Spiders of the Family Thomisidae from Sakhalin and the Kurile Islands

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Abstract: Materials of the thomisid spiders collected in Sakhalin and the Kurile Islands are studied. They are classified into 19 species including a new one described under the name of Oxyptila sakhalinensis. Female and male sexual organs of most of the species are illustrated. Zoogeographical notes are given on the basis of the present materials.

Introduction

The spiders of the family Thomisidae in Sakhalin and in the Kurile Islands have been very poorly studied. Through the reports by KISHIDA (1924), SAIITO (1932, 1933, 1934 and 1935) and PEELE and SAIITO (1933), only seven species as follows were recorded from the regions: Xysticus limbatus KEYSERLING, 1880, from Shumushu, Paramushir and Araitó Islands [misidentification; regarded as X. ephippiatus SIMON, 1880, by the present authors], X. triguttatus KEYSERLING, 1880, from Shikotan Island [regarded as X. kurilensis STRAND, 1907, by ONO (1988)], X. pini (HAHN, 1831) from Sakhalin [= X. audax (SCHRANK, 1803)], X. ulmi (HAHN, 1831) from Sakhalin, Misumena aleatoria (HENTZ, 1847) from Shikotan Island [misidentification; regarded here as Misumenanops tricuspidatus (FABRICIUS, 1775)], M. lutea PEELE et SAIITO, 1933, from Shikotan Island [never recognized since its original description] and Misumena vatia (CLERCK, 1758) from Sakhalin.

It is a question of deep interest to study the thomisid spiders of these islands lying in the northeastern part of Eurasia, because the thomisid fauna has become sufficiently known in the neighboring regions, Europe, North America and Hokkaido, at the present days.

Recently, the authors obtained some good materials of the spiders of the family Thomisidae

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collected in Sakhalin and in Kunashir, Iturup and Shumushu of the Kurile Islands. The spiders were collected by Dr. A.M. BASARUKIN in lower altitudinal regions (Fig. 51) in the years between 1984 and 1989 by sweeping method and pit-fall trapping. More than 300 individuals of thomisids were presented to this study. They were classified into 19 species including a new species of the genus *Oxyptila*. The female and male sexual organs of most of the species were illustrated. The results of the identifications and the description of the new species will be given in the present paper. The thomisid fauna of Sakhalin will be discussed on the basis of the present materials.

Before going further, the authors wish to express their sincere thanks to Dr. A.M. BASARUKIN for his offering important specimens for this study.

Family Thomisidae SUNDEVALL, 1833

*Genus Oxytate* L. KOCH, 1878

*Oxytate striatipes* L. KOCH, 1878

(Figs. 1–2)


*Range.* East of Amur Area, Sakhalin, Hokkaido to Kyushu, Korea, China.

*Genus Xysticus* C.L. KOCH, 1835

*Xysticus sibiricus* KULCZYŃSKI, 1908

(Figs. 3–4)


*Range.* East of Yenisey to Sakhalin, Mongolia, China.

*Remark.* In Siberia, this spider is found under the barks of conifers.

*Xysticus luctuosus* (BLACKWALL, 1836)

(Figs. 5–7)


*Range.* Holarctic (boreonemoral).

*Xysticus rostratus* ONO, 1988

(Figs. 8–12)
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Figs. 1–12  1–2, *Oxytate striatipes* L. KOCH; 3–4, *Xysticus sibiricus* KULCZYŃSKI; 5–7, *X. luctuosus* (BLACKWALL); 8–12, *X. rostratus* ONO.–1, 3, 6, 11, Male palps (ventral view); 2, male palp (retrolateral view); 4, 7, 12, tibiae of male palps (retrolateral view); 5, 8–10, epigyna (8, from Kunashir Island, 9–10, from Sakhalin). (Scales: 0.1 mm.)

**Range**. Sakhalin, Kunashir Island, Hokkaido.

*Xysticus lepnevae* UTOCHKIN, 1968

(Figs. 13–16)


**Range**. East of Amur Area to South Primorye in the south, to Sakhalin in the east.

*Xysticus ephippiatus* SIMON, 1880

(Figs. 17–19)


**Range**. From Tashkent to East Siberia, Mongolia, China, Korea, Sakhalin, Kurile Islands, Hokkaido to Ryukyu Islands.

*Xysticus kurilensis* STRAND, 1907

(Figs. 20–22)


**Range**. South Sakhalin, Kunashir and Iturup Islands, Hokkaido, Honshu.

*Xysticus audax* (SCHRANK, 1803)

(Figs. 23–24)
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Range. Palearctic (boreal).

Genus Oxyptila Simon, 1864
Oxyptila sincera Kulczyński, 1926

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1 ♀, Lesnoye, 14-VI-1988.

Range. East of Yenisey to Kamchatka, Hokkaido, Honshu, North America.

Oxyptila atomaria (PANZER, 1810)
(Figs. 25–27)

Figs. 21–33 21–22, Xysticus kurilensis STRAND from Sakhalin; 23–24, X. audax (SCHRANK) from Sakhalin; 25–27, Oxyptila atomaria (PANZER); 28–32, O. balkarica OVTSHARENKO; 33, O. sakhalinensis ONO, MARUSIK et LOGUNOY sp. nov.—21, 26, 31, Male palps (ventral view); 22, 27, tibiae of male palps (retrolateral view); 23–25, 28–30, 33, epigyna (28–29, paratypes, 30, from Kolyma Area); 32, male palp (retrolateral view). (Scales: 0.1 mm.)
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Range. Palearctic (boreal).

Oxyptila trux (BLACKWALL, 1846)


Range. Palearctic (boreal).

Oxyptila balkarica OVTSHARENKO, 1979

(Figs. 28–32)


Range. Caucasus, Siberia (east of Lena), Sakhalin.

Oxyptila sakhalinensis sp. nov.

(Fig. 33)


Diagnosis. The new species belongs to the group of Oxyptila rauda SIMON, 1875, by having a simple and pit-like epigynum. The group is composed of a dozen of species distributed in the boreal regions (DONDALE & REDNER, 1975; HIPPA, KOPONEN & OKSALA, 1986). Of these species, Oxyptila rauda SIMON, 1875, O. arctica KULCZYŃSKI, 1908, O. pullata (THORELL, 1875) and their relatives possess a scape-like projection in the anterior part of epigynum and distinctly differ from the new species. Oxyptila sakhalinensis seems to be related to O. balkarica OVTSHARENKO, 1979, described from Caucasus and O. orientalis KULCZYŃSKI, 1926, known only from Kamchatka, but can be distinguished from these species by the structure of female genitalia. The vestibulum is separated into two parts by wide median septum and is not a large pit, and the margin of vestibulum is not furrowed (cf. Figs. 28–30, 33 and HIPPA et al., 1986, fig. 3 A–B).

Description. Total length 3.8~4.1 mm; cephalothorax 1.5~1.7 mm long, 1.4~1.5 mm wide, yellowish brown, darker marginated and with a blackish brown stripe on each side, chelicera chestnut-brown, sternum yellowish brown mottled with dark-brown. Tibiae of legs I and II with two pairs of ventral spines, metatarsi I and II with 0~1~1 pro- and retrolateral spines and two pairs of ventral ones, respectively.
Abdomen dark-brown with many small white spots on the sides. Epigynum with vestibulum separated into two parts by wide median septum, the margin of vestibulum not furrowed, guide pocket or projection in the anterior part absent.

**Genus Lysiteles SIMON, 1895**

*Lysiteles coronatus* (GRUBE, 1861)

(Figs. 34–36)


**Range.** East of Amur Area, Sakhalin, Kurile Islands, Hokkaido to Kyushu.

*Lysiteles maius* ONO, 1979

(Figs. 37–41)

Figs. 34–41 34–36, *Lysiteles coronatus* (GRUBE) from Sakhalin; 37–41, *L. maius* ONO.—34, 37–39, Epigyna; 35, 40, male palps (ventral view); 36, 41, tibiae of male palps (retrolateral view) (37, from Sakhalin, 38–41, from Kunashir Island). (Scales: 0.1 mm.)
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Genus Misumenops F.O. PICKARD-CAMBRIDGE, 1900

Misumenops tricuspidatus (FABRICIUS, 1775)

(Figs. 42–44)


Figs. 42–50 42-44, Misumenops tricuspidatus (FABRICIUS) from Sakhalin; 45–47, Diaea subdola O. PICKARD-CAMBRIDGE; 48–50, Pistiis undulatus KARSCH.—42, 48, Epigyna; 43, 45, 49, male palps (ventral view); 44, 47, 50, tibiae of male palps (retrolateral view); 46, male palp (retrolateral view) (45–46, Sakhalin, 47, holotype from Pakistan). (Scales: 0.1 mm.)

Range. Palearctic.

Genus Diaea THORELL, 1869
Diaea subdola O. PICKARD-CAMBRIDGE, 1885


Range. From Pakistan to Kunashir Island.

Remark. MARUSIK (in press) re-examined the male holotype of this species from Murree, Pakistan, and regarded Misumena japonica BOSENBERG et STRAND, 1906, as its junior synonym.

Genus Misumena LATREILLE, 1804
Misumena vatia (CLERCK, 1758)


Range. Holarctic (boreal).

Genus Pistius SIMON, 1875
Pistius undulatus KARSCH, 1879

Specimens examined. Sakhalin: Yuzhno-Sakhalinsk: 1 ♀, Tourist Valley, 27-VI-1985, 2 juv.,
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*Range.* Siberia, Sakhalin, Kurile Islands, Hokkaido to Kyushu, Korea, China.

**Zoogeographical Notes**

Through the present study, 18 species of the Thomisidae were recorded from Sakhalin, and 10 species were recorded from the Kurile Islands. Of the species from the previous records given in the introduction of this paper, *Xysticus ulmi* and *Misumena lutea* have not been recognized by the present authors. On the basis of the present materials, the thomisid fauna of Sakhalin was analyzed. It will be described in the following lines. The specimens from the Kurile Islands are still incomplete for a certain zoogeographical discussion.

The 18 species of the Thomisidae known from Sakhalin can be divided into three groups in their distributional patterns. The first group (I) consists of the five species which seem to be distributed in all the parts of the island: *Xysticus audax*, *Oxyptila sincera*, *O. atomaria*, *Lysiteles maius* and *Misumena vatia*. All these species have a wide distributional range. *Xysticus audax* and *Oxyptila atomaria* are Palearctic species, and *Misumena vatia* is a Holarctic one. *Oxyptila sincera* ranges from Japan to the eastern part of North America. *Lysiteles maius* is also widely distributed from Nepal to the Kurile Islands.

The second group (II) is composed of *Xysticus lepnevae*, *X. luctuosus*, *X. sibiricus*, *Oxyptila balkarica* and *O. sakhalinensis*. The cold climate is favorable to these species. They were collected only in the northern part in Sakhalin. Contrary to this, the remaining species, *Oxypate striatipes*, *Xysticus ephippatus*, *X. rostratus*, *X. kurilensis*, *Lysiteles coronatus*, *Misumenops tricuspidatus*, *Diaea subdola* and *Pistius undulatus*, were found only in the southern part in the island. They form the third group (III).

The ranges of the species belonging to the group II are restricted in boreal regions (may not be sufficient for *Xysticus lepnevae*), while those of the group III extend to the temperate regions in the south. *Oxypate striatipes*, *Lysiteles coronatus* and *Pistius undulatus* are distributed from Hokkaido to Kyushu (Yakushima Island). *Misumenops tricuspidatus*, *Diaea subdola* and *Xysticus ephippatus* are found even in the Ryukyu Islands influenced by the subtropical climate (ONO, 1988).

An interesting example was recognized in the two species, *Xysticus luctuosus* (group II) and *X. rostratus* (group III). Both the species are very closely related to each other. While the former species was found in Makarov and Poronaisk Districts in the northern part of Sakhalin, the latter one was collected in the southern part south of Tomari District. *Xysticus luctuosus* is a Holarctic species widely distributed from Europe to North America, and *X. rostratus* is distributed only in Sakhalin, Kunashir Island, Hokkaido and Honshu. This allopatry indicates that Sakhalin can be divided into two parts by a certain zoogeographical factor in the area between Uglegorsk and Makarov. Some similar results were already reported in insects and other animals as well as in plants.
Although the Strait of Sóya (La Pérouse) has generally been regarded as a northernmost border of the Oriental species in spiders (YAGINUMA, 1962), the boundary area established in the middle of the island (Fig. 52) (south of the SCHMIDT’s line) seems to play an important role in the distribution of thomisid spiders.

Figs. 51–52  51, Collecting sites in Sakhalin. A: Ten'ga River, Okha District, B: Mgatchi, Aleksandrovsk-Sakhalinski District, C: Aleksandrovsk-Sakhalinski, D: upper reaches of the Langeri River, Smirynkh District, E: Mt. Vozvrashcheniye, Matrosovka River, Smirynkh District, F: upper reaches of the Rukutama River, Poronaisk District, G: middle reaches of the Rukutama River, H: Nevskoye Lake, Poronaisk District, I: Nitui River, Makarov District, J: Pugatshevo, Makarov District, K: Ainskoye Lake, Tomari District, L: Firsovo, Dolinsk District, M: Chekhov Cape, Kholmsk District, N: Slepikovski Cape, Kholmsk District, O: Yuzhno-Sakhalinsk, P: Novoaleksandrovsk, Aniva District, Q: Petropavlovskoye Village, Lyutoga River, Aniva District, R: Aniva, S: Kirillovo Village, Aniva District, T: Mitsulyovka, Aniva District, U: Lesnoye, Korsakov District, V: 2nd to 3rd Pad’, Korsakov District, W: Utesnoye, Korsakov District.—52. Distribution of the thomisid spiders in Sakhalin (records of the species of the group I omitted). ○: Localities where the species of the group II (boreal) were collected, ●: localities where the species of the group III (temperate) were collected, ◦: locality where the species of both the groups were collected. [The island is clearly divided into the northern and the southern parts in the distribution of thomisid spiders by the area possibly between the two lines on the map (indicated by an arrow).] (Scale: 100 km.)
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Summary

Shpakov and Kishida noted that 300 specimens of spiders from the Sakhalin and Kurile Islands were collected. Among these, 19 species (including a new species) of Thomisidae were identified. This study provides a detailed examination of the morphology and classification of these spiders, focusing on their external and male genitalia. These findings are presented in the following references:

References


