

The Orb-Weaver genus *Larinia* Simon in the USSR

(Aranei, Araneidae)

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Abstract:

The USSR fauna of *Larinia* SIMON has proved to comprise no less than seven species of which three are new to science: *L. nenilini* spec. nov. (Middle Asia), *L. bossae* spec. nov., and *L. jeskovi* spec. nov. (USSR Far East). Besides, *L. turkmenica* SPASSKY has happened to be but a junior synonym of *L. pubiventris* SIMON.

Introduction

The araneid genus *Larinia* SIMON, 1874 has already been excellently revised world-wide by GRASSHOFF (1970a, b; 1971). The American fauna of *Larinia* has further been revised by LEVI (1975). However *Larinia* species of the USSR have never been properly studied. Thus, GRASSHOFF (1970a) mentioned from the Soviet territory only three species described by SPASSKY (1939), i. e. *L. bonneti* from the Krasnodar Prov., Caucasus, *L. elegans* from Zaporozhye Area, Ukraine, *L. turkmenica* from Turkmenia, Middle Asia, all treated of incertae sedis, as well as one more, *L. pubiventris* SIMON 1889, from Turkmenia, transferred to *Araneus*.

The present paper deals with a revision of all the *Larinia* species known from the USSR territory. The study is based on 177 adult and immature specimens deriving from the collections of the Zoological Institute of the USSR Academy of Sciences, Leningrad (ZIL), Zoological Museum of the Moscow State University (ZMUM), Perm State University (UP), and the Muséum National d'Histoire Naturelle, Paris (MNHN).

Before going further, I wish to express my deep gratitude to Dr. V. I. OVTCHARENKO (ZIL), Dr. K. G. MIKHAILOV (ZMUM), Dr. A. S. UTOTSCHKIN (UP), Dr. M. HUBERT (MNHN) for having loaned to me the materials under their care, as well as to Dr. A. B. NENILIN (Tashkent) and Dr. A. K. BRODSKY (Leningrad) for having donated me their privately collected *Larinia* specimens. The materials treated herein have been shared between the collections of the ZIL, ZMUM, UP, MNHN, and Zoologische Staatssammlung, München (ZSM).

Larinia Simon, 1874

I follow here LEVI's (1975) concept of the genus sensu lato. Otherwise, if to stick to GRASSHOFF's (1970a) *Larinia* s. str., I should have created some indisputably new genera for part of the new species described herein.

North Palaearctic *Larinia* can be distinguished from all the other araneid genera by the characteristic abdominal pattern. Ventral side of abdomen between genital groove and spinnerets with a broad white medial band bordered by dark streaks or bands (Fig. 16). Ventral coloration yellow, grey or brown but

never black or dark brown as in *Araneus*, *Aculepeira* or *Larinioides*. Abdomen pointed anteriorly (Figs. 10, 16, 24, 34). *Larinia* differs from *Araneus* by eye arrangement as well: AME the largest, 1.4–1.6 times larger than PME, separated from each other by 0.3–0.8 of their diameter (only *L. bonneti* has PME slightly larger than AME). Rings around the eyes never dark coloured as in *Araneus* or *Araniella*. The scape of the epigyne is torn off after copulation in some species as in *Araneus* (*A. yukon*, *A. quadratus*) and *Aculepeira* species (*A. ceropegia*, *A. packardii*). I don't know cases of torn scape in *Larinia bossae* n. sp. and *L. jeskovi* n. sp., though the latter is known by a single female. Besides, the paracymbium of the male palp is relatively smaller than in *Araneus*. Chelicerae with 3–4 promarginal and 2–3 retromarginal teeth.

Biology: The *Larinia* species from the USSR were collected by sweeping herbs in such habitats as rivers, lakes, water meadows, rice fields, etc.

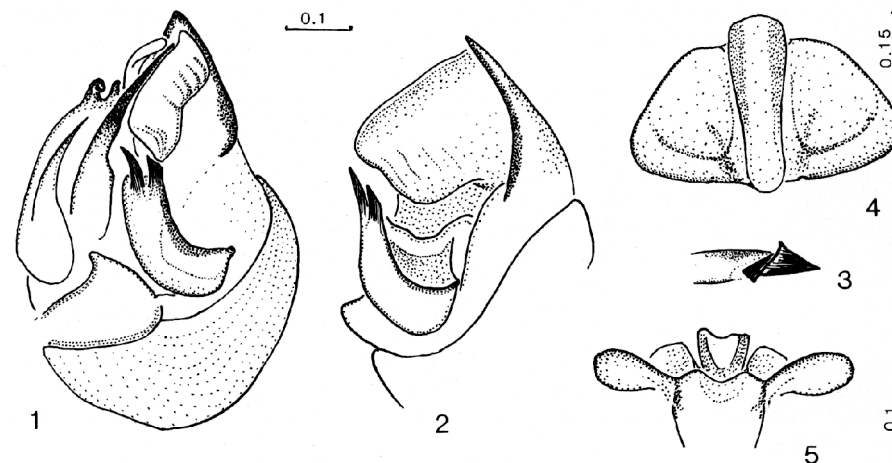
Distribution: All the species from the USSR were found within the steppe, semi-desert, and desert zones in intrazonal biotopes. The northernmost record of Palaearctic *Larinia* is 51°N (*L. bossae* n. sp. from the Chita Area), i. e. the same as in the Nearctic (LEVI 1975).

Separating species: All Palaearctic *Larinia* species are readily distinguished by the genital organs and dorsal abdominal pattern. Thanks to the last feature, the specimens may be recognised in immature stage as well.

Description of the species

Larinia nenilini spec. nov.
(Figs. 1–5)

Material examined: Holotype 1 ♂, paratypes 1 ♂, 2 ♀♀, 7 immatures. Uzbekistan: Tashkent Area: Dalversin, 9.7.1981 (A. B. NENILIN, ZIL); 1 ♂ – holotype; same locality, 4.–5.9.1980 (A. B. NENILIN, ZSM); 1 ♀; same locality, 29.8.1980 (A. B. NENILIN, ZSM); 3 immatures; Kibray 23.8.1977 (A. B. NENILIN, ZIL); 1 ♀. Karakalpak ASSR, 40 km N of Nukus, 15 km E of Krantau, 1.–10.7.1984 (I. SOKOLOV, ZSM); 1 ♂ and 1 immature. Turkmenia: Chardzhou, 6.5.1983 (A. B. NENILIN, ZIL); 1 immature; Repetek Reserve, 6.5.1983 (A. K. BRODSKY,



Figs. 1–5. *Larinia nenilini* spec. nov. – 1 & 2) male palp; 3) embolus cap; 4) epigyne ventrally; 5) epigyne from behind. Scale in mm.

ZIL); 1 immature. 1983 (A. K. BRODSKY, ZIL) 1 immature; Same locality 12.5.1969 (G. GORNOSTAEV, ZMMU) 2 ♀♀.

Derivatio nominis: This species is gladly named after A. B. NENILIN (Tashkent) who collected many specimens of this new species.

Female: Total length 9.0–9.8 mm. Carapace: 2.9–3.4 mm long, 2.0–2.1 mm wide, pale yellow, without pigmentation, except a grey stripe between posterior margin of PLE and medial fovea. Eye sizes and interdistances (mm): AME – 0.14, AME-AME – 0.24, PME – 0.09, PME-PME – 0.04. Sternum lighter than carapace, without pigmentation. Abdomen: 6.8 mm long, 2.6 mm wide, pale yellow, with 5 scarcely marked longitudinal stripes. Chelicerae with 3 promarginal and 3 retromarginal teeth. Legs slightly lighter than carapace. Epigyne as in Figs. 4–5.

Male: Total length 4.9–5.1 mm. Carapace: 1.8–2.1 mm long, 1.2–1.3 mm wide, coloration as in female. Sternum yellow, with large grey spots on the margins. Abdomen: 3.0–3.7 mm long, 1.2–1.4 mm wide, coloration same as in female, but sometimes stripes absent. Chelicerae with 3 retromarginal and 4 promarginal teeth. Palp as in Figs. 1–2.

Diagnosis: *L. nenilini* spec. nov. is similar to *L. jeskovi* n. sp., from which it may be distinguished by the shorter carapace and by genital organs: epigyne with a narrow and long scape (Fig. 4), male palp with closely separated processes of the median apophysis (Fig. 1) and with an apically divided subterminal apophysis.

Distribution: Central Asia, basins of the Amu-Darya and Syr-Darya Rivers except of mountain regions.

Note: *L. nenilini* spec. nov. seems particularly closely related to *L. chloris* (SAVIGNY AUDOIN, 1825) from Africa, and to *L. phtysica* (L. KOCH 1871) from Australia, New Zealand, Oceania. While the males of the two latter species are indistinguishable (GRASSHOFF 1970a), *L. nenilini* n. sp. is quite different from them by the form of the embolus cap (Fig. 3). Epigyne of *L. nenilini* n. sp. is very similar to that of *L. chloris*, but differs from it by the form of depressions and by the absence of medial furrow.

I believe that, in the light of the discovery of *L. nenilini* spec. nov., the species rank of both *L. chloris* and *L. phtysica* questioned by GRASSHOFF (1970a) can now be ascertained. Though the males of the latter two forms morphologically cannot be separated, the females are distinguishable by the shape of the epigynal scape, which seems quite sufficient for their discrimination. By the way, I should like to point out that the female from Ceylon as depicted by GRASSHOFF (1970a, Fig. 8e) seems in fact to represent neither *L. phtysica* nor *L. chloris*, but a new species.

Larinia pubiventris Simon, 1889

Figs. 6–10

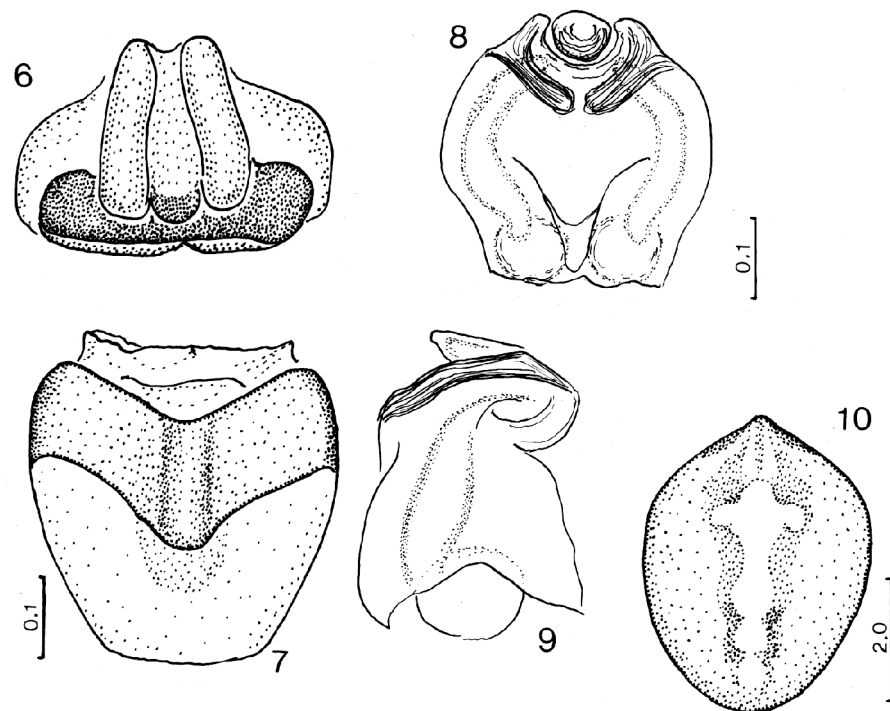
Larinia pubiventris SIMON, 1889. Verh. zool.-bot. Ges. Wien, 39: 381–382. Syntype 1 female from Imam-baba (MNHN, No. 9912), examined.

Larinia turcmunica SPASSKY, 1939. Folia Zool. Hydrobiol., 9(2): 307–308. Syntypes: female from Tedzhen and 2 females from Krasnowodsk, not examined (presumed to be lost). NEW SYNONYMY!

Araneus pubiventris: GRASSHOFF, 1970. Senckenb. biol., 51 (3/4): 217.

Though the type material of *L. turcmunica* seems lost, I think that this species is a junior synonym of *L. pubiventris* thanks to the good picture by SPASSKY (1939) and examination of 4 females from the type locality.

Female: Total length 6.0–8.0 mm. Carapace: 2.8–3.4 mm long, 2.1–2.5 mm wide, yellow, yellow-brown, grey or straw-coloured, cephalic part darker than thorax and separated from it by 2 brown bands. Sometimes pigmentation absent. Eye sizes and interdistances (mm): AME – 0.16, AME-AME – 0.20, PME – 0.11, PME-PME – 0.06. Sternum brown, with a light medial spot. Abdomen: 5.0–6.0 mm long, yellow, light brown or grey, with folium (Fig. 10), ventrally with a white area bordered by 2 narrow dark stripes. Chelicerae with 3 promarginal and 2 retromarginal teeth. Legs coloured as carapace, with a number of small spots. Epigyne as in Figs. 6–9.



Figs. 6–10. *Larinia pubiventris* SIMON. – 6) epigyne ventrally; 7) epigyne from behind, scape torn off, apical half covered by secretion; 8) epigyne from behind; 9) epigyne laterally; 10) abdomen dorsally. Scale in mm.

Male unknown.

Diagnosis: Females may be distinguished from other species by the folium of abdomen (Fig. 10) and by the peculiar form of the epigynal scape (Fig. 6). In posterior view, the epigyne varies because after copulation female excretes a dark secret which covers the apical part of the epigyne.

Material examined: Turkmenia: near Krasnowodsk 28.5.1929 (V. I. Pereleshina, ZMUM) 4 ♀♀; Imam-baba (MNHN No. 9912) 1 ♀; Mor-Kala 26.–28.11.1929 (V. I. Pereleshina, ZMMU) 1 ♀; Repetek State Reserve 12.5.1969 (G. Gornostaev, ZMMU) 3 juv. Uzbekistan: Syr-Darya Area, Akaltinsky distr., autumn 1979 (A. B. Nenilin, ZSM) 2 ♀♀; Tashkent Area, Bekabad distr., Dalversin 29.6.1980 (A. B. Nenilin, ZIL) 2 immatures. Kazakhstan: Aral Sea, Barsakelmes Island 28.5.1982 (T. PAVLENKO) 2 ♀♀ (ZIL), 1 ♀ (ZSM). Barsakelmes Island, 28.5.1982 (T. PAVLENKO, ZIL); 3 ♀♀.

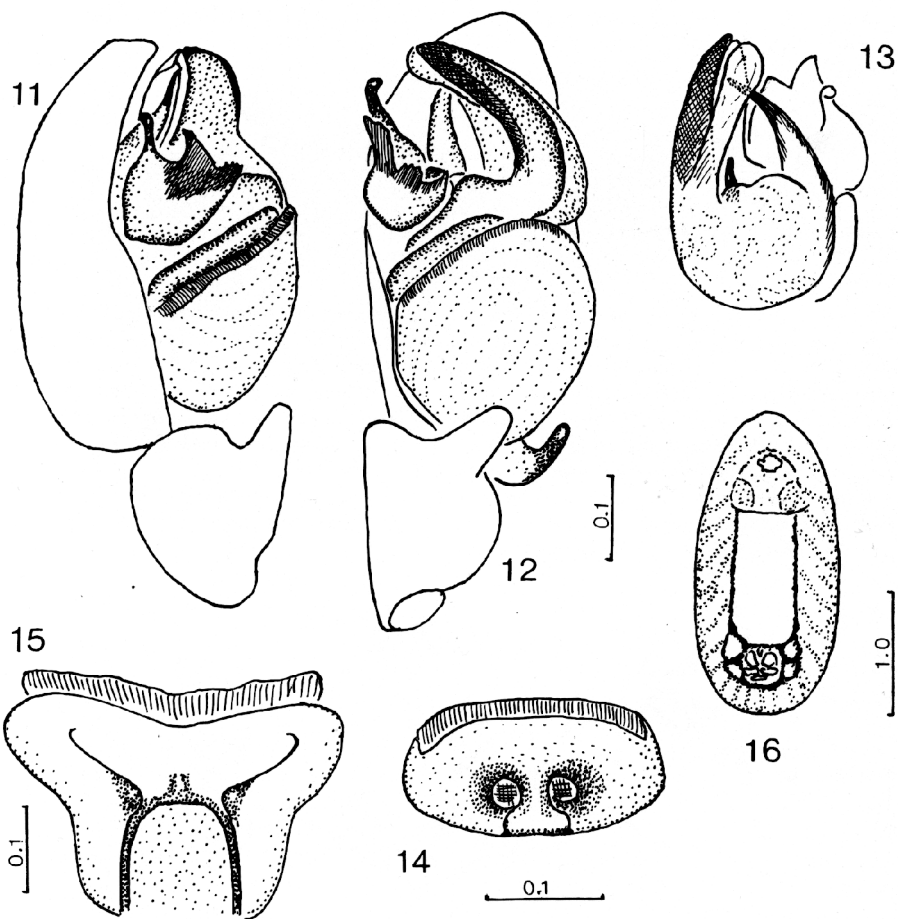
Distribution: Turkmenia, Uzbekistan, and South-West Kazakhstan.

Larinia elegans Spassky, 1939

Figs. 11–16

Larinia elegans SPASSKY, 1939. Folia Zool. Hydrobiol., 9(2): 302–304. Holotype – 1 female from Azov Sea, Berdianskaia Spit, in ZIL, examined.

Larinia elegans: MARUSIK 1985. Vestnik Zool., in press. First description of male.



Figs. 11-16. *Larinia elegans* SPASSKY. - 11-13) male palp; 14) epigyne ventrally, scape torn off; 15) epigyne from behind; 16) ♀ abdomen ventrally. Scale in mm. (13 drawn not to scale).

Female: Total length 6.8 mm. Carapace: 2.4 mm long, 1.7 mm wide, 0.6 mm high, light brown, cephalic part slightly lighter than thorax. Eye sizes and interdistances (mm): AME - 0.11, AME-AME - 0.13, PME - 0.08, PME-PME - 0.04. Sternum brown.

Abdomen: 5.1 mm long, 2.7 mm wide, uniform yellow. Chelicerae with 2 retromarginal and 4 promarginal teeth. Legs coloured as carapace. Epigyne as in Figs. 14-15, with scape torn off.

Male: Total length 5.2 mm. Carapace: 2.5 mm long, 2.7 mm wide, coloured as in female, with 2 scarcely marked light brown stripes. Chelicerae and legs as in female. Palp as in Figs. 11-13.

Diagnosis: Epigyne with broad and thin scape. Medial apophysis of male palp with two processes, one clavate on top, second broad and membranous.

Material examined: Azov Sea, Berdianskaia Spit, 2. 8. 1939 (V. NIKOLAEV, ZIL); Holotype (1 ♀) and 1 immature; same locality 20. 6. 1939 (V. NIKOLAEV, ZIL); 1 ♂.

Distribution: *L. elegans* is known from the type locality only.

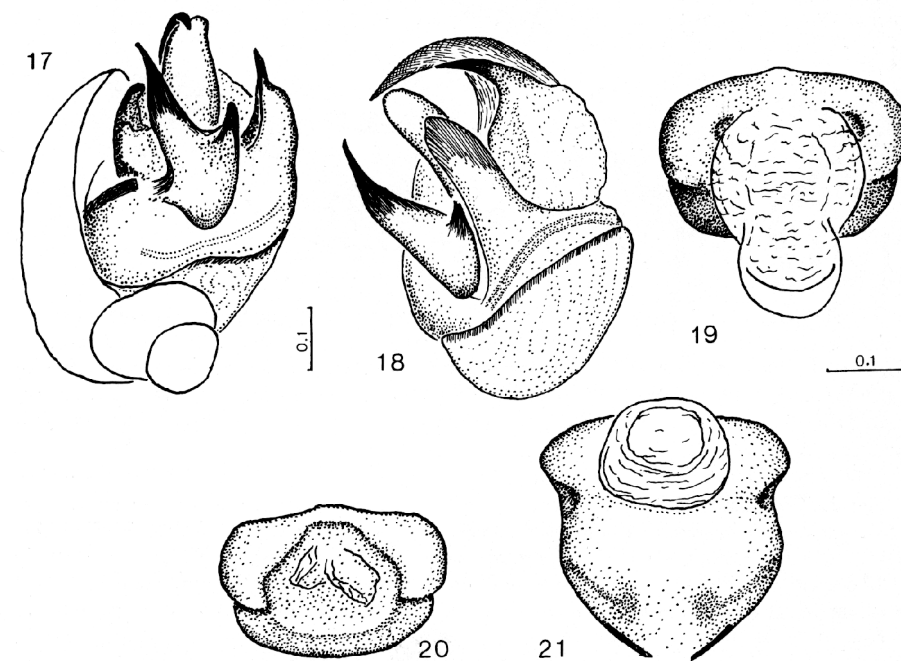
Larinia bonneti Spassky, 1939
Figs. 17-21

Larinia bonneti SPASSKY, 1939. Folia Zool. Hydrobiol., 9(2): 299-300. Lectotype 1 ♀, paralectotypes 11 ♀♀, 6 ♂♂ and 22 immatures from Kuban River, in ZIL, examined.

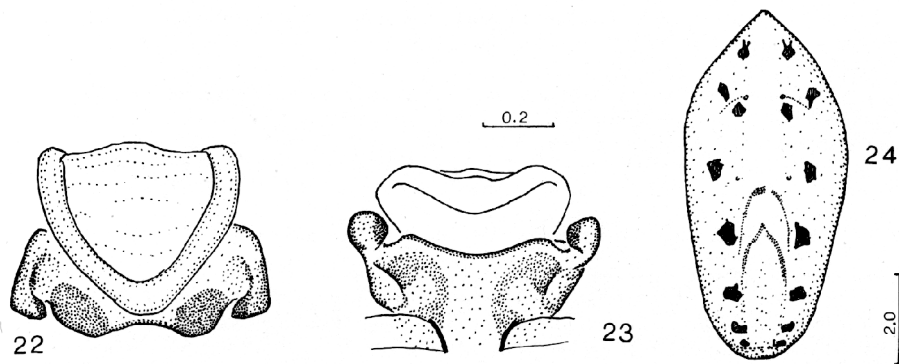
Larinia bonneti: MARUSIK 1985. Vestnik Zool., in press.

Female: Total length 3.9-5.2 mm. Carapace: 1.4-2.0 mm long, 1.2-1.6 mm wide, uniform yellow, some specimens with a white spot in the middle of carapace. Eye sizes and interdistances (mm): AME - 0.09, AME-AME - 0.13, PME-PME 0.07, PME 0.07. Sternum light brown, slightly darker than carapace. Abdomen: 2.7-4.3 mm long, 1.8-2.7 mm wide, yellow, some specimens with a light medial longitudinal band bordered by dark bands. Chelicerae with 4 promarginal and 3 teromarginal teeth. Legs coloured as carapace, uniform yellow. Epigyne as in Figs. 19-21, poorly sclerotized (so that it is very easy to consider the female with scape as immature).

Male: Total length 3.1-3.4 mm. Carapace: 1.4-1.6 mm long, 1.2-1.3 mm wide, coloured as in female but darker. Abdomen: 2.0-2.1 mm long, 1.3-1.5 mm wide, coloured as in female. Chelicerae with 3 promarginal and 3 retromarginal teeth. Palp as in Figs. 17-18.



Figs. 17-21. *Larinia bonneti* SPASSKY. - 17 & 18) male palp; 19) epigyne ventrally; 20) epigyne ventrally, scape torn off; 21) epigyne from behind. Scale in mm.



Figs. 22–24. *Larinia argiopiformis* BÖSENBERG & STRAND. – 22) epigyne ventrally; 23) epigyne from behind; 24) ♀ abdomen dorsally. Scale in mm.

Diagnosis: *L. bonneti* may be distinguished from all the other Palaearctic *Larinia* by the little size. Epigyne is most simple, with the large and poorly sclerotized scape (Figs. 19, 21). Male palp with a large regular apophysis membranous at apical third (Fig. 18).

Material examined: Krasnodar Prov., Slavyansk distr., Kuban River, Liman Dolgiy, 18.–27.5.1928 (P. SVIRIDENKO, ZIL); lectotype 1 ♀, paralectotypes 11 ♀♀, 6 ♂♂, 22 immatures. Georgia: Poti, 1940 (T. S. MCHIEDZE, UP); 17 ♀♀, ♂♂ and immatures.

Distribution: West Caucasus.

Larinia argiopiformis Bösenberg & Strand, 1906
Figs 22–24

Larinia argiopiformis BÖSENBERG & STRAND, 1906. Abh. Senckenb. Ges., 30(1/2): 212.

Larinia punctifera BÖSENBERG & STRAND, 1906. Abh. Senckenb. Ges., 30(1/2): 202.

Larinaria argiopiformis: GRASSHOFF 1970. Senckenb. biol., 51 (5/6): 421–423.

Female: Carapace: 3.8 mm long, 2.7 mm wide, pale yellow, with 2 brown stripes between posterior margin of PME and medial fovea. Eye sizes and interdistances (mm): AME–0.16, AME–AME–0.23, PME–0.11, PME–PME–0.03. Sternum brown, with a yellow medial longitudinal spot at anterior half. Abdomen: yellow, with 8 pairs of dark brown stripes. Chelicerae with 4 promarginal and 2 retro-marginal teeth. Legs yellow, with dark basal spots on leg segments except for femur and tarsus. Epigyne as in Figs. 22–23.

Male: The male of *L. argiopiformis* is unknown to me, but an illustrated description of both sexes has already been given by GRASSHOFF (1970b).

Diagnosis: *L. argiopiformis* is the largest species of the genus in the USSR, with the carapace length of more than 3.5 mm. Females can be distinguished from all the other species by the abdominal pattern, leg pigmentation and by the characteristic triangular scape of the epigyne (Fig. 22).

Material examined: Maritime Prov. (Primorié), near village Ryazanovka, 30.6.1982 (G. BELOVA, ZIL); 1 ♀.

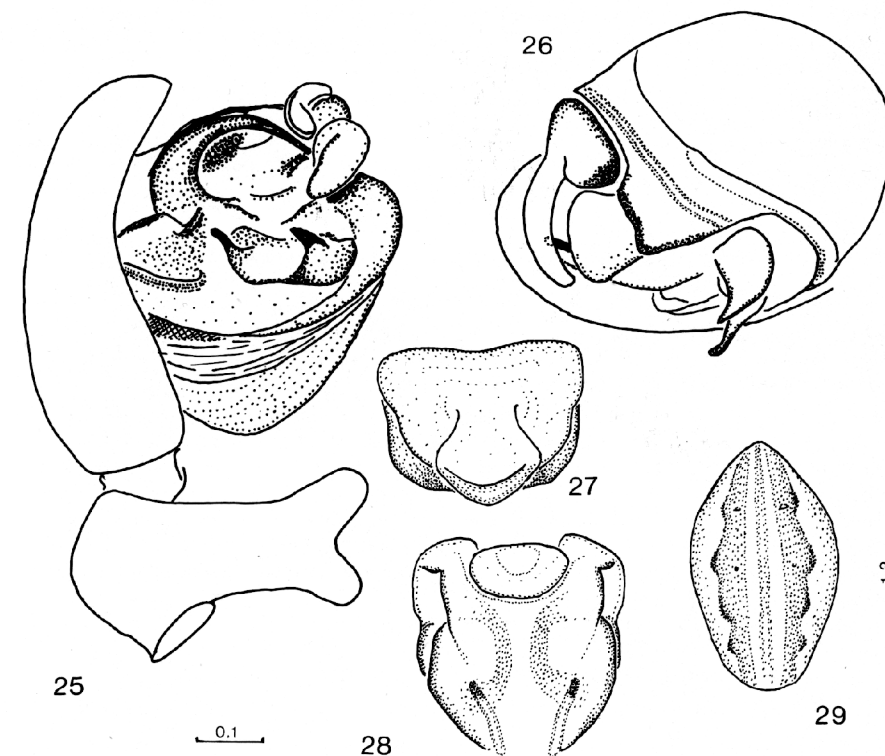
Distribution: Korea, China (Eastern provinces), Taiwan, entire Japan, including Okinawa Island (GRASSHOFF 1970b; YAGINUMA 1977), and the USSR Far East.

Larinia bossae spec. nov.
Figs. 25–29

Material examined: Holotype – 1 female, paratypes 9 ♀♀, 1 ♂ and 2 immatures. Khabarovsk Prov.: near Khabarovsk, 15.6.1931 (V. I. SYTCHEVSKAYA, ZMUM); holotype 1 ♀ and paratypes 3 ♀♀; same locality, 14.6.1931 (V. I. SYTCHEVSKAYA, ZMUM); 1 ♀; Amur River, 8 km N of Vyatskoye, 26.7.1910 (V. SOLDATOV, ZIL); 1 ♀; Amur River, 3 km N of Nizhne-Tambovskoye, 22.6.1911 (V. SOLDATOV, ZIL); 2 ♀♀; near Lake Beltcha, 4.6.1911 (V. SOLDATOV, ZIL); 1 ♂. Amur Area: Arkhara distr., Khingan Reserve, 8.8.1983 (Y. M. MARUSIK, ZSM); 2 ♀♀ and 2 immatures. Chita Area, Onon distr., Chindant, 4.7.1965 (ZIL); 1 ♀.

Derivatio nominis: This species is named after Miss Anne BOSS (Leningrad).

Female: Total length 5.5–7.3 mm. Carapace: 2.0–2.4 mm long, 1.5–1.8 mm wide, yellow brown, some specimens shot with red (Khingan population), pigmentation similar to that of *L. pubiventris*: cephalic part separated from thoracic one by 2 brown bands, with 2 brown stripes between PME and medial fovea, margins of carapace with a narrow brown border. Eye sizes and interdistances (mm): AME–0.16, AME–AME–0.20, PME–0.11, PME–PME–0.07. Sternum brown, with a light medial spot at anterior half. Abdomen: 4.0–5.3 mm long, 2.3–2.9 mm wide, pale yellow, dorsally with a whitish medial band bordered by wide brown bands (Fig. 29). Colour of abdomen, as well as of carapace,



Figs. 25–29. *Larinia bossae* spec. nov. – 25 & 26) male palp; 27) epigyne ventrally; 28) epigyne from behind; 29) ♀ abdomen dorsally. Scale in mm.

may vary. Chelicerae with 4 promarginal and 3 retromarginal teeth. Legs yellow, with numerous dark dots. Epigyne as in Figs. 27–28.

Male: Total length 5.4 mm. Carapace: 2.4 mm long, 1.8 mm wide, uniform light brown. Sternum brown, without medial spot. Abdomen and legs same as in female. Chelicerae with 3 promarginal and 3 retromarginal teeth. Palp as in Figs. 25–26.

Diagnosis: Males of *L. bossae* spec. nov. may be distinguished from all the other species by the tibial apophysis of the palp divided on top (Fig. 25). The epigyne of *L. bossae* spec. nov. resembles that of *L. bonneti*, but differs from it by the narrower and shorter scape (Fig. 27).

Natural history: *L. bossae* spec. nov. has been collected by sweeping low grass near small lakes or near Amur River.

Distribution: USSR Far East, basin of the Amur River.

Larinia jeskovi spec. nov.
Figs. 30–34

Material examined: Amur Area, Arkhara distr., Khingan Reserve, 4. 8. 1983 (Y. M. MARUSIK); Holotype 1 ♂, paratypes 4 ♂♂ and 10 immatures (ZIL); 4 ♂♂ and 7 immatures (ZSM). MONGOLIA: Erzin, summer 1976 (S. G. VOLOKHOVITCH, ZIL); paratype 1 ♀.

Derivatio nominis: This species is named after the well-known Soviet arachnologist, Dr. K. Y. ESKOV (= JESKOV) (Moscow).

Female: Carapace: 3.3 mm long, 2.2 mm wide, pale yellow, with a dark stripe between posterior margin of PME and medial fovea, margins of cephalic part with a narrow brown border. Eye sizes and interdistances (mm): AME – 0.14, AME-AME – 0.17, PME – 0.09, PME-PME – 0.06. Sternum brown, with a large medial light spot. Abdomen: dorsally with 5 longitudinal stripes (Fig. 34), ventrally a white area bordered by wide brown bands. Chelicerae with 3 retromarginal and 4 promarginal

teeth (one subadult female with 4 retromarginal teeth). Legs yellow, with brown dots. Epigyne as in Figs. 32–33.

Male: Total length 5.6–6.7 mm. Carapace: 2.4–3.0 mm long, 1.6–2.0 mm wide, coloration as in female. Sternum yellow, with grey spots on borders. Abdomen (Fig. 34), chelicerae, and legs as in female. Palp as in Figs. 30–31.

Diagnosis: Epigyne with a short V-shaped scape (Fig. 32), male palp with a large tibial apophysis, ventrally armed with a little tooth (Fig. 30). Medial apophysis with one process only (Fig. 30).

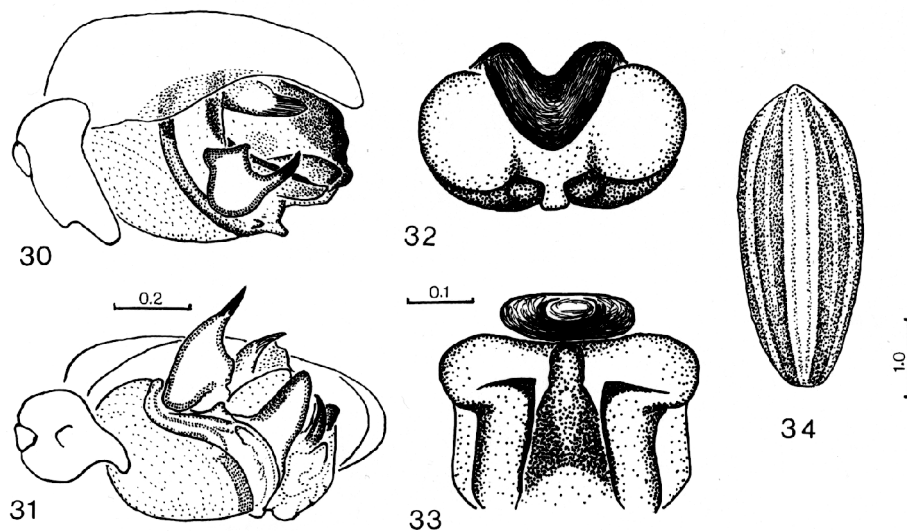
Natural history: Matured males together with subadult females have been taken in August from high grass by sweeping a water meadow.

Distribution: Basin of the Amur River.

References

- GRASSHOFF, M. 1970a: Die Tribus Mangorini. Die Gattungen *Eustala*, *Larinia* s. str., *Larinopa* n. gen. – *Senckenbergiana biol.*, **51**: 209–234.
- 1970b: Die Tribus Mangorini. II. Die neuen Gattungen *Siwa*, *Paralarinia*, *Favardja*, *Mahembea* und *Larinaria*. – *Senckenbergiana biol.*, **51**: 409–432.
- 1971: Die Tribus Mangorini. III. Die Gattung *Drexelia* Maccook [sic!]. – *Senckenbergiana biol.*, **52**: 81–95.
- LEVI, H. W. 1975: The American orb-weaver genera *Larinia*, *Cercidia* and *Mangora* north of Mexico. – *Bull. Mus. Comp. Zool.*, **147** (3): 101–135.
- MARUSIK, YU. M. 1985: [Redescription of some types of orb-weavers from the S. A. SPASSKY collection]. – *Vestnik Zool.*, Kiev (in press) [in Russian].
- SPASSKY, S. 1939: Araneae palaearticae novae IV. – *Folia Zoologica et Hydrobiologica*, **9** (2): 299–308.
- YAGINUMA, T. 1977: A list of Japanese spiders (revised in 1977). – *Acta Arachnol.*, **27** (special number): 367–406.

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Figs. 30–34. *Larinia jeskovi* spec. nov. – 30 & 31) male palp; 32) epigyne ventrally; 33) epigyne from behind; 34) ♂ abdomen dorsally. Scale in mm.