminal cornutus is long and thin, irregular, with a large bulbous base, surrounded with very long bristles (Figs 22-31). In holotype (Figs 22-23) measurements as follows in mm: big cornuti 1.05 with the bulbus apical tuft 1.0, apical cornutus 0.5, vesica length 4.4. In some specimens (Gen. prep. 1./28.8.2020) (Figs 24-25) big cornuti 1.0 with the bulbus, apical tuft 0.7, apical cornutus 0.5, vesica length 4.7; in Gen. prep. 1./29.8.2020 (Figs 26-26): big cornuti 1.2 with bulbs, apical tuft 1.1, apical cornutus 0.5, vesica length 4.5.

Female genitalia (Figs 51-54): Typical for the group but more similar to *O. michaelorum michaelorum* (Figs 55-56) than to *O. confusa* (Figs 57-58). Ovipositor lobes roughly spiny and with tuft of long hair. Dimension in mm: ductus 0.65-0.7; dorsal plate 1.6-1.75; ventral plate 1.25-1.3;

ductus with plate to 8ht abdominal segment: 3.0-3.2; length of the bursa longitudinally: 3.5-4.2. Bursa copulatrix irregular, almost as wide as long. Appendix bursae long and narrow.

Differential diagnosis: The new subspecies is very similar to its relatives, closer to *O. michaelorum michaelorum* (Figs 11-15) then to *O. confusa* (Figs 16-20). *Oncocnemis michaelorum srnkai* ssp. n. can be easily separated from *O. michaelorum michaelorum* by wing colour; *O. michaelorum srnkai* ssp. n. is more strongly contrasting and colorful, grey to ash grey with ochreous and brick-like tints, whereas *O. michaelorum michaelorum* is unicolourous silverish (Figs 11-13). *Oncocnemis confusa* is less contrasting and more unicolorous (Figs 16-19). Male genitalia of *Oncocnemis michaelorum srnkai* ssp. n. differs with lanceolate almost parallel valvae margins and slightly curved costal margin, cuculus with triangular apex, angled at ca. 45º (Figs 21, 24, 26, 28, 30). In both *O. michaelorum michaelorum* (Figs 32-34) and *O. confusa* (Figs 37, 39, 42) the valvae are more arcuate, narrow distally and with more pointed cucullus. Length of the valva in mm: *O. michaelorum srnkai* ssp. n. 3.0-3.15, in *O michaelorum michaelorum* 3.0-3.25, in *O. confusa* 2.4-3.1. Harpe in *O. michaelorum srnkai* ssp. n. is short and wide, more robust, 0.55-0.6/0.2-0.25, in *O. michaelorum michaelorum* 0.6-0.7/0.2 and in *O. confusa* 0.55-0.8/0.16. Aedeagus is 4.0-4.2 in *O. michaelorum srnkai* ssp. n., 3.7-4.2 in *O. michaelorum michaelorum* and 3.3-4.0 in *O. confusa.* Everted vesica in *O. michaelorum srnkai* ssp. n. lies almost in a plain, those of *O. michaelorum michaelorum* and *O. confusa* are twisted axially. Vesica of *O. michaelorum srnkai* ssp. n. and *O. michaelorum michaelorum* are equal - 4.4-4.7 mm, in *O. confusa* usually remarkably smaller - 3.2-3.5 but exceptionally to 4.9 mm (Gen. prep 3./29-8-2020). The differences in the dimensions and the spatial structure are demonstrated in figs 45-50 where everted vesica of these three taxa, as well as of *Oncocnemis confusa persica* Ebert, 1978 are photographed together in the same positions in isopropanol. Spatial configuration of elastic membranous structures, however, depends also on pressure used for everting them, which also depends on the aperture of the vesica ejaculatorius, and even in manipulations performed in the same way results can be different (see figs 45-50). During copulation, however, the position of the vesica must be different because the vesica ejaculatorius is in the main tube and in the aedeagus. The biggest cornuti of *O. michaelorum srnkai* ssp. n. and *O. michaelorum michaelorum* are equal 1.0-1.2 mm, in *O. confusa* usually remarkably smaller 0.6 but exceptionally 0.9 mm (Gen. prep 3./29-8-2020, Figs 37-38). The apical tuft in *O. michaelorum srnkai* ssp.n. is 0.7-1.1mm, in *O. michaelorum michaelorum* 1.0 mm, in *O. confusa* 0.75-0.8 mm; The apical cornutus in *O. michaelorum srnkai* ssp.n. is 0.5 mm, in *O. michaelorum michaelorum* 0.5-0.55 mm, in *O. confusa* 0.3-0.55 mm. The female genitalia of *O. michaelorum srnkai* ssp. n. differs from these of *O. confusa* by its shorter ductus bursae (0.65-0.7 in *O. michaelorum srnkai* ssp. n. and 1.0 in *O. confusa*) and the shape of the bursa copulatrix (Figs 59-64). The apendix bursae is thinner in *O. michaelorum srnkai* ssp. n.; *O. michaelorum michaelorum* has longer and thinner appendix bursae (Figs 65-66). The dorsal and ventral plates in *O. confusa* are smaller (Figs 59-64). The differences in the dimension and the spatial structure are illustrated on figs 65-66 where equally inflated female genitalia of the three taxa are photographed together in the same positions in isopropanol, which however do not represent the natural positions in the insects' abdomens.

Distribution: *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. is known from a small area in Bulgaria, NW from Sofia: Tchepun Hill, below Petrovski Krust summit, 1167m, N42.94797, E022.95211 (Fig. 67) and two more localities in the Tri Ushi Hills. In all three localities *Artemisia alba* Turra is well represented. Habitat type: Mountain petrophytic steppes 02E1. Relationships with habitat classifications: EUNIS: E1.21 Helleno-Balkan [*Satureja montana* L.] steppes; PAL. CLASS.: 34.311 Helleno-Balkan savory steppes; HD 92/43: 62A0 Eastern sub-Mediterranean dry grasslands (*Scorzoneretalia villosae*) (TZONEV, DIMITROV & GUSSEV, 2015). *Oncocnemis michaelorum srnkai* ssp. n. in the type locality is synchronic with *Narraga tessularia* (Metzner, 1845), *Charissa mutilata* (Staudinger, 1878), *Phibalapteryx virgata* (Hufnagel, 1767), *Cucullia formosa* Rogenhofer, 1860, *Cucullia santonici* (Hübner, [1813]), *Craniophora pontica* (Staudinger, 1879), *Hadena drenowskii drenowskii* (Rebel, 1930), *Chersotis elegans* (Eversmann, 1837). The other localities and more species which are syntopic and synchronic with *O. michaelorum srnkai* ssp. n. are listed and illustrated in BESHKOV & NAHIRNIĆ-BESHKOVA (2021).

**Fig. 67.–** Type locality of *Oncocnemis michaelorum srnkai* Beshkov, ssp. n.: Tchepun Hill, below Petrovski. Krust summit, 1167 m.

Molecular data: Two legs from two paratypes from the type locality were sent to Dr Axel Hausmann (Munich, Germany) with numbers: BC SB Lep 0500, male (Fig. 4) and BC SB Lep 0501, female (Figs 8-9). On 16-02-2021 Dr Hausmann wrote: "The two Noctuidae are DNA (Fig. 68) barcoded now: both are *Oncocnemis michaelorum*". The BOLD TaxonID Tree is presented below. *Oncocnemis michaelorum srnkai,* ssp. n. is not included, because there are no differences from *O. michaelorum*.

Project: Stoyan Beshkov's Collection of Lepidoptera - NMNHS [NMNHL]
Date: 5-July-2010
Data Type: Nucleotide
Distance Model: Kimura 2 Parameter
Codon Positions: 1st, 2nd, 3rd

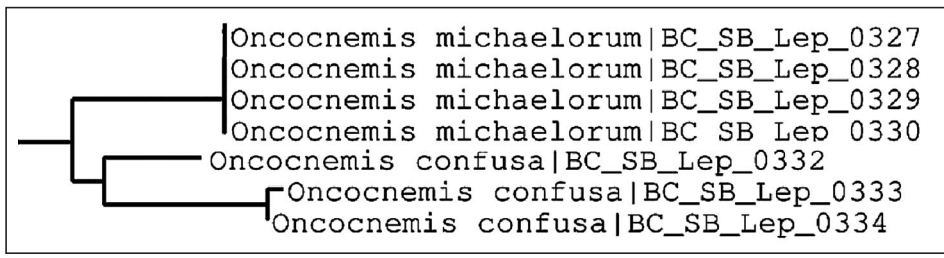


**Fig. 68.–** Barcode TaxonID Tree.

Etymology: The new taxon is named after the famous Slovak collector Mr. Lubomir Srnka (Lehota pod Vtáènikom, SK) who first found this remarkable *Oncocnemis*.

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I am glad to thank Mr. Zdenko Tokár (Šala, SK) and Mr. Lubomir Srnka (Lehota pod Vtáčnikom, SK) for sharing their finding with me, Dr Zoltan Varga (Debrescen, HU) and Dr Laszlo Ronkay (Budapest, HU) for confirming the new subspecies and their comments, Dr Axel Hausmann (Munich, D.) for the molecular data, Mrs. Ana Nahirnić-Beshkova and Mr. Viktor Gashtarov (Sofia, BG) for their assistance in the field and Dr Mark Shaw (Edinburgh, Scotland, UK) for linguistic corrections.

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S. V. B.
National Museum of Natural History
Bulgarian Academy of Sciences
Tsar Osvoboditel Blvd., 1
BG-1000 Sofia
BULGARIA / *BULGARIA*
E-mail: stoyan.beshkov@gmail.com
https://orcid.org/0000-0002-5459-0101

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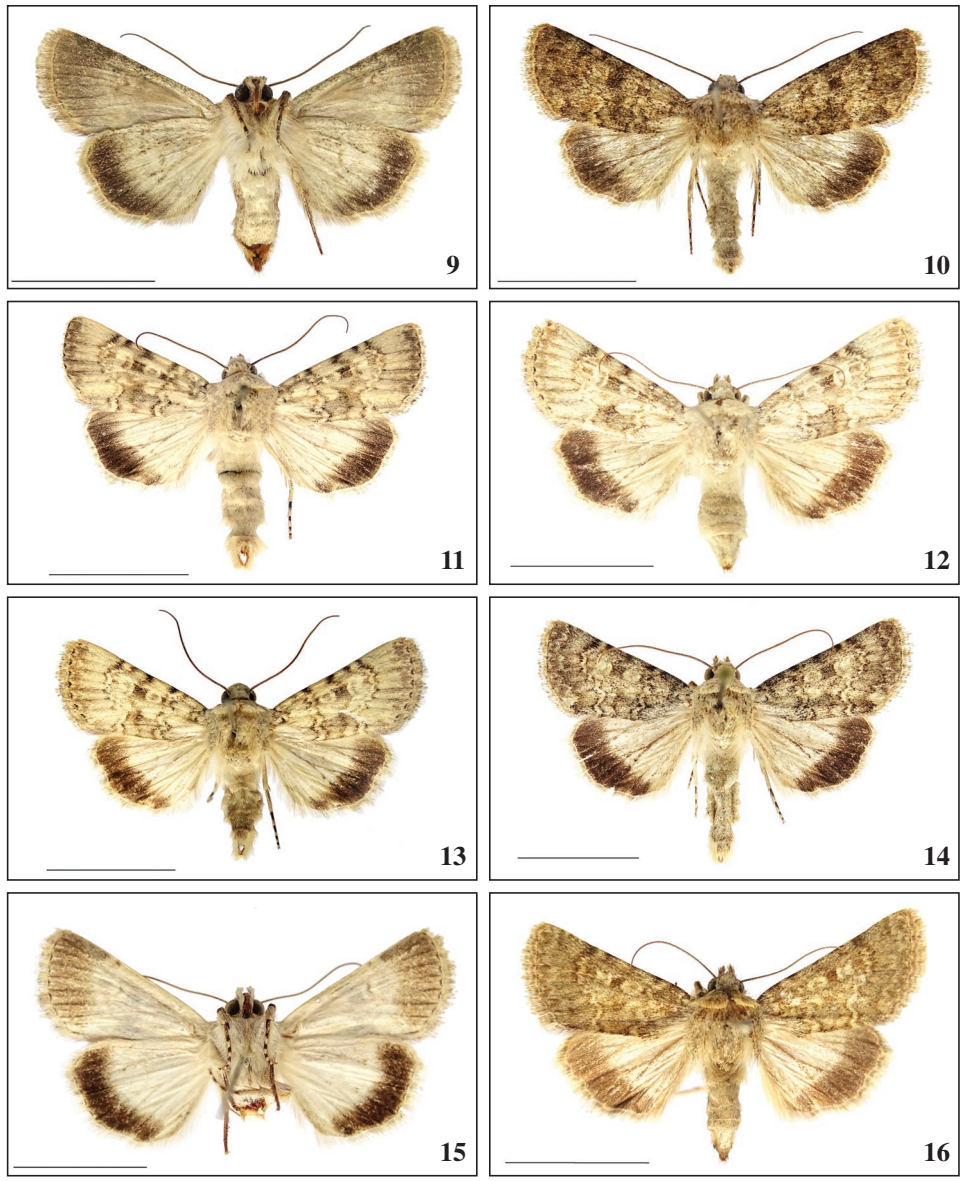
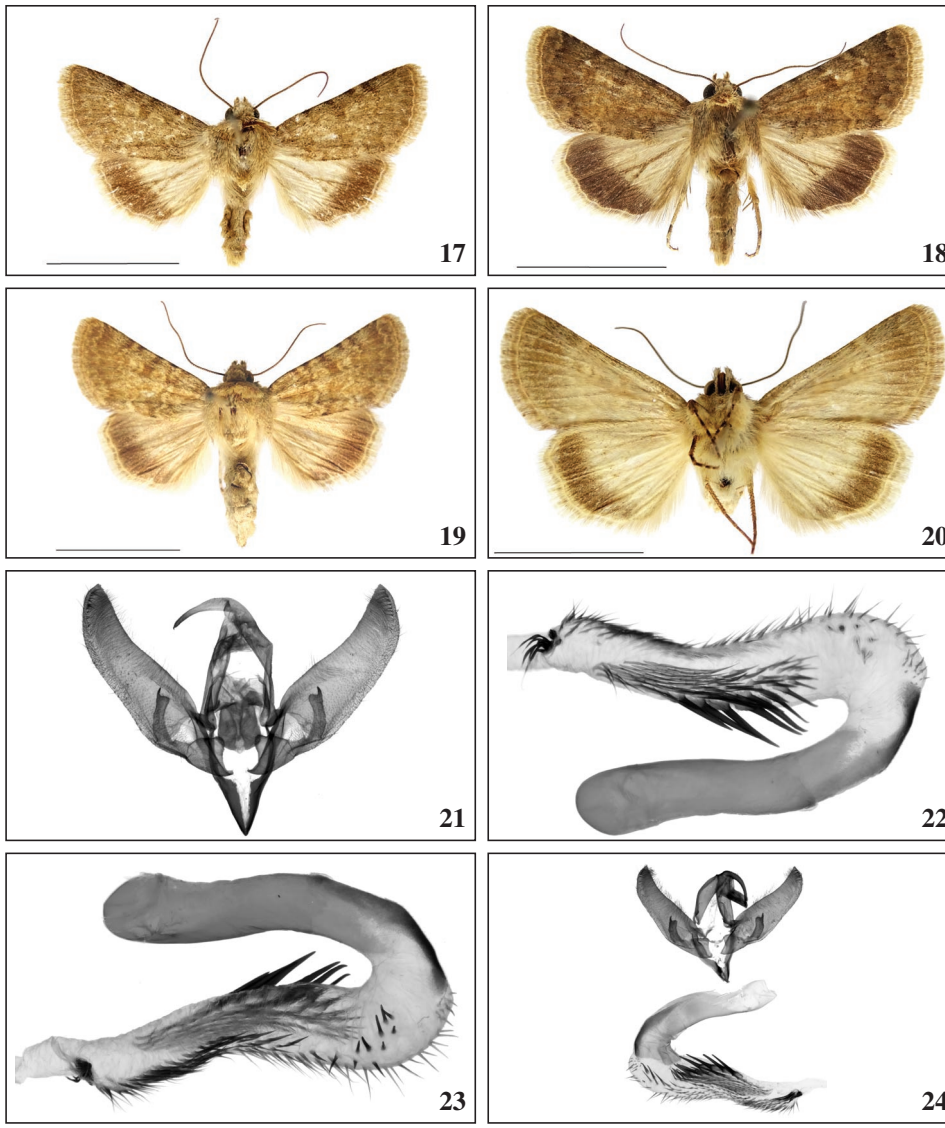
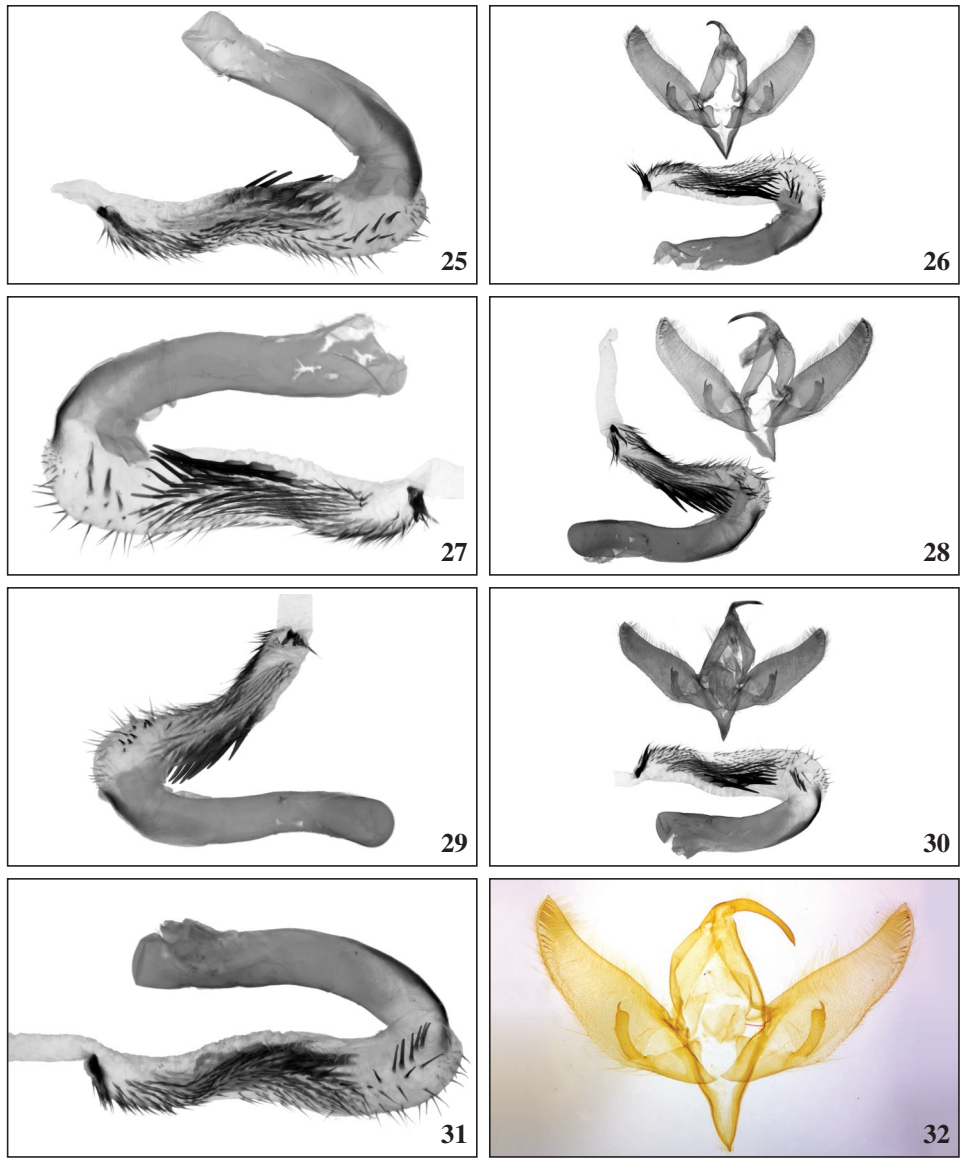
**Figs 1-8.–** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. **1.** ♂. Holotype, Tchepun, 14-VIII-2020, Gen. prep. 1./30-8-2020, SB. **2.** ♂, ups. Paratype, Tchepun, 14-VIII-2020. **3.** ♂, unds. Paratype, Tchepun, 14-VIII-2020. **4.** ♂. Paratype, Tchepun, 14-VIII-2020, BC SB Lep 0500. **5.** ♂. Paratype, Tchepun, 14-VIII-2020. **6.** ♂. Paratype, Tchepun, 14-VIII-2020. **7.** ♀. Paratype, Tchepun, 14-VIII-2020, Gen. prep. 1./14.9.2020, SB. **8.** ♀, ups. Paratype, Tchepun, 14-VIII-2020, BC SB Lep 0501.



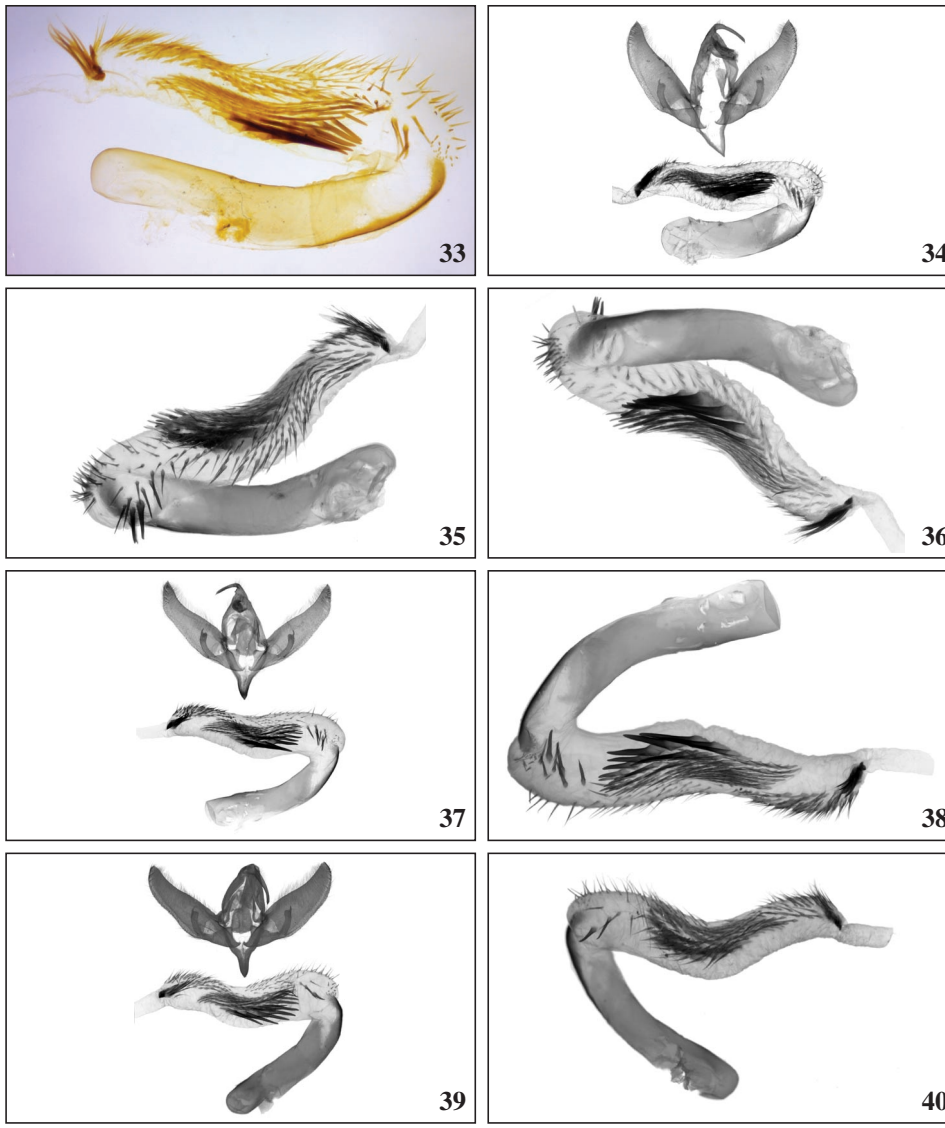

**Figs 9-16.– 9.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., ♀, unds. Paratype, Tchepun, 14-VIII-2020, BC SB Lep 0501. **10.** ♂. Paratype, above Aldomirovsko blato, 10-VIII-2020. **11-15.** *Oncocnemis michaelorum michaelorum* Beshkov, 1997. **11.** ♂. Parapype, Balchik-Tuzlata, 10-VIII-1996. **12.** ♀, ups. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB. **13.** ♂. Balchik-Tuzlata, 15-VIII-2004. **14.** ♂. Paratype, Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.020, SB. **15.** ♀, unds. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB. **16.** *Oncocnemis confusa*, ♀. E Turkey, Prov. Van, near Guseldere, 2450 m, 31-VII-2001, Gen. prep. 1./16.9.2020, SB.



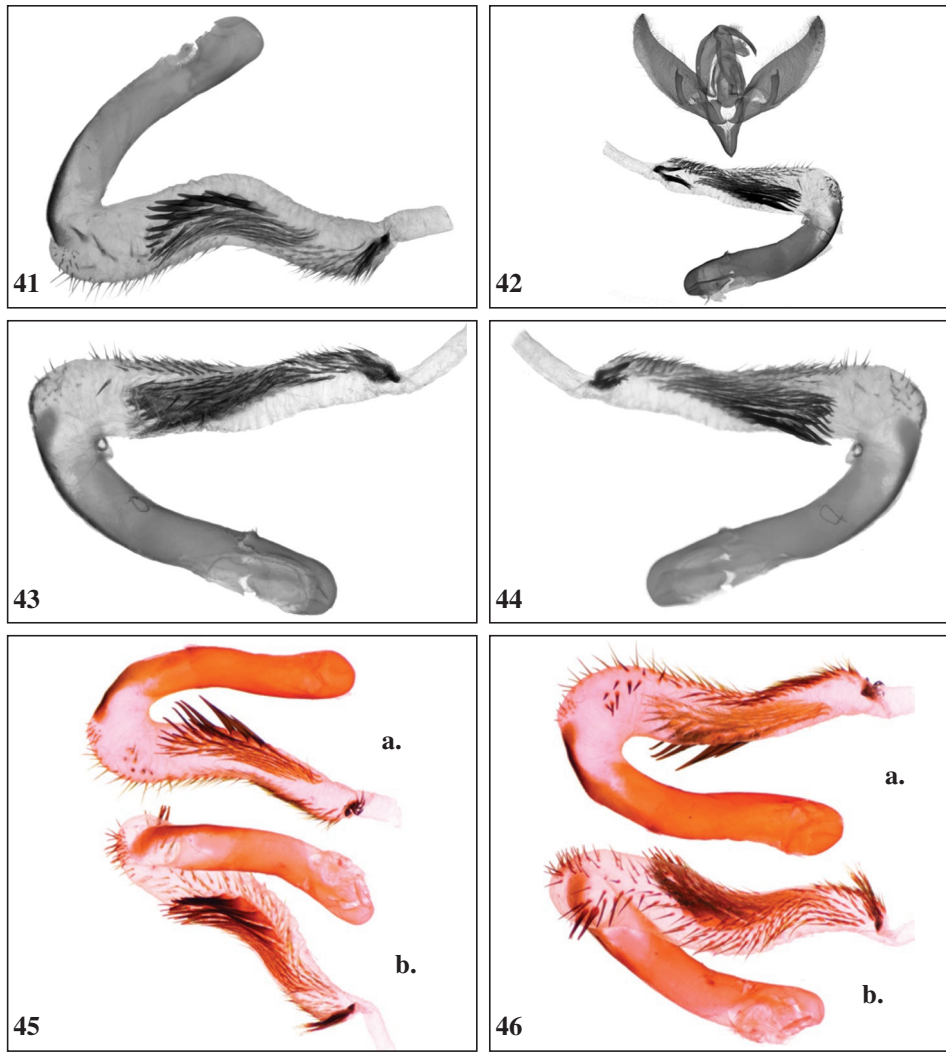

**Figs 17-24.– 17.** *Oncocnemis confusa*, ♂. E Turkey, Prov. Van, Baklatepe, 2100 m, 29-VII-2001, Gen. prep. 3./30.8.2020, SB. **18.** *Oncocnemis confusa persica*, ♂. Iran, Prov. Tehran, Elburz Mts, 10 km S of Semsak, Deezin, 2000 m, 11-VII-2000, B. Benedek leg., Gen. prep. 1.31.8.2020, SB. **19.** *Oncocnemis confusa*, ♀ ups. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB. **20.** *Oncocnemis confusa*, ♀ unds. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB. **21-24.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. **21.** holotype, male genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB. **22.** holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB. **23.** holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB. **24.** paratype, male genitalia with everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./28.8.2020, SB.



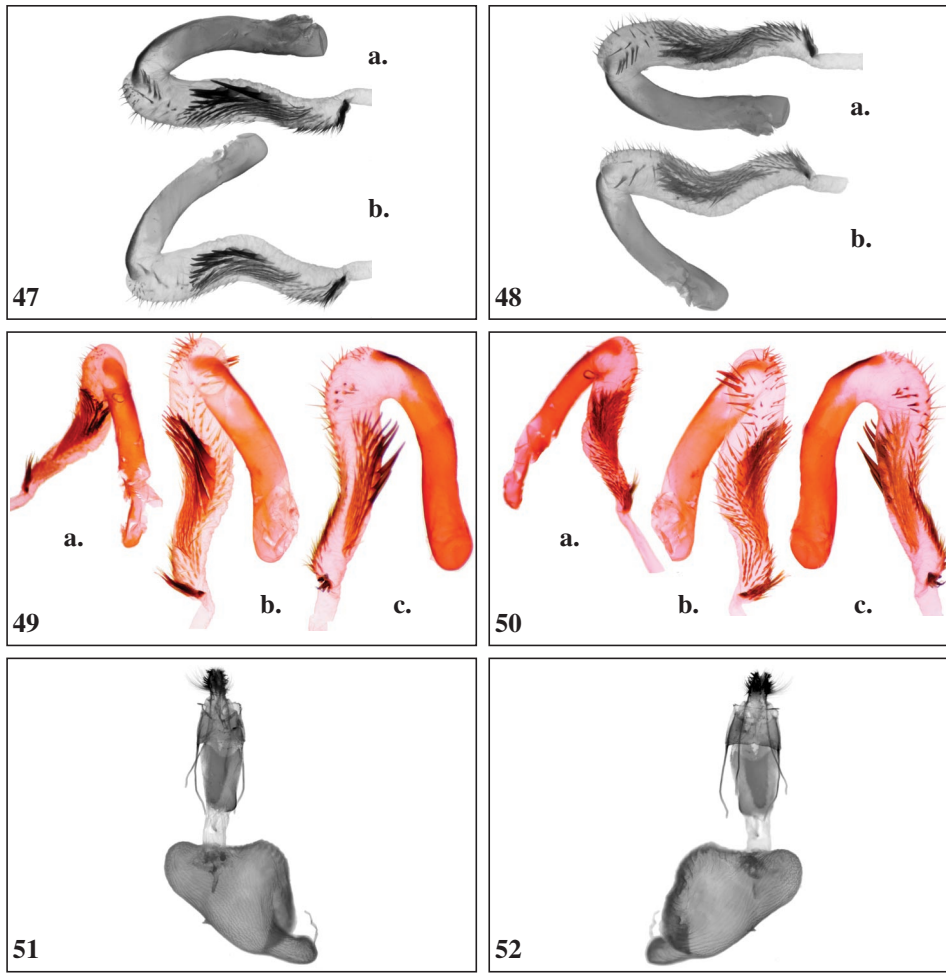

**Figs 25-32.– 25-31.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n. **25.** paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./28.8.2020, SB. **26.** paratype, male genitalia with everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./29.8.2020, SB. **27.** paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./29.8.2020, SB. **28.** paratype, male genitalia with everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./29.8.2020, SB. **29.** paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./29.8.2020, SB. **30.** paratype, male genitalia with everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./09,9,2020, SB. **31.** paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./09.9.2020, SB. **32.** *Oncocnemis michaelorum michaelorum* holotype, male genitalia. Balchik-Tuzlata, 10-VIII-1996, Gen. prep. 7./04.9.1996, SB.



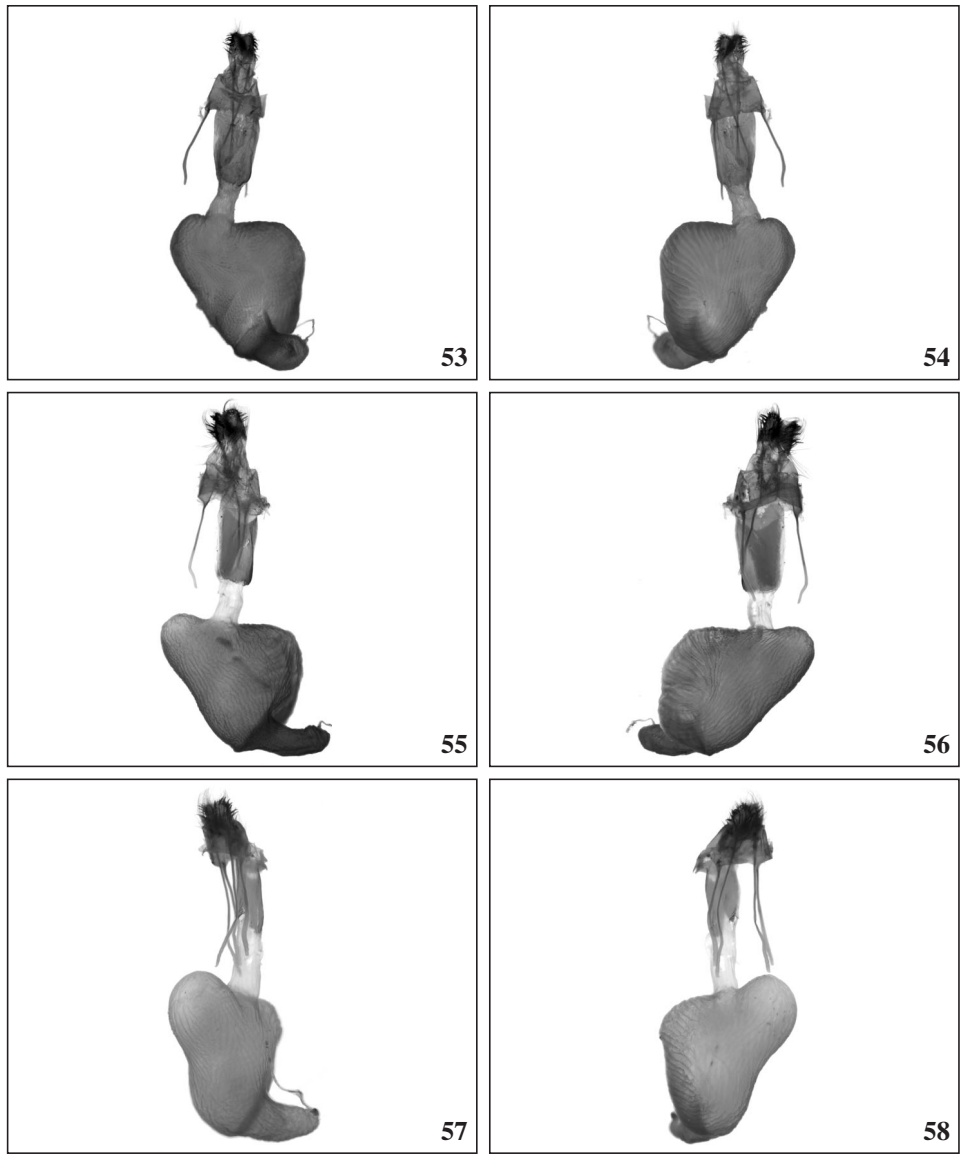

**Figs 33-40.– 33-36.** *Oncocnemis michaelorum michaelorum* **33.** holotype, everted vesica. Balchik-Tuzlata, 10.8.1996, Gen. prep. 7./04.9.1996, SB. **34.** paratype, male genitalia with everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB. **35.** paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB. **36.** paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30-.8.2020, SB. **37-40.** *Oncocnemis confusa.* **37.** male genitalia with everted vesica. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 3./29.8.2020, SB. **38.** everted vesica. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 3./29.8.2020, SB. **39.** male genitalia with everted vesica. Turkey, Prov. Erzurum, S above Ispir, 2030 m, 28-VII-2001, Gen. prep. 1./09-IX-2020, SB. **40.** *Oncocnemis confusa*, everted vesica. Turkey, Prov. Erzurum, S above Ispir, 2030 m, 28-VII-2001, Gen. prep. 1./09.9.2020, SB.



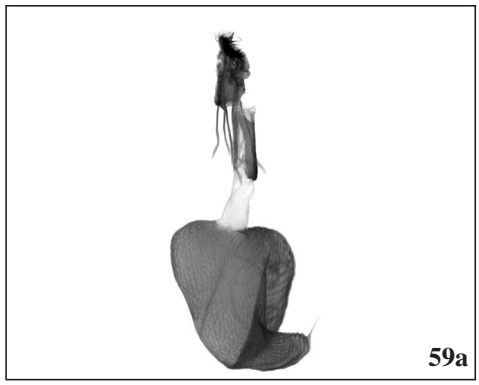

**Figs 41-46.– 41.** *Oncocnemis confusa*, everted vesica. Turkey, Prov. Erzurum, S above Ispir, 2030 m, 28-VII-2001, Gen. prep. 1./09.9.2020, SB. **42.** *Oncocnemis confusa persica*, male genitalia with everted vesica. Iran, Prov. Tehran, Elburz Mts, 10 km S of Semsak, Deezin, 2000 m, 11-VII-2000, B. Benedek leg., Gen prep. 1./31.8.2020, SB. **43.** *Oncocnemis confusa persica*, everted vesica. Iran, Prov. Tehran, Elburz Mts, 10 km S of Semsak, Deezin, 2000 m, 11-VII-2000, B. Benedek leg., Gen prep. 1./31.8.2020, SB. **44.** *Oncocnemis confusa persica*, everted vesica. Iran, Prov. Tehran, Elburz Mts, 10 km S of Semsak, Deezin, 2000 m, 11-VII-2000, B. Benedek leg., Gen prep. 1./31.8.2020, SB. **45a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB; **b.** *Oncocnemis michaelorum michaelorum*, paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB. **46a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB; **b.** *Oncocnemis michaelorum michaelorum* Beshkov, paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB.

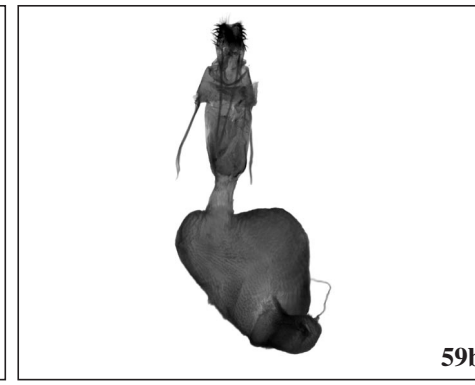


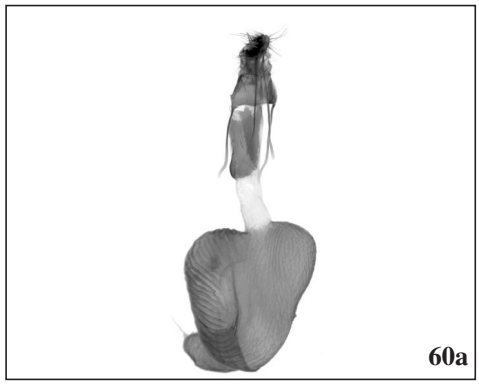

**Figs 47-52.– 47a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./09.9.2020, SB; **47b.** *Oncocnemis confusa*, everted vesica. Turkey, Prov. Erzurum, S above Ispir, 2030 m, 28-VII-2001, Gen. prep. 1./09.9.2020, SB. **48a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 2./09.9.2020, SB; **48b.** *Oncocnemis confusa*, everted vesica. Turkey, Prov. Erzurum, S above Ispir, 2030 m, 28-VII-2001, Gen. prep. 1./09.9.2020, SB. **49a.** *Oncocnemis confusa*, everted vesica. E Turkey, Prov. Van, Baklatepe, 2100 m, 29-VII-2001, Gen. prep. 3./30.8.2020, SB; **49b.** *Oncocnemis michaelorum michaelorum*, paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB; **49c.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB. **50a.** *Oncocnemis confusa*, everted vesica. E Turkey, Prov. Van, Baklatepe, 2100 m, 29-VII-2001, Gen. prep. 3./30.8.2020, SB; **50b.** *Oncocnemis michaelorum michaelorum*, paratype, everted vesica. Balchik-Tuzlata, 23-VIII-1996, Gen. prep. 2./30.8.2020, SB; **50c.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., holotype, everted vesica. Tchepun, 14-VIII-2020, Gen. prep. 1./30.8.2020, SB. **51.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB. **52.** *Oncocnemis michaelorum srnkai* ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB.



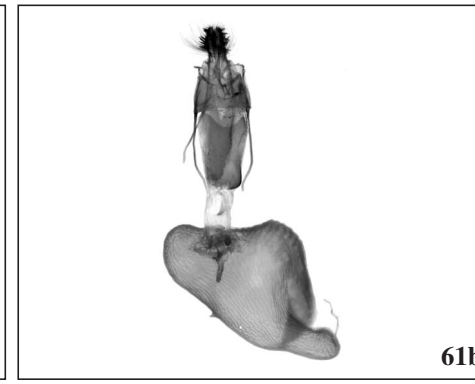

**Figs 53-58.– 53.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./14.9.2020, SB. **54.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./14.9.2020, SB. **55.** *Oncocnemis michaelorum michaelorum,* female genitalia. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB. **56.** *Oncocnemis michaelorum michaelorum,* female genitalia. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB. **57.** *Oncocnemis confusa*, female genitalia. E Turkey, Prov. Van, near Guseldere, 2450 m, 31-VII-2001, Gen. prep. 1./16.9.2020, SB. **58.** *Oncocnemis confusa*, female genitalia. E Turkey, Prov. Van, near Guseldere, 2450 m, 31-VII-2001, Gen. prep. 1./16.9.2020, SB.



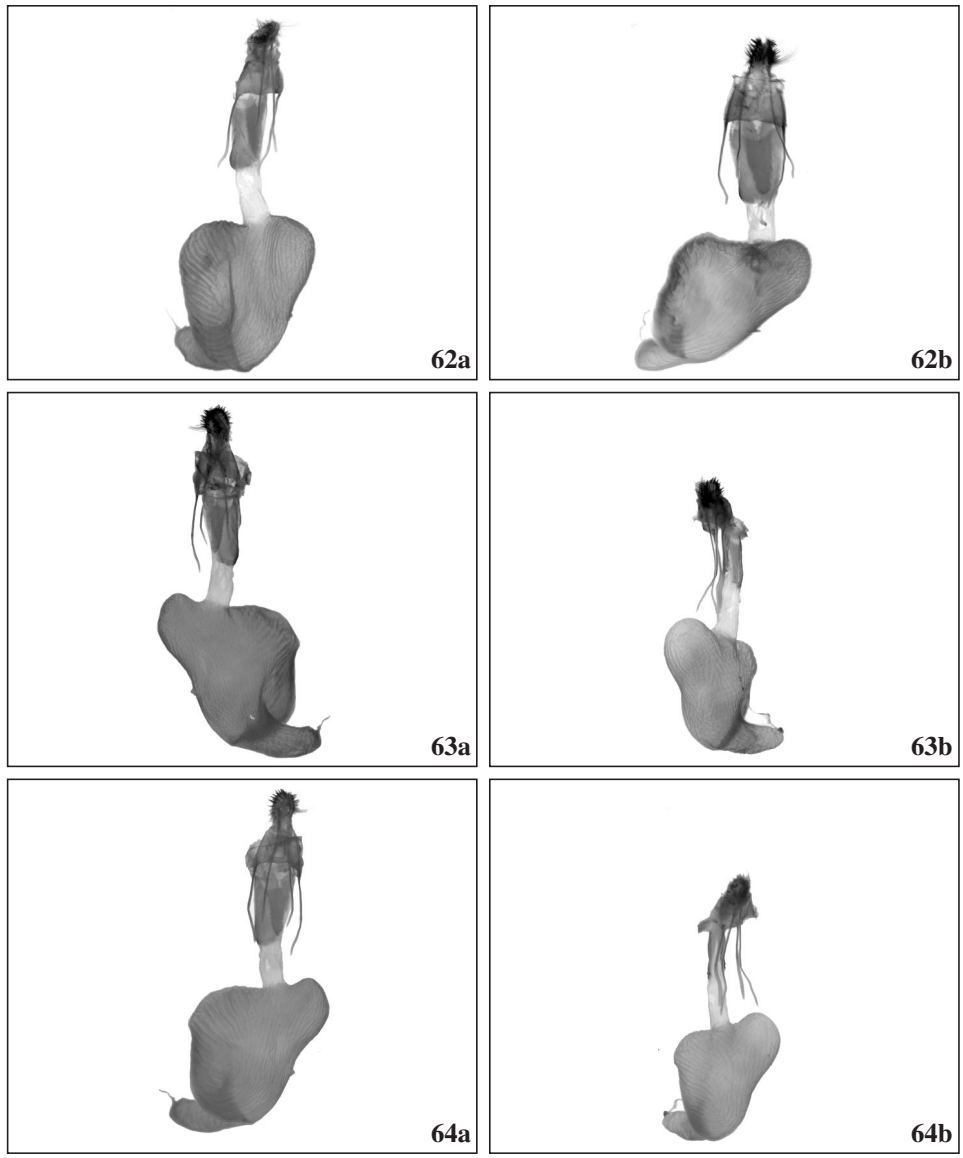



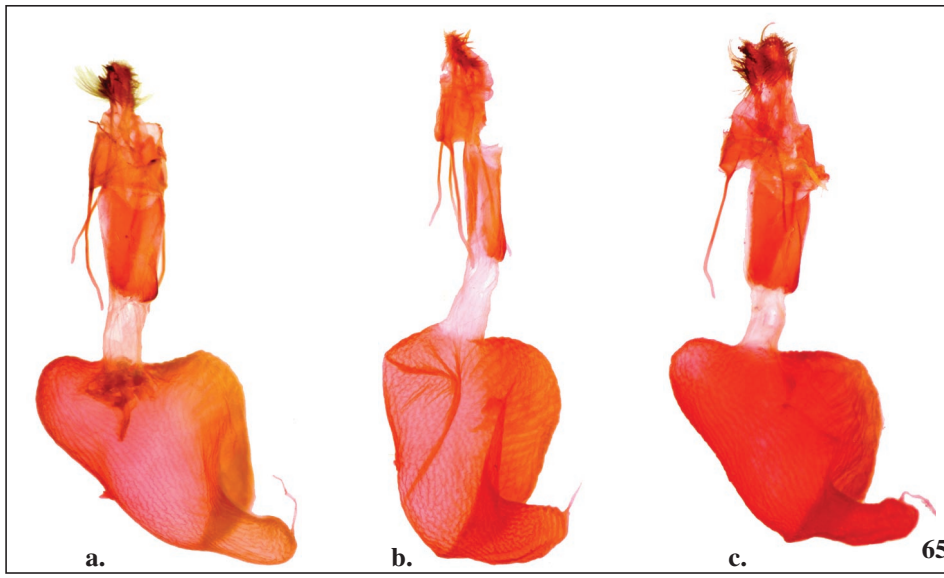


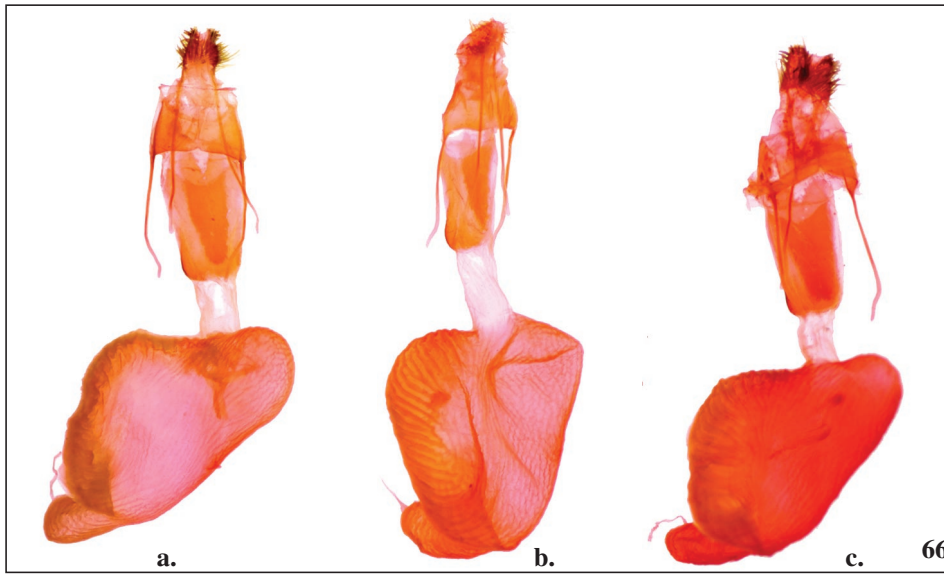




**Figs 59-61.– 59a.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **59b.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./14.9.2020, SB. **60a.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **60b.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./14.9.2020, SB. **61a.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **61b.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB.




**Figs 62-64.– 62a.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **62b.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB. **63a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB; **63b.** *Oncocnemis confusa*, female genitalia. E Turkey, Prov. Van, near Guseldere, 2450 m, 31-VII-2001, Gen. prep. 1./16.9.2020, SB. **64a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 2./16.9.2020, SB; **64b.** *Oncocnemis confusa*, female genitalia. E Turkey, Prov. Van, near Guseldere, 2450 m, 31-VII-2001, Gen. prep. 1./16.9.2020, SB.




**Figs 65-66.– 65a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./15.9.2020, SB; **65b.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **65c.** *Oncocnemis michaelorum michaelorum,* female genitalia. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB. **66a.** *Oncocnemis michaelorum srnkai* Beshkov, ssp. n., paratype, female genitalia. Tchepun, 14-VIII-2020, Gen. prep. 1./15.9.2020, SB; **66b.** *Oncocnemis confusa*, female genitalia. Turkey, Prov. Erzurum, below Golurt Pass, 2000 m, 05-VIII-2001, Gen. prep. 2./14.9.2020, SB; **66c.** *Oncocnemis michaelorum michaelorum,* female genitalia. Balchik-Tuzlata, 15-VIII-2004, Gen. prep. 2./15.9.2020, SB.