

A NEW SPECIES OF *MESIOTELUS* SIMON 1897 (ARANEI, LIOCRANIDAE) FROM THE REPUBLIC OF UZBEKISTAN

© 2024 S. V. Vlasov*, V. E. Efimik**

Perm State University, Perm, 614600 Russia

* e-mail: probel15@yandex.ru

**e-mail: efimik.viktor@mail.ru

Received February 29, 2024

Revised March 22, 2024

Accepted March 28, 2024

A new species of Liocranidae is described and illustrated from Uzbekistan: *Mesiotelus uzbekistanicus* sp. n. (female). An identification key is given to *Mesiotelus* species from Middle Asia and Iran.

Keywords: spider, taxonomy, Middle Asia, Iran, identification key

DOI: 10.31857/S0044513424080037, **EDN:** twryth

The genus *Mesiotelus* includes 20 species and is found from the Canary Islands to China, in the southern part of the Palearctic (WSC, 2024). One species, *Mesiotelus pococki* Caporiacco 1949, is described from Kenya, but its taxonomic validity is questionable (Marusik, Guseinov, 2003). The greatest species diversity of this genus (9 species) is recorded in Southern Europe (Nentwig et al., 2024). Earlier, four *Mesiotelus* species were known from the Middle Asia: *M. kulczynskii* Charitonov 1946, *M. tenuissimus* (L. Koch 1866), *M. zonsteini* Mikhailov 1986 and *M. lubricus* (Simon 1880) (Fig. 1). All representatives of this genus found in Middle Asia live in mountainous and foothill areas (Kharitonov, 1946; Zonstein, 1984; Mikhailov, 1986; Mikhailov, Fet, 1986; Abdurasulova, 2014). The aim of the present work is to describe a new species and provide an identification key for Middle Asia and Iran *Mesiotelus* species.

METHODS

The holotype of new species is deposited in the Zoological Museum of the Moscow State University, Moscow, Russia (ZMMU; curator K.G. Mikhailov). The only specimen of the new species was sampled by handpicking and fixed in 70% ethanol. The measurements are given in millimeters. Lengths of leg segments are measured from their dorsal side. The measurements are given as follows: total length (femur, patella, tibia, metatarsus, tarsus). Abbreviations used in the text: ALE – anterior lateral eye, AME – anterior median eye, PLE – posterior lateral eye, PME – posterior median eye, AER – anterior eye row, PER – posterior eye row, AME-ALE – distance between AME and ALE, AME-AME – distance between AME,

PME-PLE – distance between PME and PLE, PME-PME – distance between PME, d – dorsal, rl – retrolateral, pl – prolateral, v – ventral. The map was compiled using the online mapping software SimpleMapp (Shorthouse, 2010).

Illustrations for the *Mesiotelus* species key are based on drawings or photographs by the following authors: Fig. 3A, 3G, 3H after Mikhailov, Fet (1986); Fig. 3B after Bosmans, El-Hennawy (2018); Fig. 3C, 3K, 3L after Fu et al. (2009); Fig. 3D, 3E after Zamani, Marusik (2021); Fig. 3F, 3O after Zamani, Marusik (2021a); Fig. 3I, 3J, 3P after Zamani et al. (2024); Fig. 3M after Zamani et al. (2022); Fig. 3N after Zamani et al. (2023); Fig. 3Q after Coşar et al. (2023); Fig. 3R after Mikhailov (1986); Fig. 3R after Bosmans, El-Hennawy (2018).

TAXONOMY

Mesiotelus uzbekistanicus Vlasov et Efimik sp. n.

(Fig. 2)

Material. Holotype, ♀, Uzbekistan, Tashkent Region, Bostanlik District, the Kungurbuka ridge (41°59'75"N, 69°94'26"E), mountain open woodlands, 1450 m a.s.l., 16.03.2023, S.V. Vlasov.

Diagnosis. The female of the new species is most similar to those of *M. deltshevi* Naumova 2020 described from Albania and Turkey (Naumova, 2020) and *M. lubricus* (Simon 1880) described from China (Simon, 1880; Fu et al., 2009). Epigyne of the new species differs from *M. deltshevi* by parallel lateral margins of epigyne fovea and closely spaced spermathecae. It differs also by the size of the anterior hood which is smaller

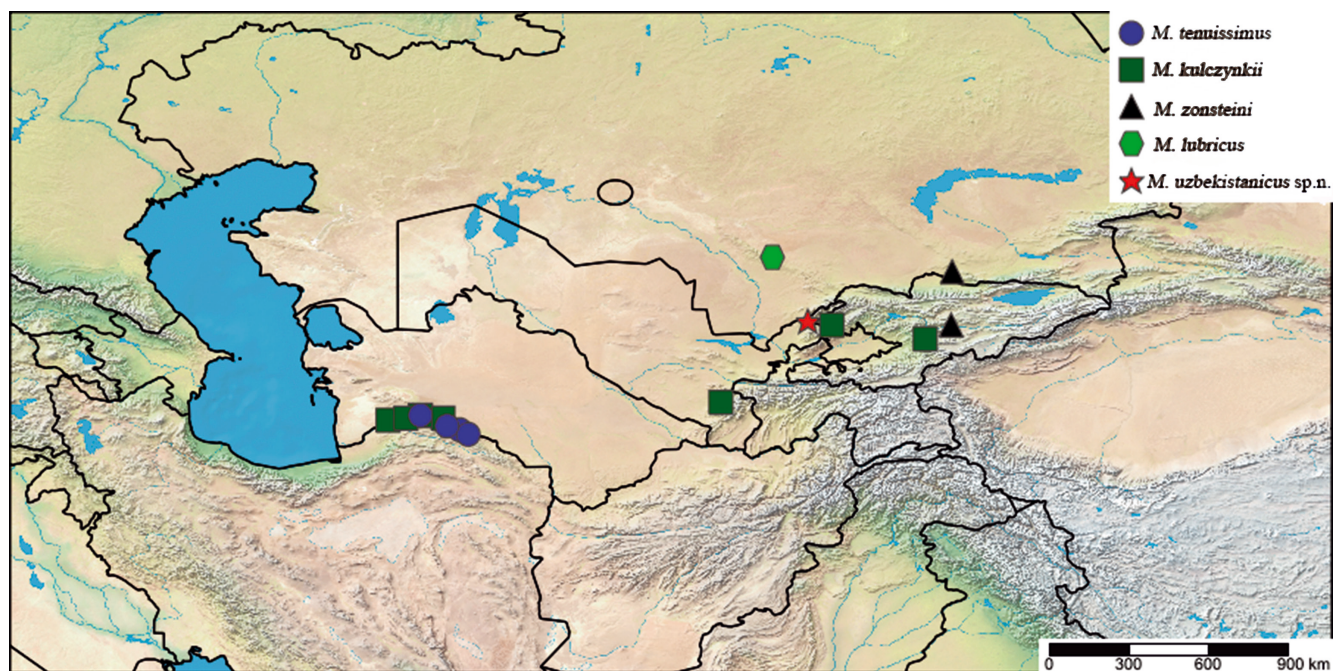


Fig. 1. The places of find of *Mesiotelus* species in Middle Asia.

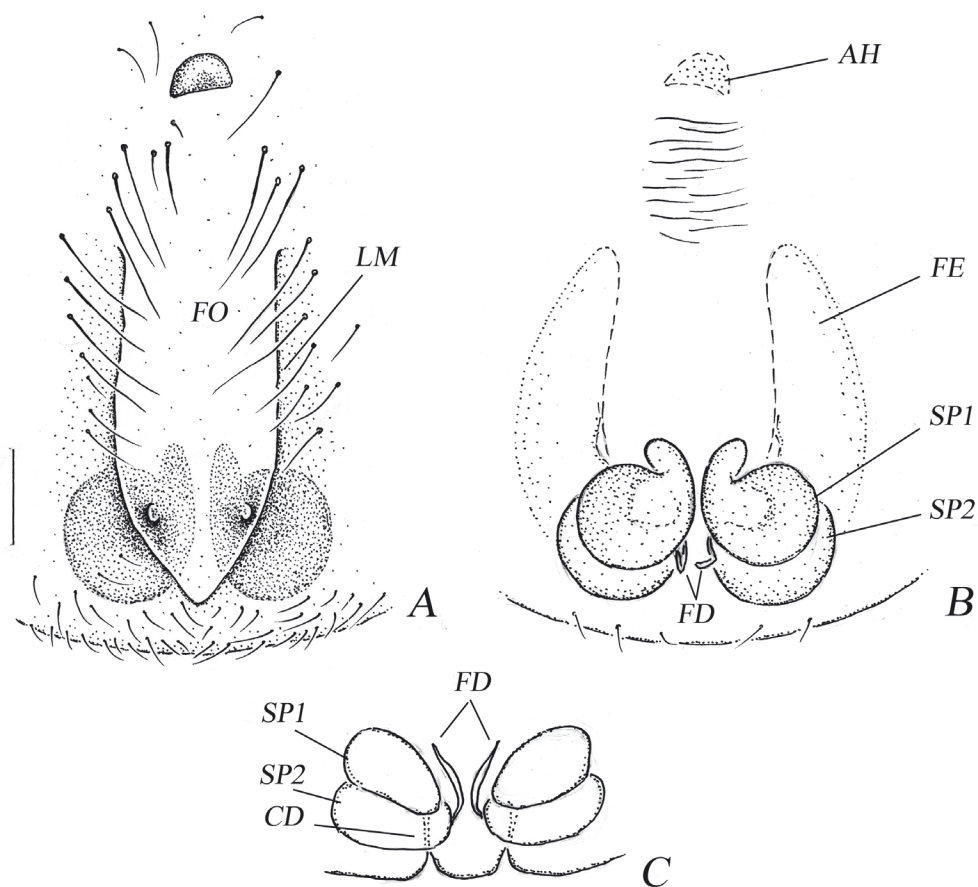


Fig. 2. Epigyne of *Mesiotelus uzbekistanicus* sp. n., ventral (A), dorsal (B) and behind (C) views: AH – anterior hood, CD – copulatory duct, FD – fertilization duct, FE – fenestra, FO – fovea, LM – lateral margins of fovea, SP1 – spermathecal without fertilization duct, SP2 – spermathecal with fertilization duct.

in *M. deltshevi*. New species can be differentiated from *M. lubricus* in the long lateral margins of epigyne fovea.

Description. Holotype female. Measurements. Total length 4.48. Carapace 1.73 long, 1.33 wide; width/length ratio 0.77. Clypeal height 0.05. Chelicera 0.73 long. Abdomen 2.75 long, 1.75 width. Coloration: carapace light yellow; chelicerae light brown, labium and endites light brown, with distal-apical light yellow swellings; legs light yellow. Abdomen grey, without a pattern. Eyes field light brown. Medial eyes field trapezoidal: length 0.21–0.27, width 0.29. Eye sizes and measurements: AME0.07, ALE0.11, PLE0.11, PME0.08, AER width 0.43, PER width 0.57. Eyes of the anterior row are slightly separated from each other: ALE-AME0.01, AME-AME0.01. Eyes of the posterior row are separated from each other: PLE-PME0.04, PME-PME0.10. Posterior medial eyes light. Leg measurements (II, IV absent): I 5.53 (1.63, 2.05, 1.10, 0.75), III 4.40 (1.30, 1.50, 0.93, 0.68). Leg spination: Femur I d1–0–2; III d1–0–1, pl and rl 0–0–1. Tibia I v 2–2–0, and many smaller, in dense rows; III pl and rl 1–1–0, v 2–2–2, and many smaller, in dense rows. Metatarsus I v 2–0–0, and many smaller, in dense rows; III pl and rl 1–0–2, v 2–2–3, and many smaller, in dense rows. Tarsus with hairs protruding in all directions. The epigyne is elongated, the lateral margins of epigyne fovea are parallel, only in the posterior part they merge with each other, forming the letter “V” (Fig. 2A). In the anterior part there is a small sclerotized anterior hood. The spermathecae consists of two parts: dorsally (Sp1) without fertilization duct and ventrally (Sp2) with fertilization duct (Fig. 2B, 2C). Sp1 is bean-shaped, has a narrow and a wide part. Sp2 roundish.

Male: Unknown

Etymology. This species is named after the country where was collected the holotype.

IDENTIFICATION KEY TO MIDDLE ASIA AND IRAN *MESIOTELUS* SPECIES

M. patricki female unknown, and *M. iranicus*, *M. uz-bekistanicus* sp. n. males unknown.

- 1 Male..... 2
 - Female..... 8
- 2 Tibial apophysis directed along the palp, straight (Fig. 3A, 3C, 3E) 3
 - Tibial apophysis directed away from the palp (Fig. 3G, 3J) 7
- 3 Tibia short, its length without tibial apophysis clearly less than the length of the cymbium. Tegular and median apophysis small (Fig. 3A).....
 -*kulczyiskii* Charitonov 1946
 - Tibia longer, its length without tibial apophysis equal to or greater than the length of the cymbium. Tegular and median apophysis larger 4
- 4 Tibia length without tibial apophysis about equal to the length of cymbium. Cymbium tip 5 times shorter

than cymbium length. Tegular apophysis with two tips (Fig. 3B)*tenuissimus* (L. Koch 1866)

- Tibia length without tibial apophysis greater than the length of the cymbium. Cymbium tip 3–4 times shorter than cymbium length 5

- 5 Tegular apophysis with one tip, its basal part swollen (Fig. 3C). Tibia with dorsal apophysis (Fig. 3K) *lubricus* (Simon 1880)

- Tegular apophysis with two tips. Tibia without dorsal apophysis..... 6

- 6 Median apophysis claw-shaped, gradually expanding towards its base. Subtegulum not extended over the tegulum (Fig. 3D) *patricki* Zamani & Marusik 2021

- Median apophysis different, with a sharply widened base. Subtegulum extended posteriorly over the tegulum (Fig. 3F) ...*caucasicus* Zamani & Marusik 2021

- 7 The length of tibia is 2.5 times its diameter. Retrolateral apophysis at the top is sharp (Fig. 3H). Bulbus at an acute angle to the longitudinal axis of cymbium. Tegular apophysis at 9 o'clock position (Fig. 3G).*zonsteini* Mikhailov 1986

- The length of tibia is 4 times its diameter. Retrolateral apophysis at the top is expanded (Fig. 3I). Longitudinal axis of bulbus coincides with that cymbium. Tegular apophysis at 12 o'clock position (Fig. 3J).*khorsanicus* Zamani & Marusik 2024

- 8 Fovea long, distance between the anterior hood and the posterior edge of the epigyne no less than 1.5 times longer than the widest distance between the lateral margins of the fovea9

- Fovea shorter, distance between the anterior hood and the posterior edge of the epigyne approximately equal to the widest distance between the lateral margins of the fovea.....13

- 9 Lateral margins of fovea parallel (Fig. 2A, 3L)....10
 - Lateral margins of fovea diverging to the sides (Fig. 3M–3R).....11

- 10 Lateral margins length exceed the distance between them by 2 times (Fig. 2A, 2B).....
 -*uzbekistanicus* sp. n.

- Lateral margins length almost equal to the distance between them (Fig. 3L) *lubricus* (Simon 1880)

- 11 Cephalothorax orange-yellow with a gray marginal line; 4 pairs of radial and a pair of curved lines diverge from the posterolateral eyes back and to the sides. Abdomen gray with white dots. Epigyne as in Fig. 3M.....*kulczyiskii* Charitonov 1946

- Carapace, sternum, chelicerae, maxillae and labium light brown, without any pattern.....12

- 12 Epigyne fenestra large and clearly defined. SP1 do not touch, directed along the medial line (Fig. 3N) *iranicus* Zamani & Marusik 2023

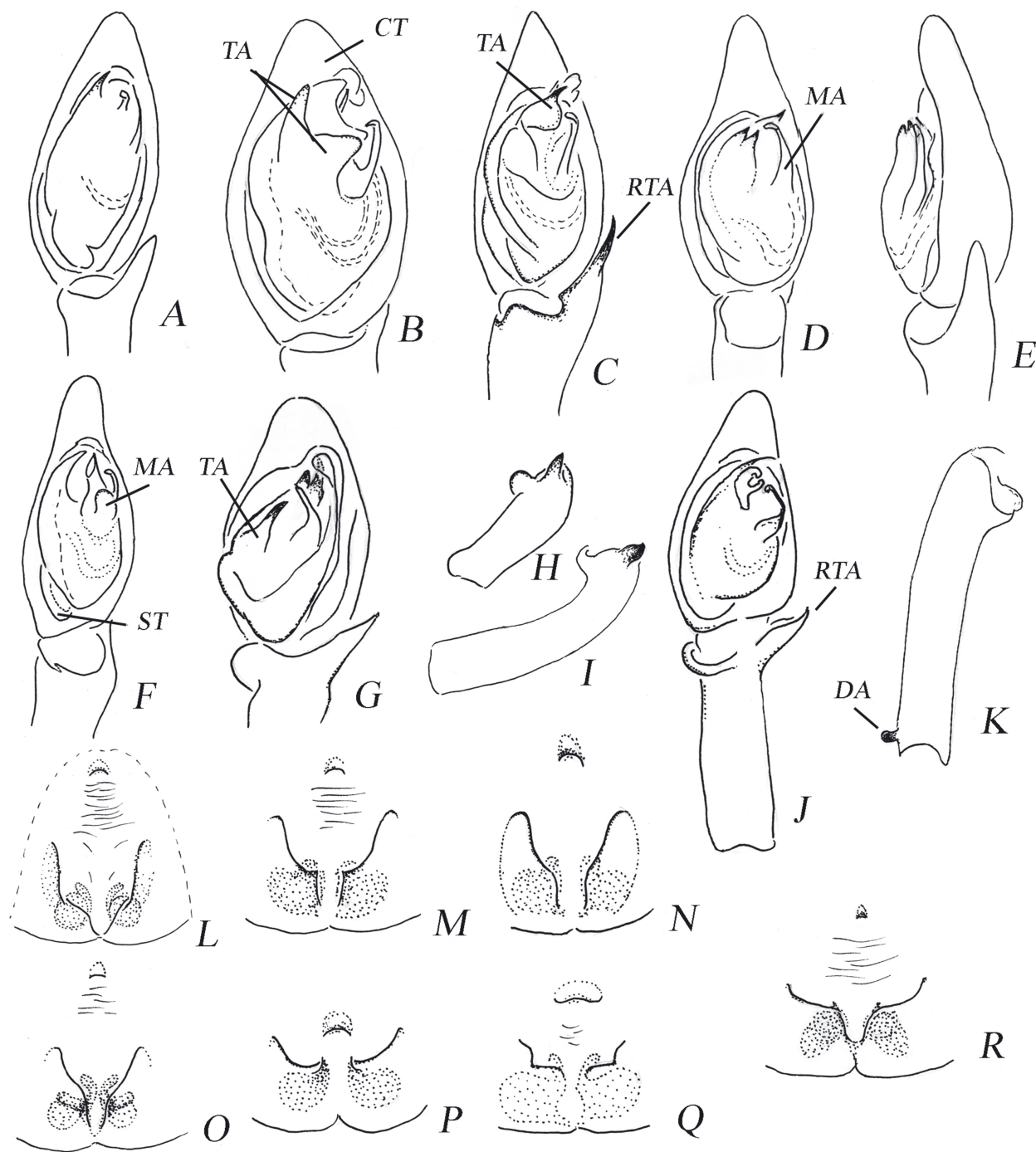


Fig. 3. Copulatory organs: *A, M*—*M. kulczynskii* Charitonov 1946; *B, R*—*M. tenuissimus* (L. Koch 1866); *C, K–L*—*M. lubricus* (Simon 1880); *D–E*—*M. patricki* Zamani et Marusik 2021; *F, O*—*M. caucasicus* Zamani et Marusik 2021; *G–H, Q*—*M. zonsteini* Mikhailov 1986; *I–J, P*—*M. khorasanicus* Zamani et Marusik 2024; *N*—*M. iranicus* Zamani et Marusik 2023. *CT*—cymbium tip, *DA*—dorsal apophysis, *MA*—median apophysis, *RTA*—retrolateral tibial apophysis, *TA*—tegular apophysis, *ST*—subtegulum.

- Epigyne fenestra less pronounced. SP1 touch, but diverge from each other (Fig. 3O).....
caucasicus Zamani & Marusik 2021
- 13 Posterior lateral margins of fovea are smoothly curved, diverging to the sides (Fig. 3P).....
khorasanicus Zamani & Marusik 2024
- Posterior-lateral margins of fovea noticeably curved with an outer corner (Fig. 3Q, 3R)14
- 14 Anterior hood large, its width not less than half the width of the fovea. Spermatheca extend beyond the lateral margins of the fovea (Fig. 3Q)
zonsteini Mikhailov 1986
- Anterior hood smaller, its width is much smaller than half the width of the fovea. Spermatheca not extend beyond the lateral margins of the fovea (Fig. 3R)
tenuissimus (L. Koch 1866)

ACKNOWLEDGMENTS

Cordial thanks to S.L. Esyunin (Perm State University) for the helpful recommendations and comments on an earlier draft of the manuscript. We appreciate to S.L. Zonshtein (Tel-Aviv University) for his help in finding rare literary sources. Special thanks to K.G. Mikhailov (ZMMU) for providing valuable advice during the preparation of this article.

FUNDING

This work was supported by ongoing funding Perm State University. No additional grants to carry out or direct this particular research were obtained.

ETHICAL APPROVAL AND CONSENT TO PARTICIPATE

This work does not contain any studies involving living animals. All studied materials were obtained from the zoological collection of the Department of Invertebrate Zoology and Aquatic Ecology, Perm State University (Perm, Russia).

CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

REFERENCES

- Abdurasulova L.S., 2014. (State of study research of fauna invertebrate animals from conservancy area of Karatau) // Uspekhi formirovaniya i funktsionirovaniya seti osobo okhranyayemykh prirodnykh territoriy i izucheniye biologicheskogo raznoobraziya: materialy mezhdunarodnoy nauchno-prakticheskoy konferentsii. Kostanay. P. 90–93. (in Russian).
- Bosmans R., El-Hennawy H.K., 2018. *Mesiotelus alexandrinus* (Simon, 1880) is a junior synonym of *Mesiotelus tenuissimus* (L. Koch, 1866) (Araneae: Liocranidae) // Serket. V. 16. № 2. P. 100–104.
- Coşar İ., Danişman T., Erdek M., 2023. The genus *Mesiotelus* Simon, 1897 (Araneae: Liocranidae) in Turkey // Caucasian Entomological Bulletin. V. 19. № 1. P. 9–13.
- Fu J. Y., Zhang F., Zhu M. S., 2009. Redescription of a little-known spider species, *Mesiotelus lubricus* (Simon, 1880) (Aranei: Liocranidae) from China // Arthropoda Selecta. V. 17. № 3. P. 169–173.
- Kharitonov D. E., 1946. (New forms of spiders of the USSR) // Izvestiya Estedvenno-Nauchnogo Instituta pri Molotovskom Gosudarstvennom Universitete imeni M. Gor'kogo. № 12. P. 19–32. (in Russian).
- Marusik Yu. M., Guseinov E. F., 2003. Spiders (Arachnida: Aranei) of Azerbaijan. 1. New family and genus records // Arthropoda Selecta. V. 12. № 1. P. 29–46.
- Mikhailov K. G., 1986. New species of spiders from the families Clubionidae and Liocranidae from the middle Asia and the Caucasus // Zoologicheskii Zhurnal. V. 65. P. 798–802. (in Russian).
- Mikhailov K. G., Fet V. Y., 1986. (Contribution to the spider fauna (Aranei) of Turkmenia. I. Families Anyphaenidae, Sparassidae, Zoridae, Clubionidae, Micariidae, Oxyopidae) // Sbornik Trudov Zoologicheskogo Muzeya MGU. Moscow State University. V. 24. P. 168–186. (in Russian).
- Naumova M., 2020. Descriptions of two new spider species, with new data on the Albanian arachnofauna (Arachnida: Araneae, Opiliones, Pseudoscorpiones and Scorpiones) // Acta Zoologica Bulgaria. V. 72. № 1. P. 3–12.
- Nentwig W., Blick T., Bosmans R., Gloor D., Hänggi A., Kropf C., 2024. Spiders of Europe. Version 03.2024. Online at <https://www.araneae.nmbe.ch>, accessed on 21 march 2024. <https://doi.org/10.24436/1>
- Shorthouse D. P., 2010. SimpleMapp, an online tool to produce publication-quality point maps. Retrieved from: <http://www.simplermap.net>, accessed 3 February 2024
- Simon E., 1880. Etudes arachnologiques. 11e Mémoire. XVII. Arachnides recueilles aux environs de Pékin par M. V. Collin de Plancy // Annales de la Société Entomologique de France. V. 10. P. 97–128.
- WSC, 2024. World Spider Catalog. Version 25.0. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, accessed on 28 January 2024. doi: 10.24436/2
- Zamani A., Marusik Y. M., 2021. A new genus and ten new species of spiders (Arachnida, Araneae) from Iran // ZooKeys. V. 1054. P. 95–126.
- Zamani A., Marusik Y. M., 2021a. Two new species of Liocranidae (Arachnida: Aranei) from the Caucasus and northern Iran // Arthropoda Selecta. V. 30. № 4. P. 557–564.

- Zamani A., Nadolny A.A., Dolejš P., 2022. New data on the spider fauna of Iran (Arachnida: Araneae), part X // *Arachnology*. V. 19. № 2. P. 551–573.
- Zamani A., Darvishnia H., Marusik Y.M., 2023. New data on cave spiders (Arachnida: Araneae) of Iran, with new species and records // *Zootaxa*. V. 5361. № 3. P. 345–366.
- Zamani A., Esyunin S.L., Mikhailov K.G., Marusik Y.M., 2024. New data on the spider fauna of Iran (Arachnida: Araneae), part XI // *Journal of Insect Biodiversity and Systematics*. V. 10. № 2. P. 285–309.
- Zonstein S.L., 1984. (To the fauna and ecology of spiders (Aranei) of the lower strata of walnut-fruit forests of southern Kirghizia) // *Entomologicheskie issledovaniya v Kirgizii*. Frunze: Ilim. V. 17. P. 144–151. (in Russ.).

НОВЫЙ ВИД *MESIOTELUS* SIMON 1897 (ARANEI, LIOCRANIDAE) ИЗ РЕСПУБЛИКИ УЗБЕКИСТАН

С. В. Власов*, В. Е. Ефимик**

Пермский государственный университет, ул. Букирева 15, Пермь, 614600 Россия

* e-mail: probel15@yandex.ru

**e-mail: efimik.viktor@mail.ru

Описан и проиллюстрирован новый вид пауков из семейства Liocranidae – *Mesiotelus uzbekistanicus* sp. n. (самец) из Республики Узбекистан. Приведен определительный ключ для видов рода *Mesiotelus* из Средней Азии и Ирана.

Ключевые слова: паук, таксономия, Средняя Азия, Иран, определительный ключ