Genus	Vol. 6(2): 163-175	Wrocław, 30 VI 1995

New data on some poorly known Palaearctic species of *Sitticus* (*Araneae: Salticidae*)

DMITRI V. LOGUNOV[1], WANDA WESOŁOWSKA[2]

[1]Zoological Museum, Institute for Systematics and Ecology of Animals, Frunze street 11, Novosibirsk 630091, Russia
[2]Zoological Institute, Wrocław University, Sienkiewicza 21, 50-335 Wrocław, Poland

ABSTRACT. A new species, *Sitticus eskovi*, from Sakhalin and the Kurile Islands is described. It is closely related to *S. albolineatus, S. nenilini* and *S. burjaticus*. New faunistic data on nine rare or recently decribed species of *Sitticus* are given.

Key words: Arachnology, *Araneae, Salticidae, Sitticus*, new species, East Palaearctic.

INTRODUCTION

Though there are numerous species of the *Sitticus* spiders known from the Eastern Palaearctic, data on their distribution within the region are rather scanty. We provide here new information on the distribution of nine poorly known species and describe one new species.

The material constituting the basis of this paper is kept in the following collections:

ISE - Zoological Museum, Institute for Systematics and Ecology of Animals, Novosibirsk;

IZW - Institute of Zoology, Warszawa;

MNH - Museum of Natural History, Wrocław University, Wrocław;

ZIS - Zoological Institute of Russian Academy of Science, St.-Petersburg;

ZMMU - Zoological Museum of the Moscow State University, Moscow.

Abbreviations used: M - male, F - female, AME - anterior median eyes, d. - dorsally, v. - ventrally, pr. - prolaterally, rt. - retrolaterally, ap. - apically, Fm. - femur, Pt. - patella, Tb. - tibia, Mt. - metatarsus. The sequence of leg segments in measurement data is as follows: femur+patella+tibia+metatarsus+tarsus. The system adopted by Ono (1988) is used for description of leg spination. All measurements are given in mm.

SURVEY OF SPECIES

Sitticus eskovi sp.n.

(Figs 1-6, 8)

MATERIAL

Holotype: THE KURILE ISLANDS: Iturup Is., 20.VIII.1994, leg. K. ESKOV, 1 M (ISE, 3667).

Paratypes: together with holotype, 2 M, 2 F (ZMMU), 3 M, 2 F (MNH, 655), 4 M, 3 F (ISE, 3668); Kunashir Is., Ivanovskiy Peninsula, 6-8.VII.1989, leg. V. ZINCHENKO, 1 M (ISE, 3669); Zelyeniy Is., 1.5 km N of Glushnevskiy's Cape, 5.VIII.1994, leg. K. ESKOV, 2 M, 3 F (ZIP); Moneron Is., Kologeras' Bay, 19.V.1992, leg. A. BASARUKIN, 1 F (ZMMU). SAKHALIN: 5 km E of Novoaleksandrovsk, 8.VII.1986, leg. A. BASARUKIN, 1 F (ZMMU); Tamarinsk distr., Ainskoye Lake, the Ptich'ya river, 13.VI.1984, leg. A. BASARUKIN, 1 F (ZMMU), 21-22.VI.1986, 1 F (MNH; 655); Korsakov distr., Utesnoye vill., 3.VI.1985, leg. A. BASARUKIN, 1 F (ZMMU); Aniva distr., Kril'on Peninsula, the Utesovka river, 3.X.1985, leg. A. BASARUKIN, 1 F (ZMMU); Aniva distr., Uspenskoye, 24.VI.1985, leg. A. BASARUKIN, 2 F (ZMMU). PRIMORIE: the coast of the Japan Sea, Sokolovskaya (=Preobrazhenya) Bay, Petrov Is., 16.IX.1932, leg. GURYANOVA, 1 F (ZIP); Pos'yet Bay, Furugelm's Is., 18.VII.1975, leg. M. SHTERNBERGS, 1 F (ISE, 3670).

DIAGNOSIS

This species is closely related to *Sitticus albolineatus* (KULCZYŃSKI, 1895), *S. nenilini* LOGUNOV et WESOŁOWSKA, 1993 and *S. burjaticus* DANILOV et LOGUNOV, 1993. The male can be separated from all those species by the shape of tibial apophysis and embolus (Fig. 2, 3), as well as by the body colouration (cf. Fig. 1A with PRÓSZYŃSKI 1987: figs on p. 85, LOGUNOV & WESOŁOWSKA 1993: figs 9, 10 and DANILOV & LOGUNOV 1993: fig. 4C). The female may be distinguished by the shape and position of copulatory openings (Fig. 5) and the body coloration (Fig. 4); additionally it differs from *S. albolineatus* in the absence of median notch in posterior edge of epigyne (cf Fig. 2B with PRÓSZYŃSKI 1987: fig. on p. 86), and from the remaining two species in having an indivisible central pocket of epigyne (cf. Fig. 2B with LOGUNOV & WESOŁOWSKA 1993: fig. 11 and DANILOV & LOGUNOV 1993: fig. 4D).

DISTRIBUTION

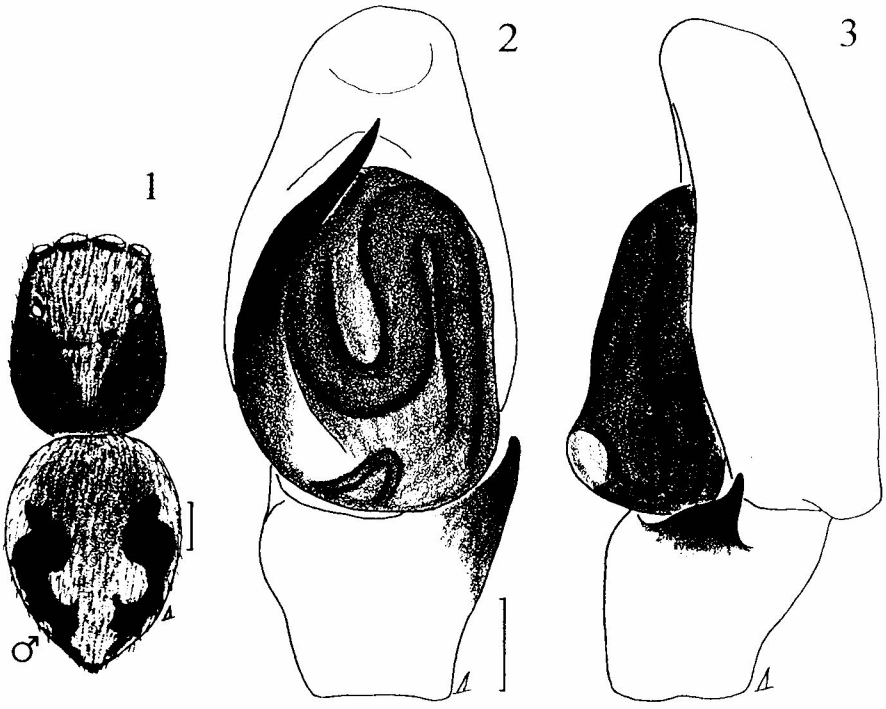
The Russian Far East (Primorie), Sakhalin and the Kurile Islands (Fig. 8). Its occurrence in Korea and Japan is very probable.

HABITAT

Usually collected on seashore, under stones, driftwood and seaweeds. Dr. K. Yu. ESKOV observed that the species, because of its bright and mottled body coloration, was practically invisible on the sandy background.

DESCRIPTION

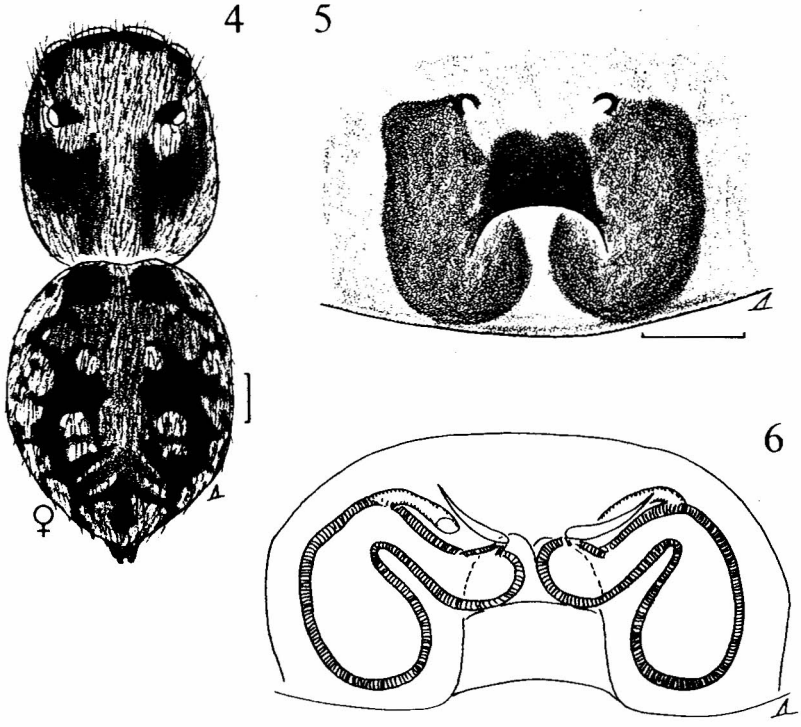
Male. Measurements. Carapace 1.93-2.48 long, 1.46-1.93 wide, 0.94-1.15 high at PLE. Ocular area 0.93-1.05 long, 1.20-1.35 wide anteriorly and 1.13-1.30 wide posteriorly. Diameter of AME 0.30-0.38. Abdomen 2.25-2.95 long, 1.68-2.15 wide. Cheliceral length 0.63-1.13. Clypeal height 0.06. Length of leg segments: leg I - 1.10-1.65+0.70-0.95+0.75-1.03+0.63-0.85+0.40-0.55; leg II - 0.95-1.25+0.58-0.65+0.60-0.75+0.54-0.65+0.38-0.50; leg III - 0.94-1.23+0.48-0.63+0.55-0.65+0.58-0.70+0.38-0.44; leg IV - 1.43-1.83+0.60-0.83+0.95-1.15+0.85-1.10+0.43-0.58. Leg



1-3. *Sitticus eskovi* sp.n. - male: 1 - general appearance; 2, 3 - palpal organ, ventral and lateral views. Scale bars: 1 - 1 mm, 2, 3 - 0.1mm

spination. Leg I: Fm. d. 0-1-2; Tb. pr. 0-1, v. 2-2-2ap.; Mt. 2-2ap. Leg II: Fm. d. 0-1-2; Tb. pr. 0-1, v. 1-2-2ap.; Mt. v. 2-2ap. Leg III: Fm. d. 1-1-1; Tb. d. 1-0, pr. and rt. 1-1, v. 1ap.; Mt. pr. and rt. 1-2ap., v. 2-2ap. Leg IV: Fm. d. 1-1-1; Pt. rt. 0-1-0; Tb. d. 1-0, pr. and rt. 1-1, v. 1-0-2ap.; Mt. pr. and rt. 1-1-2ap., v. 2ap. Coloration. Carapace dark brown with large triangular spot of white hairs, its base facing anterior row of eyes (Fig. 1). Clypeus narrow, covered with orange or reddish hairs. Sternum, maxillae and labium light brown. Chelicerae dark brown. Abdomen dorsally brownish-grey with paler withish-grey longitudinal band (Fig. 1), in some, exceptionally large, males dorsum resembles that of female (Fig. 4); sides of abdomen yellowish; venter yellow. Book-lung covers yellow. Spinnerets dark brown. Legs yellow with numerous broad brown rings. Femora I often uniformly dark brown. Palpal femur and patella yellow, covered with white hairs, remaining segments of palp dark brown. Palpal structure as in Fig. 2, 3.

Female. Measurements. Carapace 2.90 long, 2.03 wide, 1.13 high at PLE. Ocular area 1.15 long, 1.56 wide anteriorly and 1.45 wide posteriorly. Diameter of AME 0.43. Abdomen 2.83 long, 2.25 wide. Cheliceral length 0.80. Clypeal height

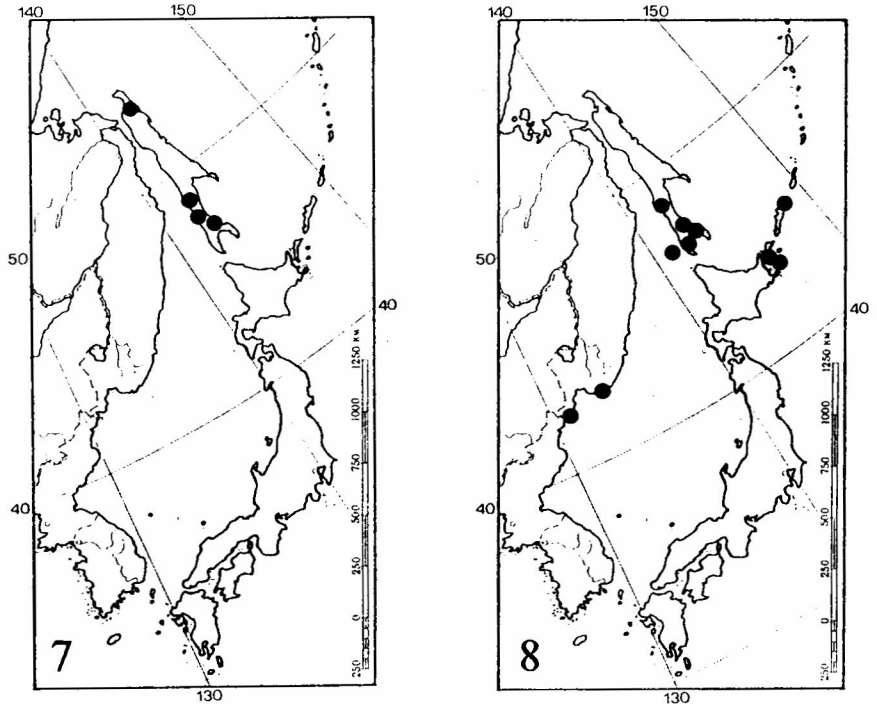


4-6. *Sitticus eskovi* sp. n. - female: 4 - general appearance; 5, 6 - epigyne and its internal structure. Scale bars: 4 - 1 mm, 5, 6 - 0.1 mm

0.08. Length of leg segments: leg I - 1.33+0.90+0.88+0.70+0.50; leg II - 1.25+ +0.80+0.73+0.65+0.48; leg III - 1.28+0.73+0.70+0.79+0.50; leg IV - 1.85+0.90+ +1.35+1.15+0.63. Leg spination. Leg I: Fm. d. 0-1-2 or 0-1-3; Tb. pr. 0-2, v. 1-1-2ap.; Mt. v. 2-2ap. Leg II: Fm. d. 1-1-2; Tb. pr. 0-1, v. 1-1-2ap.; Mt. v. 2-2ap. Leg III: Fm. d. 1-1-2; Tb. pr. 1-1-1, rt. 1-1, v. 2ap.; Mt. pr. 2-2ap., rt. 1-2ap., v. 2ap. Leg IV: Fm. d. 1-1-1; Pt. rt. 0-1-0; Tb. pr. and rt. 1-1-1, v. 1-0-2ap.; Mt. pr. and rt. 1-1-2ap., v. 2ap. Coloration. General appearance shown in Fig. 4. Carapace dark brown, eye field clothed in greyish-white hairs, these hairs form a pair of white rounded spots behind posterior eyes. Clypeus narrow, covered with long white hairs. Sternum, maxillae and labium light brown, chelicerae darker. Abdomen dorsally brownish-grey with pattern composed of whitish spots. In pale specimens these spots surrounded by almost black fringes. Ventrally abdomen yellowish. Brown and grey hairs on abdomen. Spinnerets greyish-brown. Legs yellow with brownish rings. Palps yellow. Epigyne and its internal structure shown in Figs 5, 6.

ETYMOLOGY

The species is named in honour of Dr. K. Yu. ESKOV (Moscow), who collected the bulk of the type material and contributed a valuable information on its habitat.



7 - Far Eastern localities of *S. saxicola*; 8 - Distribution of *S. eskovi*

Sitticus ammophilus (THORELL, 1875)

(Fig. 9)

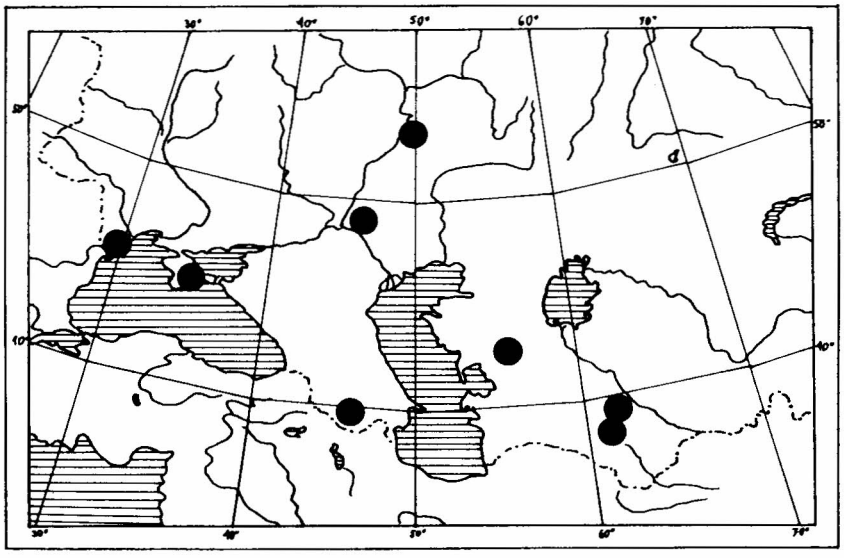
Attus ammophilus THORELL, 1875a: 119; 1875b: 192.
Sitticus ammophilus: PRÓSZYŃSKI 1976: map 182; 1983: map 9; 1987: 86-87 (figs); RICHMAN & CUTLER 1978: 99.

MATERIAL

RUSSIA: Saratov area, Saratov environs, 7.V.1914, 3 M (IZW); Volgograd area, Elton Lake, the Khari river, 18.VIII.1974, 2 F (ISE). KAZAKHSTAN: Ustyurt Plateau, Ustyurtskiy Reserve, floodzone of Onere spring, *Phragmites* bed, 16.V.1989, leg. A. ZYUZIN, 1 F (ISE).

NOTE

So far this species was known only from the type locality (South Ukraine) and the Caucasus (PRÓSZYŃSKI 1976). Records from North America were regarded as a result of a single colonisation (PRÓSZYŃSKI 1983, 1990). Recently, the species has also been found in Turkmenistan (WESOŁOWSKA, unpublished data). New faunistic data furnish an opportunity to refine a distributional pattern of the species in the Palaearctic Region (Fig. 9).



9. Localities of *S. ammophilus* in the Palaearctic region

Sitticus ansobicus Andreeva, 1976
(Fig. 17)

Sitticus ansobicus Andreeva, 1975: 340, nom. nud.
Sitticus ansobicus Andreeva, 1976: 92-94, figs 131-134; Prószyński 1976: 43, 49, 53, figs 308-309, map 176; 1983: map 8; 1987: 88-89 (figs); Nenilin 1984: 141.

Material

KIRGIZSTAN: N coast of Issyk-Kul' Lake, Chop-Uryukty Canyon, 1700-2500 m a.s.l., 19-24.VI.1993, leg. D. Milko, 1 M (ISE); N slope of Alay Mt ridge, 3500 m a.s.l., 21-23.V.1993, leg. D. Milko, 3 M, 3 F (ISE); Alay Mt ridge, near Abramov's glacier, V.1985, leg. V. Nozdryukhin, 1 M (ZMMU).

Note

This species is widely distributed in the mountains of Middle Asia (Fig. 17). Previously it was recorded only from the two localities in Kirgizstan (Talasskiy Mt ridge and Osh area) - Logunov (1993).

Sitticus lineolatus (Grube, 1861)

Attus lineolatus Grube, 1861: 170.
Sitticus ranieri Peckham et Peckham, 1909: 520, t. 43, fig. 5; Levi & Levi 1951: 232.
Sitticus haydeni Levi et Levi, 1951: 232, figs 36, 45-46.
Sitticus mazamae Schenkel, 1951: 45, fig. 45.
Sitticus lineolatus: Logunov 1992b: 65; Nenilin 1984: 142; Prószyński 1971: 192-198, figs 14-30; 1976: 45, 49, 56-57, map 174; 1979: 317; 1983: map 10; Richman & Cutler 1978: 89.

Material

RUSSIA: Siberia, SW Altay, Bertkum, 2000 m a.s.l., 12.VII.1983, leg. H.Hippa, 1 F (ISE, 3672).

Note

An amphi-Pacific species, its distribution poorly known. SW Altay constitutes the south-westernmost locality of *S. lineolatus* in Siberia. Hitherto, in South Siberia, this species was recorded from Tuva (Logunov, 1992b).

Sitticus monstrabilis Logunov, 1992

Sitticus monstrabilis Logunov, 1992 a: 64, fig. 9a-e.

Material

KAZAKHSTAN: Almaty (=Alma-Ata) area, Chegensk distr., Orta-Merke Canyon, 1 km S of Zhaidam-Bulak, 17.VII.1992, leg. E. Koptykbayev, 1 M (ISE).

NOTE

This species was described from Kazakhstan (LOGUNOV 1992a). This is its second record.

Sitticus nenilini LOGUNOV et WESOŁOWSKA, 1993

(Fig. 17)

Sitticus nenilini LOGUNOV et WESOLOWSKA, 1993: 9-11, figs 3-4, 9-12.

MATERIAL

KAZAKHSTAN: Chimkent area, Arys environs, 1.IX.1992, leg. D. LOGUNOV, 1 F (ISE); Almaty (=Alma-Ata) area, Talgar distr., 17-18 km E of Kapchagay town, NW coast of Kapchagay Reservoir, 27.IX.1992, leg. O. LYAKHOV, 1 F (ISE). KIRGIZSTAN: Dzhangi Pakhta, 10.VI.1986, leg. S. OVCHINNIKOV, 2 M, 1 F (ISE).

NOTE

Hitherto *S. nenilini* was known only from two localities (LOGUNOV & WESOŁOWSKA 1993).

Sitticus pulchellus LOGUNOV, 1992

(Fig. 18)

Sitticus pulchellus LOGUNOV, 1992a: 64-66, figs 6a, b.

MATERIAL

KIRGIZSTAN: Osh area, Otuz-Adyr, 24.III.1985, leg. S. RYBIN, 1 M (ZMMU).

NOTE

Osh area is the southernmost locality of *S. pulchellus* hitherto reported from Kazakhstan and Kirgizstan (LOGUNOV 1992a, in press).

Sitticus saltator (O. P.-CAMBRIDGE in SIMON, 1868)

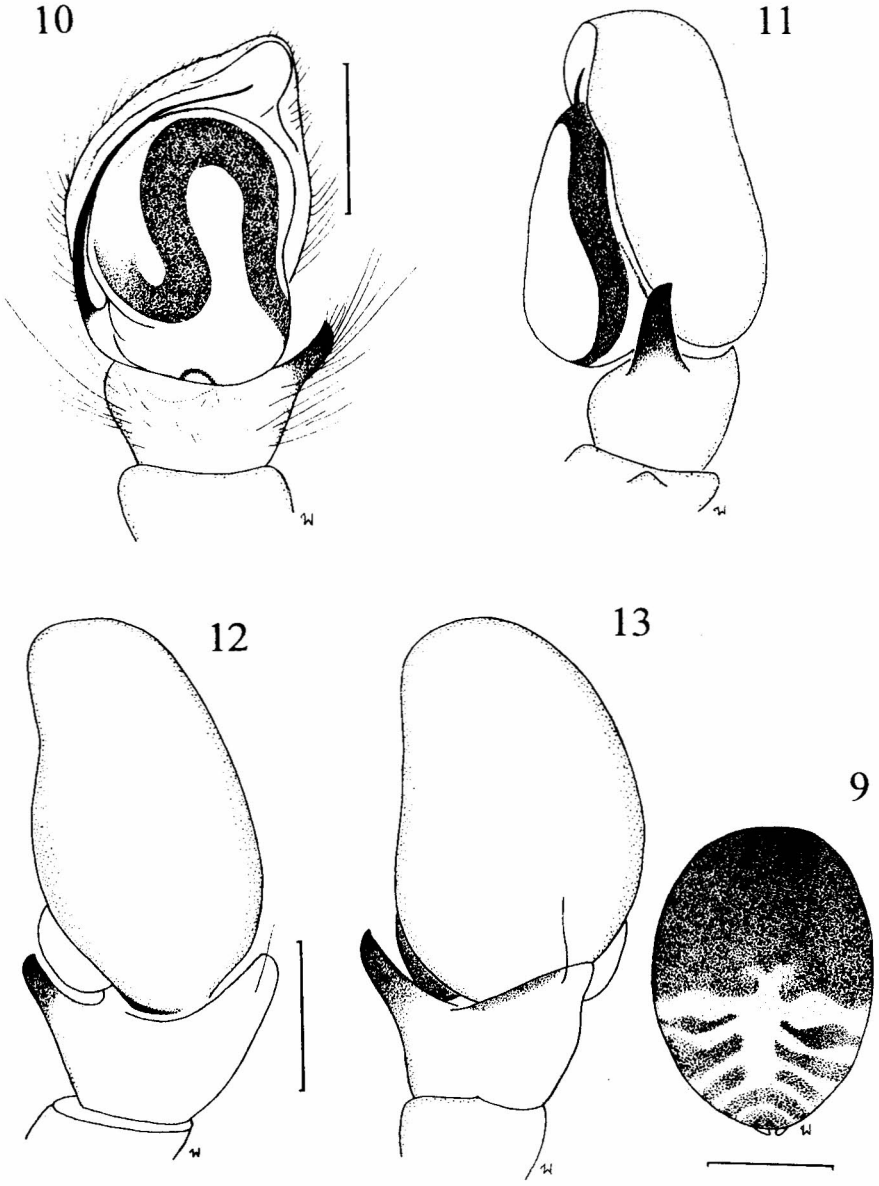
Attus saltator O. P.-CAMBRIDGE in SIMON, 1868: 611; BÖSENBERG 1903: 428, t. 42, fig. 629.
Attulus saltator: SIMON 1937: 1198, 1259, figs 1901-1903; VILBASTE 1969: 190, figs 160-161.
Sitticulus saltator: DAHL 1926: 29, figs 81-82.
Sitticus saltator: HARM 1973: 395-397, figs 53, 59-60, 65-66, 71-72; LOGUNOV 1992b: 66; 1993: 4, figs 3, 4-6, 13-17; PRÓSZYŃSKI 1976: 9, 29, 49, map 175; 1983: map 8; 1987: 89 (figs).

MATERIAL

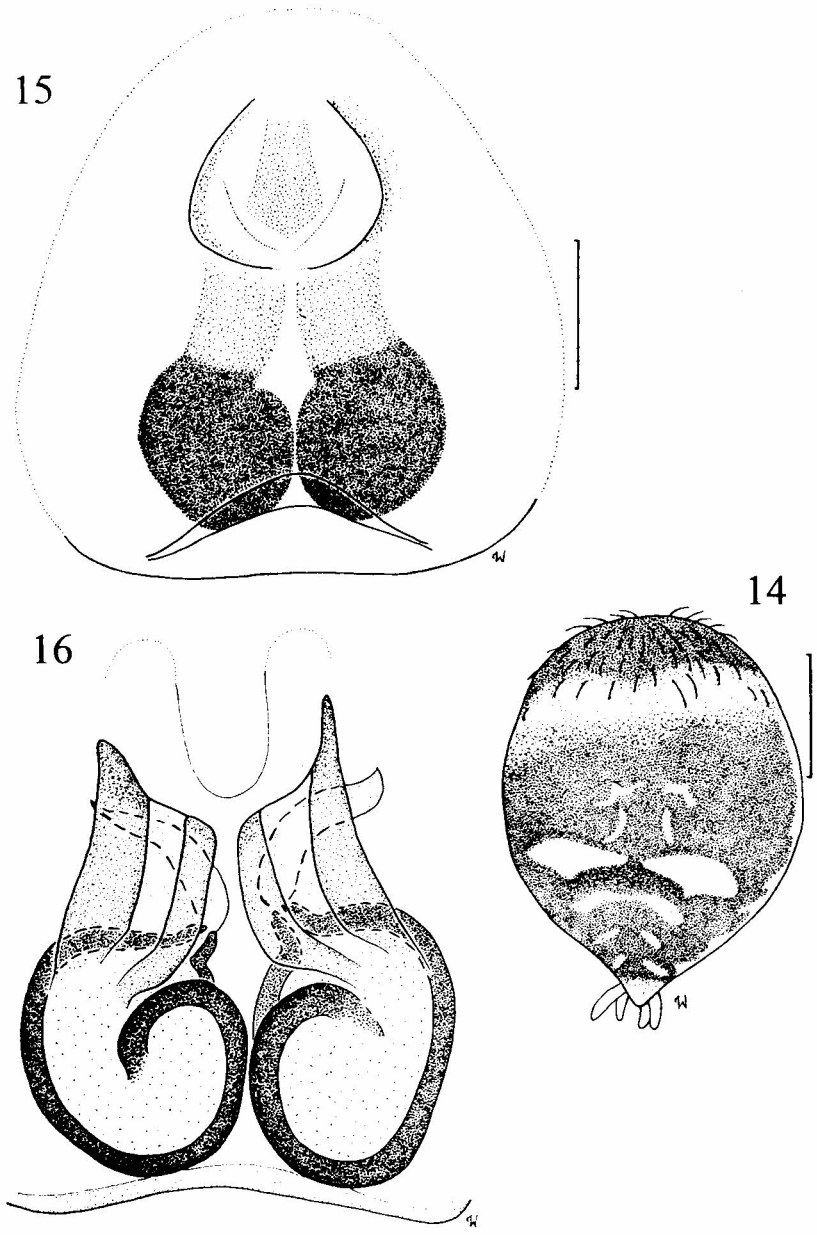
RUSSIA: Novosibirsk area, Karasuk distr., 20-25 km SW of Karasuk, meadow steppe, 26.V-7.IX.1990, leg V. PEKIN, 2 M (ISE, 2655, 2603).

NOTE

A widely distributed Palaearctic species with poorly delineated eastern distribution border. The present findings fit into the distribution pattern hypothesised by LOGUNOV (1992b).



9-13. *Sitticus saxicola* - male: 9 - abdominal pattern; 10-13 - palpal organ, ventral, lateral and dorsal views. Scale bars: 9 - 1 mm, 10-13 - 0.3 mm

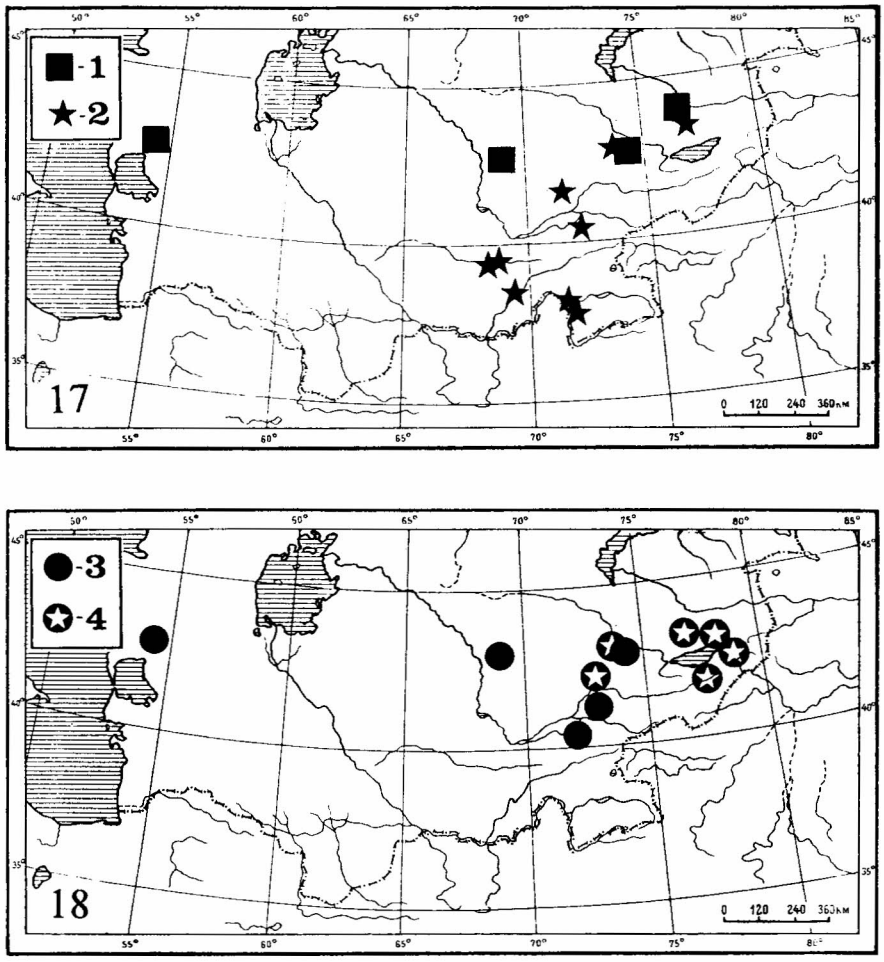


14-16. *Sitticus saxicola* - female: 14 - abdominal pattern; 15-16 - epigyne and its internal structure. Scale bars: 14 - 1 mm, 15 - 0.13 mm

Sitticus saxicola (C.L.Koch, 1848)

(Figs 7, 9-16)

Euophrys saxicola C. L. Koch, 1848: 17, figs 1248-1249.
Attus cingulatus Simon, 1868: 579.
Attus montigenus Thorell, 1875a: 108; Bösenberg 1903: 434, t. 42, f.ig. 638; Thorell 1875b: 194.
Sitticus montigenus: Dahl 1926: 33, fig. 90-100.
Sitticus cingulatus: Simon 1937: 1189, fig. 1877.
Sitticus saxicola: Harm 1973: 394-395, figs 6, 52, 57-58, 64; Prószyński 1971: 188-192; 1976: 42, 45, 49, 56, fig. 174, map 216; 1983: map 10.



17 - Localities of *S. nenilini* (1) and *S. ansobicus* (2); 18 - Localities of *S. pulchellus* (3) and *S. talgarensis* (4)

MATERIAL

SAKHALIN: Aniva distr., Chekhov's Peak, 1000 m a.s.l., 3.VII.1986, leg. A. BASARUKIN, 1 M (ISE, 441); Kholmsk distr., Slepikovskiy's Peninsula, 6-9.VI.1992, leg. A. BASARUKIN, 1 M (ISE, 1953); Tamarinsk distr., Ainskoye Lake, the Ptich'ya river, 13.VI.1984, leg. A. BASARUKIN, 1 F (ISE, 444); Okha distr., Pil'tun Bay, 6.VII.1991, leg. A. BASARUKIN, 1 F (ISE, 3673).

NOTE

This species was known only from the mountains of Central and North Europe (PRÓSZYŃSKI 1971, 1983) and quite recently it was recorded from Sakhalin (MARUSIK et al. 1992). Thus, it has apparently a disjunct distribution. Far Eastern localities of *S. saxicola* are shown in Fig. 7.

Sitticus talgarensis LOGUNOV et WESOŁOWSKA, 1993

(Fig. 18)

Sitticus talgarensis LOGUNOV et WESOLOWSKA, 1993: 5-9, figs 1-2, 5-8.

MATERIAL

KAZAKHSTAN: Almaty (=Alma-Ata) environs, 2500-3200 m a.s.l., 29.VI.1983, 1 M, leg. C. TARABAEV (ISE). KIRGIZSTAN: Terskey Alatu Mt ridge, Barskaun Canyon, 2300-3400 m a.s.l., 21.VII.1993, leg D. MILKO, 1 F (ISE); Suusamyrtu Mt ridge, 3-8 km SW of Kyzyl-Oi, the Kobuksu (=Kovyuksu) river Canyon, 23-27.VII.1993, leg. D. MILKO, 1 M (ISE); Artabash Mt ridge, Bosogo Canyon, 22.VII.1987, leg. S. OVCHINNIKOV, 1 F (ISE); Kungey-Alatu Mts, Chon-Uryuktry, 13.VIII.1987, leg. S. OVCHINNIKOV, 2 M, 3 F (ISE).

ACKNOWLEDGEMENTS

We wish to express our warmest thanks to the following persons who contributed specimens for this study: Dr. M. T. SHTERNBERGS (Riga, Latvia), Dr. A. M. BASARUKIN (Yuzhno-Sakhalinsk, Russia), Dr. K. Yu. ESKOV (Moscow, Russia), Mr V. K. ZINCHENKO (Novosibirsk, Russia), Mr D. A. MILKO and Mr S. V. OVCHINNIKOV (both from Bishkek, Kirghizia). Our special thanks are extended to Dr. K. G. MIKHAILOV, Dr. V. I. OVCHARENKO and Dr. W. JĘDRYCZKOWSKI, the curators of the ZMMU, ZIP and IZW respectively, for creating the opportunity to study some materials from their museums.

REFERENCES

ANDREEVA, E., 1975. Distribution and ecology of spiders (*Aranei*) in Tadjikistan. Fragm. faun., **20**: 323-353.

-, 1976. [Spiders of Tadjikistan] Pauki Tadzhikistana. Dushanbe, 195 pp (in Russian).

BÖSENBERG, W., 1903. Die Spinnen Deutschlands. Zoologica (Stuttgart), **14** (35): 385-465.

DAHL, M., 1926. Spinnentiere oder Arachnoidea. I: Springspinnen (*Salticidae*). Die Tierwelt Deutschlands, **3**: 1-55.

DANILOV, S. N., LOGUNOV, D. V., 1993. Faunistic review of the jumping spiders of Transbaikalia (*Aranei Salticidae*). Arthropoda Selecta, **2** (4): 25-39.

GRUBE, A. E., 1861. Beschreibung neuer, von den Herren L. v. SCHRENCK, MAACK, C. v. DITTMAR u. a. im Amurlande und in Ostsiberien gesammelter Araneiden. Bull. Acad. Imp. Sci., **4**: 161-180.

HARM, M., 1973. Revision der gattung *Sitticus* SIMON (*Arachnida: Araneae: Salticidae*). Senck. biol., **54**: 369-403.

KOCH, C. L., 1848. Die Arachniden. Nürnberg, 14 band, 210 pp.

LOGUNOV, D. V., 1992a. *Salticidae* of Middle Asia (*Araneae*). I. New species from the genera *Heliophanus*, *Salticus* and *Sitticus*, with notes on new faunistic records of the family. Arthropoda Selecta, **1** (1): 51-67.

-, 1992b. The spider family *Salticidae* (*Araneae*) from Tuva. II. An annotated check list of species. Arthropoda Selecta, **1** (2): 47-71.

-, 1993. Notes of the *penicillatus* species group of the genus *Sitticus* SIMON, 1901 with a description of a new species (*Araneae, Salticidae*). Genus, **4** (1): 1-15.

-, in press. New and little-known species of the jumping spiders from Central Asia (*Araneae, Salticidae*). Zoosystematica Rossica.

LOGUNOV, D. V., WESOLOWSKA, W., 1993. Two new species of the genus *Sitticus* Simon, 1901 from Middle Asia. Entom. bas., **16**: 5-11.

MARUSIK, Yu. M., ESKOV, K. Yu., LOGUNOV, D. V., BASARUKIN, A. M., 1992. A check-list of spiders (*Arachnida, Aranei*) from Sakhalin and Kurile Islands. Arthropoda Selecta, **1** (4): 73-85.

LEVI, H. W., LEVI, L. R., 1951. Report on a collection of spiders and harvestmen from Wyoming and neighboring states. Zoologica (New York), **36**: 219-237.

NENILIN, A. B., 1984. [Contribution to the knowledge of the spider family *Salticidae* from USSR. III. *Salticidae* of Kirgizia] Materialy k faune paukov semeystva *Salticidae* SSSR. III. *Salticidae* Kirgizi. Ent. Issled. Kirgizi, **17**: 132-143 [in Russian].

ONO, H., 1988. A revisional study of the spider family *Thomisidae* (*Arachnida, Araneae*) of Japan. National Science Musuem, Tokyo, 252 pp.

PECKHAM, G. W., PECKHAM, E. G., 1909. Revision of the *Attidae* of North America. Trans. Wisc. Akad. Sci. Arts Let., **16** (1): 355-646.

PRÓSZYŃSKI, J., 1971. Revision of the spider genus *Sitticus* SIMON, 1901 (*Aranei, Salticidae*). II. *Sitticus saxicola* (C. L. KOCH, 1848) and related species. Ann. zoll., **28** (10): 183-204.

-, 1976. Studium systematyczno-zoogeograficzne nad rodziną *Salticidae* (*Aranei*) Regionów Palearktycznego i Nearktycznego. Rozprawy WSP, **6**, Siedlce, 260 pp.

-, 1979. Systematic studies on East Palaearctic *Salticidae*. III. Remarks on *Salticidae* of the USSR. Ann. zool., **34** (11): 299-369.

-, 1983. Tracing the history of a genus from its geographical range by the example of *Sitticus* (*Arachnida*: *Araneae*: *Salticidae*). Verh. naturw. Ver., **26**: 161-179.

-, 1987. Atlas rysunków diagnostycznych mniej znanych *Salticidae*. 2. WSRP, Siedlce, 172 pp.

-, 1990. Catalogue of *Salticidae* (*Araneae*). Synthesis of quotations in the world literature since 1940, with basic taxonomic data since 1758. WSRP, Siedlce, 366 pp.

RICHMAN, D. B., CUTLER, B., 1978. A list of the jumping spiders (*Araneae*: *Salticidae*) of the United States and Canada. Peckhamia, **1** (5): 82-100.

SCHENKEL, E., 1951. Spinnentiere aus dem westlichen Nordamerica. II. Verh. naturf. Ges., **62**: 24-62.

SIMON, E., 1868. Monographie des especes européenes de la familie des Attides (*Attidae* SUNDEVALL - *Saltigradae* LATREILLE). Ann. Soc. ent. Fr., (**4**) 8: 529-720.

-, 1937, Les Arachnides de France. VI. Synopsis général et catalogue..., Paris, p. 979-1298.

THORELL, T., 1875a. Verzeicinniss südrussischer Spinnen. Horae Soc. Ent. Ross., **11**: 39-122.

-, 1875b. Descriptions of several European and North-African spiders. Kongl. Svenska Vetensk. Akad. Handl., **13**: 1-203.

VILBASTE, A., 1969. [The spiders of Estonia I.] Eesti amblikud I. Eesti NSV Teaduste, Akad. Zool. Bot. Inst., Valgus, Tallin, 224 pp.