

New *Lathys* Simon, 1884 species from Crimea (Aranei: Dictynidae)Новый вид рода *Lathys* Simon, 1884 из Крыма (Aranei: Dictynidae)

Mykola M. Kovblyuk<sup>1</sup>, Zoya A. Kastrygina<sup>1</sup>, Mikhail M. Omelko<sup>2,3</sup>  
Н.М. Ковблюк<sup>1</sup>, З.А. Кастрыгина<sup>1</sup>, М.М. Омелько<sup>2,3</sup>

<sup>1</sup> Zoology Department, V.I. Vernadsky Taurida National University, Yaltinskaya Street 4, Simferopol 95007, Ukraine. E-mail: kovblyuk@mail.ru; zoiac\_21@mail.ru

<sup>2</sup> Gornotaezhnaya Station FEB RAS, Gornotaezhnoe Vil., Ussuriyski Dist., Primorski krai 692533, Russia. E-mail: omelkom@gmail.com

<sup>3</sup> Far Eastern Federal University, Sukhanova 8, Vladivostok 690950, Russia.

<sup>1</sup> Кафедра зоологии, Таврический национальный университет им. В.И. Вернадского, ул. Ялтинская 4, Симферополь 95007, Украина.

<sup>2</sup> Горнотаёжная станция ДВО РАН, с. Горнотаёжное, Уссурийский район, Приморский край 692533, Россия.

<sup>3</sup> Дальневосточный федеральный университет, ул. Суханова 8, Владивосток 690950, Россия.

KEY WORDS: spiders, *Lathys*, new species, description, Crimea.

КЛЮЧЕВЫЕ СЛОВА: пауки, *Lathys*, новый вид, описание, Крым.

ABSTRACT. A new species, *Lathys lehtineni* sp.n., from Crimea (Ukraine) is described and illustrated. This species belongs to the *L. stigmatisata*-group and differs from its sibling species by its lack of an outgrowth on the male palpal patella and by its possession of small copulatory openings being spaced by about one radius in combination with a singly-coiled basal (vertical) insemination duct.

РЕЗЮМЕ. Новый вид, *Lathys lehtineni* sp.n., описан из Крыма (Украина). Новый вид относится к группе видов *stigmatisata* и отличается от других видов этой группы отсутствием выроста на колене пальпы самца, небольшими копулятивными отверстиями эпигины, отстоящими друг от друга на расстояние, примерно равное их радиусу, в сочетании с одной единственной петлёй базальной (вертикальной) части осеменительного канала.

## Introduction

This paper continues our studies of Crimean dictynid spiders [Marusik *et al.*, 2009]. *Lathys* Simon, 1884 is a relatively large genus with 44 species, known exclusively from the Holarctic [Platnick, 2013]. The genus was recently redefined by Marusik *et al.* [2009]. Its type species is *L. humilis* (Blackwall, 1855) and occurs from Western Europe to Caucasus and northern Iran [Marusik *et al.*, 2009].

Three species of this genus have been reported from Crimea: *L. humilis*, *L. stigmatisata* (Menge, 1869) and an undescribed *Lathys* sp., for which only (a single) female have been found [Marusik *et al.*, 2009]. Recently, in newly collected material from Crimea, we have found males and further females of the undescribed species and the goal of this paper is to provide a full description for this new species.

## Material and methods

The specimens examined in this study are housed in the collections of Zoology Department, V.I. Vernadsky Taurida National University, Simferopol, Ukraine, curator M.M. Kovblyuk (TNU) and the Zoological Museum of the Moscow State University, Moscow, Russia, curator K.G. Mikhailov (ZMMU).

Leg segments were measured after their separation from the prosoma. All measurements are in mm: minimum-maximum.

Drawings were made by means of both dissecting and compound microscopes using a grid method. All scale bars are 0.1 mm.

The morphological terminology and abbreviations follow Marusik *et al.* [2006, 2009] and Zhang *et al.* [2012]: *Co* — copulatory opening; *Ct* — terminal part of conductor; *Ctt* — tip of *Ct*; *Dt* — dorsal tibial apophysis; *E* — embolus; *Fd* — fertilization duct; *Ia* — apical portion of insemination duct; *Ib* — basal portion of insemination duct; *Rt* — retrolateral (intermediate) tibial apophysis; *Sp* — spermatheca; *Vt* — ventral tibial apophysis.

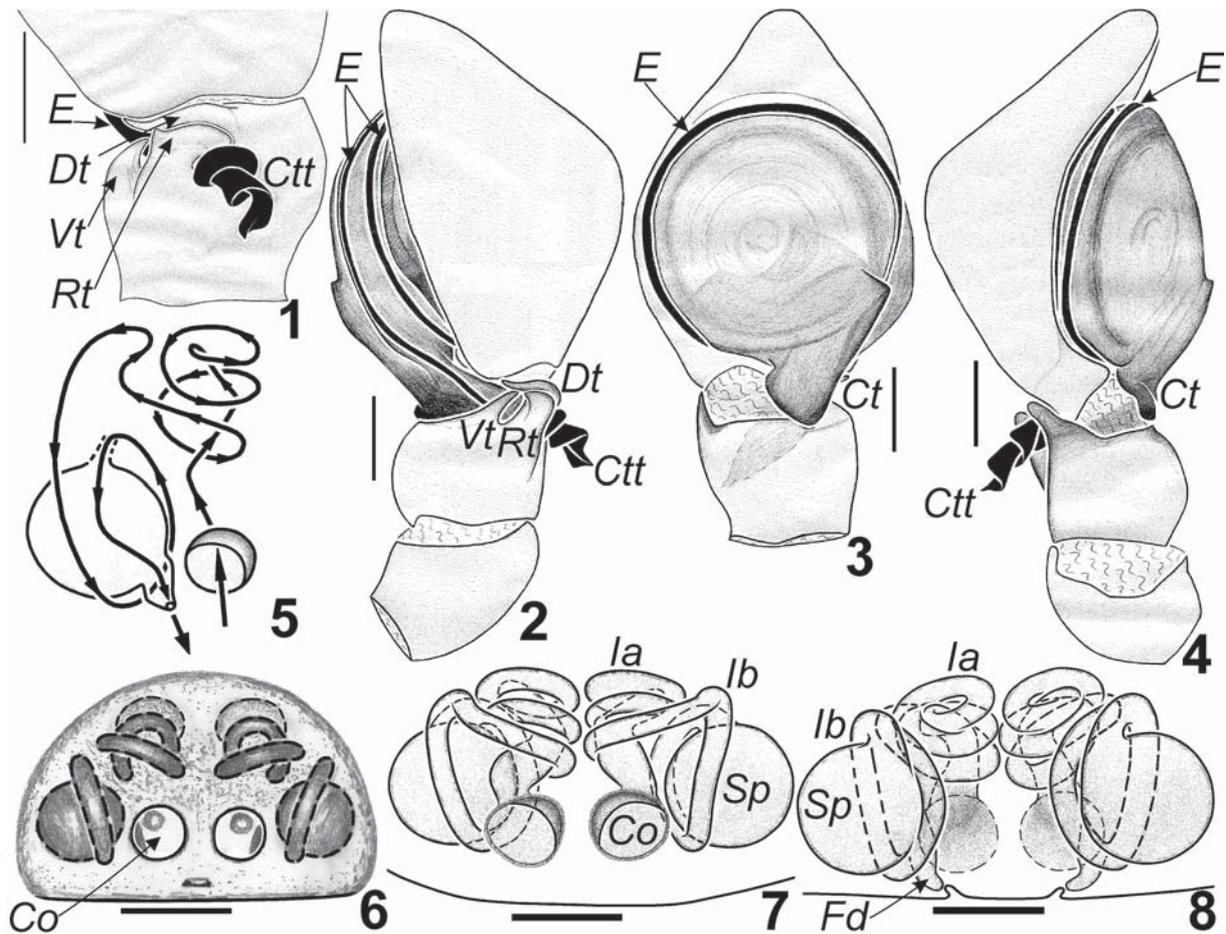
## Taxonomy

### *Lathys lehtineni* sp.n.

Figs 1–8.

*Lathys* sp.: Marusik *et al.*, 2009: 26, f. 66–69 (♀).

MATERIAL. UKRAINE. Crimea. Holotype ♀ (ZMMU), Lenino District, Kerch Peninsula, Opuk Nature Reserve, Opuk Mt., 11–12.05.2009, O.V. Kukushkin. Paratypes: 8 ♀♀ (TNU-3065/12), together with holotype; 1 ♀ (ZMMU), same locality, 10–12.05.2008, O.V. Kukushkin; 1 ♂, 4 ♀♀ (TNU-3290/58), Lenino District, Kerch Peninsula, Kazantip Nature Reserve, steppe with bushes and stones, 2–10.05.2013, M.M. Kovblyuk & A.A. Nadolny; 1 ♀ (TNU-



Figs 1–8. Copulatory organs of *Lathys lehtineni* sp.n.: 1 — tibia of male palp, dorso-retrolateral; 2 — male palp, retrolateral; 3 — male palp, ventral; 4 — male palp, prolateral; 5 — schematic course of insemination and fertilization ducts; 6 — epigyne, ventral; 7 — epigyne, ventral (after maceration); 8 — epigyne, dorsal (after maceration). Scale 0.1 mm.

Рис. 1–8. Копулятивные органы *Lathys lehtineni* sp.n.: 1 — голень пальпы самца, дорсо-ретролатерально; 2 — пальпа самца, ретролатерально; 3 — пальпа самца, вентрально; 4 — пальпа самца, пролатерально; 5 — схема расположения каналов эпигины; 6 — эпигина, вентрально; 7 — эпигина, вентрально (после мацерации); 8 — эпигина, дорсально (после мацерации). Масштаб 0,1 мм.

2035/14), Feodosiya District, Karadag Nature Reserve, Kara-Agach Mt., *Juniperus excelsa*, 24.04.2004, O.V. Kukushkin.

**DIAGNOSIS.** This new species belongs to the *L. stigmatisata*-group *sensu* Marusik *et al.* [2006, 2009]. The males of *L. lehtineni* sp.n. are distinguished from *L. stigmatisata* males by the lack of an outgrowth on the male palpal patella (present in *L. stigmatisata*). Females of the new species can be distinguished from *L. stigmatisata* by the smaller copulatory openings being spaced by about one radius (openings touching in *L. stigmatisata*), and its insemination ducts joining receptacle at an apical point (subapical in *L. stigmatisata*). The diameters of the receptacles and the copulatory openings are almost equal in *L. stigmatisata* while the diameters of the copulatory openings in *L. lehtineni* sp.n. are significantly smaller than those of receptacles.

The new species differs from *L. arabs* Simon, 1910 and *L. balestrerii* Caporiacco, 1934 (currently consid-

ered as synonyms of *L. stigmatisata* [Platnick, 2013] but, in our opinion, are separate species), by a single coil of basal (vertical) insemination duct (two coils in *L. arabs* and *L. balestrerii* [Bosmans *et al.*, 2009: figs 37–40; Marusik *et al.*, 2007: fig. 30]). In addition, *L. balestrerii* is much larger in size [Caporiacco, 1934]: length of carapace in male of *L. balestrerii* — 1.4, in male of *L. lehtineni* sp.n. — 1.0; length of carapace in female of *L. balestrerii* — 1.9, in female of *L. lehtineni* sp.n. — 0.9–1.1.

From *L. alberta* Gertsch, 1946 the new species differs by smaller size (male and female carapace length in *L. alberta* is 1.5 [Chamberlin & Gertsch, 1958], in new species is 1.0 and 0.9–1.1), and in the distance between the copulatory openings (as wide as diameter of copulatory opening in *L. alberta* [Chamberlin & Gertsch, 1958; Marusik *et al.*, 2006; Zhang *et al.*, 2012], and as radius of copulatory opening in new species).

Table 1. Comparison and distribution of some *Lathys* species related to *Lathys lehtineni* sp.n.  
Таблица 1. Сравнительные признаки видов *Lathys*, наиболее близких к *Lathys lehtineni* sp.n.

	<i>L. alberta</i>	<i>L. lehtineni</i> sp.n.	<i>L. arabs</i>	<i>L. balestrerii</i>	<i>L. stigmatisata</i>	<i>L. subalberta</i>	<i>L. subviridis</i>
Length of male carapace	1.5	1.0	no data	1.4	1.0	1.3	no data
Length of female carapace	1.5	0.9–1.1	no data	1.9	1.0–1.1	0.9	no data
Patellar outgrowth in male palp	absent	absent	no data	absent	present	absent	♂ unknown
Distance between the copulatory openings	as diameter of copulatory opening	as radius of copulatory opening	as radius to a full diameter of copulatory opening	as radius of copulatory opening	extremely thin (much smaller, then the radius of copulatory opening)	as radius of copulatory opening	as radius of copulatory opening
Number of coils of basal (vertical) insemination duct	1	1	2	2	1	2	no data
Distribution	North America, Siberia	Ukraine (Crimea)	Algeria, Greece	northern India, Tian Shan, Xinjiang	Europe	China (Shaanxi)	Algeria, Tajikistan

From *L. subalberta* Zhang, Hu et Zhang, 2012 new species differs by size (male carapace length in *L. subalberta* is 1.3 [Zhang *et al.*, 2012], in new species is 1.0), and in number of coils of basal (vertical) insemination duct (2 in *L. subalberta* [Zhang *et al.*, 2012] and 1 in new species).

From *L. subviridis* Denis, 1937 new species slightly differs in size (total length of female in *L. subviridis* is 2.3 [Denis, 1937], in new species is 2.5–3.2) and in number of promarginal teeth of chelicerae (3 in female of *L. subviridis* [Denis, 1937] and 4 in female of new species). The extremely poor description of *L. subviridis* makes impossible its more detailed comparison with the new species.

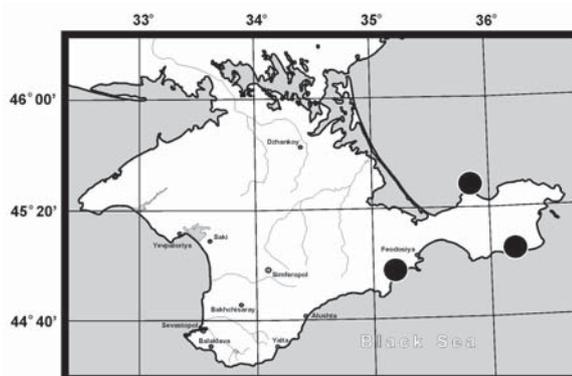
The main characteristics of *L. lehtineni* sp.n. and some of its similar species are compared in Table 1.

DESCRIPTION. Male and females (n=2). Measurements (♂/♀): total length 2.2 / 2.5–3.2; carapace 0.99 / 0.91–1.12 long, 0.78 / 0.66–0.85 wide; chelicerae 0.44 / 0.35–0.45 long. Carapace and abdomen light brown without distinct pattern.

Length of leg segments in female (carapace 3.2 long):

	femur	patella	tibia	metatarsus	tarsus	Total
I	0.85	0.36	0.71	0.61	0.36	2.90
II	0.74	0.32	0.55	0.52	0.32	2.63
III	0.65	0.28	0.42	0.47	0.31	2.13
IV	0.83	0.34	0.64	0.62	0.30	2.73

Chelicerae of male with 2 large promarginal and 3 small retromarginal teeth. In females 4 promarginal and 4 retromarginal identically-sized teeth.



Map 1. Distribution of *Lathys lehtineni* sp.n.  
Карта 1. Распространение *Lathys lehtineni* sp.n.

Male palp as in Figs 1–4, without patellar outgrowth. Tip of terminal part of conductor (*Ctt*) with 3 screws, as in *L. stigmatisata* and other above-mentioned species.

Epigyne as in Figs 5–8, with two large round copulatory openings (*Co*) separated by the distance equivalent to the radius of one copulatory opening. The diameter of each copulatory opening significantly smaller than that of a receptacle. Receptacles round, insemination ducts long and coiled in two plains (vertical — over receptacle, and horizontal — over openings). One vertical (basal) coil (*Ib*) and three horizontal (apical) coils (*Ia*).

TYPE LOCALITY. Crimea, Kerch Peninsula, Opuk Nature Reserve, Opuk Mt.

DISTRIBUTION. East part of Crimea: Karadag and Kerch Peninsula (Map 1).

HABITATS. Stony steppes with bushes.

PHENOLOGY. ♂♀ — V; ♀♀ — IV.

ETYMOLOGY. The species is named in honour of the prominent Finnish arachnologist Pekka T. Lehtinen.

ACKNOWLEDGEMENTS. We are very grateful to O.V. Kukushkin (Karadag Nature Reserve, Crimea) and A.A. Nadolny (Simferopol), who provided us with the material used in this study, and drew our attention to a female of the new species and made the drawings (Figs 5–8) used in this paper. We thank P.E. Gol'din (Simferopol) for improving the English of the earlier draft and D.J. Court (Singapore) for editing English in the final draft. Special thanks go to Yu.M. Marusik (Magadan, Russia) who critically commented on the ms. This work was supported in part by the Karadag Nature Reserve.

## References

- Bosmans R., Baert L., Bosselaers J., De Koninck H., Maelfait J.-P., Van Keer J. 2009. Spiders of Lesbos (Greece) // Newsletter of the Belgian Arachnological Society. Vol. 24 (1 supplement). P.1–70.
- Caporiacco L. 1934. Aracnidi dell'Himalaia e del Karakoram raccolti dalla Missione Italiana al Karakoram (1929-VII) // Memorie della Societa Entomologica Italiana. Vol.13. P.113–160.
- Chamberlin R.V., Gertsch W.J. 1958. The spider family Dictynidae in America north of Mexico // Bulletin of American Museum of Natural History. Vol.116. Article 1. P.1–152.
- Denis J. 1937. On a collection of spiders from Algeria // Proceedings of the Zoological Society of London. 1936. P.1027–1060.
- Hu J.L. 2001. Spiders in Qinghai-Tibet Plateau of China. Henan: Henan Science and Technology Publishing House. 658 pp.
- Marusik Y.M., Fritzen N.R., Song D.X. 2007. On spiders (Aranei) collected in central Xinjiang, China // Arthropoda Selecta. Vol.15. No.3. P.259–276.
- Marusik Yu.M., Kovblyuk M.M., Nadolny A.A. 2009. A survey of *Lathys* Simon, 1884 from Crimea, with resurrection of *Scotolathys* Simon, 1884 (Aranei: Dictynidae) // Arthropoda Selecta. Vol.18. No.1/2. P.21–33.
- Marusik Yu.M., Ovchinnikov S.V., Koponen S. 2006. Uncommon conformation of the male palp in common Holarctic species belonging to the *Lathys stigmatisata* group (Araneae, Dictynidae) // Bulletin of the British Arachnological Society. Vol.13. Part 9. P.353–360.
- Platnick N.I. 2013. The world spider catalog, version 14.0. American Museum of Natural History; online at: <http://research.amnh.org/entomology/spiders/catalog/index.html> (accessed January 31, 2014).
- Zhang Z.-S., Hu D.-S., Zhang Y.-G. 2012. Notes on the spider genus *Lathys* Simon, 1884 (Araneae: Dictynidae), with description of four new species from China // Zootaxa. No.3359. P.1–16.
- Zhang Z.S., Yang Z.Z., Zhang Y.G. 2009. A new species of the genus *Lathys* (Araneae, Dictynidae) from China // Acta zootaxonomica Sinica. Vol.34. No.2. P.199–202.

*Responsible editor Yu.M. Marusik*