

## THE ZOOGEOGRAPHICAL – CHOROLOGICAL REVIEW OF THE SPIDERS (FAMILY *THOMISIDAE*) OF GEORGIA

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### Abstract

Chorological study of the family *Thomisidae* of Georgia has shown that 3 genera are world tropical, 2 genera – Holarctic, and one by one genus belongs to the following zoogeographical units: Palaearctic – Ethiopian – Oriental – Australian – Neotropical, Holarctic-Neotropical, Palaearctic-Ethiopian-Neotropical, Palaearctic-Ethiopian, Central Eurasian, Ethiopian-Holarctic -Neotropical. It was established that allochthonous element (11 genera, 37 species) prevails on autochthonous element (3 genera, 13 species). From autochthonous fauna with South Caucasian distribution characterized 3 genera, 10 species, quasi-Caucasian – 2 genera, 3 species. From allochthonous fauna with Holarctic distribution characterized 2 genera, 2 species, with Palaearctic – 8 genera, 25 species, with Palaearctic-Ethiopian – (1 genus, 1 species), with wide Mediterranean – (2 genera, 4 species); with Europe-Siberian (1 genus, 1 species); with Euro-Europe-Siberian (3 genera, 4 species).

**Key words:** Taxonomy, zoogeography, chorology, *Thomisidae*.

### Introduction

11 genera and 50 species of the family *Thomisidae* were registered [Mkheidze, 1992; Mikhailov, 1997].

The family *Thomisidae* today comprises following genera: *Xysticus* Koch - 28; *Oxyptila* Sim.- 7; *Synaema* Sim.- 4; *Tmarus* Sim.- 3; *Heriades* Sim.- 2; and one by one species of *Rucinus* Sim., *Pisticus* Sim., *Dia* Thor., *Thomisus* Walck., *Misumena* Latr., *Misumenops* Pick-Cambre [Mkheidze, 1992; Mikhailov, 1997].

Studies of spiders fauna of the family *Thomisidae* in different landscape zones and altitudinal mountain belts in Georgia were carried out from the beginning of 20<sup>th</sup> century, but in ecological and zoogeographical viewpoint it was not discussed till recent time.

### Materials and Methods

Materials have been collected during 2000-2004 in Georgia. To precise the list of species of the family *Thomisidae* with some information about their geographical distribution, scientific sources were used [Mkheidze 1992; Mikhailov 1997].

## Results and Discussion

Chorological study of the family *Thomisidae* of Georgia (Table 1) have shown that 3 genera have the world tropical distribution (*Tmarus* Sim; *Diae* Thor; *Thomisus* Walck.) [National Science Museum, Tokyo 1988], 2 genera – Holarctic (*Xysticus* Koch; *Oxyptila* Sim.) [Gertsch, 1953; National Science Museum, Tokyo, 1988], and one by one genus belongs to the following zoogeographical units: Holarctic-Neotropical (*Misumenops* Pick-Camb.), Palaearctic-Ethiopian-Neotropical (*Synaema* Simon), central-Eurasian (*Pisticus* Sim.), Ethiopian-Holarctic-Neotropical (*Misumena* Latr.), Palaearctic-Ethiopian (*Heriatus* Sim.), Palaearctic – Ethiopian – Oriental – Australian – Neotropical (*Bucinia* Sim.) [National Science Museum, Tokyo, 1988].

Thus, according to the zoogeographical-chorological studies of species of spiders fauna of the family *Thomisidae*, it was established that allochthonous element (11 genera, 37 species) prevails on autochthonous one distributed in Georgia (3 genera, 13 species).

From autochthonous fauna with South Caucasian distribution characterized 3 genera, 10 species *Xysticus* kochi, abchasicus sub. sp.n. Mkhaidze, *X. gallicus* Sim., batumiensis sub. sp.n. Mkhaidze, *X. kalandadze*, *X. caucasicus*, *X. charitonovi*, *X. adsharicus*, *X. nubilis*, *Ox. mingrelica*, *Synaema caucasicus*, S.richteri) [Mkhaidze, 1992; Mikhailov, 1997]; quasi-Caucasian - 2 genera, 3 species (*X. urbrinus*, *X. bacuriensis*, *Synaema globosum* (F) dagestanicum) [Mkhaidze, 1992; Mikhailov, 1997; National Science Museum Tokyo, 1988].

From allochthonous fauna with Holarctic distribution characterized 2 genera, 2 species (*Misumena valia*, *Oxyptila praticola*) [Gertsch, 1953; Mkhaidze, 1992], with Palaearctic - 8 genera, 25 species (*Xysticus andar*, *X. cristatus*, *X. kochi*, *X. Cambriget*, *X. kulmi*, *X. acerbus*, *X. luctuosus*, *X. lineatus*, *X. kampelae*, *X. virgatipes*, *X. nitens*, *X. sabulosus*, *X. robustus*, *X. tristami*, *Oxyptila lugubris*, *Ox. conostyla*, *Ox. scarbicula*, *Synaema globosum*, *Tmarus piger*, *Th. stellio*, *Th. horvathi*, *Heriatus oblongus*, *Bucinia lateralis*, *Diae dorsata*, *Misumenops tricuspidatus*) [Mkhaidze, 1992; Mikhailov, 1997; National Science Museum Tokyo, 1988], with Palaearctic–Ethiopian - 1 genus, 1 species (*Tomisus onanus*), with wide Mediterranean - 2 genus, 4 species (*Xysticus marmoratus*, *X. cribratus*, *X. banduchii*, *Heriatus hirtus*), with Europe-Siberian - 1 genus 1 species (*Xysticus ukrainicus*), with Euro-Europe-Siberian - 3 genera, 4 species (*Xysticus gallicus*, *X. lanio*, *Oxyptila trix*, *Pisticus truncatus*) [Mkhaidze, 1992; Azheganova, 1968; Mikhailov, 1997; Tyshchenko, 1971; Utotchkin, 1989, 1964].

Table 1. Data of Zoogeographical-Chorological Studies of Species of Spiders (Family

	Genera, species	Distribution	Zoogeographical area
1	<i>Xysticus</i> (Koch 1835)	Palaearctic (Eurasia, North Africa), North America.	Holarctic
1	<i>Xandax</i> (Schrank, 1803) [= <i>X. pini</i> (Abab., 1831)]	Northern Eurasia, Russia, Carpathians, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Georgia), Middle Asia (Uzbekistan, Kirghizia, Tajikistan), Kazakhstan, the Ural, South Siberia, continental Southern Far-East (Amur-Maritime area), Sakhalin and Moneron Islands, Southern Kurile Islands, Japan (Hokaido, Honshu).	Palaearctic
2	<i>X. cristatus</i> (Clowck, 1758) [= <i>X. viaticus</i> (C.L. 1758)]	North Africa, Europe, Russian, Carpathians, Estonia, Latvia, Lithuania, Byelorussia,	Palaearctic

<sup>1</sup> *Xandax* considered as general species of Neozarctic and Palaearctic fauna [Utotchkin 1964; Mkhaidze 1992]

3	<i>X.kochi</i> (Thor., 1972)	Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Kirgizia, Tajikistan), Kazakhstan, South Siberia, the Urals, Mediterranean countries (Syria, Tunisia), Russia, Carpathians, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), Middle Asia (Turkmenistan), Kazakhstan, the Urals, South Siberia, Georgia.	Palaearctic
4	<i>X.koch.abchasicus</i> sub. sp.n. (Mkheidze, Utotshkin, 1971)	(endemic of Georgia).	South Caucasian
5	<i>X.gallicus</i> (Sim., 1895)	Asia Minor, France, Switzerland, Russia (North Caucasus), Carpathians, Ukraine, Moldavia, South Caucasus (Georgia), the Urals.	Euro-Europe Siberian
6	<i>X.gallicus</i> Sim., <i>betumiensis</i> sub. sp.n. (Mkheidze et Utotshkin, 1971)	Georgia (endemic of Georgia).	South Caucasian (According Mkheidze, 1992)
7	<i>X.umbrius</i> (Utotshkin, 1968)	North Caucasus (Russian), South Caucasus (Georgia) (endemic of Caucasus)	Caucasian
8	<i>X.Cambridgei</i> (Blakw., 1858) [= <i>X.luctator</i> (Koch, 1870). (= <i>X.impavidus</i> (Thor., 1872))]	Russian, Estonia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), the Urals, Middle Asia.	Palaearctic
9	<i>X.ulmi</i> (Hahn., 1831) [= <i>X.bivittatus</i> (Westw., 1861)]	Russian, Carpathians, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Kirgizia), Kazakhstan, South Siberia, the Urals, Sakhalin and Moneron Islands, Japan.	Palaearctic
10	<i>X.kalandaze</i> (Mkheidze, Utotshkin, 1971)	Georgia (endemic of Georgia).	South Caucasian
11	<i>X.ukrainicus</i> (Utotshkin, 1968)	North Caucasus (Russia) South Caucasus (Georgia), the Urals.	Europe-Siberian
12	<i>X.lanio</i> (Koch, 1835)	Russia, Carpathians, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), South Siberia, the Urals.	Euro-Europe- Siberian
13	<i>X.acerbus</i> (Thor., 1872)	South Europe, Turkey, Russia, Carpathians, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Turkmenistan, Tajikistan), Kazakhstan, Siberia, continental southern Far East (Amur-Maritime area).	Palaearctic
14	<i>X.luctosus</i> (Blakw., 1836)	Russia, Estonia, Latvia, Byelorussia, Ukraine, Moldavia, South Caucasus (Georgia), Middle Asia (Uzbekistan).	Palaearctic

15	<i>X. lineatus</i> (Westw., 1851)	Kazakhstan, the Urals, South Siberia, Kamchatka, Sakhalin and Moneron Islands, China.	Palearctic
16	<i>X. caucasicus</i> (Koch, 1872)	Georgia (endemic of Georgia)	South Caucasian
17	<i>X. campestris</i> (Thor., 1872) [= <i>X. flavus</i> (Horn., 1879)]	Middle Europe, Carpathians, Russia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Turkmenistan).	Palearctic
18	<i>X. strabus</i> (Koch, 1870) [= <i>X. perogaster</i> (Thor., 1872)]	Kazakhstan, the Urals, Russia, Carpathians, Byelorussia, Ukraine, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Kirgizia).	Palearctic
19	<i>X. nivalis</i> (Thorell, 1872)	Kazakhstan, the Urals, South Siberia, China, Mediterranean countries (south Europe), Russia, Lithuania, Ukraine, South Caucasus (Armenia, Azerbaijan, Georgia), Middle Asia (Uzbekistan, Turkmenistan).	Palearctic
20	<i>X. subulatus</i> (Hahn., 1831)	Kazakhstan, the Urals, South Siberia, Mediterranean countries (Tunisia), Russia, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia, the Urals.	Palearctic
21	<i>X. narmouratus</i> (Thor., 1875)	Mediterranean countries, Ukraine, South Caucasus (Georgia).	Wide Mediterranean
22	<i>X. ebarnonavi</i> (Mkheidze, 1971)	Georgia (endemic of Georgia).	South Caucasian
23	<i>X. dacuriensis</i> (Mkheidze, 1971)	South Caucasus (Georgia), North Caucasus (Russia).	Caucasian
24	<i>X. cribratus</i> (Sim., 1885)	Mediterranean countries (south Europe), South Caucasus (Azerbaijan, Georgia).	Wide Mediterranean
25	<i>X. adsharicus</i> (Mkheidze, 1970)	Georgia (endemic of Georgia).	South Caucasian
26	<i>X. subulatus</i> (Hahn., 1831) [= <i>X. fixus</i> (Koch, 1837)]	Mediterranean countries (south Europe, North Africa), Estonia, Latvia, Lithuania, Ukraine, South Caucasus (Georgia), Middle Asia (Uzbekistan), Kazakhstan, the Urals, South Siberia.	Palearctic
27	<i>X. irani</i> (Camb., 1872)	Mediterranean countries (Syria, Libya, Palestine, Jerusalem), South Caucasus (Azerbaijan, Georgia), Middle Asia (Turkmenistan, Tajikistan, Kirgizia, Uzbekistan), Kazakhstan, Georgia.	Palearctic
28	<i>X. umbellus</i> (Simon, 1875)		South Caucasian (According Mkheidze, 1992)
2	<i>Oxyptila</i> (Sim., 1869)		Holarctic

			(According to National Science Museum, Tokyo, 1988) South Caucasian
29	<i>Ox. mingrelica</i> (Mkheidze, 1970)	Georgia (endemic of Georgia)	
30	<i>Ox. praticola</i> (Koch, 1837)	Russia, Estonia, Latvia, Byelorussia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Kirgizia, Tajikistan), Kazakhstan, the Urals, South Siberia, North America (Washington).	Holarctic
31	<i>Ox. lugubris</i> (Croneb., 1875)	Mediterranean countries, Ukraine, South Caucasus (Armenia Azerbaijan, Georgia), Middle Asia (Uzbekistan, Turkmenistan, Kirgizia, Tajikistan) Kazakhstan, west Siberia.	Palearctic
32	<i>Ox. trux</i> (Blakw., 1846)	Russia, Estonia, Carpathians, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), the Urals, South Siberia, southern Kurile Islands.	Euro-Europe-Siberian
33	<i>Ox. bauduieri</i> (E.S., 1875)	France, Portugal, European countries of the former Soviet Union, South Caucasus (Georgia)	Wide Mediterranean
34	<i>Ox. conostyla</i> (Hippa, Koponen, Oksala, 1986)	Middle Asia (Turkmenistan), Asia Minor South Caucasus (Azerbaijan, Georgia).	Palearctic
35	<i>Ox. scarbicularia</i> (Westring, 1851)	Russia, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Middle Asia (Uzbekistan, Kirgizia), Kazakhstan, the Urals, South Siberia	Palearctic
3	<i>Synaema</i> (Simon, 1864)	Eurasia, Africa, South America.	Palearctic-Ethiopian-Neotropical
36	<i>S. caucasum</i> (Utotshkin, 1960)	Georgia (endemic of Georgia)	South Caucasian
37	<i>S. globosum</i> (Fabr., 1775)	Mediterranean countries (south Europe, Turkey, North Africa, Canary Isl., Spain), Carpathians, Russia, Ukraine, Moldavia, Moldavia, South Caucasus (Azerbaijan, Georgia), Kazakhstan, Middle Asia (Kirgizia, Tajikistan), the Urals, south Siberia, continental south Far East (Amur-Maritime Area), China, Mongolia, Japan (Hokaido, Honshu, Shikoku, Kyushu).	Palearctic
38	<i>S. globosum</i> (f) <i>dagestanicus</i> (Utotshkin, 1960)	North Caucasus (Dagestan), South Caucasus (Georgia)	Caucasian
39	<i>S. richteri</i> (Utotshkin, 1960)	South Caucasus Armenia, Georgia, (endemic of south Caucasus)	South Caucasian
4	<i>Tmarus</i> (Sim., 1875)		World tropical (According to

Palearctic

Palearctic

Palearctic

Palearctic-  
EthiopianWide  
Mediterranean

Palearctic

Palearctic-  
Ethiopian-  
Oriental-  
Australian-  
Neotropical

Palearctic

Central Eurasian  
(According to  
National Science  
Museum, Tokyo,  
1988)Euro-Europe-  
Siberian  
Ethiopian-  
Holarctic-  
Neotropical

Holarctic

40 *Tim piger* (Walc., 1802)

Spain, Russia, Carpathians, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), Kazakhstan, the Urals, South Siberia, continental southern Far-East (Amur-Maritime area), Japan (Hokaido, Honshu, Kyushu).

41 *Tim stellia* (Simon, 1875)

Mediterranean Countries (South Europe), Central Asia, North Caucasus (Russia), South Caucasus (Georgia), Japan.

42 *Timborvathi* (Kulcz., 1835)

North Caucasus (Russia), South Caucasus (Azerbaijan, Georgia), Middle Asia (Turkmenistan), continental Southern Far East (Amur-Maritime area).

5 *Hersiens* (Simon, 1875)

Eurasia, Africa.

43 *H. hirtus* (Latt., 1819)  
[=*H. tevignyi* (Simon,  
1875)]

South Europe, Estonia, Ukraine, North Caucasus (Russia), South Caucasus (Georgia)

44 *Hoblingus* (Simon, 1918)

Spain, Russia, Carpathians, Ukraine, Moldavia, South Caucasus (Azerbaijan, Georgia), Kazakhstan, Middle Asia (Turkmenistan, Kirgizia, Uzbekistan), the Urals, China, Mongolia.

6 *Bucunia* (Sim., 1875)

North and South Africa, South Europe, South Asia, Australia, South America.

45 *R. lateralis* (Koch, 1838)

Mediterranean countries (south Europe, Turkey, North Africa), Russia, Byelorussia, Ukraine, South Caucasus (Armenia, Azerbaijan, Georgia), Kazakhstan, Middle Asia (Turkmenistan, Uzbekistan, Tajikistan), west Siberia, China.

7 *Picticus* (Sim., 1875)

Eurasia.

46 *P. truncatus*  
(Pallas, 1772)

Carpathians, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), south Siberia, continental South Far East (Amur-Maritime area).

8 *Mixomena* (Latt., 1804)

Africa, Eurasia, North and South America.

47 *M. variis*  
(Cl., 1757)  
[=*M. Calyciana* L., 1758]

Russia, Carpathians, Latvia, Lithuania, Estonia, Byelorussia, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), Kazakhstan, Middle Asia (Kirgizia,

9	<i>Diae</i> (Thor., 1863)	Tajikistan, Uzbekistan), the Urals, North Siberia, continental South Far East (Amur Maritime) area, Japan (Hokkaido and Honshu), Sakhalin and Moneron Islands, South Kurile Islands, North America.	World tropical (According to National Science Museum, Tokyo, 1988)
48	<i>D. dorsata</i> (Fabr., 1777)	Mediterranean countries (Asia Minor), Russia, Estonia, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, Carpathians, South Caucasus (Armenia, Azerbaijan, Georgia), Middle Asia (Turkmenistan, Tajikistan) the Urals, South Siberia.	Palaearctic
10	<i>Thomisus</i> (Walck., 1805)		World tropical (According National Science Museum, Tokyo, 1988)
49	<i>Tonustus</i> (Walck., 1805)		Palaearctic-Ethiopian
11	<sup>1</sup> <i>Misumenops</i> (Pick-Cambre, 1990)	Palaearctic and equatorial Africa, Eurasia, North and South America.	
50	<i>M. tricupsidatus</i> (Fabr., 1775)	Spain, Russia, Carpathians, Latvia, Lithuania, Byelorussia, Ukraine, Moldavia, South Caucasus (Armenia, Azerbaijan, Georgia), Middle Asia (Tajikistan, Uzbekistan), Kazakhstan, the Urals, South Siberia, continental South Far East (Amur-Maritime Area), Sakhalin and Moneron Islands, South Kurile Islands, Japan (Hokkaido, Honshu, Shikoku), Mongolia.	Holarctic-Neotropical  Palaearctic

1. *Misumenops* Pick-Cambre - this species is somehow different from typical *Misumenops* species occurring in North America by more developed eyes and very long embolus of male palp (National Science Museum, Tokyo, 1988).

## References:

- Azheganiva N.S. *A brief guide to spiders (Aranei) of the forest and forest-steppe zone of the USSR*. L., "Nauka", 98, 149, 1968.
- Gertsch W.J. *The spider genera Xysticus, Coriarachne and Oxyptila (Thomisidae, Misumenidae) in North America*. IBID, 102, 413-482, 1953.
- Mikhailov K.G. *Catalogue of spiders of the area of the former Soviet Union (Arachnida, Aranei)*. M., "Nauka", 1997.
- Mkheidze T.S. *The spiders of Georgia (fauna, systematic, ecology)*. Tbilisi, Univ.Publ., 1992.
- Tyshchenko V.P. *An identification guide to the spiders of the European part of the USSR*. Acad.Sci.USSR., L., "Nauka" 105, 281, 1971.
- Utotelikin A.S. *A systematic list of the spider genus Xysticus (Arachnida, Aranei, Thomisidae) of the USSR fauna*. 14-16, 1989.
- A Revisional study of the spider family Thomisidae (Arachnida, Aranei) of Japan*. ed. Hurotsugu, Ono. National Science Museum, Tokyo, 1988.

## საქართველოში ბავრცელაზული ობობების ოჯახ *Thomisidae*-ს წარმომადგენელ-ძორილობიური მიმონილა

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### რეზიუმე

შეხვედლია საქართველოში გავრცელებული ფეხსახსრიანთა ტიპის, ობობების რიგის (*Araneae*), ოჯახ *Thomisidae*-ის 50 სახეობა, რომელიც შეკუთვნება 11 გვარს. სოციოლოგიურ-ქორილობიური კვლევის შედეგად დადგინდა, რომ *Thomisidae*-ის ოჯახის 3 გვარი ტროპიკულია, 2-პოლარქტიკული; თითო-თითო გვარით წარმოდგენილია შემდეგი სოციოლოგიური არეალები: პალეარქტიკულ-ეთიოპურ-ორიენტალურ-ავსტრალიურ-ნეოტროპიკული, პოლარქტიკულ-ნეოტროპიკული; პალეარქტიკულ-ეთიოპურ-ნეოტროპიკული; ცენტრალურ-ევრაზიული, ეთიოპურ-სილარქტიკულ-ნეოტროპიკული; პალეარქტიკულ-ეთიოპური. დადგინდა, რომ ფაუნის ალოქტონური ელემენტი (11 გვარი, 37 სახეობა) ჭარბობს ავტოქტონურ ელემენტს (3 გვარი, 13 სახეობა). ავტოქტონური ფაუნიდან სამხრეთ კავკასიურია 3 გვარი, 10 სახეობა; კავკასიური - 2 გვარი, 3 სახეობა. ალოქტონური ფაუნიდან სილარქტიკული გავრცელებით ხასიათდება 2 გვარი, 2 სახეობა, პალეარქტიკული - 8 გვარი, 25 სახეობა; პალეარქტიკულ-ეთიოპურით - 1 გვარი, 1 სახეობა; ფართო სუბლაპარკულით - 2 გვარი, 4 სახეობა; ევროპა-ციმბირულით - 1 გვარი, 1 სახეობა; ევროპა-ციმბირულით - 3 გვარი, 4 სახეობა.