An annotated checklist of the Thomisidae (Araneae) of the Bureinski Reserve and neighbouring regions, the Russian Far East

Laimonas A. Trilikauskas

Bureinski State Nature Reserve, Zelyonaya str. 3, Chegdomyn, Khabarovsk Territory, 682030 Russia

Summary

Twenty-three species of Thomisidae are recorded from seven habitats of the Bureinski Nature Reserve and neighbouring regions (Khabarovsk Territory, Russia). Most species show wide distributional patterns: trans-Palaearctic (five species), Siberio-Nearctic (four species), circum-Holarctic (four species). Boreal and boreo-nemoral species predominate in the studied thomisid fauna. The zone of larch forests is most diverse and contains eleven species.

Introduction

The present study was carried out in the Bureinski Reserve, lying in the basin of the Levaya and Pravaya Bureya rivers, and neighbouring areas (in the central part of Khabarovsk Territory, Russia; Fig. 1) and covering an area of 358,444 ha. The studied region is situated in the light coniferous (mostly larch) taiga zone. The upper forest limit lies from 900 to 1100 m a.s.l., and above it vast areas are occupied by mountain tundra. Dark coniferous (*Picea*) forests occur in river valleys and on slopes. Inundated habitats (mostly along river banks) are covered with poplar and *Chosenia* forests mixed with areas of patchy mixed meadows.

Of the 27 thomisid species recorded to date from Khabarovsk Territory (Kim & Kurenshchikov, 1995), ten were known previously from the studied area (Logunov *et al.*, 2001; Trilikauskas, 2000, 2005). According to the present data, 23 species of eight genera occur there (Table 1), of which eight species are reported from Khabarovsk Territory for the first time (marked with asterisks in the text). The aim of this work is to provide a complete checklist of the Thomisidae of the Bureinski Reserve.



This work is based on material collected by the author in 1999–2005. Traditional collecting methods were used (Trilikauskas, 2000). A total of 247 specimens has been collected and examined. Specimens for this study have been distributed among the following museums and personal collection: ISEA=Siberian Zoological Museum, Institute for Systematics and Ecology of Animals, Novosibirsk, Russia (Ms G. N. Azarkina), ZMVU=Zoological Museum of Vilnius University, Vilnius, Lithuania (Ms M. Biteniekite), PCLT=personal collection of L. A. Trilikauskas.

The following abbreviations are used in the text: BR=Bureinksi Reserve; KT=Khabarovsk Territory; LT=Laimonas Trilikauskas; nr=near.

Survey of species

*Coriarachne depressa (C. L. Koch, 1837)

Habitat: A single specimen was collected in *Larix–Betula* forest from a larch trunk.

Distribution: Trans-Palaearctic boreo-nemoral range (Marusik *et al.*, 2000). New record for Khabarovsk Territory.

Material examined: 1
♀ (PCLT), KT, nr Chegdomyn, 22 September 2003, LT.

Lysiteles maius Ono, 1979

Habitat: A single specimen was collected from an inundated meadow.

Distribution: Siberio-Manchurian nemoral range, but unlike other species with a similar distributional pattern (*T. rimosus* and *P. undulatus*), *L. maius* has also been recorded from Nepal (see Ono *et al.*, 1990; Logunov, 1990).

Material examined: 1º (PCLT), KT, BR, upper reaches of River Kuraigagna, nr Lake Medvezhie, 27 June 2002, LT.

Misumena vatia (Clerck, 1758)

Habitat: This is a very common species in anthropogenic landscapes, mixed meadows and inundated *Salix* forests. Also this species has been found in *Larix* forests. The spider hunts for insects on *Spiraea*, *Ledum*, *Salix* flowers and other plants (Trilikauskas, 2001).

Distribution: Circum-Holarctic polyzonal range (Marusik *et al.*, 2000).

Material examined: 1[°] (ISEA), KT, Chegdomyn, 27 March 1999, LT; 2[°] 7[°] (ISEA), same locality, 23 May–10 June 1999, LT; 2[°] (ISEA), same locality, 27 May 2000, LT; 1[°] (ISEA), BR, Pravaya Bureya river valley, *c*. 45 km SE of Sofiysk, nr mouth of River Medvezhiy, 3 July 2000, LT; 1[°] (ISEA), KT, Verchnebureinsky Distr., nr Sofiysk, Olga river valley, 8 September 2000, LT; 1[°] (ISEA), KT, *c*. 4 km E of Chegdomyn, Chegdomyn river valley, 13 May 2001, LT; 1[°] 1[°] (ISEA), Bureya river valley, *c*. 6 km upstream of Usman river mouth, 28 June–8 July 2001, LT; 1[°] (ISEA), Bureya river valley, nr Adnikan river mouth, 4 September 2001, LT.

Ebrechtella tricuspidata (Fabricius, 1775)

Habitat: The only specimen was collected in mixed meadow.

Distribution: Trans-Palaearctic nemoral range (Ono et al., 1990).

* Ozyptila arctica Kulczyński, 1908

Habitat: Mountain tundra.

Distribution: (Sub)Circum-Holarctic hypoarctomontane range; in the Nearctic it is known from NW regions only (Marusik *et al.*, 2000). New record for Khabarovsk Territory.

Material examined: 13 49 (PCLT, ZMVU), KT, BR, Pravaya Bureya river valley, headwater of River Lednikoviy, 8 July 2005, LT; 19 (PCLT), same locality, 8–19 July 2005, LT.

*Ozyptila atomaria (Panzer, 1801)

Habitat: The only specimen was collected in mixed meadow.

Distribution: Trans-Palaearctic boreo-nemoral range (Marusik *et al.*, 2000), though the species is likely to be under-recorded. New record for Khabarovsk Territory.

Material examined: 13 (PCLT), KT, nr Chegdomyn, 15–22 September 2000, LT.

Ozyptila sincera Kulczyński, 1926

Habitat: This species is rather common in *Larix* and *Picea* forests, and also occurs in *Betula* and *Populus* forests.

Distribution: Siberio-trans-Nearctic boreal range (Marusik *et al.*, 2000).

Material examined: 75 12 (PCLT, ISEA), KT, BR, Bureya river valley, *c*. 100 km NE of Chegdomyn, *c*. 3.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 15–21 June 2001, 21–27 June 2001, LT; 25 (ISEA), KT, BR, Levaya Bureya river valley, nr mouth of River Chapkhoz, 23–26 June 2001, LT; 35 22 (PCLT), KT, Bureya river valley, *c*. 6 km upstream of mouth of River Usman, 28 June–5 July 2001, LT; 15 59 (ISEA), KT, BR, Bureya river valley,

c. 100 km NE of Chegdomyn, *c.* 2.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 1–11 July 2002, 15 August–4 September 2002, LT.

Pistius undulatus Karsch, 1879

Habitat: This species was found in a larch forest and in mountain tundra.

Distribution: Siberio-Manchurian nemoral range (Marusik *et al.*, 2000).

Material examined: 19 (PCLT), KT, Verchnebureinski Distr., 5–6 km SE of Chegdomyn, 4 June 2002, LT; 13 (PCLT), KT, BR, Pravaya Bureya river valley, headwater of River Lednikoviy, 21 July 2005, P. Korob.

Tmarus rimosus Paik, 1973

Habitat: The only specimen was collected in mixed meadow.

Distribution: Siberio-Manchurian nemoral range (Marusik *et al.*, 2000).

Material examined: 13 (PCLT), KT, Verchnebureinski Distr., nr Ust'-Urgal, Bureya river valley, 25 May 2005, LT.

*Xysticus albidus Grese, 1909

Habitat: Collected from pebble river banks.

Distribution: Trans-Palaearctic hypoarcto-boreal range (Marusik, 2005). Reported from Khabarovsk Territory for the first time and the first record from the continental regions of the southern part of the Russian Far East.

Material examined: 1d (PCLT), KT, BR, *c*. 110 km NE of Chegdomyn, 3–4 km upstream of mouth of River Lan, 28 June 2002, LT.

Species	Habitat*	Zoogeographical distribution	Zonal distribution
Coriarachne depressa (C. L. Koch, 1837)	1	Trans-Palaearctic	boreo-nemoral
Lysiteles maius Ono, 1979	2	Siberio-Manchurian	nemoral
Misumena vatia (Clerck, 1758)	1, 2, 3	Circum-Holarctic	polyzonal
Ebrechtella tricuspidata (Fabricius, 1775)	3	Trans-Palaearctic	nemoral
Ozyptila arctica Kulczyński, 1908	4	(Sub)Circum-Holarctic	hypoarcto-montane
Ozyptila atomaria (Panzer, 1801)	3	Trans-Palaearctic	boreo-nemoral
Ozyptila sincera Kulczyński, 1926	1, 2, 6	Siberio-trans-Nearctic	boreal
Pistius undulatus Karsch, 1879	1, 4	Siberio-Manchurian	nemoral
Tmarus rimosus Paik, 1973	3	Siberio-Manchurian	nemoral
Xysticus albidus Grese, 1909	7	Trans-Palaearctic	hypoarcto-boreal
Xysticus audax (Schrank, 1803)	1, 5	Trans-Palaearctic	boreo-nemoral
Xysticus britcheri Gertsch, 1934	1	Siberio-trans-Nearctic	boreal
Xysticus canadensis Gertsch, 1934	4	Circum-Holarctic	boreal
Xysticus emertoni Keyserling, 1880	1, 2, 5, 7	Siberio-trans-Nearctic	boreo-nemoral
Xysticus ephippiatus Simon, 1880	3, 5	East-Palaearctic	boreo-nemoral
Xysticus hedini Schenkel, 1936	2	Mongolo-Manchurian	nemoral
Xysticus latitabundus Logunov, 1995	2	Manchurian	nemoral
Xysticus obscurus Collett, 1877	1	Circum-Holarctic	boreo-nemoral
Xysticus rugosus Buckle & Redner, 1964	4	Siberio-West Nearctic	boreal
<i>Xysticus sibiricus</i> Kulczyński, 1908	1, 6	Siberian	boreal
Xysticus soldatovi Utochkin, 1968	2	Manchurian	nemoral
Xysticus vachoni Schenkel, 1963	1, 2	Siberio-Manchurian	boreal
Xysticus wunderlichi Logunov, Marusik & Trilikauskas, 2001	1, 5	Mongolo-Manchurian	nemoral

 Table 1: Habitat preferences and zoogeographical and zonal distribution of the thomisid species of the Bureinski Reserve. *1=larch forest;

 2=inundated habitats;
 3=mixed meadows;
 4=mountain tundra;
 5=anthropogenic landscapes;
 6=dark coniferous forest;
 7=riverbanks.

Xysticus audax (Schrank, 1803)

Habitat: Collected in anthropogenic landscapes, also in *Tilia–Betula–Larix*, *Betula–Alnus* and *Betula–Larix* forests.

Distribution: Trans-Palaearctic boreo-nemoral range (Marusik *et al.*, 2000).

Material examined: 13 (PCLT), KT, Chegdomyn, 23 May 2000, LT; 13 (PCLT), same locality, 27 May 2002, LT; 13 (PCLT), 3–4 km SE of Chegdomyn, Chegdomyn river valley, 4 June 2002, LT; 19 (PCLT), KT, Verchnebureinski Distr., nr Ust'-Urgal, Bureya river valley, 26 May 2005, LT.

Xysticus britcheri Gertsch, 1934

Habitat: This species is common in all types of *Larix* forests, also collected in *Carex* swamps.

Distribution: Siberio-trans-Nearctic boreal range (Marusik *et al.*, 2000).

Material examined: 13 (ISEA), KT, Chegdomyn, 2 June 2000, LT; 43 89 (ISEA), KT, BR, Pravaya Bureya river valley, *c*. 45 km SE of Sofiysk, nr mouth of River Medvezhiy, 17 June-4 August 2000, LT; 43 (ISEA), KT, BR, Bureya river valley, *c*. 100 km NE of Chegdomyn, *c*. 3.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 15–27 June 2001, LT; 53 (ISEA), KT, Bureya river valley, *c*. 6 km upstream of mouth of River Usman, 28 June–10 July 2001, LT; 63 39 (ISEA), KT, BR, Bureya river valley, *c*. 100 km NE of Chegdomyn, *c*. 2.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 1 July–5 August 2002, LT; 13 (ZMVU), same locality, 29 June 2004, LT; 13 (PCLT), KT, BR, Levaya Bureya river valley, nr mouth of River Kuraigagna, 18 August 2004, LT.

*Xysticus canadensis Gertsch, 1934

Habitat: Mountain tundra.

Distribution: Circum-Holarctic boreal range (Marusik & Logunov, 1994; Marusik, 2005). New record for Khabarovsk Territory.

Material examined: 63 (PCLT, ISEA), KT, BR, Pravaya Bureya river valley, headwater of River Lednikoviy, 8–25 July 2005, LT.

Xysticus emertoni Keyserling, 1880

Habitat: This species is very common in *Larix* forests, and also inhabits inundated poplar forests, pebble river banks and anthropogenic landscapes.

Distribution: Siberio-trans-Nearctic boreo-nemoral range (Marusik *et al.*, 2000).

Material examined: 1º (ISEA), KT, Chegdomyn, 10 June 1999, A. G. Blyummer; 18 19 (ISEA), same locality, July 2000, A. G. Blyummer; 2d (ISEA), same locality, 26 May-18 October 2001, LT; 13 (ISEA), same locality, 19 May 2002, LT; 13 (ISEA), KT, nr Chegdomyn, Satanka, 4 June 2002, LT; 25 (ISEA), KT, c. 3 km E of Chegdomyn, 20 May-25 June 2001, LT; 13 (PCLT), same locality, 22-29 June 1999, LT; 33 (ISEA), same locality, 15 May 2000, 31 May 2000, 2 June 2000, LT; 11of 59 (ISEA), KT, BR, Pravaya Bureya river valley, c. 45 km SE of Sofiysk, nr mouth of River Medvezhiy, 8 June-9 July 2000, LT; 2º (ISEA), KT, Verkhnebureinski Distr., c. 45 km SE of Sofiysk, nr Kurumkan Mt., 18–24 June 2000, LT; 43 (ISEA), KT, BR, Levaya Bureya river valley, nr mouth of River Chapkhoz, 23–26 June 2001, LT; 2
ở (ISEA), KT, Bureya river valley, c. 6 km upstream of mouth of River Usman, 5-7 July 2001, LT; 263 29 (ISEA), KT, BR, Bureya river valley, c. 100 km NE of Chegdomyn, 3.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 15-27 June 2001, LT; 19 (ZMVU), same locality, 24 August 2004, LT; 128 19 (ISEA), KT, BR, c. 2.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 1-11 July 2002, 25–30 August 2002, LT; 1 ${\rm d}$ (ISEA), KT, BR, Levaya Bureya river valley, nr mouth of River Lan, 28 June 2002, LT.

Xysticus ephippiatus Simon, 1880

Habitat: Specimens were collected in anthropogenic landscapes and a mixed meadow.

Distribution: East-Palaearctic boreo-nemoral range (Marusik *et al.*, 2000).

Material examined: 13 (PCLT), KT, Chegdomyn, 31 May 2000, LT; 13 (ISEA), KT, Verkhnebureinski Distr., Bureya river valley, nr mouth of River Niman, 20 June 2003, LT.

Xysticus hedini Schenkel, 1936

Habitat: All specimens were found in *Carex* swamps and among flood-land bushes.

Distribution: Mongolo-Manchurian nemoral range (Marusik *et al.*, 2000).

Material examined: 2° (PCLT), KT, Chegdomyn, Satanka, Chegdomyn river valley, 8 October 2000, LT; 6° (PCLT, ISEA), KT, same locality, 10–13 May 2001, LT.

*Xysticus latitabundus Logunov, 1995

Habitat: This species was found in Populus-Chosenia forest.

Distribution: Manchurian nemoral range. This is the northernmost record of *X. latitabundus*, which was hitherto recorded from Kedrovaya Pad Reserve and Bikin river valley (Logunov, 1995). New record for Khabarovsk Territory.

Material examined: 23 (ISEA), KT, Verchnebureinski Distr., nr Chekunda, 14–18 May 2001, LT.

*Xysticus obscurus Collett, 1877

Habitat: The single specimen was found in a larch forest in a river valley.

Distribution: Circum-Holarctic boreo-nemoral range (Logunov & Marusik, 1998; Marusik *et al.*, 2000). New record for Khabarovsk Territory.

Material examined: 1º (PCLT), KT, BR, basin of River Pravaya Bureya, Bureika river valley, nr mouth of River Syuryuktak, 30 July 2005, LT.

*Xysticus rugosus Buckle & Redner, 1964

Habitat: Mountain tundra.

Distribution: Siberio-West Nearctic boreal range (Marusik *et al.*, 2000). New record for Khabarovsk Territory.

Material examined: 23 (ZMVU, PCLT), KT, BR, upper reaches of River Pravaya Bureya, nr headwater of River Lednikoviy, 30 June 2000, LT.

Xysticus sibiricus Kulczyński, 1908

Habitat: This is a rather common species in *Picea* and *Larix* forests.

Distribution: Siberian boreal range (Marusik *et al.*, 2000).



Fig. 2: Habitat preferences of thomisid species of the Bureinski Nature Reserve.

Material examined: 1ở 2¢ (ISEA), KT, BR, Pravaya Bureya river valley, *c*. 45 km SE of Sofiysk, nr mouth of River Lednikoviy, 8–13 June 2000, LT; 1ở 3¢ (ISEA), KT, Verkhnebureinski Distr., *c*. 40 km SE of Sofiysk, upper reaches of River Niman, 18 June 2000, LT; 1ở (PCLT), KT, same distr., *c*. 45 km SE of Sofiysk village, nr Kurumkan Mt., 18–24 June 2000, LT; 5ở 10¢ (ISEA), same locality, nr mouth of River Medvezhiy, 20 June–10 July 2000, LT; 1¢ (ISEA), KT, BR, Pravaya Bureya river valley, nr mouth of River Bureika, 19 July 2000, LT; 1ở (ISEA), KT, Bureya river valley, 6 km upstream of mouth of River Usman, 30 June 2001, LT; 2¢ (ISEA), KT, BR, *c*. 1 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 11 July–13 August 2002, LT.

Xysticus soldatovi Utochkin, 1968

Habitat: This species is common in inundated *Betula* and *Populus* forests.

Distribution: Manchurian nemoral range (Utochkin, 1968).

Material examined: 2*ö* (PCLT, ISEA), KT, BR, Pravaya Bureya river valley, *c*. 300 m upstream of river mouth, 4–8 July 2002, LT; 1*ö* (PCLT), same locality, 7–12 July 2004, LT; 1*ö* (PCLT), KT, BR, *c*. 1 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 3–8 July 2002, LT; 1*ö* (ZMVU), same locality, 8–13 July 2003, LT; 2*ö* (PCLT), same locality, 18–26 June 2004, LT; 1⁹ (PCLT), KT, Bureya river valley, nr mouth of River Niman, 21 June 2003, LT.

Xysticus vachoni Schenkel, 1963

Habitat: This species inhabits *Larix* forests. A single specimen was also found in inundated habitat.

Distribution: Siberio-Manchurian boreal range (Marusik *et al.*, 2000).



Fig. 3: Compositiuon of zoogeographical elements of the thomisid fauna of the Bureinski Nature Reserve.

Material examined: 3[°] (ISEA), KT, BR, Pravaya Bureya river valley, c. 45 km SE of Sofiysk, nr mouth of River Medvezhiy, 14 June–5 August 2000, LT; 3[°] 3[°] (PCLT, ISEA), same locality, nr mouth of River Lednikoviy, 18 July–4 August 2000, LT; 1[°] (ISEA), KT, BR, c. 2.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 30 July 2002, LT; 1[°] (PCLT), same locality, 2 August 2004, LT; 1[°] (PCLT), KT, BR, Levaya Bureya river valley, nr mouth of River Kuraigagna, 18 August 2004, LT.

Xysticus wunderlichi Logunov, Marusik & Trilikauskas, 2001

Habitat: This species inhabits swamps with sparse growth of *Larix* trees. Also collected in anthropogenic landscapes.

Distribution: Mongolo-Manchurian nemoral range; known from southern Siberia, from northern Mongolia in the west to the southern part of Khabarovsk Territory in the east (Logunov *et al.*, 2001).

Material examined: 2ð (PCLT), KT, BR, *c*. 3.5 km downstream of confluence of Rivers Pravaya and Levaya Bureya, 21–27 June 2001, LT; 2ð (ISEA), same locality, *c*. 6 km upstream of Usman river mouth, 2–6 July 2001, LT; 1ð (ISEA), KT, Chegdomyn, 17 May 2003, LT.

Discussion

Figure 2 and Table 1 show the habitat preferences of crab-spiders in the studied area. Most species (11) were recorded from larch forests. Xysticus emertoni, X. britcheri, X. vachoni and Ozyptila sincera were dominants there. It should be noted that X. emertoni occupied a wide spectrum of habitats from low elevations to mountains at 2000 m a.s.l., and it was also quite common in anthropogenic landscapes (even in dwelling houses). In inundated habitats, X. soldatovi and O. sincera were very common. The thomisid fauna of mixed meadows included mainly nemoral elements. Xysticus canadensis and O. arctica were very common in the mountain tundra. Pistius undulatus was recorded from mountain tundra for the first time; previously it had been reported as a species of river valley meadows and glades of mixed taiga forests (see Logunov, 1990; Logunov & Marusik, 1994). Xysticus sibiricus and O. sincera were very common in dark (Picea) coniferous forests.



Fig. 4: Composition of zonal elements of the thomisid fauna of the Bureinski Nature Reserve.

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The structure of zoogeographical elements (Fig. 3) is rather heterogeneous, and species with wide distributional ranges predominate. The high percentage of Manchurian, Siberio- and Mongolo-Manchurian species indicates that the studied crab-spider fauna is transitional between Siberia and Manchuria. The composition of zonal elements is also heterogeneous (Fig. 4), but nemoral (36%), boreal (26%) and boreal-nemoral (26%) species clearly predominate and are represented almost equally. This fact also indicates that the studied crab-spider fauna is of a transitional nature.

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