

Ber. nat.-med. Verein Innsbruck	Band 85	S. 125 – 159	Innsbruck, Okt. 1998
---------------------------------	---------	--------------	----------------------

# A Check-List of the Spiders in Tuva, South Siberia with Analysis of their Habitat Distribution

(Arachnida: Araneae)

by

Dmitri V. LOGUNOV, Yuri M. MARUSIK & Seppo KOPONEN \*)

**Synopsis:** On the basis of personal collecting and literature data from Tuva (S. Siberia), a check-list of spiders (605 species from 23 families) is presented. A chorological analysis of the spider complexes (based on 573 species) within 23 vegetation types and 4 landscapes is additionally performed.

## Contents:

1. Introduction .....	125
2. Material and methods .....	126
2.1. List of localities .....	126
2.2. List of habitats studied .....	129
3. List of species .....	129
4. Analysis of habitats and discussion .....	144
Acknowledgements .....	156
5. Literature .....	157

## 1. Introduction:

Tuva is a rather small administrative unit of Russia lying in the mountains of South Siberia (see Map) and covering ca. 170.5 thousand sq. km. Tuva is a mountain region, with elevations ranging from 650 m a.s.l. (Tuvan hollow) to 3970 m a.s.l. (Mongun-Taiga Mt.). Despite its small size, Tuva encompasses an extremely wide range of landscapes and vegetation types. For instance, in some parts of S. Tuva, within a distance of 50-60 km, all natural zones can be found from semi-desert and dry steppe to *Larix*-taiga and mountain tundra.

However, such a vast and highly diverse land has remained practically unexplored with regard to the spider fauna until 1989, when one of us (DVL) began to study Tuvan spiders. Before that, only two species, *Pardosa lusisi* and *Yllenus mongolicus*, were known to occur in Tuva (STERNBERGS 1981, PRÓSZYŃSKI 1982). Since then, radical progress in the treatment of the spiders in Tuva has been observed and about 40 papers have been published. In the present paper, 605 species found so far in Tuva are listed.

The present paper is thus an up-to-date review of the spider fauna in Tuva, based on original spider collecting done in 1989-1996 during field trips to Tuva.

\*) Addresses of authors: D.V. Logunov, Zoological Museum, Institute for Systematics and Ecology of Animals, Siberian Division of the Russian Academy of Sciences, Frunze Street 11, Novosibirsk, 630091, Russia; Yu. M. Marusik, Institute for the Biological Problems of the North, Far Eastern Division of the Russian Academy of Sciences, K. Marx pr. 24, Magadan, 685010, Russia; S. Koponen, Zoological Museum, University of Turku, SF-20014 Turku, Finland.

## 2. Material and methods:

The material dealt with here has been shared mostly between the collections of the Institute for Systematics and Ecology of Animals (Novosibirsk, Russia), the Zoological Museum of the Moscow State University (Moscow, Russia), the Institute for Biological Problems of the North (Magadan, Russia), the Zoological Museum of the University of Turku (Turku, Finland) and the California Academy of Sciences (San Francisco, USA).

In the list of localities (see below), names of collectors are abbreviated as follows: DL = D.V. Logunov; OL = O.V. Lyakhov; YM = Yu.M. Marusik; SK = S. Koponen.

The following check-list is believed to have been compiled up to November 1997, and it is arranged alphabetically. If a species has already been reported from Tuva, corresponding locality numbers are underlined. Species new to Russia (altogether 14), as compared to the recent catalogue of the ex-USSR spiders (MIKHAILOV 1997), are marked with an asterisk. The species marked with "?" refer to preliminary determinations; in most cases we need comparative material to check identifications. The question marks "?" among/instead of vegetation type abbreviations mean that data on the habitat preferences of a species are absent or poorly known. Of the 605 spider species listed below, 53 have already been described by us or by our Russian colleagues during the last 5-7 years, while 63 species are either undescribed, e.g. *Talavera* sp. 1 (cf. *petrensis*), *Xysticus* sp. 1, etc., or are of an obscure status. All these species are listed here as undetermined ones with reference, if possible, to their closest relatives.

Of the vegetation types prevailing in Tuva (see KUMINOVA et al. 1985, NAMZALOV & KOROLYUK 1991), we have been able to analyse, with regard to the arachnofauna, 23 formations (see below).

The similarity of spider communities was studied using the Czekanowski-Soerensen index (Ics).

The chorological analysis has been performed in terms of the so-called landscape-typology approach (PRAVDIN 1978, PRAVDIN & MISHENKO 1980). Three main parameters of spider biodiversity throughout the studied ecosystems (vegetation types and landscapes) have been estimated: (1) the general level of biodiversity, i.e. the number of spider species; (2) the taxonomic pattern, i.e. the composition of taxa; and (3) the taxonomic originality, i.e. the proportion of exclusive (indicator) species compared to the whole number of species found. In addition, CLUSTERING of the studied spider communities within 23 vegetation types has been performed using the program BIODIV (BAEV & PENEV 1991). The terms used are as follows:

1. The taxonomic index (TI), used in the geobotanical literature and first adopted for zoogeographic purposes by MEDVEDEV (1984), reflects to taxonomic specificity of a particular spider faunula (fauna of a segregated habitat), i.e. a set of dominating taxa. The spider families (usually ca. 3) that form a half (50%) or more of the species in an entire fauna/ faunula are included in the TI. For instance, the families Linyphiidae and Lycosidae comprise together 61% of the spider community of the mountain tundra landscape (Fig. 4) and hence the TI is Lin-Lyc.

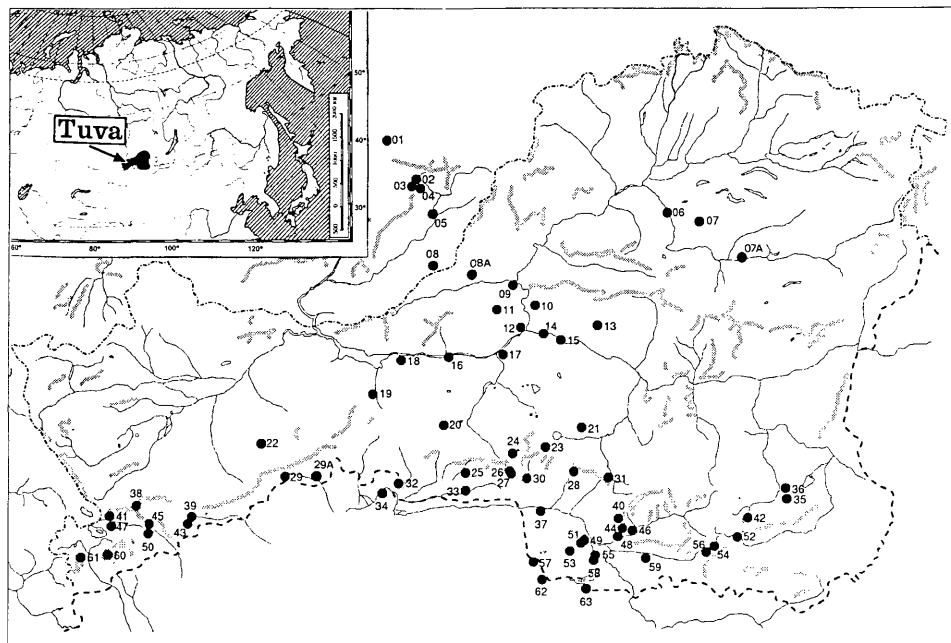
2. Vegetation type is used *sensu stricto* and adopted from NAMZALOV & KOROLYUK (1991).

3. Exclusive (indicator) species are those restricted to a particular ecosystem (vegetation type or landscape). The proportion of these species is used to indicate the taxonomic originality of an ecosystem (vegetation type or landscape).

4. The index of originality (IO) is counted in a similar way to the taxonomic index, showing spider families contributing 50% or more of the total number of exclusive (indicator) species in a particular ecosystem (cf. Figs. 4-5 and Table 2).

### 2.1. List of localities (see Map):

01. Tanzybei environs, Forest Research Station and Mutnaya River, 380-400 m a.s.l., 53° 08' N, 92° 53' E (26.06-12.07.1990, DL; 2.-3.06.1995, YM & SK).
02. West Sayany Mts, Oiskiy Mt. Range, Oiskiy Pass and Oiskoye Lake, 52° 51' N, 93° 15' E, 1500-1700 m a.s.l. (12.07.1990, DL & V.G. Mordkovitch; 3.-21.06.1995, YM).
03. West Sayany Mts, Oiskiy Mt. Range, 8-10 km S of Oiskoye Lake, Olenia Rechka River, 52° 48' N, 93° 12' E, 1400-1900 m a.s.l. (27.06-11.07.1990, DL; 8.07.1993, DL).
04. West Sayany Mts., Oiskiy Mt. Range, Buiba Riv., 52° 47' N, 93° 18' E, 1230 m a.s.l. (20.-21.06.1995, YM & SK).
05. West Sayany Mts, 2-3 km N of Aradan, Belyi Us River Valley, 52° 36' N, 93° 27' E, 840-850 m a.s.l. (8.-9.07.1990, DL).
06. Toora-Khem environs, 52° 29' N, 96° 07' E, 850-870 m a.s.l. (18.-23.06.1989, DL).
07. NW bank of Azas Lake, 52° 24' N, 96° 28' E, 850-900 m a.s.l. (19.-23.06.1989, DL).
- 07a. Serlig-Khem River (basin of Biy-Khem River), ca. 8 km upstream of mouth, 52° 08' N, 96° 55' E (11.06.1992, A.B. Ryvkin).



Map: Situation of Tuva and collecting localities; for sites, see "Material and methods".

08. West Sayany Mts., Kurtushibinskiy Mt. Range, ca. 10 km NW of Shivilig, 52° 14' N, 93° 28' E, 1100-1300 m a.s.l. (5.-7.06.1990, DL).
- 08a. Turan environs, 52° 09' N, 93° 57' E (summer 1984, A.B. Ryvkin).
09. Uyuk River mouth, 52° 04' N, 94° 22' E, 600-700 m a.s.l. (21.-23.05.1989, DL; 3.-5.06.1995, YM).
10. 4-5 km N of Cherbi, 51° 55' N, 94° 37' E, 850-1000 m a.s.l. (1.07.1990, DL).
11. Sesarlig environs (5-10 km NW and SE), 51° 54' N, 94° 11' E, 1100-1500 m a.s.l. (24.-25.07.1989, DL; 2.05.-29.06.1990, DL).
12. 3-5 km N of Kyzyl, 650-900 m a.s.l., 51° 46' N, 94° 27' E, (20.05.-21.09.1989, DL; 1.05.-1.07.1990, DL, OL & V.K. Zinchenko; 6.-20.06.1995, YM & SK; 18.06.-24.07.1996, YM).
13. ca 20 km S of Balgazyn, 6-10 km N of Shuurmak, 51° 45' N, 95° 17' E, 1000 m a.s.l. (7.07.1989, DL).
14. 15-30 km E of Kyzyl, Kaa-Khem (Riv.), 51° 43' N, 94° 42' E, 700-1200 m a.s.l. (30.06.1990, DL; 16.-18.06.1996, YM).
15. 33-35 km E of Kyzyl, ca. 5 km N of Sug-Bazhi, 51° 40' N, 94° 53' E, 900 m a.s.l. (30.06.1990, DL).
16. ca 65 km W of Kyzyl, Otuk-Dash Stand, 51° 35' N, 93° 39' E, 700-800 m a.s.l. (10.05.1990, DL).
17. 6-7 km WSW of Kyzyl, Yenisei River Valley, Agricultural Res. Station, 51° 35' N, 94° 15' E, 650-700 m a.s.l. (25.05.-24.07.1989, DL; 27.05.-1.07.1990, DL).
18. 5-7 km E of Shagonar, Khairakan Mt., 51° 34' N, 93° 08' E (10.05.1990, DL).
19. 10-25 km SSW of Shagonar, Torgalyg environs, 51° 20' N, 92° 50' E, 900-1200 m a.s.l. (8.-10.05.1990, DL).
20. 1-5 km WSW of Khovu-Aksy, Elegest River Valley, 51° 07' N, 93° 36' E, 1000 m a.s.l. (4.-5.05.1990, DL & V.K. Zinchenko).
21. ca 90 km SE of Kyzyl, 3-7 km N of Balgazyn, 51° 04' N, 95° 04' E (19.07.1993, DL; 6.06.1995, YM, SK & DL; 20.06.1996, YM).
22. 24-25 km N of Khandagaity, West Tannu-Ola Mt. Range, 50° 59' N, 91° 38' E (17.-26.07.1993, DL).
23. 1-2 km S and SE of Chagytai Lake, northern foothills of East Tannu-Ola Mt. Range, 50° 57' N, 94° 41' E, 1050-1800 m a.s.l. (26.06.-2.07.1989, DL).
24. ca 30 km NW of Khol'-Oozhu, East Tannu-Ola Mt. Range, Kara-Khol' Lake, 50° 55' N, 94° 20' E, 1700-1750 m a.s.l. (9.07.1989, DL).

25. ca. 20 km N of Oo-Shinaa, 3-4 km E of Despen, 50° 48' N, 93° 50' E, 1600 m a.s.l. (17.07.1989, DL).
26. East Tannu-Ola Mt. Range, 20 km NE of Khol'-Oozhu, Kangai-Kyry Mt., 50° 48' N, 94° 18' E, 2100 m a.s.l. (12.07.1989, DL; 8.-17.06.1995, YM, SK & DL).
27. East Tannu-Ola Mt. Range, 8-10 km NE of Khol'-Oozhu, Belengishch Stand, 50° 47' N, 94° 19' E, 1700-1800 m a.s.l. (9.-11.07.1989, DL; 16.07.1995, YM, SK & DL).
28. ca. 1.5 km W of Samagaltai, 50° 47' N, 94° 58' E (14.07.1993, DL).
29. 13-15 km N of Khandagaity, Kham-Dag River, 50° 46' N, 91° 55' E (25.-26.07.1993, DL).
- 29a. ca. 15 km E of Khandagaity, Ulatai River Valley, 1000-1100 m a.s.l., 50° 45' N, 92° 15' E (11.-12.06.1989, DL).
30. East Tannu-Ola Mt. Range, ca. 5 km E of Khol'-Oozhu, Arysannyg-Khem River Canyon, 50° 45' N, 94° 29' E, 1200-1350 m a.s.l. (8.-9.07.1989, DL; 16.07.1993, DL; 16.-18.06.1995, YM, SK & DL).
31. ca. 8 km E of Samagaltai, 6-10 km W of Shuurmak, W parts of Khorumnug-Taiga Mt. Range, 50° 44' N, 95° 19' E, ~ 1100 m a.s.l. (10.07.1993, DL; 20.06.-18.07.1996, YM & D.V. Obydov).
32. 40-45 km W of Ak-Tsyraa, Irbitei River Valley, 50° 44' N, 93° 08' E, 1000-1200 m a.s.l. (18.-19.07.1993, DL; 13.-16.06.1995, YM).
33. ca. 15 km E of Oo-Shinaa, 50° 41' N, 93° 50' E (17.-19.07.1993, DL).
34. NE bank of Ubsunur (Uvs) Lake, 50° 40' N, 92° 58' E, 760 m a.s.l. (12.06.1989, DL; 18.07.1993, DL; 14.6.1995, DL & YM).
35. Sangelen Mt. Range, the middle reaches of Kargy River, 50° 31' N, 97° 03' E, 1300-1400 m a.s.l. (28.-30.06.1996, YM).
36. Sangelen Mt. Range, the middle reaches of Kargy River, 50° 35' N, 97° 05' E, 1300-1400 m a.s.l. (2.-4.07.1996, YM).
37. ca. 8 km W of Ak-Erik, Tes-Khem River Valley, 50° 32' N, 94° 37' E (June 1990, OL).
38. ca. 3 km NE of Sagly, 50° 31' N, 90° 20' E (24.07.1993, DL).
39. 20-25 km W of Sagly, the upper reaches of Onachy River, 50° 28' N, 90° 57' E, 1500-1600 m a.s.l. (13.06.1989, DL; 24.07.1993, DL).
40. Sangelen Mt. Range, the upper reaches of Dzhen-Aryk (Ck), 50° 28' N, 95° 24' E, 1750-2030 m a.s.l. (16.-18.07.1996, YM).
41. 40-45 km W of Mugur-Aksy, the upper reaches of Kargy River, 50° 26' N, 90° 03' E, 2200-2300 m a.s.l. (17.-18.05.1990, DL).
42. Sangelen Mt. Range, the upper reaches of Kargy River, 50° 25' N, 96° 41' E, 2230 m a.s.l. (28.06.-4.07.1996, YM & D.V. Obydov).
43. Tsagan-Shibetu Mt. Range, Barlyk River Valley, confluence with Onachy River, 50° 25' N, 90° 55' E, 2000-2100 m a.s.l. (13.06.1989, DL; 6.06.1990, OL).
44. Sangelen Mt. Range, the middle reaches of Dzhen-Aryk (Ck), 50° 24' N, 95° 26' E, 1450 m a.s.l. (14.-16.07.1996, YM).
45. 8-9 km NE of Mugur-Aksy, the upper reaches of Kuge-Davaa River, Tsagan-Shibetu Mt. Range, 50° 24' N, 90° 30' E, 2100-2700 m a.s.l. (10.-19.05.1990, DL).
46. 30-35 km NWW of Erzin, confluence of Ular-Khem and Erzin Rivers, 50° 23' N, 95° 32' E, 1200-1300 m a.s.l. (11.-12.06.1989, DL).
47. 30-35 km SW of Mugur-Aksy, the upper reaches of Mugur River, Mongun-Taiga Mt., 50° 22' N, 90° 05' E, 3100-3300 m a.s.l. (23.07.1993, DL).
48. Sangelen Mt. Range, Moren environs, 50° 21' N, 95° 23' E, 1150 m a.s.l. (14.-18.07.1996, D.V. Obydov).
49. ca. 20 km NW of Erzin, Tes-Khem River Valley, 50° 20' N, 95° 03' E, 900-1000 m a.s.l. (31.05.1989, DL; 8.-10.06.1995, YM & SK).
50. 3-10 km SE of Mugur-Aksy, Kargy River Canyon, 50° 20' N, 90° 30' E, 1800-1850 m a.s.l. (14.06.1989, DL; 16.-20.05.1990, DL & OL; 23.-24.07.1993, DL).
51. 20-25 km NW of Erzin, Dus-Khol' Lake, 50° 19' N, 95° 01' E, 1050 m a.s.l. (31.05.-13.08.1989, DL; 10.06.1995, DL, YM & A.V. Abramov).
52. Sangelen Mt. Range, the upper reaches of Balyktyg-Khem River, 50° 18' N, 96° 34' E, 2000-2300 m a.s.l. (26.-28.06.1996, YM).
53. 15-20 km W of Erzin, Onchalaan and Yamaalyg Rocks, 50° 16' N, 94° 54' E, 1150-1350 m a.s.l. (27.05.-12.08.1989, DL; 11.07.1993, DL; 7.-10.06.1995, YM & SK).
54. Sangelen Mt. Range, Pass between Naryn and Balyktyg-Khem Rivers, 50° 15' N, 96° 20' E, 2550 m a.s.l. (26.06.-5.07.1996, YM & D.V. Obydov).
55. Erzin environs, 50° 14' N, 95° 09' E, 1165 m a.s.l. (14.08.1989, DL; 9.06.1995, YM & SK).
56. The upper reaches of Naryn River, 50° 13' N, 96° 15' E, 1820-1900 m a.s.l. (24.-26.06.1996, YM).

57. 30-35 km W of Erzin, Shara-Nur Lake environs, 800-900 m a.s.l., 94° 32' E, 50° 12' N, (3.-10.06.1989, DL & V.K. Zinchenko; 8.06.1995, YM).
58. 2-3 km S of Erzin, Tes-Khem River Valley, 50° 12' N, 95° 08' E, 1000-1100 m a.s.l. (13.-15.08.1989, DL; 23.-26.05.1990, DL & OL; 9.-10.06.1995, YM, SK, DL & A.V. Abramov).
59. The middle reaches of Naryn River, 50° 12' N, 95° 39' E, 1540 m a.s.l. (22.06.-6.07.1996, YM & D.V. Obydov).
60. 45-50 km SW of Mugur-Aksy, Khara-Kharagai River and Eski-Tolaity Lake, 50° 10' N, 90° 05' E, 2100-2300 m a.s.l. (14.-15.06.1989, DL).
61. 3-5 km NW of Kyzyl-Khaiya, Mogen-Buren River Canyon (right riverside), 50° 08' N, 89° 48' E, 2100-2200 m a.s.l. (15.06.1989, DL).
62. ca. 50 km SW of Erzin, Nariyn Gol (= Naryn) River, 50° 05' N, 94° 37' E, 900 m a.s.l. (10.06.1989, DL).
63. Tere-Khol' Lake SE bank, Eder-Elezin Sands (desert), 50° 01' N, 95° 03' E, Sharlaa Stand, 1150 m a.s.l. (8.-9.08.1989, DL; 12.07.1993, DL; 11.-12.6.1995, DL, YM & SK; 6.-14.07.1996, YM).

## 2.2. List of habitats studied:

GLT – goltsy (mountain tundra) landscape:

mwt – Mountain moss-tussock-shrubby wet tundra;

mst – Mountain moss-lichen-stony tundra;

sm – Subalpine meadow;

s – Scree (talus).

ILT – inundated landscape:

u – Urema (= flood plain forest of *Populus laurifolia*-*Betula microphylla*-*Salix* spp.);

ism – Inundated steppe-upland meadow (mostly with *Caragana spinosa*);

mm – Mesophytic meadow;

as – *Achnatherum splendens* stands (= saz steppe);

bf – Bulrush fen;

rpb – River pebble banks (or lake shores, sometimes saline).

MFLT – mountain forest-steppe landscape:

sss – Sloping shrub-stony steppe;

sms – Sloping meadow shrubby steppe;

lf – *Larix sibirica* forest (light coniferous forest);

mf – Taiga forest, including mixed taiga;

bef – Birch (*Betula pendula*) forest;

sm – Sedge (*Carex* spp.) moor;

sgg – Shrubby grass glades (= mesophytic grasslands);

s – Scree.

MSLT – mountain steppe landscape:

dns – Desert nanophanerophyte steppe (= tar steppe) (with *Nanophyton erinaceus*);

dbx – Dry shrub-grass (*Caragana-Stipa-Artemisia*) steppe;

sds – Desert sandy shrub-grass (*Caragana-Stipa-Artemisia*) steppe;

cxs – Cryo-xerophilous, high-mountain (= cryophyte) steppe;

s – Cobble-gramineous stands (including scree).

## 3. List of species:

### Ageleneidae

*Agelena labyrinthica* (CLERCK, 1758): 11, 12, 21, 23, 27, 30, 36, 44, 51, 53; ILT: U, Ism, As; MFLT: Sss, Sgg;

MSLT: Dns, Dbs.

*Coelotes* sp. 1: 08; MFLT: Sss.

*Coelotes* sp. 2: 01; MFLT: Mf.

### Amaurobiidae

*Arctobius agelenoides* (EMERTON, 1919): 26, 27, 40; MFLT: Lf, Mf.

## Araneidae

*Aculepeira carbonarioides* (KEYSERLING, 1892): 03, 61; GLT: S, MSLT: S.

*Aculepeira packardi* (THORELL, 1875): 07, 09, 10, 12, 17, 25, 28, 29, 31, 34, 36, 40, 44, 54, 61, 63; MFLT: Sm, Sgg, Lf, Sms; ILT: Mm, Ism; MSLT: S, Dbs, Sds.

*Aculepeira* sp. 1 (cf. *carbonarioides*): 05, 09, 14, 32, 38, 51; MFLT: S, Sss; ILT: As, Rpb; GLT: S; MSLT: Dbs, Dns.

*Araneus alsine* (WALCKENAER, 1802): 31; MFLT: Sgg.

? *Araneus grossus* (C.L. KOCH, 1844): 12; MSLT: Dns.

*Araneus marmoreus* CLERCK, 1758: 01, 05, 11, 56; MFLT: Lf, Sgg, Mf; ILT: Rpb.

\* *Araneus mongolicus* SIMON, 1895: 53; MSLT: S.

*Araneus nordmanni* (THORELL, 1870): 05; MFLT: Mf.

"*Araneus*" *pallasi* (THORELL, 1875): 32, 34, 63; MSLT: Sds; ILT: Ism, Mm.

*Araneus quadratus* CLERCK, 1758: 12, 40; ILT: U; MFLT: Sms.

\* "*Araneus*" *strandiiellus* CHARITONOV, 1951: 32, 63; MFLT: Sms; MSLT: Sds, Dns.

*Araneus* sp. 1 (cf. *saevus*): 25, 44, 52, 53; MSLT: S, Dbs.

*Araniella displicata* (HENTZ, 1847): 01, 07, 08, 09, 10, 11, 14, 23, 25, 28, 29, 30, 31, 34, 35, 36, 44, 46, 62; ILT: Ism, Mm; MFLT: Sgg, Mf, Lf, Sm, Sms, Sss.

*Araniella proxima* (KULCZYNSKI, 1885): 63; ILT: U (?).

\* *Araniella yaginumai* TANIKAWA, 1995: 14; ILT: U (?).

*Atea sturmi* (HAHN, 1831): 01, 03, 08; GLT: Sm; MFLT: Mf.

*Atea* sp. 1: 14.

*Cercidia prominens* (WESTRING, 1851): 59; MFLT: Sgg.

*Cyclosa conica* (PALLAS, 1772): 08, 23, 36; MFLT: Lf, Mf.

*Cyclosa* sp. 1 (cf. *oculata*): 12, 27, 32, 34, 57, 58; ILT: Bf, Ism; MSLT: Dbs, Dns; MFLT: Sss.

? *Gibbaranea bituberculata* (WALCKENAER, 1802): 09, 12, 29, 32, 63; MFLT: Sss; MSLT: Dbs, Dns, Sds.

*Hypsosinga albovittata* (WESTRING, 1851): 09, 28, 45, 53; MSLT: Cxs, S; MFLT: Sms.

*Hypsosinga pygmaea* (SUNDEVALL, 1831): 09, 23, 31, 34, 35, 38, 57, 58, 62; ILT: Bf, Mm, Ism; MSLT: Dbs; MFLT: Sss.

*Hypsosinga sanguinea* (C.L. KOCH, 1844): 14, 31, 32, 34, 40, 63; ILT: Ism; MSLT: Sds, Dns.

*Larinia bossae* MARUSIK, 1986: 17, 34, 51, 57, 63; ILT: U, As, Bf, Ism; MSLT: Dbs, Sds.

*Larinioides cornutus* (CLERCK, 1758): 03, 07, 23; MFLT: Sm; GLT: Sm.

*Larinioides folium* (SCHRANK, 1803): 09, 12, 34, 57, 63; ILT: Bf; MFLT: Sms, Sss.

*Larinioides patagiatus* (CLERCK, 1758): 07, 09, 10, 17, 23, 30, 31, 32, 63; ILT: U, Mm; MFLT: Mf, Lf, Sgg, Sss.

*Neoscona adianta* (WALCKENAER, 1802): 09, 12, 34; MFLT: Sss; MSLT: Dbs.

*Singa nitidula* C.L. KOCH, 1844: 05; ILT: Rpb.

"*Zygiella*" *stroemi* (THORELL, 1875): 07, 31, 49; MFLT: Sms; ILT: U.

## Argyronetidae

*Argyroneta aquatica* (CLERCK, 1758): 57, 63; ILT: Bf.

## Clubionidae

*Cheiracanthium erraticum* (WALCKENAER, 1802): 31, 35, 40, 63; MFLT: Sgg, Sms.

*Cheiracanthium* sp. 1: 09, 21, 29, 32, 34, 49, 53; ILT: Mm, Ism, U; MFLT: Sgg, Sm, Sss.

*Cheiracanthium* sp. 2: 34, 63; MSLT: Sds, Dns.

*Clubiona caerulescens* L. KOCH, 1867: 07, 23; MFLT: Mf, Lf. (MIKHAILOV 1992).

*Clubiona diversa* O.P.-CAMBRIDGE, 1862: 11, 17, 19, 27, 40, 56; ILT: Mm, U; MFLT: Lf. (MIKHAILOV 1992).

*Clubiona interjecta* L. KOCH, 1879: 11, 12, 51, 63; ILT: As, U; MSLT: Sds. (MIKHAILOV 1992).

*Clubiona kulczynskii* LESSERT, 1905: 04, 05, 06, 07, 08, 09, 11, 13, 23, 31, 40; GLT: Sm; MFLT: Mf, Bef, Sms. (MIKHAILOV 1992).

*Clubiona latericia* KULCZYNSKI, 1926: 07, 23, 63; MFLT: Sm. (MIKHAILOV 1992).

? *Clubiona lutescens* WESTRING, 1851: 63; ILT: U.

*Clubiona neglecta* O.P.-CAMBRIDGE, 1862: 12, 17, 21, 23, 51, 57, 58, 63; ILT: U, As, Mm, Rpb; MFLT: Sgg; MSLT: Sds. (MIKHAILOV 1992).

*Clubiona pallidula* (CLERCK, 1758): 07, 08, 14, 30, 34, 49, 58; ILT: As, U, Rpb; MFLT: Mf, Bef. (MIKHAILOV 1992).

- Clubiona phragmitis* C.L. KOCH, 1843: 63; ILT: Bf. (MIKHAILOV 1992)  
*Clubiona pseudosaxatilis* MIKHAILOV, 1992: 43, 50; ILT: U. (MIKHAILOV 1992).  
*Clubiona riparia* L. KOCH, 1866: 23, 32, 34, 51, 58, 63; ILT: Ism, As; MFLT: Sm. (MIKHAILOV 1992).  
*Clubiona stagnatilis* KULCZYNSKI, 1897: 11; MFLT: Lf. (MIKHAILOV 1992).  
*Clubiona subsultans* THORELL, 1875: 20, 58, 63; ILT: U. (MIKHAILOV 1992).

## Dictynidae

- Archaeodictyna consecuta* (O.P.-CAMBRIDGE, 1872): 42; MSLT: Cxs (?).  
*Arctella lapponica* HOLM, 1945: 35, 42, 45, 54, 56; MSLT: Cxs.  
*Argenna prominula* TULLGREN, 1948: 26, 27, 30; MFLT: Mf, Lf.  
*Argenna* sp. 1: 31, 34; ILT: As (?).  
 ? *Devade indistincta tatyanae* ESYUNIN, 1994: 55; MSLT: Dbs.  
*Dictyna alaska* CHAMBERLIN & IVIE, 1947: 07, 35; MFLT: Mf.  
*Dictyna arundinacea* (LINNAEUS, 1758): 07, 08, 09, 11, 23, 28, 30, 32, 34, 35, 36, 46, 49, 52, 55, 58, 63;  
 ILT: Mm, U, Rpb, Ism; MFLT: Mf, Lf, Sm, Sgg, Sms, Sss; MSLT: Sds.  
*Dictyna major* MENGE, 1869: 09; ILT: Mm.  
*Dictyna obydoivi* MARUSIK & KOPONEN, 1998: 59; MSLT: Dbs. (MARUSIK & KOPONEN 1998)  
*Dictyna pusilla* THORELL, 1856: 07; MFLT: Mf, Sgg.  
*Dictyna schmidti* KULCZYNSKI, 1927 (sensu LEHTINEN 1967): 04; GLT: Sm; MFLT: Mf, Sgg.  
*Dictyna ubsunurica* MARUSIK & KOPONEN, 1998: 34, 55, 58, 63; ILT: U, Ism, As; MSLT: Dbs, Sds. (MARUSIK & KOPONEN 1998)  
*Dictyna uncinata* THORELL, 1856: 14, 58, 63; ILT: U; MFLT: Sm.  
*Dictyna uvs* MARUSIK & KOPONEN, 1998: 34, 49; MSLT: Dns. (MARUSIK & KOPONEN 1998)  
*Emblyna annulipes* (BLACKWALL, 1846): 07, 08, 09, 14, 32, 34, 49, 63; ILT: U, Ism, Rpb, MFLT: Mf.  
*Emblyna logunovi* MARUSIK & KOPONEN, 1998: 12, 32, 49; MSLT: Dns. (MARUSIK & KOPONEN 1998)  
*Emblyna mongolica* MARUSIK & KOPONEN, 1998: 12, 14; MSLT: Dns. (MARUSIK & KOPONEN 1998)  
 ? *Lathys puta* (O.P.-CAMBRIDGE, 1863): 05, 08, 11, 12, 14, 27, 29, 30, 32, 34, 35, 53; GLT: Mst; ILT: Ism; MFLT: Sss, Sms, Mf, S; MSLT: S, Dns.

## Eresidae

- ? *Eresus cinnaberinus* (OLIVIER, 1787): 12, 14; MSLT: Dns.

## Gnaphosidae

- Berlandina potanini* SCHENKEL, 1963: 12, 17, 34; ILT: As; MSLT: Dns. (MARUSIK & LOGUNOV 1995).  
*Berlandina schenkeli* MARUSIK & LOGUNOV, 1995: 50, 55; ILT: As; MSLT: Dbs, Cxs. (MARUSIK & LOGUNOV 1995).  
*Berlandina ubsunurica* MARUSIK & LOGUNOV, 1995: 09, 32, 34; ILT: Ism; MFLT: Sss; MSLT: Dns. (MARUSIK & LOGUNOV 1995).  
*Callilepis nocturna* (LINNAEUS, 1758): 01, 09, 11, 12, 13, 23, 27, 30, 32, 44, 46, 49, 50, 53, 55, 57, 58, 60, 62, 63; ILT: Rpb; MFLT: Sss; MSLT: Sds, Dns, S, Cxs. (MARUSIK & LOGUNOV 1995).  
*Drassodes kaszabi* LOKSA, 1965: 41; MSLT: Cxs. (MARUSIK & LOGUNOV 1995).  
 ? *Drassodes lapidosus* (WALCKENAER, 1802): 02, 09, 05, 08, 26, 27, 29, 40, 42, 47, 52, 56; GLT: Sm, Mst, Mwt; ILT: Mm; MFLT: S, Mf, Sss, Sms. (MARUSIK & LOGUNOV 1995).  
*Drassodes lesserti* SCHENKEL, 1936: 11, 12, 13, 18, 23, 31, 32, 34, 38, 46, 49, 50, 51, 53, 55, 63; ILT: As, Ism; MFLT: Sss; MSLT: Dns, Dbs. (MARUSIK & LOGUNOV 1995).  
*Drassodes longispinus* MARUSIK & LOGUNOV, 1995: 07, 09, 11, 12, 14, 16, 18, 19, 32, 34; MFLT: S, Sss, Sms; MSLT: Dns. (MARUSIK & LOGUNOV 1995).  
*Drassodes neglectus* (KEYSERLING, 1887): 11, 12, 14, 23, 27, 28, 30, 34, 35, 49, 50, 53, 58; ILT: U, Ism, Rpb; MFLT: Sms, Sss; MSLT: Dns, Dbs, S. (MARUSIK & LOGUNOV 1995).  
*Drassodes pseudolesserti* LOKSA, 1965: 19; MFLT: Sss. (MARUSIK & LOGUNOV 1995).  
*Drassodes serratidens* SCHENKEL, 1963: 07, 08, 14, 23, 31, 58, 63; ILT: U; MFLT: Sss, Sms. (MARUSIK & LOGUNOV 1995).  
*Drassodes villosus* (THORELL, 1856): 06, 07, 08, 46, 53; MFLT: Sss, Sms; MSLT: Dbs. (MARUSIK & LOGUNOV 1994).  
*Drassodes* sp. 1: 12, 32; MSLT: Dns.  
*Drassyllus pusillus* (C.L. KOCH, 1833): 63; ILT: U.

- Drassyllus vinealis* (KULCZYNSKI, 1897): 32; MSLT: Dns.
- Echemus sibiricus* MARUSIK & LOGUNOV, 1995: 50; MSLT: Cxs. (MARUSIK & LOGUNOV 1995).
- Gnaphosa borea* KULCZYNSKI, 1908: 09, 11, 12, 14, 26, 31, 35, 36, 52, 54, 56, 63; GLT: Mwt; ILT: U; MFLT: S, Sms. (MARUSIK & LOGUNOV 1995).
- Gnaphosa chola* OVTSHARENKO & MARUSIK, 1988: 35; ILT: Rpb.
- Gnaphosa gracilior* KULCZYNSKI, 1901: 11, 12, 13, 14, 18, 19, 27, 28, 30, 31, 32, 34, 37, 38, 43, 44, 46, 49, 50, 51, 53, 55, 57, 58, 60, 63; ILT: U, Rpb, Mm, As; MFLT: Sss; MSLT: Dns, Dbs, Sds, S. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995: in part sub. *G. proxima*).
- Gnaphosa inconspicua* SIMON, 1878: 21, 34, 35, 58; ILT: U, Ism; MFLT: Mf. (MARUSIK & LOGUNOV 1995).
- Gnaphosa leporina* (L. KOCH, 1866): 05, 21, 26, 27, 31, 54, 56; GLT: Mwt; MFLT: Mf, Sms. (MARUSIK & LOGUNOV 1995).
- Gnaphosa licenti* SCHENKEL, 1953: 07, 09, 16, 18, 19, 53; ILT: Rpb; MFLT: Sss; MSLT: Dbs, Dns, S. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1994: sub. *G. denisi*).
- Gnaphosa mandschurica* SCHENKEL, 1963: 09, 11, 27, 35, 36; MFLT: Sss, Sms. (MARUSIK & LOGUNOV 1995: sub. *G. glandifera*; OVTSHARENKO et al. 1992).
- Gnaphosa microps* HOLM, 1939: 22, 35, 40, 42, 52, 54, 56; MFLT: Lf.
- Gnaphosa mongolica* SIMON, 1895: 12, 16, 18, 19, 29a, 30, 32, 33, 34, 38, 50, 53, 57, 60, 63; MFLT: Sss; MSLT: Dns, Dbs, Sds. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995: sub. *G. punctata*).
- Gnaphosa muscorum* (L. KOCH, 1866): 06, 07, 08, 12, 14, 16, 18, 23, 26, 27, 28, 30, 31, 32, 35, 36, 44, 47, 52, 56, 60; GLT: Mst; ILT: U; MFLT: Sms, Sss, Bf; MSLT: S, Dbs, Cxs. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995).
- Gnaphosa nigerrima* L. KOCH, 1877: 34; 63; ?. (MARUSIK & LOGUNOV 1995).
- Gnaphosa pseudoleporina* OVTSHARENKO, PLATNICK & SONG, 1992: 01, 02; GLT: Mst; MFLT: Mf. (OVTSHARENKO et al. 1992).
- Gnaphosa sticta* KULCZYNSKI, 1908: 02, 03, 26, 35, 40, 42, 49, 52, 56, 57; GLT: Mwt, Sm; MFLT: Sms. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995).
- Gnaphosa tuvinica* MARUSIK & LOGUNOV in OVTSHARENKO, PLATNICK & SONG, 1992: 12, 45, 50; MSLT: Cxs. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995).
- Gnaphosa wiehlei* SCHENKEL, 1963: 34, 53; ILT: As; MSLT: Dbs, Dns. (OVTSHARENKO et al. 1992, MARUSIK & LOGUNOV 1995).
- Gnaphosa* sp. 1 (cf. *orites*): 47; GLT: Mst.
- Haplodrassus cognatus* (WESTRING, 1862): 14, 31; MFLT: Sgg.
- Haplodrassus moderatus* (KULCZYNSKI, 1897): 07, 08, 14, 31, 40, 56, 63; MFLT: ?. (MARUSIK & LOGUNOV 1995).
- Haplodrassus pugnans* (SIMON, 1880): 12, 17, 27, 30, 34, 43, 46, 50, 52, 53, 60, 63; ILT: Ism; MFLT: Sss; MSLT: Dns, S. (MARUSIK & LOGUNOV 1995).
- Haplodrassus signifer* (C.L. KOCH, 1839): 08, 22, 26, 31, 40, 42, 48, 52, 54, 56; MFLT: Mf, Lf, Sms. (MARUSIK & LOGUNOV 1995).
- Haplodrassus soerenseni* (STRAND, 1900): 02, 04, 08, 11, 31, 35, 36, 63; GLT: Sm; MFLT: Sms, Sm. (MARUSIK & LOGUNOV 1995).
- Haplodrassus* sp. 1: 58, 63; ILT: U.
- Micaria aenea* THORELL, 1871: 08, 63; ILT: U; MFLT: Sms.
- Micaria alpina* L. KOCH, 1872: 02, 22, 27, 31, 35, 40, 56; GLT: Mst; MFLT: Lf, Mf.
- Micaria dives* (LUCAS, 1846): 09; ILT: Rpb; MFLT: Sms.
- Micaria guttulata* (C.L. KOCH, 1839): 26; MFLT: Sms.
- Micaria lenzi* BÖSENBERG, 1899: 12, 13, 14, 30, 32, 34, 49, 51, 53, 58; ILT: Rpb, Bf; MSLT: Dns, Dbs.
- Micaria mongunica* DANILOV, 1996: 31, 60; MSLT: Cxs. (DANILOV 1996).
- Micaria nivosa* L. KOCH, 1866: 09, 31; ILT: Rpb; MFLT: Sms.
- Micaria rossica* THORELL, 1875: 12, 36, 40, 48, 52; MSLT: Dbs; MFLT: Sss, Sms.
- Micaria tripunctata* HOLM, 1978: 31, 40, 42, 54, 63; ILT: U, Mm.
- Micaria tuvensis* DANILOV, 1993: 09, 31, 53, 58, 63; ILT: Ism; MFLT: Sms; MSLT: Sds, Dbs. (DANILOV 1993).
- Micaria* sp. 1 (cf. *lenzi*): 17; ILT: As.
- Micaria* sp. 2 (cf. *rossica*): 12, 32, 34, 53, 58, 63; ILT: Ism, As, Bf; MSLT: Dns, Sds.
- Parasyrisca asiatica* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 39, 43, 45, 47, 50, 60, 61; GLT: Mst; MSLT: Cxs, S; MFLT: S. (OVTSHARENKO et al. 1995).



- Parasyrisca belengish* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 27, 44, 46; MFLT: Sss. (OVTSHARENKO et al. 1995).
- Parasyrisca hippai* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 09, 43; MFLT: S, Sss. (OVTSHARENKO et al. 1995).
- Parasyrisca logunovi* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 47; GLT: Mst. (OVTSHARENKO et al. 1995).
- Parasyrisca potanini* SCHENKEL, 1963: 09, 11, 17, 34, 49, 51, 58, 63; ILT: Rpb, As, Bf; MSLT: Dbs, S. (MARUSIK & LOGUNOV 1995: sub. *P. lugubris*; OVTSHARENKO et al. 1995).
- \**Parasyrisca schenkeli* OVTSHARENKO & MARUSIK, 1988: 49, 53; ILT: Rpb; MSLT: Dbs.
- Parasyrisca tyshchenkoi* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 19; MFLT: ?. (OVTSHARENKO et al. 1995).
- Parasyrisca ulykpani* OVTSHARENKO, PLATNICK & MARUSIK, 1995: 26, 35, 54; GLT: Mwt; MFLT: Mf. (OVTSHARENKO et al. 1995).
- Phaeoedus braccatus* (L. KOCH, 1866): 11, 12, 17, 27, 29, 30, 32, 34, 51, 53, 63; ILT: Rpb, Ism; MFLT: Sss, Sms; MSLT: Dns, Dbs, S. (MARUSIK & LOGUNOV 1995).
- Poecilochroa variana* (C.L. KOCH, 1839): 09; ILT: Rpb.
- Tuvadrassus tegulatus* (SCHENKEL, 1963): 50, 60, 63; MSLT: Sds, Cxs. (MARUSIK & LOGUNOV 1995).
- Zelotes baltistanus* CAPORIACCO, 1934: 27, 28, 30, 34, 50, 53, 63; ILT: U; MFLT: Sss; MSLT: Dns, Dbs, Sds. (MARUSIK & LOGUNOV 1995).
- Zelotes barkol* PLATNICK & SONG, 1986: 20, 49; ILT: U. (MARUSIK & LOGUNOV 1995).
- Zelotes exiguus* (MÜLLER & SCHENKEL, 1895): 09, 14, 34, 53; ILT: Ism; MSLT: Dbs, S.
- Zelotes fratris* CHAMBERLIN, 1920: 01, 04, 19; ILT: Rpb; GLT: Sm; MFLT: ?. (MARUSIK & LOGUNOV 1995: in part sub. *Z. cf. fratris*).
- Zelotes potanini* SCHENKEL, 1963: 02, 09, 10, 12, 13, 17, 18, 19, 27, 29a, 30, 31, 32, 34, 35, 36, 44, 49, 50, 53, 57, 58, 60, 62; GLT: Mst; ILT: As, U, Mm, Rpb; MFLT: Sss, Sms; MSLT: Dns, Dbs, S. (MARUSIK & LOGUNOV 1995).
- Zelotes puritanus* CHAMBERLIN, 1922: 27, 30; MFLT: Sss. (MARUSIK & LOGUNOV 1995).
- Zelotes sula* LOWRIE & GERTSCH, 1955: 09, 11, 19, 20, 27, 31; MFLT: Lf, S, Sss, Sms. (MARUSIK & LOGUNOV 1995).
- Zelotes yutian* PLATNICK & SONG, 1986: 19, 32, 34, 48, 50, 51, 57; ILT: Mm, Rpb. (MARUSIK & LOGUNOV 1995).

## Hahniidae

- Cryphoea silvicola* (C.L. KOCH, 1834): 40; MFLT: Lf.
- Hahnia* sp. 1 (cf. *ononidum*): 02, 08, 09, 23, 26, 27, 31, 36, 40, 42, 56, 58; GLT: Mwt; MFLT: Mf, Lf, Sgg.

## Linyphiidae

- Abacoproeces saltuum* (L. KOCH, 1872): 58, 63; ILT: U.
- Agyneta affinisoides* TANASEVITCH, 1984: 26; GLT: Mwt. (ESKOV 1992).
- Agyneta* sp. 1 (cf. *affinisoides*): 42, 52; GLT: ?.
- Agyneta allosubtilis* LOKSA, 1965: 04, 07, 26, 27, 30, 31, 35, 52; MFLT: Mf, Lf, Sms. (ESKOV 1992).
- Agyneta beata* (O.P.-CAMBRIDGE, 1906): 31; MFLT: Mf.
- ? *Agyneta birulaioides* WUNDERLICH, 1995: 12, 34, 40; MSLT: S, Dns.
- Agyneta conigera* (O.P.-CAMBRIDGE, 1863): 07; MFLT: Mf. (ESKOV 1992).
- Agyneta fuscipalpus* (C.L. KOCH, 1836): 26; GLT: Mwt.
- Agyneta kaszabi* (LOKSA, 1965): 50, 51; ILT: As; MSLT: Cxs. (ESKOV 1992).
- Agyneta levii* TANASEVITCH, 1984: 12; MSLT: Dns. (ESKOV 1992).
- Agyneta olivacea* (EMERTON, 1882): 02, 04, 03, 07, 14, 22, 27, 31, 35, 36, 40, 42, 44, 52, 54, 56, 63; GLT: Mst, Sm; ILT: Bf; MFLT: Mf, Lf. (ESKOV 1992).
- Agyneta pseudosaxatilis* TANASEVITCH, 1984: 23, 35, 56; MFLT: ?. (ESKOV 1992).
- Agyneta trifurcata* HIPPA & OKSALA, 1985: 35, 40, 52, 54, 56; MFLT: ?.
- Allomengea dentisetis* (GRUBE, 1861): 17, 55; ILT: Mm. (ESKOV 1992).
- Allomengea scopigera* (GRUBE, 1859): 17, 29, 31; ILT: Mm. (ESKOV 1992).
- Anguliphantes cerinus* L. KOCH, 1879): 02, 04; GLT: Sm. (ESKOV 1992: sub. *Lepthyphantes c.*).
- Anguliphantes dybowskii* (O.P.-CAMBRIDGE, 1873): 05; MFLT: Mf. (ESKOV 1992: sub. *Lepthyphantes d.*).

- Anguliphantes karpinskii* (O.P.-CAMBRIDGE, 1873): 07, 35; MFLT: Mf. (ESKOV 1992: sub. *Lepthyphant* k.).
- ? *Arachosinella strepens* DENIS, 1958: 14, 26, 55, 63; ILT: U; GLT: Mwt. (ESKOV 1992).
- Araeoncus crassiceps* (WESTRING, 1862): 34, 57; ILT: Ism.
- Araeoncus vorkutensis* TANASEVITCH, 1984: 03; GLT: Sm. (ESKOV 1992).
- Asiophantes sibiricus* ESKOV, 1993: 23; MFLT: Sm. (ESKOV 1993).
- Bathyphantes eumenis* (L. KOCH, 1879): 04, 14, 27, 31, 35, 36, 40, 44, 56; GLT: Sm, S; MFLT: Lf, Mf.
- Bathyphantes gracilis* (BLACKWALL, 1841): 23, 63; ILT: U; MFLT: Sm. (ESKOV 1992).
- Bathyphantes seitiger* F.O.P.-CAMBRIDGE, 1894: 55; GLT: U. (ESKOV 1992).
- Bathyphantes simillimus* (L. KOCH, 1879): 05, 07, 11, 20, 23, 26; GLT: Mwt; ILT: U; MFLT: Mf, Lf. (ESKOV 1992).
- Bolyphantes alticeps* (SUNDEVALL, 1833): 17; ILT: Mm. (ESKOV 1992).
- Bolyphantes index* (THORELL, 1856): 11, 40; MFLT: Sgg. (ESKOV 1992).
- Carorita limnaea* (CROSBY & BISHOP, 1927): 07, 27, 34, 63; ILT: Rpb, U; MFLT: Mf. (ESKOV 1992).
- Centromerus clarus* (L. KOCH, 1879): 02, 04, 05, 07; GLT: Mwt, Sm; MFLT: Mf. (ESKOV 1992, ESKOV & MARUSIK 1992b).
- Centromerus* sp. 1 (cf. *amurensis*): 35; MFLT: ?.
- Ceratinella brevis* (WIDER, 1834): 07; MFLT: Mf. (ESKOV 1992).
- Ceratinella wideri* (THORELL, 1871): 02, 27; GLT: Mwt; MFLT: Mf, Lf.
- Cnephalocotes obscurus* (BLACKWALL, 1834): 35; MFLT: Mf.
- Collinsia caliginosa* (L. KOCH, 1879): 35, 36, 52; ILT: Rpb.
- Collinsia dentata* ESKOV, 1990: 31; ILT: Rpb.
- Collinsia distincta* (SIMON, 1884): 07, 52; MFLT: Mf. (ESKOV 1992).
- Collinsia submissa* (L. KOCH, 1879): 09, 12, 31, 32, 35, 36, 48; ILT: U. (ESKOV 1992: sub. *C. japonica*).
- Concavocephalus* sp. 1 (cf. *rubens*): 07a, 35, 36, 56; ILT: U; MFLT: Sm. (ESKOV & MARUSIK 1994: sub. *C. rubens*).
- Dactylopiastes diphysus* (HEIMER, 1987): 34, 57; ILT: Ism.
- Dactylopiastes video* (CHAMBERLIN & IVIE, 1947): 63; ILT: U.
- Decipiphantes decipiens* (L. KOCH, 1879): 07, 11, 23, 26, 27, 31, 35, 40, 52, 56; GLT: Mwt; MFLT: Mf. (ESKOV 1992: sub. *Lepthyphant* d.).
- Dicymbium facetum* (L. KOCH, 1879): 07, 56; MFLT: Mf. (ESKOV 1992).
- Diplocentria bidentata* (EMERTON, 1882): 07, 23; MFLT: Mf, Lf. (ESKOV 1992).
- Diplocentria rectangulata* (EMERTON, 1915): 23, 27, 31, 35, 36, 40, 56; MFLT: Mf, Lf. (ESKOV 1992).
- Diplocephalus cristatus angusticeps* HOLM, 1973: 02, 04; GLT: Sm, S; ILT: Rpb.
- ? *Diplocephalus marusiki* ESKOV, 1988: 30, 63; ILT: U.
- Diplocephalus subrostratus* (O.P.-CAMBRIDGE, 1873): 01, 07, 09, 12, 14, 17, 19, 20, 26, 30, 31, 40, 54, 58, 63; ILT: U; MFLT: Lf. (ESKOV 1992).
- Dismodicus bifrons* (BLACKWALL, 1841): 01, 05, 07, 11, 14, 20, 23, 31, 48; ILT: U; MFLT: Mf, Lf. (ESKOV 1992, ESKOV & MARUSIK 1994).
- Drepanotylus borealis* HOLM, 1945: 03, 52; GLT: Sm. (ESKOV 1992).
- Entelecara erythropus* (WESTRING, 1851): 09, 12, 30; ILT: U; MFLT: Mf, Sms. (ESKOV 1992).
- Entelecara sombra* (CHAMBERLIN & IVIE, 1947): 09, 30, 31, 58, 63; ILT: U; MFLT: Sms.
- Epigytholus tuvensis* TANASEVITCH, 1995: 17, 51; ILT: As. (TANASEVITCH 1995).
- Episolder finitimus* TANASEVITCH, 1995: 26, 27, 31, 35, 36, 52; GLT: Mwt; MFLT: Lf, Mf. (TANASEVITCH 1995).
- Erigone atra* BLACKWALL, 1833: 03, 08, 12, 14, 26, 27, 30, 31, 36, 40, 48, 56, 58, 60, 63; GLT: Mwt; ILT: Mm; MFLT: Sgg, Sms, S; MSLT: Dns. (ESKOV 1992).
- Erigone dentigera* O.P.-CAMBRIDGE, 1874: 28, 57; ILT: Ism; MSLT: Dns.
- Erigone dentipalpis* (WIDER, 1834): 63; ILT: Ism.
- Erigone hypoarctica* ESKOV, 1989: 05; MFLT: Mf. (ESKOV 1992).
- Erigone piechockii* HEIMER, 1987: 09, 31, 34, 44, 48, 49, 51, 54, 57, 63; ILT: Ism, Mm, As, U, Rpb.
- Erigone remota* L. KOCH, 1869: 47; GLT: Mst. (ESKOV & MARUSIK 1994).
- Erigone simillima* KEYSERLING, 1886: 03, 07a; GLT: Sm; MFLT: Mf. (ESKOV 1992, ESKOV & MARUSIK 1994).
- Erigonoplus sibiricus* ESKOV & MARUSIK, 1998: 12, 14; MSLT: S, Dns. (ESKOV & MARUSIK 1998)
- Estrandia grandaeva* (KEYSERLING, 1886): 05, 07, 08, 35; MFLT: Mf. (ESKOV 1992).
- Floronia bucculenta* (CLERCK, 1758): 58; ILT: Mm. (ESKOV 1992).

- Gnathonarium dentatum* (WIDER, 1834): 07, 63; ILT: U; MFLT: Mf. (ESKOV 1992).
- Gnathonarium taczanowskii* (O.P.-CAMBRIDGE, 1873): 05, 11, 19, 20, 30, 31; ILT: U, Rpb; MFLT: Mf. (ESKOV 1992).
- Gonatum rubellum* (BLACKWALL, 1841): 01, 05, 40; MFLT: Mf. (ESKOV 1992).
- Gonatum rubens* (BLACKWALL, 1833): 22, 26, 27, 35, 36, 40, 42, 52, 54, 56; MFLT: Mf, Lf. (ESKOV & MARUSIK 1994).
- Hilaira frigida intercepta* (O.P.-CAMBRIDGE, 1873): 07; MFLT: Mf. (ESKOV 1992).
- Hilaira gibbosa* TANASEVITCH, 1982: 26, 27; MFLT: Sms. (ESKOV 1992).
- ? *Hilaira glacialis* (THORELL, 1872): 47; GLT: Mst. (ESKOV & MARUSIK 1994).
- Hilaira herniosa* (THORELL, 1875): 02, 07, 23, 20, 26, 27, 31, 35, 36, 40, 54, 56; GLT: Mwt; MFLT: Mf, Lf. (ESKOV 1992).
- Hilaira minuta* ESKOV, 1979: 23, 26, 27, 31, 35, 40; MFLT: Mf, Lf. (ESKOV 1992).
- "*Hilaira*" *mongolica* WUNDERLICH, 1995: 07, 08a, 11, 23, 20, 26, 31, 35, 63; ILT: U; MFLT: Mf, Lf. (ESKOV 1992: sub. *H. tatrca tatrca*).
- Hilaira sibirica* ESKOV, 1987: 07a; ILT: U; MFLT: Sm. (ESKOV & MARUSIK 1994).
- Hilaira* sp. 1 (cf. *marusiki*): 63; ILT: U.
- Holminaria prolata* (O.P.-CAMBRIDGE, 1873): 07, 31; MFLT: Mf. (ESKOV 1992: sub. *H. obscura*).
- Horcotes strandi* (SYTSHEVSKAJA, 1935): 02, 40, 54, 56; GLT: ?. (ESKOV 1992: sub. *Saloca* s.).
- Hylyphantes nigrilus* (SIMON, 1881): 02, 04; GLT: Mwt, Sm, S.
- Hypomma bituberculatum* (WIDER, 1834): 17, 40, 56, 57, 58, 63; ILT: U, Bf. (ESKOV 1992).
- Hypomma cornutum* (BLACKWALL, 1833): 07, 20; ILT: U; MFLT: Mf. (ESKOV 1992).
- Hypselistes jacksoni* (O.P.-CAMBRIDGE, 1902): 01, 07, 23, 27, 30; MFLT: Mf, Lf. (ESKOV 1992; MARUSIK & LEECH 1993: map 2).
- Hypselistes semiflavus* (L. KOCH, 1879): 05, 23; MFLT: Lf, Sgg. (ESKOV 1992, MARUSIK & LEECH 1993: map 1).
- Incestophantes ancus* TANASEVITCH, 1996: 11; MFLT: Lf. (TANASEVITCH 1996).
- Incestophantes bonus* TANASEVITCH, 1996: 50; ILT: U, Rpb. (TANASEVITCH 1996).
- Incestophantes incestus* (L. KOCH, 1879): 35, 36, 52; MFLT: ?
- Incestophantes logunovi* TANASEVITCH, 1996: 53; MSLT: Dbs. (TANASEVITCH 1996).
- Incestophantes obtusus* TANASEVITCH, 1996: 07, 20; ILT: U; MFLT: Mf. (ESKOV 1992: sub. *Lepthyphantes kochiellus*).
- Incestophantes tuvensis* TANASEVITCH, 1996: 11, 30, 40, 44, 48, 50, 52, 58, 63; ILT: U, Mm; MFLT: Lf. (TANASEVITCH 1996).
- Improphantes complicatus* (EMERTON, 1882): 26, 27, 31, 36, 40; MFLT: Mf, Lf.
- Improphantes flexilis* (TANASEVITCH, 1986): 02; GLT: Sm, Mwt. (ESKOV 1992: sub. *Lepthyphantes f.*).
- Ivielum sibiricum* ESKOV, 1988: 02, 04, 05, 09, 27, 35, 40, 52, 54, 56, 63; GLT: Mwt; ILT: U; MFLT: Mf, Sms. (ESKOV 1992).
- Kaestneria pullata* (O.P.-CAMBRIDGE, 1863): 63; ILT: U.
- Lasiargus hirsutus* (MENGE, 1869): 14, 21, 26, 27, 30, 35, 40, 52, 54, 56, 60; GLT: ?; MFLT: Mf, Sms, S; MSLT: Cxs. (ESKOV 1992).
- Lasiargus pilipes* (KULCZYNSKI, 1908): 14, 56; MFLT: Lf (?).
- Lepthyphantes abiskoensis* HOLM, 1945: 07; MFLT: Mf.
- Lepthyphantes bergstroemi* SCHENKEL, 1931: 02, 07, 27, 31, 52, 56; GLT: Mst; MFLT: Mf. (ESKOV 1992).
- Lepthyphantes cornutus* SCHENKEL, 1927: 02, 26, 30; GLT: Sm, Mwt; MFLT: Lf. (ESKOV 1992).
- Lepthyphantes distichus* TANASEVITCH, 1986: 02; GLT: Sm, Mwt. (ESKOV 1992).
- Lepthyphantes expunctus* (O.P.-CAMBRIDGE, 1875): 35, 56; MFLT: Lf (?).
- \**Lepthyphantes kaszabi* WUNDERLICH, 1995: 49, 63; ILT: Ism.
- Lepthyphantes laricetorum* TANASEVITCH & ESKOV, 1987: 23, 35; MFLT: Lf. (ESKOV 1992).
- Lepthyphantes luteipes* (L. KOCH, 1879): 02, 07, 11, 19, 20, 23, 26, 27, 31, 36, 40, 45, 52, 56; ILT: U; GLT: Mwt; MFLT: Mf, Sgg. (ESKOV 1992).
- Lepthyphantes nigriventris* (L. KOCH, 1879): 02, 05, 11, 23, 40; GLT: Sm; MFLT: Lf. (ESKOV 1992).
- Lepthyphantes pseudoobscurus* MARUSIK, HIPPA & KOPONEN, 1996: 08, 56; MFLT: Mf. (ESKOV 1992: sub. *L. obscurus*).
- "*Lepthyphantes*" *quadrinaculatus* KULCZYNSKI, 1896: 07; MFLT: Mf. (ESKOV 1992).
- "*Lepthyphantes*" *sajanensis* ESKOV & MARUSIK, 1994: 02, 04, 05; GLT: Sm, Mwt; ILT: Rpb. (ESKOV & MARUSIK 1994).
- Lepthyphantes sibiricus* TANASEVITCH, 1986: 02, 04; GLT: Mwt, Sm.

- Lepthyphantes taczanowskii* (O.P.-CAMBRIDGE, 1873): 19, 20, 31; ILT: U. (ESKOV 1992).
- Lepthyphantes* sp. 1 (cf. *pepticus*): 63; ILT: Bf.
- Leptorhoptrum robustum* (WESTRING, 1851): 01, 02; GLT: Sm. (ESKOV 1992).
- Lophomma cognatum* HOLM, 1960: 08a; MFLT: Mf. (ESKOV 1992).
- Macrargus multesimus* (O.P.-CAMBRIDGE, 1875): 07, 11, 19, 27, 31, 40; MFLT: Mf, Lf. (ESKOV 1992).
- Maro flavescens* (O.P.-CAMBRIDGE, 1873): 07a; MFLT: ?. (ESKOV & MARUSIK 1994).
- Maro saaristoi* ESKOV, 1980: 11, 14, MFLT: Lf. (ESKOV 1992).
- Maro sibiricus* ESKOV, 1980: 07; MFLT: Mf. (ESKOV 1992).
- Maso sundevalli* (WESTRING, 1851): 07, 27, 56, 63; ILT: U; MFLT: Mf. (ESKOV 1992).
- Mecynargus monticola* (HOLM, 1943): 02, 04, 23, 26, 27, 35, 40, 56; GLT: Mwt, Sm; MFLT: Lf. (ESKOV 1992).
- ? *Mecynargus sphagnicola* (HOLM, 1939): 40; ?.
- Mecynargus tungusicus* (ESKOV, 1981): 26, 27, 40, 56; MFLT: Mf, Lf. (ESKOV 1992).
- Metopobactrus prominulus* (O.P.-CAMBRIDGE, 1872): 31, 56, 63; ILT: U; MFLT: Sss (?).
- Micrargus herbigradus* (BLACKWALL, 1854): 31; MFLT: ?.
- Microlinyphia impigra* (O.P.-CAMBRIDGE, 1871): 23, 63; ILT: Ism. (ESKOV 1992).
- Microlinyphia pusilla* (SUNDEVALL, 1830): 07, 11, 17, 23, 27, 28, 30, 31, 32, 34, 35, 36, 44, 49, 51, 53, 56, 57, 63; ILT: Ism, As, Rpb, Bf, U; MFLT: Sss, Sms; MSLT: Dbs. (ESKOV 1992).
- Microneta viaria* (BLACKWALL, 1841): 02, 04, 07, 14, 19, 30, 35, 63; GLT: Mst, S, Sm; ILT: U; MFLT: Mf, S. (ESKOV 1992).
- Minicia marginella* (WIDER, 1834): 35; MFLT: Sgg.
- Minicia uralensis* TANASEVITCH, 1983: 02, 04; GLT: Sm, S.
- Minyrioloides trifrons* (O.P.-CAMBRIDGE, 1863): 04, 05, 11, 23, 36; GLT: Sm; MFLT: Mf, Lf. (ESKOV 1992).
- Monocerellus montanus* TANASEVITCH, 1983: 02, 54; GLT: Mst.
- Nenilinium asiaticum* ESKOV, 1988: 05; MFLT: Mf. (ESKOV 1992).
- Neriene clathrata* (SUNDEVALL, 1830): 07, 08; MFLT: Sgg. (ESKOV 1992).
- Neriene emphana* (WALCKENAER, 1841): 01, 17; ILT: Mm; MFLT: Sgg. (ESKOV 1992).
- Neriene montana* (CLERCK, 1758): 17, 55, 63; ILT: U, Mm. (ESKOV 1992).
- Neriene radiata* (WALCKENAER, 1841): 07, 09, 14, 17, 23, 27, 30, 31, 32, 58; ILT: Mm, U; MFLT: Sms, Sss, Sgg. (ESKOV 1992: sub. *N. marginata*).
- Notioscopus jamalensis* GRESE, 1909: 07, 08, 35, 36, 40, 56; MFLT: Mf. (ESKOV 1992).
- Oedothorax agrestis* (BLACKWALL, 1853): 04, 05; GLT: Sm; ILT: Rpb; MFLT: Mf. (ESKOV 1992).
- Oedothorax mongolensis* (HEIMER, 1987): 60; MSLT: Cxs. (ESKOV 1992).
- Oedothorax retusus* (WESTRING, 1851): 02, 07, 17; GLT: Sm; ILT: Mm; MFLT: Mf, Sgg. (ESKOV 1992).
- Oreonetides sajanensis* ESKOV, 1991: 04; GLT: Sm.
- Oreonetides vaginatus* (THORELL, 1872): 31, 34, 40, 56; ILT: Ism; MFLT: Mf.
- Oryphantes geminus* (TANASEVITCH, 1982): 07; MFLT: Mf. (ESKOV 1992: sub. *Lepthyphantes* g.).
- Panamomops depilis* ESKOV & MARUSIK, 1994: Sayano-Shushensky Reservation, 52; MFLT: Sms (?). (ESKOV & MARUSIK 1994).
- Panamomops dybowskii* (O.P.-CAMBRIDGE, 1873): 02, 04, 40, 44, 56; GLT: Mwt. (ESKOV 1992).
- Panamomops tauricornis* (SIMON, 1881): 26, 27, 31, 34; GLT: Mwt; ILT: Ism; MFLT: Mf, Lf.
- Paraeboria jeniseica* (ESKOV, 1981): 07; MFLT: Mf. (ESKOV 1992).
- Parawubanoïdes marusiki* (TANASEVITCH, 1987): 09, 12, 14, 20, 30, 31, 35, 36, 49, 58, 63; ILT: Rpb, U; MFLT: S, Lf, Sms. (ESKOV 1992, ESKOV & MARUSIK 1992a).
- Parawubanoïdes unicornis* (O.P.-CAMBRIDGE, 1873): 07, 08a, 27, 30, 31, 35, 36; MFLT: Mf, Lf. (ESKOV 1992, ESKOV & MARUSIK 1992a).
- Pelecopsis dorniana* HEIMER, 1987: 02, 08a, 11, 26, 27, 40, 42, 52, 56; GLT: Mwt; MFLT: Mf, Sms. (ESKOV 1992).
- \**Pelecopsis minor* WUNDERLICH, 1995: 32, 63; ILT: Ism.
- Pelecopsis palmgreni* MARUSIK & ESYUNIN, 1998: 22, 27, 35, 40, 52, 56; MFLT: Mf. (ESKOV & MARUSIK 1994: sub. *P. mengei*, MARUSIK & ESYUNIN 1998).
- Pelecopsis parallela* (WIDER, 1834): 08a, 23; MFLT: ?. (ESKOV 1992).
- Perlongipalpus* sp. 1 (cf. *pinipumilis*): 30; MFLT: Lf.
- Perregrius deformis* (TANASEVITCH, 1982): 07, 31, 40, 52, 54, 56; MFLT: Mf. (ESKOV 1992).
- Pityohyphantes phrygianus* (C.L. KOCH, 1836): 07; MFLT: Mf. (ESKOV 1992).
- Pocadicnemis pumila* (BLACKWALL, 1841): 14, 17, 33, 49, 58; ILT: U, Bf. (ESKOV 1992).

- Poeciloneta petrophila* TANASEVITCH, 1989: 52, 54; GLT: Mst.  
*Poeciloneta theridiformis* (EMERTON, 1911): 08; MFLT: Mf. (ESKOV & MARUSIK 1994).  
*Poeciloneta variegata* (BLACKWALL, 1841): 07, 35, 63; ILT: U; MFLT: ?. (ESKOV 1992).  
*Porrohmma pygmaeum* (BLACKWALL, 1834): 07; MFLT: Mf. (ESKOV 1992).  
*Praestigia kulczynskii* ESKOV, 1979: 17, 30, 58; ILT: U. (ESKOV 1992).  
*Praestigia pini* (HOLM, 1950): 07, 20; ILT: U; MFLT: Mf. (ESKOV 1992).  
*Pseudocyba miracula* TANASEVITCH, 1984: 09, 12, 20, 31, 32, 36; ILT: U; MSLT: Dns. (ESKOV 1992).  
*Saloca ryvkini* ESKOV & MARUSIK, 1994: 07a; ILT: U; MFLT: Sm. (ESKOV & MARUSIK 1994).  
*Satilatlas marxi* KEYSERLING, 1886: 08; MFLT: Mf. (ESKOV 1992).  
 ? *Savignia birostra* (CHAMBERLIN & IVIE, 1947): 07a; ILT: U, Ism. (ESKOV & MARUSIK 1994).  
*Savignia centrasiatica* ESKOV, 1991: 12, 17; ILT: U. (ESKOV 1991, 1992).  
*Savignia frontata* BLACKWALL, 1833: 07, 26, 30, 31; GLT: Mwt; MFLT: Mf, Lf. (ESKOV 1992).  
*Scotargus pilosus* SIMON, 1913: 35; ?.  
*Scotinotylus alpinus* (L. KOCH, 1869): 11, 26, 54; GLT: Mwt; MFLT: Lf. (ESKOV 1992).  
*Scotinotylus alpinus* (BANKS, 1896): 27, 31; MFLT: Mf.  
*Scotinotylus altaicus* MARUSIK, HIPPA & KOPONEN, 1996: 26, 30; GLT: Mwt; MFLT: Mf, S.  
*Scotinotylus protervus* (L. KOCH, 1879): 26, 27, 35, 40, 52, 54, 56; GLT: Mwt; MFLT: Lf. (ESKOV 1992).  
*Semljicola angulata* (HOLM, 1963): 07; 23; MFLT: ?. (ESKOV 1992: sub. *Eboria a.*, SAARISTO & ESKOV 1996: fig. 14).  
*Semljicola latus* (HOLM, 1939): 07; 26, 27, 35, 36, 52; GLT: Mwt; MFLT: Mf, Lf. (ESKOV 1992: sub. *Latiithorax l.*, SAARISTO & ESKOV 1996: fig. 15).  
*Semljicola thaleri* (ESKOV, 1981): Sayano-Shushensky Reservation, 31, 40, 52, 54, 56; ?. (ESKOV 1992: sub. *Latiithorax t.*, SAARISTO & ESKOV 1996: fig. 15).  
*Sibirocyba incerta* (KULCZYNSKI, 1916): 35, 56; ILT: Rpb.  
 ? *Silometopoides sphagnicola* ESKOV & MARUSIK, 1992: 22; MFLT: Mf.  
*Silometopus elegans* (O.P.-CAMBRIDGE, 1872): 07; MFLT: Mf. (ESKOV 1992).  
*Silometopus uralensis* TANASEVITCH, 1985: 02, 04, 07, 08a, 26, 31, 44; GLT: Mwt, Sm; ILT: U; MFLT: Mf. (ESKOV 1992).  
*Sisis transbaikalicus* (ESKOV, 1989): 35; MFLT: ?.  
*Stemonyphantes conspersus* (L. KOCH, 1879): 02, 05, 07, 11, 20, 31; GLT: Sm; ILT: U; MFLT: Mf, Lf. (ESKOV 1992).  
*Stemonyphantes sibiricus* (GRUBE, 1861): 31, 36, 56; ILT: U.  
*Styloctetor logunovi* (ESKOV & MARUSIK, 1994): 05, 20, 27, 31, 53, 56; ILT: Rpb; MSLT: Dns, S. (ESKOV & MARUSIK 1994).  
*Styloctetor romanus* (O.P.-CAMBRIDGE, 1872): 55; ILT: ?. (ESKOV 1992).  
*Styloctetor stativus* (SIMON, 1881): 08a, 31, 35; ?. (ESKOV 1992).  
*Styloctetor tuvinensis* MARUSIK & TANASEVITCH, 1998: 32; ILT: U, Rpb.  
 ? *Thaleria orientalis* TANASEVITCH, 1984: 05, 31; MFLT: Mf. (ESKOV 1992).  
*Thaleria sajanensis* ESKOV & MARUSIK, 1992: 02, 05, 07, 26, 27, 31, 35, 36, 40, 52, 54, 56; GLT: Mwt; MFLT: Mf, Lf. (ESKOV 1992).  
*Thyreosthenius biovatus* (O.P.-CAMBRIDGE, 1875): 02; GLT: Sm.  
*Tibioploides arcuatus* (TULLGREN, 1955): 01, 05, 19, 31; ILT: U; MFLT: Mf. (ESKOV 1992).  
*Tibioplus diversus* (L. KOCH, 1879): 02, 04, 05, 07, 26, 30, 31, 32, 35, 36, 40, 52, 56, 63; GLT: Mwt, Mst; ILT: U; MFLT: Mf, S. (ESKOV 1992).  
*Tiso aestivus* (L. KOCH, 1872): 08a, 26, 27, 40, 52, 54, 56; MFLT: Mf, Sms. (ESKOV 1992).  
*Tmeticus affinis* (BLACKWALL, 1855): 08, 23, 63; ILT: U; MFLT: Mf, Lf. (ESKOV 1992).  
*Trematocephalus cristatus* (WIDER, 1934): 14; ILT: U.  
 \**Trichobacterus brevispinosus* WUNDERLICH, 1995: 34, 53, 63; ILT: Ism; MSLT: S.  
*Trichoncus vasconicus* DENIS, 1944: 09; MFLT: Sss.  
*Trichopierna cito* (O.P.-CAMBRIDGE, 1872): 09, 30, 53; MFLT: Sms; MSLT: Dbs.  
*Trichopterna thorelli* (WESTRING, 1862): 07; MFLT: ? (ESKOV 1992).  
*Troxochrus scabriculus* (WESTRING, 1851): 31; ?.  
*Typhochrestoides baikalensis* ESKOV, 1990: 02, 04, 26, 27, 30, 35, 52; GLT: Sm, Mst, Mwt; MFLT: Mf, S.  
*Ummeliata sibirica* (ESKOV, 1980): 07; MFLT: ?. (ESKOV 1992).  
*Victorium putoranicum* ESKOV, 1988: 02; GLT: Mwt, Mst. (ESKOV 1992).  
*Wabasso questio* (CHAMBERLIN, 1948): 07, 56; MFLT: ? (ESKOV 1992).  
*Walckenaeria antica* (WIDER, 1834): 08a, 11, 23; MFLT: Lf. (ESKOV 1992).

- Walckenaeria auranticeps* (EMERTON, 1882): 58; ILT: U. (ESKOV 1992).  
*Walckenaeria capito* (WESTRING, 1861): 05; MFLT: Mf. (ESKOV 1992).  
*Walckenaeria cuspidata* BLACKWALL, 1833: 02, 31; GLT: ? (ESKOV 1992).  
*Walckenaeria karpinskii* (O.P.-CAMBRIDGE, 1873): 02, 07, 20, 23, 26, 27, 30, 31, 35, 36, 40, 42, 56; GLT: Sm, Mwt; MFLT: Mf, Lf. (ESKOV 1992: sub. *W. holmi*).  
*Walckenaeria kazakhstanica* ESKOV, 1995: 19; ILT: U. (ESKOV 1992).  
*Walckenaeria koenbouteri* BAERT, 1994: 02; GLT: Mst. (BAERT 1994).  
*Walckenaeria korobeinikovi* ESYUNIN & EFIMIK, 1996: 40, 47, 52, 63; GLT: Mst; ILT: Bf. (ESKOV & MARUSIK 1994: sub. *W. clavicornis*).  
*Walckenaeria lepida* (KULCZYNSKI, 1885): 07, 20; ILT: U; MFLT: Mf. (ESKOV 1992).  
*\*Walckenaerianus aimakensis* WUNDERLICH, 1995: 6; ILT: Bf.  
*Wubanoidea uralensis* (PAKHORUKOV, 1981): 04, 26, 27, 35, 36, 52, 56; GLT: S, Sm; MFLT: Mf, Lf. (ESKOV 1992, ESKOV & MARUSIK 1992a).  
*Yakutopus xerophilus* ESKOV, 1990: 09, 30, 32, 49, 53, 63; ILT: U; MFLT: Lf, Sms; MSLT: Dns.  
*Zornella* sp. 1 (cf. *cultrigera*): 05, 07, 19, 20, 23, 31, 35, 36, 40, 54; ILT: U; MFLT: Mf, Lf. (ESKOV 1992: sub. *Z. cultrigera*).

## Liocranidae

- Agroeca maculata* L. KOCH, 1879: 07; MFLT: Mf.  
*Agroeca* sp. 1: 09, 12, 13, 30, 32, 35, 44, 52; MFLT: S; MSLT: S, Dns.  
*"Phrurolithus" sinicus* ZHU & MEI, 1982: 09, 14, 31, 32, 53; ILT: Rpb; MSLT: Dbs, S.

## Lycosidae

- Acantholycosa lignaria* (CLERCK, 1758): 13; MFLT: Bef.  
*Acantholycosa norvegica* (THORELL, 1872): 02, 03, 04, 07, 26, 27, 31, 35, 36, 56; GLT: Sm, Mwt; MFLT: S, Sms, Mf.  
*\*Acantholycosa triangulata* YU & SONG, 1988: 47; GLT: Mst.  
*Allohogna singoriensis* (LAXMANN, 1770): 21, 49, 57, 58; ILT: saline wasteland.  
*Alopecosa aculeata* (CLERCK, 1758): 03, 04, 06, 07, 08, 11, 19, 22, 26, 27, 30, 35, 36, 40, 54, 56, 58; GLT: Sm, Mwt, S; ILT: U, Rpb; MFLT: Sms, Mf, Lf.  
*Alopecosa albostrigata* (GRUBE, 1861): 35, 36; MFLT: Lf.  
*Alopecosa cuneata* (CLERCK, 1758): 19, 27, 58; ILT: U, MFLT: Sms.  
*Alopecosa dimidiata* (THORELL, 1875): 09, 12, 23, 27, 30, 50, 53, 55, 63; MFLT: Sss; MSLT: Sds, Cxs, Dbs, Dns, S. (MIKHAILOV 1996: sub. *Trochosa d.*).  
*\*Alopecosa hingganica* SONG, 1993: 48; ILT: Rpb.  
*\*Alopecosa licenti* (SCHENKEL, 1953): 28; MSLT: Dbs.  
*? Alopecosa pinetorum* THORELL, 1856: 05; MFLT: Mf.  
*Alopecosa pulverulenta* (CLERCK, 1758): 02, 19, 31, 54; GLT: Sm; ILT: U.  
*Alopecosa sibirica* (KULCZYNSKI, 1908): 36; MFLT: Sms.  
*Alopecosa solivaga* (KULCZYNSKI, 1901): 08, 09, 11, 12, 14, 17, 19, 20, 21, 27, 30, 35, 36, 41, 42, 44, 48, 49, 51, 58, 63; ILT: U, As, Rpb; MFLT: Sss, Sms, S, Sm, Lf; MSLT: Dns.  
*\*Alopecosa subrufa* SCHENKEL, 1963: 30, 34; ILT: Ism.  
*Alopecosa zyzyni* LOGUNOV & MARUSIK, 1995: 17, 29, 30, 34, 36, 38, 46, 48, 49, 50, 51, 53, 55, 58, 61, 63; ILT: Ism, As, Rpb, Mm; MFLT: Sss; MSLT: Dbs, Sds, S. (LOGUNOV & MARUSIK, 1995).  
*Alopecosa* sp.1 (cf. *erudita*): 09, 21, 27, 28, 30, 32, 34, 53, 58, 63; ILT: Ism, Rpb; MFLT: Sss, Sms; MSLT: Dns, Dbs, Sds, S.  
*Alopecosa* sp. 2 (cf. *erudita*): 55, 58, 63; MSLT: Sds.  
*Alopecosa* sp. 3 (cf. *erudita*): 41; MSLT: Cxs.  
*\*Arctosa cervina* SCHENKEL, 1936: 34, 51, 63; ILT: Mm, As.  
*Evippa* sp. 1 (cf. *sibirica*): 12, 30, 32, 34, 53; MFLT: Sss; MSLT: Dbs, Dns, S.  
*Pardosa amentata* (CLERCK, 1758): 01; MFLT: Sgg.  
*Pardosa atrata* (THORELL, 1873): 07, 23, 24, 32, 52, 55, 58, 63; ILT: U, Mm, Bf; MFLT: Sm.  
*Pardosa baraan* LOGUNOV & MARUSIK, 1995: 24, 35, 45, 47, 52; GLT: Mst. (LOGUNOV & MARUSIK 1995).  
*Pardosa bifasciata* (C.L. KOCH, 1834): 09, 13, 26, 27, 29, 30, 31, 35, 36, 44, 52; GLT: Mwt; MFLT: S, Sss, Sgg.  
*Pardosa bukukun* LOGUNOV & MARUSIK, 1995: 26, 27, 30, 56; GLT: Mwt; MFLT: Sss, Sms.

- Pardosa chionophila* L. KOCH, 1879: 09, 14, 17, 49, 55, 58; ILT: As, U, Rpb, Mm.  
*Pardosa eiseni* (THORELL, 1875): 08, 11, 22, 23, 26, 27, 35, 36, 40, 42, 44, 52, 54; GLT: Mwt; MFLT: Mf, Lf.  
 \**Pardosa etsinensis* SCHENKEL, 1963: 34, 51, 57, 63; ILT: Rpb, Bf.  
*Pardosa incilis* (ODENWALL, 1901): 13, 25, 27, 32, 34, 39, 49, 50, 51, 53, 55, 57, 58, 63; ILT: U, Ism, As, Rpb, Bf; MFLT: Sss, Sms; MSLT: Sds, S.  
*Pardosa indecora* L. KOCH, 1879: 03, 04, 05, 40; GLT: Mwt; MFLT: Mf.  
*Pardosa jeniseica* ESKOV & MARUSIK, 1995: 09, 19, 20, 31, 49, 55; ILT: Mm, Rpb.  
*Pardosa lasciva* L. KOCH, 1879: 05, 11, 23, 31, 40; MFLT: Lf, Mf.  
*Pardosa lusisi* STERNBERGS, 1981: Yrban; MFLT: Sgg. (STERNBERGS 1981).  
*Pardosa nenilini* MARUSIK, 1995: 39; MFLT: Sm.  
*Pardosa oksalai* MARUSIK, HIPPA & KOPONEN, 1996: 02, 04, 05, 63; GLT: Sm, Mwt; ILT: Bf.  
*Pardosa oljunae* LOBANOVA, 1978: 05, 07, 08, 11, 12, 13, 22, 23, 26, 31, 35, 36, 40, 42, 52, 54, 56; GLT: Mwt; ILT: U; MFLT: Mf, Lf, Bef, Sm, Sgg.  
*Pardosa palustris* (LINNAEUS, 1758): 05, 06, 07, 12, 22, 23, 24, 27, 31, 35, 36, 48, 52, 56; ILT: U; MFLT: Sm, Sgg, Sms, Mf.  
*Pardosa paratesquorum* SCHENKEL, 1963: 12, 14, 19, 29, 30, 34, 39, 44, 48, 49, 50, 51, 52, 57, 58, 62, 63; ILT: Ism, As, Mm, U, Rpb; MFLT: Sm; MSLT: Dbs, Cxs.  
*Pardosa plumipes* (THORELL, 1875): 08, 09, 12, 17, 23, 24, 27, 29, 31, 32, 34, 40, 44, 48, 49, 51, 53, 57, 58, 62, 63; ILT: U, Mm, As, Rpb, Bf, Ism; MFLT: Sms, Sgg, Sm.  
*Pardosa ricta* (ODENWALL, 1901): 12, 27, 29, 30, 31, 32, 34, 38, 39, 40, 44, 45, 49, 50, 51, 53, 55, 58, 63; ILT: Ism, As; MFLT: Sss; MSLT: Dns, Dbs, S, Cxs.  
*Pardosa schenkeli* LESSERT, 1904: 05, 07, 08, 09, 11, 21, 23, 25, 26, 27; GLT: Mwt, S; MFLT: Mf, Sss, Sms, Sgg.  
*Pardosa selengensis* (ODENWALL, 1901): 32, 34, 51, 53, 57, 63; ILT: Ism, As, Bf, U, Rpb; MFLT: Sm; MSLT: Sds, Dbs.  
*Pardosa sphagnicola* (F. DAHL, 1908): 07; MFLT: Sm.  
*Pardosa tesquorum* (ODENWALL, 1901): 05, 09, 12, 13, 26, 28, 30, 31, 32, 34, 35, 36, 44, 45, 52, 58, 63; ILT: U, Ism, Mm, Rpb; MSLT: Dbs; MFLT: Sms, Mf, Lf, S.  
*Pardosa* sp. 1 (cf. *lapponica*): 14, 21, 23, 25, 26, 27, 30, 31, 36, 40, 44, 45, 48, 49, 53, 58; GLT: Mst, Mwt; ILT: U; MFLT: Mf, Sms; MSLT: Dbs.  
*Pardosa* sp. 2 (cf. *lapponica*): 08, 11, 12, 22, 24, 26, 27, 35, 39, 40, 42, 45, 47, 52, 54, 56; GLT: Mst, Mwt; ILT: U, Mm; MFLT: Mf, Lf, Sms.  
*Pardosa* sp. 3 (cf. *lugubris*): 02, 09, 17, 19; GLT: S; ILT: U.  
*Pirata hygrophilus* THORELL, 1872: 01; ILT: Rpb.  
*Pirata praedo* KULCZYNSKI, 1885: 07, 57; ILT: Bf; MFLT: Sm. (LOGUNOV 1992b).  
*Tricca alpigena* (DOLESHALL, 1852): 02, 08, 35, 40, 42, 56; GLT: Mwt, Sm; MFLT: Mf.  
*Xerolycosa miniata* (C.L. KOCH, 1834): 09, 13, 17, 49, 51, 63; ILT: As, Mm, Rpb; MFLT: Sgg.  
 \*"*Xerolycosa*" *mongolica* (SCHENKEL, 1963): 12, 53, 55; MSLT: Dbs, Dns, S.  
*Xerolycosa nemoralis* (WESTRING, 1861): 04; GLT: Sm.

## Mimetidae

"*Ero*" sp. 1: 31, 32, 53; MSLT: Dns, S.

## Oxyopidae

*Oxyopes parvus* PAIK, 1969: 01, 09; 30, 31, 58; ILT: Mm; MFLT: Sgg, Sss, Sms.

## Philodromidae

- Apollophanes macropalpus* (PAIK, 1979): 23; MFLT: Lf, Sgg. (LOGUNOV 1996a).  
*Artanes marusiki* LOGUNOV, 1997: 29, 30, 32, 44, 53; MFLT: Sss; MSLT: S. (LOGUNOV 1997b).  
*Philodromus alascensis* KEYSERLING, 1884: 17, 23, 30, 43, 44, 50, 56, 57, 63; ILT: Bf, U.  
*Philodromus aureolus* (CLERCK, 1758): 13, 17; ILT: Mm; MFLT: Sgg.  
*Philodromus cespitum* (WALCKENAER, 1802): 07, 08, 09, 10, 11, 14, 19, 23, 63; MFLT: Mf, Lf, Sgg, Sms, Sm.  
*Philodromus corticinus* (C.L. KOCH, 1837): 63; ILT: ?.  
 ? *Philodromus emarginatus* (SCHRANK, 1803): 55; (?).  
*Philodromus fallax* SUNDEVALL, 1833: 34, 49, 51, 57, 63; ILT: Bf, Rpb, As, Ism.

- Philodromus fuscomarginatus* (DE GEER, 1778): 36; MFLT: ?.
- Philodromus histrio* (LATREILLE, 1819): 09, 11, 12, 17, 19, 32, 49, 53, 58; ILT: As; MFLT: Sss; MSLT: Dbs, Dns.
- Philodromus margaritatus* (CLERCK, 1758): 05, 09, 30; MFLT: S.
- Philodromus poecilus* (THORELL, 1872): 30, 49, 63; ILT: U; MFLT: Lf.
- ? *Philodromus praedatus* O.P.-CAMBRIDGE, 1871: 32; ILT: Bf.
- Philodromus rufus* WALCKENAER, 1826: 01, 09, 14, 17, 28, 30, 32, 34, 53, 57, 58, 63; ILT: Rpb, Bf, As, U, Ism; MSLT: Dbs, Dns.
- Philodromus* sp. 1 (cf. *alascensis*): 32, 63; ILT: Mm.
- Philodromus* sp. 2 (cf. *histrio*): 30, 53; MSLT: Dbs; MFLT: Sss.
- Philodromus* sp. 3 (cf. *margaritatus*): 63; ILT: U.
- Thanatus arcticus* THORELL, 1872: 10, 11, 12, 24, 45, 47, 50, 53, 55, 61; GLT: Mwt; MFLT: Sss, Sgg; MSLT: Dbs, Dns, Cxs. (LOGUNOV 1996a).
- Thanatus arenarius* L. KOCH in THORELL, 1872: 09; MFLT: Sss, Sms. (LOGUNOV 1996a).
- Thanatus bungei* (KULCZYNSKI, 1908): 05; GLT: Mwt; MFLT: S. (LOGUNOV 1996a).
- Thanatus coloradensis* KEYSERLING, 1880: 21, 26, 27, 29, 31, 40, 44, 45, 52, 56; GLT: Mwt; MFLT: Sms, S. (LOGUNOV 1996a).
- Thanatus coreanus* PAIK, 1979: 21, 30, 35, 40, 49, 50, 53; MFLT: Sss, Sms; MSLT: Cxs, Dbs. (LOGUNOV 1996a).
- Thanatus stepposus* LOGUNOV, 1996: 23, 32, 33, 34; MSLT: Dns, S. (LOGUNOV 1996a).
- Thanatus striatus* C.L. KOCH, 1845: 30, 34; ILT: Bf. (LOGUNOV 1996a).
- Thanatus tuvinensis* LOGUNOV, 1996: 23, 30, 32, 34, 38, 44, 49, 50, 53; MSLT: Dns, Dbs. (LOGUNOV 1996a).
- Thanatus ubsunurensis* LOGUNOV, 1996: 32, 34; MSLT: Dns. (LOGUNOV 1996a).
- Thanatus* sp. 1: 63; MSLT: Sds.
- Tibellus asiaticus* KULCZYNSKI, 1908: 08, 17, 28, 32, 34, 51; ILT: As, Mm, Ism; MFLT: Sgg.
- Tibellus aspersus* DANILOV, 1991: 08, 12, 14, 29, 34, 51, 53, 63; ILT: As, Ism; MFLT: Sgg; MSLT: Dbs.
- Tibellus maritimus* (MENGE, 1875): 07, 17, 23, 34, 57, 58, 63; ILT: Bf, As, Ism; MFLT: Sgg, Sm.
- Tibellus oblongus* (WALCKENAER, 1802): 13; MFLT: Sgg.

## Pisauridae

- Dolomedes bukhkaloi* MARUSIK, 1988: 07, 63; ILT: Bf; MFLT: Sm.
- Dolomedes plantarius* (CLERCK, 1758): 01; MFLT: Sm.
- Pisaura ancora* PAIK, 1969: 19, 63; ILT: U. (LOGUNOV 1990).

## Salticidae

- Asianellus festivus* (C.L. KOCH, 1846): 08, 09, 11, 12, 14, 17, 18, 19, 20, 23, 27, 29, 30, 34, 35, 40, 44, 45, 49, 50, 51, 53, 58, 63; ILT: Rpb; MFLT: Sss, S; MSLT: Dns, S. (LOGUNOV 1992c, LOGUNOV & HECIAK 1996).
- Asianellus ontchalaan* LOGUNOV & HECIAK, 1996: 12, 14, 15, 18, 19, 33, 34, 37, 53, 55, 63; MSLT: Dns, Dbs, Sds. (LOGUNOV 1992c: sub. *Aelurillus* cf. *potanini*; LOGUNOV & HECIAK 1996).
- Bianor aemulus* (GERTSCH, 1934): 08, 11; MFLT: Mf. (LOGUNOV & MARUSIK 1991, LOGUNOV 1992c).
- Bianor inexploratus* LOGUNOV, 1991: 17; ILT: As. (LOGUNOV 1991).
- Bianor stepposus* LOGUNOV, 1991: 17, 34, 35, 37, 53, 58, 63; ILT: As, U, Ism; MFLT: Sss; MSLT: Dbs, Sds. (LOGUNOV 1991, 1992c).
- Chalcoscirtus alpicola* (L. KOCH, 1876): 02, 27; GLT: Mwt; MFLT: Sms.
- Chalcoscirtus* sp. 1 (cf. *alpicola*): 26; GLT: Mwt.
- Chalcoscirtus glacialis* CAPORIACCO, 1935: 14, 19, 32, 36, 45, 50, 53, 55, 58, 60, 63; ILT: Rpb; MSLT: Dbs, Dns, Cxs, S. (LOGUNOV 1992c).
- Chalcoscirtus nigritus* (THORELL, 1875): 14; MSLT: Dbs.
- Dendryphantes czechanowskii* PROSZYNSKI, 1979: 35, 56; GLT: Mwt.
- Dendryphantes fusconotatus* (GRUBE, 1861): 07, 09, 19, 20, 23, 27, 29a, 32, 34, 35, 36, 39, 46, 49, 51, 58, 63; ILT: Ism; MFLT: Sms, Sss. (LOGUNOV 1992c).
- Dendryphantes hastatus* (CLERCK, 1757): 08; MFLT: Mf. (LOGUNOV 1992c).
- Dendryphantes rudis* (SUNDEVALL, 1832): Yirban; MFLT: Mf. (LOGUNOV 1992c).



- Dendryphantes tuviniensis* LOGUNOV, 1991: 12, 17, 29a, 30, 31, 37, 49, 53, 58; ILT: Ism; MSLT: Dbs, Dns, Sds. (LOGUNOV 1991, 1992c).
- Euophrys flavoatra* (GRUBE, 1861): 02, 08, 11, 27, 35, 56; GLT: Mst, Mwt; MFLT: Mf. (LOGUNOV 1992c, LOGUNOV et al. 1993).
- Euophrys prozyskii* LOGUNOV, CUTLER & MARUSIK, 1993: 09, 26, 30, 43; GLT: Mst; MFLT: S, Sss. (LOGUNOV 1992c: sub. *Euophrys* sp.; LOGUNOV et al. 1993).
- Evarcha arcuata* (CLERCK, 1758): 09, 14, 19, 58, 63; ILT: U, Mm; MFLT: Sms. (LOGUNOV 1992c).
- Evarcha falcata* (CLERCK, 1758): 01, 05; MFLT: Mf. (MARUSIK & LOGUNOV 1998).
- Evarcha michailovi* LOGUNOV, 1992: 07, 11, Sayano-Shushensky Reservation; MFLT: Sms, Sgg. (LOGUNOV 1992c).
- Evarcha prozyskii* MARUSIK & LOGUNOV, 1998: 07, 08, 23; MFLT: Mf. (LOGUNOV 1992c: sub. *E. falcata*; MARUSIK & LOGUNOV 1998).
- Harmochirus latens* (LOGUNOV, 1991): 17; ILT: As. (LOGUNOV 1991).
- Heliophanus auratus* C.L. KOCH, 1835: 14, 17, 58, 63; ILT: Ism, Mm; MFLT: Sm. (LOGUNOV 1992c).
- Heliophanus baicalensis* KULCZYNSKI, 1895: 11, 23, 35, 58; ILT: U; MFLT: Sms, Mf, Sgg. (LOGUNOV 1992c).
- Heliophanus camtschadalicus* KULCZYNSKI, 1895: 08, 40; ILT: U; MFLT: Sms. (LOGUNOV 1992c).
- Heliophanus dubius* C.L. KOCH, 1835: 63; ILT: U.
- Heliophanus flavipes* HAHN, 1832: 07, 10, 11, 23, 27, 31; MFLT: Mf, Lf, Sgg, Sms. (LOGUNOV 1992c).
- Heliophanus lineiventris* SIMON, 1868: 08, 17, 19, 30, 63; ILT: As; MFLT: Sss; MSLT: Dbs, Sds. (LOGUNOV 1992c).
- Heliophanus patagiatus* THORELL, 1875: 09, 14, 17, 19, 20, 30, 35, 37, 49, 50, 55, 58, 63; ILT: Rpb; MFLT: S. (LOGUNOV 1992c).
- Marpissa radiata* (GRUBE, 1859): 23; MFLT: Sm. (LOGUNOV 1992c).
- Neon rayi* (SIMON, 1875): 63; ILT: U.
- Neon reticulatus* (BLACKWALL, 1853): 14, 63; ILT: U.
- Pellenes gobiensis* SCHENKEL, 1936: 12, 55; MSLT: Dns, Dbs. (LOGUNOV 1992c).
- Pellenes ignifrons* (GRUBE, 1861): 08, 26, 36; MFLT: Sgg, Sms. (LOGUNOV 1992c).
- Pellenes lapponicus* (SUNDEVALL, 1832): 26, 56; GLT: Mwt. (DANILOV & LOGUNOV 1993).
- Pellenes limbaeus* (KULCZYNSKI, 1895): 41, 44, 45, 50, 55, 59, 61; ILT: Rpb; MSLT: Cxs, S. (LOGUNOV 1992c).
- Pellenes pulcher* LOGUNOV, 1995: 34; MSLT: Dns. (LOGUNOV 1995).
- Pellenes sibiricus* LOGUNOV & MARUSIK, 1994: 08, 09, 11, 14, 17, 20, 23, 31, 32, 34, 57, 63; ILT: Ism; MFLT: Sms, Sgg. (LOGUNOV 1992c: sub. *P. cf. tripunctatus*; LOGUNOV & MARUSIK 1994b).
- Philaeus chrysops* (PODA, 1761): 08, 09, 14, 18, 23; ILT: Rpb; MFLT: Sss, S. (LOGUNOV 1992c).
- Phlegra fuscipes* KULCZYNSKI in CHYZER & KULCZYNSKI, 1891: 12, 17, 18, 19, 27, 29; ILT: As; MFLT: Sss; MSLT: Dns. (LOGUNOV 1992c, 1996b).
- Phlegra profuga* LOGUNOV, 1996: 12, 16, 32; MSLT: Dns. (LOGUNOV 1992c: sub. *P. cf. sogdiana*, 1996b).
- Pseudeuophrys erratica* (WALCKENAER, 1825): 01, 07; MFLT: Mf. (LOGUNOV 1992c: sub. *Euophrys e.*; LOGUNOV et al. 1993: sub. *Euophrys e.*).
- Salticus cingulatus* (PANZER, 1797): 12, 17, 49, 58, 63; ILT: U. (LOGUNOV 1992c).
- Sitticus albolineatus* (KULCZYNSKI, 1895): 19, 20, 55; ILT: Rpb. (LOGUNOV 1992c).
- Sitticus avocator* (O.P.-CAMBRIDGE, 1885): 09, 12, 14, 16, 30, 35, 53; MFLT: Sss, S; MSLT: S. (LOGUNOV 1992c).
- Sitticus distinguentus* (SIMON, 1868): 09, 12; MFLT: S; MSLT: S.
- Sitticus floricola* (C.L. KOCH, 1837): 07, 08, 21, 23, 32, 58, 63; ILT: Mm, Rpb; MFLT: Sm. (LOGUNOV 1992c).
- Sitticus lineolatus* (GRUBE, 1861): 26, 36; GLT: Mwt. (LOGUNOV 1992c).
- Sitticus mirandus* LOGUNOV, 1993: 58, 63; ILT: U. (LOGUNOV 1993b).
- Sitticus penicillatus* (SIMON, 1875): 20, 37, 55, 58; ILT: Rpb. (LOGUNOV 1992c).
- Sitticus saltator* (O.P.-CAMBRIDGE in SIMON, 1868): 53; MSLT: S. (LOGUNOV 1992c).
- Sitticus tannuolana* LOGUNOV, 1991: 08, 27; MFLT: Mf, Lf. (LOGUNOV 1991, 1992c).
- Synageles hilarulus* (C.L. KOCH, 1846): 17, 58; ILT: U, As. (LOGUNOV 1992c).
- Synageles ramitus* ANDREEVA, 1976: 63; MSLT: Sds. (LOGUNOV & RAKOV 1996).
- Synageles venator* (LUCAS, 1836): 01; MFLT: Sgg. (LOGUNOV & RAKOV 1996).
- Talavera aequipes* (O.P.-CAMBRIDGE, 1871): 50, 59; MSLT: Cxs. (LOGUNOV 1992c, LOGUNOV et al. 1993: sub. *Euophrys a.*).

*Talavera* sp. 1 (cf. *petrensis*): 14; MSLT: Dbs.

*Talavera* sp. 2 (cf. *trivittata*): 54, 63; GLT: Mst; ILT: U.

*Tuvaphantes arat* LOGUNOV, 1993: 58; ILT: Ism. (LOGUNOV 1993a).

*Tuvaphantes insolitus* (LOGUNOV, 1991): 19, 25; MFLT: Sms. (LOGUNOV 1991: sub. *Dendryphantes* i., 1993a).

*Yllenus kulczynskii* PUNDA, 1975: 49, 53, 55, 61, 63; MSLT: Sds, Dbs. (LOGUNOV 1992c).

*Yllenus mongolicus* PROSZYNSKI, 1968: 12, 34, 63; MSLT: Dns, Sds. (PROSZYNSKI 1982, LOGUNOV 1992c).

*Yllenus* sp. 1 (cf. *koreanus*): 12, 29a, 49, 53, 55, 61, 63; ILT: Rpb, Ism, As; MSLT: Sds, Dns, Dbs.

*Yllenus* sp. 2 (cf. *hamifer*): 12, 16, 45, 50, 55; ILT: Rpb; MSLT: Dns, Dbs, S, Cxs.

## Tetragnathidae

*Eucta* sp. 1: 12, 27, 32, 34, 63; ILT: Ism, As; MFLT: Sms; MSLT: Dbs.

*Pachygnatha clercki* SUNDEVALL, 1823: 17, 34, 51, 55; ILT: Rpb, Mm, As; MFLT: Sm.

*Pachygnatha degeeri* SUNDEVALL, 1830: 08; MFLT: Sgg.

*Pachygnatha listeri* SUNDEVALL, 1830: 01, 09, 12, 14, 17, 31, 48, 49, 51, 58, 63; ILT: U, Bf, As, Mm; MFLT: Sm.

*Tetragnatha dearmata* THORELL, 1873: 63; ILT: U, Bf.

*Tetragnatha extensa* (LINNAEUS, 1758): 01, 05, 07, 09, 12, 13, 17, 23, 28, 34, 35, 57, 62, 63; ILT: Mm, As; MFLT: Mf, Sm, Sgg, Sms; MSLT: Dbs, Sds.

*Tetragnatha nigruta* LENDL, 1886: 07, 63; MFLT: Mf; ILT: U.

*Tetragnatha obtusa* C.L. KOCH, 1837: 63; ILT: As.

*Tetragnatha pinicola* L. KOCH, 1870: 01, 04, 07, 08, 09, 11, 14, 23, 28, 40, 44; MFLT: Mf, Lf, Sgg; GLT: Sm, S.

## Theridiidae

*Achaeareana riparia* (BLACKWALL, 1834): 01, 03; GLT: Mwt; MFLT: Mf.

*Achaeareana tepidariorum* (C.L. KOCH, 1841): 12; ILT: U.

*Achaeareana* sp. 1: 53; MSLT: Dbs.

*Arctachaea nordica* (CHAMBERLIN & IVIE, 1947): 07, 11; MFLT: Sss, Sms.

*Crustulina sticta* (O.P.-CAMBRIDGE, 1861): 11; MFLT: Sms.

*Dipoena prona* (MENGE, 1868): 09; ILT: U, Mm.

*Dipoena* sp. 1: 07; MFLT: Mf; ILT: Ism.

*Dipoena* sp. 2: 53; MSLT: S.

*Enoplognatha serratosignata* (L. KOCH, 1879): 09, 27, 45, 52, 60; ILT: Mm; MFLT: Sss, Sms; MSLT: Cxs, S.

*Enoplognatha tecta* (KEYSERLING, 1884): 17, 34, 51, 63; ILT: Bf, As.

*Enoplognatha* sp. 1: 12, 27, 53; MSLT: Dbs, Dns; MFLT: Sss.

*Enoplognatha* sp. 2: 12, 27, 29, 30, 35, 38, 52, 53, 56; MFLT: Sms, Sss, S; MSLT: Dns, S.

*Euryopis levii* HEIMER, 1987: 58; ILT: U.

*Euryopis saucae* LEVI, 1951: 11, 50; MFLT: Sms; MSLT: Cxs.

*Neottiura bimaculata* (LINNAEUS, 1767): 17, 13, 14, 23, 58, 63; ILT: Mm, As, U; MFLT: Lf, Sm, Bef.

*Robertus kastoni* ESKOV, 1987: 02, 31, 35, 40; GLT: Mwt; MFLT: Mf.

*Robertus lividus* (BLACKWALL, 1836): 14, 31; ILT: U; MFLT: ?.

*Robertus unguilatus* VOGELSANGER, 1944: 30, 63; ILT: Mm; MFLT: Sss, Sm.

*Steatoda albomaculata* (DE GEER, 1778): 02, 06, 08, 09, 10, 12, 21, 23, 25, 27, 29, 30, 31, 32, 33, 34, 44, 45, 46, 49, 50, 53, 55, 56, 57, 58, 61, 63; ILT: As, Rpb, Ism; MSLT: Dns, Dbs, S, Cxs, Sds; MFLT: Sss, S.

*Steatoda bipunctata* (LINNAEUS, 1758): 46, 49; ILT: U, Ism.

*Steatoda phalerata* (PANZER, 1801): 23, 27, 28, 30, 35, 53, 56, 58; ILT: Ism; MSLT: S, Dbs; MFLT: Sss, Sms.

*Steatoda* sp. 1: 09, 14, 27, 30, 32, 44, 53, 55; MFLT: S, Sss, Sms; MSLT: Dbs, Dns, S.

*Theridion aurantium* EMERTON, 1915: 07, 31; MFLT: Mf, Sms.

*Theridion impressum* L. KOCH, 1881: 07, 08, 09, 10, 11, 12, 14, 23, 25, 27, 30, 31, 32, 33, 34, 35, 36, 44, 48, 58, 63; ILT: Ism, Rpb, As; MFLT: Sss, Sgg, Sms, Lf, Mf; MSLT: Dbs, Dns.

? *Theridion montanum* EMERTON, 1882: 05, 08, 12, 30, 32, 53; MFLT: Mf, Lf, S; MSLT: Dns, S.

*Theridion ohlerti* (THORELL, 1870): 07, 08, 11, 21, 23, 25, 30, 31, 35, 46; ILT: Ism; MFLT: Lf, Mf, Sgg.

*Theridion palmgreni* MARUSIK & CELLARIUS, 1986: 23; MFLT: Mf.

*Theridion petraeum* L. KOCH, 1872: 12, 15, 33, 49, 51; MSLT: Dbs; ILT: As.

*Theridion pictum* (WALCKENAER, 1802): 02, 07, 23, 31, 63; GLT: S; ILT: Mm; MFLT: Mf, Lf; MSLT: Sds.

- Theridion sibiricum* MARUSIK, 1988: 02, 05, 09, 11, 12, 14, 26, 27, 30, 32, 35, 36, 45, 50, 53; GLT: Mwt; ILT: Ism; MSLT: Dbs, Dns, S, Cxs; MFLT: Sss, S.  
*Theridion varians* HAHN, 1833: 07, 14, 23, 63; ILT: U; MFLT: Mf, Lf.  
*Theridion* sp. 1 (cf. *sibiricum*): 09, 53; MFLT: S; MSLT: S.  
*Theridion* sp. 2: 04; GLT: S.  
*Theridion* sp. 3: 08; MFLT: ?.  
*Thymoites bellissimus* (L. KOCH, 1879): 03, 07, 23, 36; GLT: S; MFLT: Sm.  
*Thymoites oleatus* (L. KOCH, 1879): 05; MFLT: S.

## Thomisidae

- Coriarachne depressa* (C.L. KOCH, 1837): 07; MFLT: Mf. (LOGUNOV & MARUSIK 1994b).  
*Heriaeus mellotei* SIMON, 1886: 08, 14, 23, 30, 31, 53, 63; MFLT: Sss, Sms, Sgg; MSLT: Dbs, Sds. (LOGUNOV & MARUSIK 1994b).  
*Lysiteles maius* ONO, 1979: 01; MFLT: Mf.  
*Misumena vatia* (CLERCK, 1758): 07, 08, 23, 31; MFLT: Sgg. (LOGUNOV & MARUSIK 1994b).  
*Ozyptila arctica* KULCZYNSKI, 1908: 54; GLT: Mwt.  
*Ozyptila atomaria* (PANZER, 1801): 23, 40; MFLT: Lf. (LOGUNOV & MARUSIK 1994b).  
*Ozyptila orientalis* KULCZYNSKI, 1926: 11, 26, 35, 52, 54, 58; GLT: Mwt; ILT: Mm; MFLT: Sms. (LOGUNOV & MARUSIK 1994b).  
*"Ozyptila" pseudoblitea* SIMON, 1880: 12; MSLT: Dns.  
*Ozyptila rauda* SIMON, 1875: 03, 04, 35, 40, 56; GLT: Sm. (LOGUNOV & MARUSIK 1994b).  
*Ozyptila scabricula* (WESTRING, 1851): 09; MFLT: Sms.  
*Ozyptila sincera* KULCZYNSKI, 1926: 14, 35, 63; ILT: U; MFLT: Mf.  
*Ozyptila trux* (BLACKWALL, 1846): 05, 07; MFLT: Mf. (LOGUNOV & MARUSIK 1994b).  
*Pistius undulatus* KARSCH, 1879: 01; MFLT: Mf. (LOGUNOV 1990).  
*Synaema globosum* (FABRICIUS, 1775): 09, 14; MFLT: Sms.  
*Thomisus onustus* WALCKENAER, 1805: 09, 12, 14, 28, 30, 32, 34, 53, 55, 57, 63; ILT: Ism, Bf; MFLT: Sss; MSLT: Dbs, Sds, Dns. (LOGUNOV & MARUSIK 1994b).  
*Tmarus rimosus* PAIK, 1973: 01; MFLT: Mf. (LOGUNOV 1992a).  
*Xysticus audax* (SCHRANK, 1803): 05, 07, 08, 09, 12, 14, 23, 26, 28, 31, 34, 36, 40, 51, 56, 57; ILT: As, Mm; MFLT: Sms, Sgg, Sss. (LOGUNOV & MARUSIK 1994b).  
*Xysticus austrosibiricus* LOGUNOV & MARUSIK, 1998: 23, 26, 35, 36, 39, 45, 47, 52, 54, 56; GLT: Mst, Mwt. (LOGUNOV & MARUSIK 1994b: sub. *X. viduus*; LOGUNOV & MARUSIK 1998).  
*Xysticus ballistatus* (CAPORIACCO, 1935): 12, 16, 18, 27, 30, 35, 40, 32, 53, 55; MFLT: Sss; MSLT: Dbs, Dns, S. (LOGUNOV & MARUSIK 1994b).  
*Xysticus bifasciatus* C.L. KOCH, 1837: 07, 08, 23, 26; MFLT: Sms, Sgg. (LOGUNOV & MARUSIK 1994b).  
*Xysticus bonneti* DENIS, 1937: 08, 09, 14, 23, 26, 27, 30, 35, 36, 40, 43, 45, 52, 53, 56, 63; GLT: Mwt; MFLT: Sss; MSLT: Cxs, Sds. (LOGUNOV & MARUSIK 1994b).  
*Xysticus brücheri* GERTSCH, 1934: 02; 22, 35, 40; GLT: Mwt; MFLT: Mf. (LOGUNOV & MARUSIK 1994b).  
*Xysticus dzhungaricus* TYSHCHENKO, 1965: 08, 09, 23, 27, 35, 40, 44; MFLT: Sms, Sgg. (LOGUNOV 1992b: sub. *X. kiritschenkoi*; LOGUNOV & MARUSIK 1994b).  
*Xysticus emertoni* KEYSERLING, 1880: 07, 08, 19, 23, 26, 27, 31, 36, 56, 58; GLT: Mwt; ILT: U; MFLT: Mf, Lf. (LOGUNOV & MARUSIK 1994b).  
*Xysticus ephippiatus* SIMON, 1880: 07, 09, 12, 14, 17, 26, 28, 30, 32, 34, 44, 63; ILT: Mm, Ism, U, Rpb; MFLT: Sms, Sss. (LOGUNOV & MARUSIK 1994b).  
*Xysticus hedinii* SCHENKEL, 1936: 34; ILT: Ism.  
*"Xysticus" inaequalis* KULCZYNSKI, 1901: 34; MSLT: Dns. (LOGUNOV & MARUSIK 1994b).  
*Xysticus laticeps* SCHENKEL, 1963: 32; MSLT: Dns.  
*? Xysticus lineatus* (WESTRING, 1851): 07; MFLT: ?. (LOGUNOV & MARUSIK 1994b).  
*Xysticus luctuosus* (BLACKWALL, 1836): 01, 07, 11, 31, 40; MFLT: Mf, Lf. (LOGUNOV & MARUSIK 1994b).  
*Xysticus mugur* MARUSIK in MARUSIK & CHEVRIZOV, 1990: 41, 47, 50, 61; MSLT: Cxs. (MARUSIK & CHEVRIZOV 1990, LOGUNOV & MARUSIK 1994b).  
*Xysticus nenilini* MARUSIK, 1989: 28, 32, 38, 39, 41, 43, 45, 50, 61; ILT: U; MFLT: Sss; MSLT: Dbs, Cxs. (MARUSIK 1989, LOGUNOV & MARUSIK 1994b).

- Xysticus obscurus* COLLETT, 1877: 03, 04, 09; GLT: Sm; MFLT: Sms. (LOGUNOV & MARUSIK 1994b).  
*Xysticus rugosus* BUCKLE & REDNER, 1964: 02, 03, 47; GLT: Mst, Mwt. (LOGUNOV & MARUSIK 1994b).  
*Xysticus seserlig* LOGUNOV & MARUSIK, 1994: 11, 31, 49, Boyarovka; MSLT: Dbs. (LOGUNOV & MARUSIK 1994b).  
*Xysticus sibiricus* KULCZYNSKI, 1908: 05, 06, 56, Sayano-Shushensky Reservation; MFLT: Mf. (LOGUNOV & MARUSIK 1994b).  
*Xysticus sjostedti* SCHENKEL, 1936: 11, 23, 27, 29, 32, 39, 45, 49, 50, 53, 57, 58, 41, 61, 63; MFLT: Sss; MSLT: Dns, Dbs, Cxs. (LOGUNOV & MARUSIK 1994b).  
*Xysticus striatipes* L. KOCH, 1870: 58; MSLT: Dbs. (LOGUNOV & MARUSIK 1994b).  
*Xysticus vachoni* SCHENKEL, 1963: 07, 08, 11, 14, 19, 21, 36; MFLT: Mf, Lf. (LOGUNOV & MARUSIK 1994b).  
*Xysticus* sp. 1: 63; ILT: U, Bf.

#### Titanoecidae

- Titanoeca asimilis* SONG & ZHU, 1985: 07, 09, 10, 12, 14, 23, 27, 29, 30, 31, 32, 34, 35, 38, 44, 46, 49, 50, 51, 53, 55, 58; ILT: Mm, Rpb; MFLT: S, Sss; MSLT: Dns, Dbs, S, Cxs.  
*Titanoeca nivalis* SIMON, 1874: 06, 07, 08, 09, 53; MFLT: Sss, Sms, Mf; MSLT: Dbs, S.  
*Titanoeca sibirica* L. KOCH, 1879: 08, 11, 17, 23, 27, 30, 31, 34, 35, 40, 45, 51, 52; ILT: As, Ism; MFLT: Lf, Sss, Sms, Sgg; MSLT: Cxs.  
*Titanoeca* sp. 1: 58; ILT: Rpb (?).

#### Uloboridae

- Uloborus walckenaerius* (LATREILLE, 1806): 09, 10, 12, 14, 32, 63; ILT: Rpb; MSLT: Dns; Dbs, Sds, S.

#### Zoridae

- Zora* sp. 1 (cf. *nemoralis*): 31, 49, 52, 56, 58; ILT: U.

### 4. Analysis of habitats and discussion:

According to the list of species, altogether 605 spider species from 23 families have so far been recorded in Tuva. Total family composition (in %) of the Tuvan spider fauna is shown in fig. 1, with the faunal taxonomic index (TI) being Lin-Gna-Sal. Thus, this TI corresponds well with that of the entire spider fauna of the mountains of South Siberia (see MIKHAILOV 1997: fig. 1), but differs from other Siberian faunas (e.g. W., C. and NE Siberia), having a higher percentage of jumping and gnaphosid spiders. In most of the Siberian spider faunas, the TI is Lin, Lin-Lyc or Lin-Lyc-Gna. This difference, i.e. including the gnaphosids and salticids in the TI in Tuva is largely due to two reasons: (1) true steppe (arid) ecosystems are practically restricted to South Siberia, and just in such arid ecosystems do the Gnaphosidae and Salticidae form a large part of the whole spider communities (fig. 5); and (2) the true mountain forest landscape in Tuva (Todzha Plateau and the mountain forest belt of the Tannu-Ola Range, see Map) is practically unexplored, so the total number of forest dwellers (mostly linyphiids; see KOPONEN 1996) is somewhat underestimated in comparison to other Siberian spider faunas. In general, we assume that the 605 spider species so far found in Tuva constitute no more than 75-80 % of its real species number.

Despite some gaps in our knowledge of the spider communities of certain vegetation types (e.g. birch forest, see table 1), we consider it possible to conduct a preliminary chorological analysis on the basis of the materials at hand.

On the basis of the similarity of the communities at the value of ca. 0.1 of the Czekanowski-Soerensen index (Ics) (the UPGMA method), the spider communities are divided into two large clusters (fig. 3). Cluster A represents the spider communities of all forest, meadow and mountain tundra vegetation types, including the sedge moor. Cluster B includes the spider communities

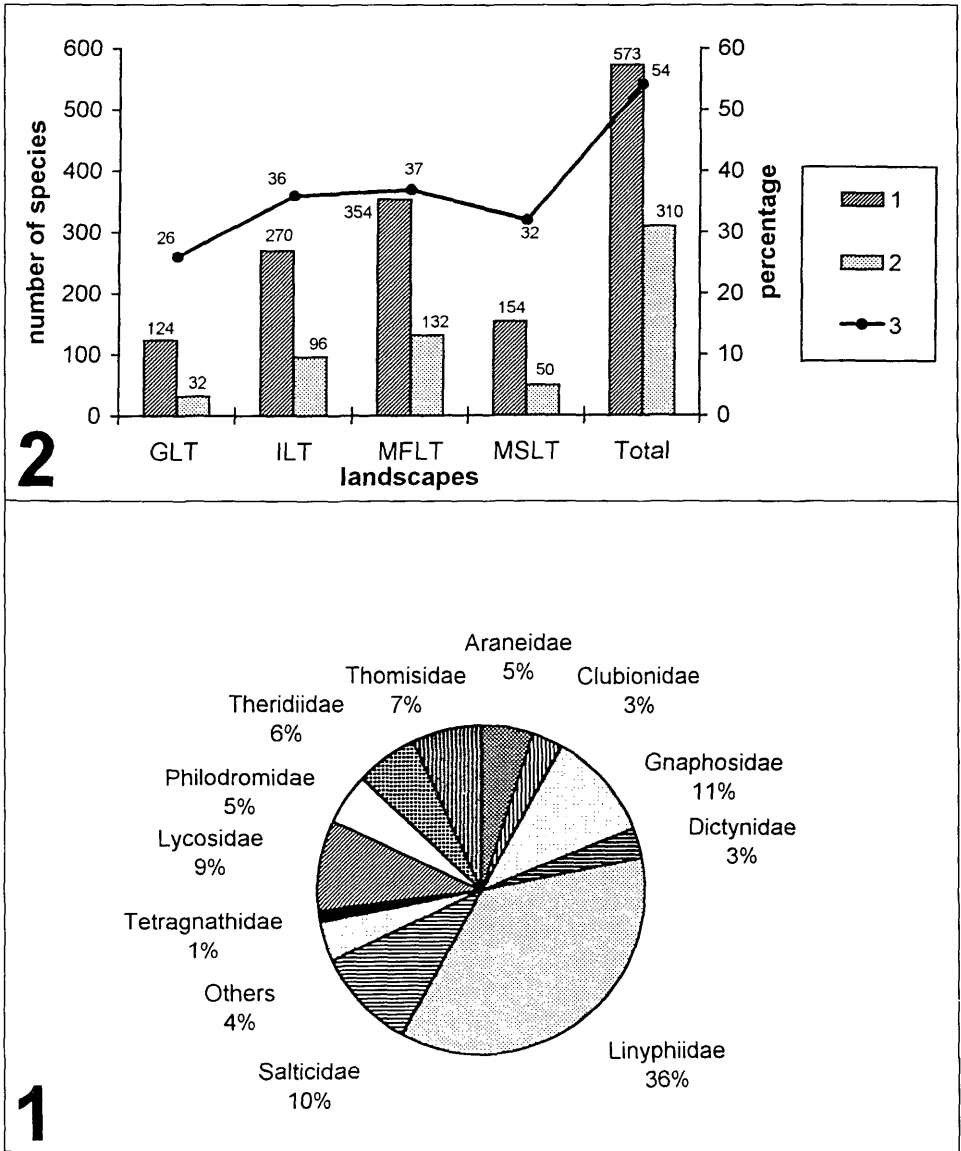


Fig. 1-2: 1 – Percentages of selected families (with 9 or more species) of the total spider fauna of Tuva (605 species); 2 – Distribution of total species numbers (1), numbers of exclusive (indicator) species (2) and percentage of exclusive species (3) in different landscapes of Tuva. For abbreviations, see "Material and methods".

found primarily/totally in steppe vegetation types. It is interesting to note that all the spider communities of the mountain tundra (GLT) and mountain steppe (MSLT) landscapes are referred to either cluster A (the former) or cluster B (the latter), while those of the inundated (ILT) and mountain forest-steppe (MFLT) landscapes are distributed between the two large clusters (fig. 3). Moreover, the two latter landscapes show the same taxonomic index (Lin-Gna-Lyc) and index of

Table 1: Species numbers of selected spider families in the studied vegetation types of Tuva; for abbreviations see "Material and methods".

Family	Landscapes and vegetation types									
	GLT				ILT					
	mwt	mst	sm	s	u	ism	mm	as	bf	rpb
Araneidae	—	—	2	2	6	7	5	2	4	2
Clubionidae	—	—	1	—	8	2	3	4	1	2
Dictynidae	—	1	1	—	4	4	2	2	—	2
Gnaphosidae	5	8	4	—	13	9	5	9	3	15
Linyphiidae	33	12	29	6	60	13	11	4	7	14
Lycosidae	12	4	6	2	16	9	10	11	7	15
Philodromidae	3	—	—	—	4	5	3	6	6	2
Salticidae	6	3	—	—	11	7	3	7	—	10
Tetragnathidae	—	—	1	1	3	1	3	5	2	1
Theridiidae	3	—	—	3	7	7	5	5	1	2
Thomisidae	7	2	2	—	5	3	3	1	2	1
Others	1	—	—	—	3	2	2	2	2	4
Total	70	30	46	14	140	69	55	58	35	70

Family	Landscapes and vegetation types												
	MFLT								MSLT				
	sss	sms	lf	mf	bef	sm	sgg	s	dns	dbS	sds	cxs	s
Araneidae	8	7	5	6	—	3	6	1	6	8	6	1	5
Clubionidae	1	2	3	3	2	3	3	—	1	—	3	—	—
Dictynidae	2	2	2	7	—	2	3	1	4	3	2	2	1
Gnaphosidae	23	21	4	7	—	2	1	6	18	18	6	9	11
Linyphiidae	4	15	43	88	2	5	9	7	7	4	—	3	4
Lycosidae	10	14	8	13	2	10	8	4	6	11	6	3	7
Philodromidae	6	4	3	1	—	2	8	3	6	7	1	2	2
Salticidae	8	10	2	10	—	3	7	5	11	11	8	4	7
Tetragnathidae	—	2	1	3	—	3	3	—	—	2	1	—	—
Theridiidae	10	9	6	11	1	3	2	7	7	8	2	4	9
Thomisidae	8	9	4	11	—	—	5	—	6	7	3	3	1
Others	5	3	4	5	—	1	4	1	6	5	1	2	6
Total	85	98	85	165	7	37	59	35	78	84	39	33	53

originality (Lin-Sal), differing in both respects from the GLT and the MSLT. Thus, it is safe to assume that the considered landscapes can be combined into two groups: primary (core) landscapes (the GLT and the MSLT) and marginal landscapes (the ILT and the MFLT). The MFLT is situated between primary and marginal landscapes and, for the most part, it consists of ecosystems occurring in primary landscapes.

It is known that one of the most striking peculiarities of marginal landscapes is their higher level of biodiversity in comparison to primary landscapes (CHERNOV 1975, MORDKOVITCH pers. comm.). Fig. 2 seems to support this idea as well: both the ILT and the MFLT show twice as high species numbers as the GLT and the MSLT. The taxonomic originality of spider communities in all landscapes is approximately the same, varying from 26% (in the GLT) to 37% (in the MFLT); and this suggests that the mixed nature of marginal landscapes does not mean that they lose their taxonomic originality and hence their independent consideration in the discussion

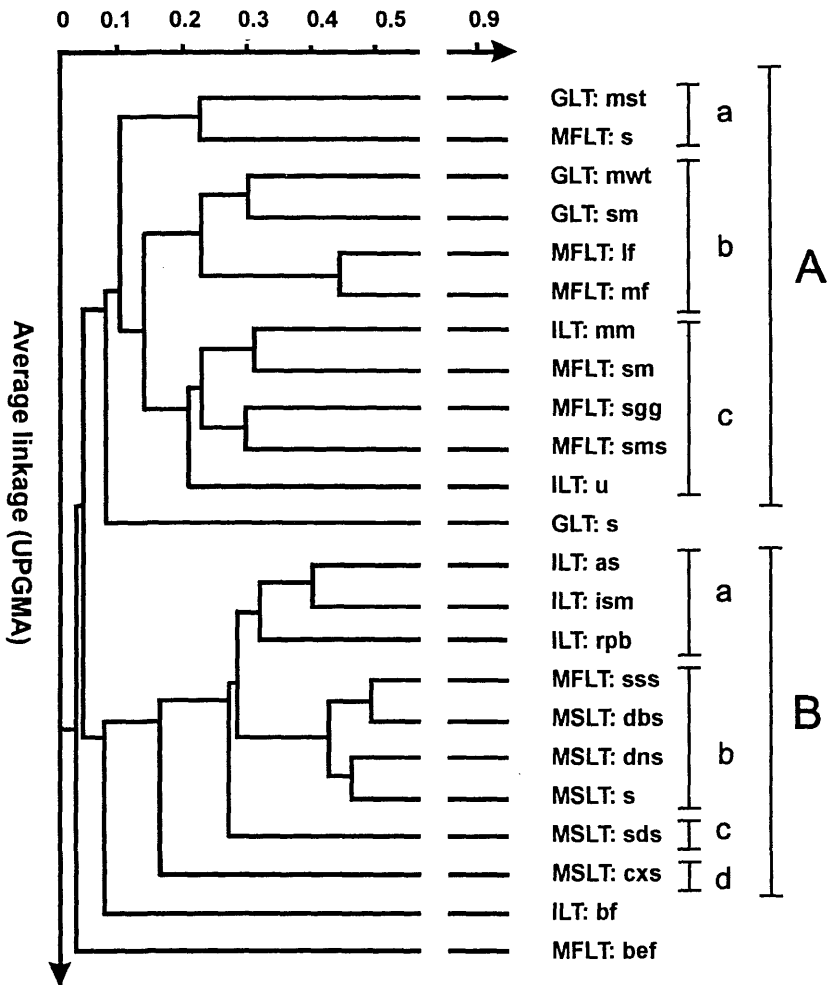


Fig. 3: Cluster dendrogram of the spider communities (573 species) in 23 vegetation types based on the Czekanowski-Soerensen similarity index. For abbreviations, see "Material and methods".

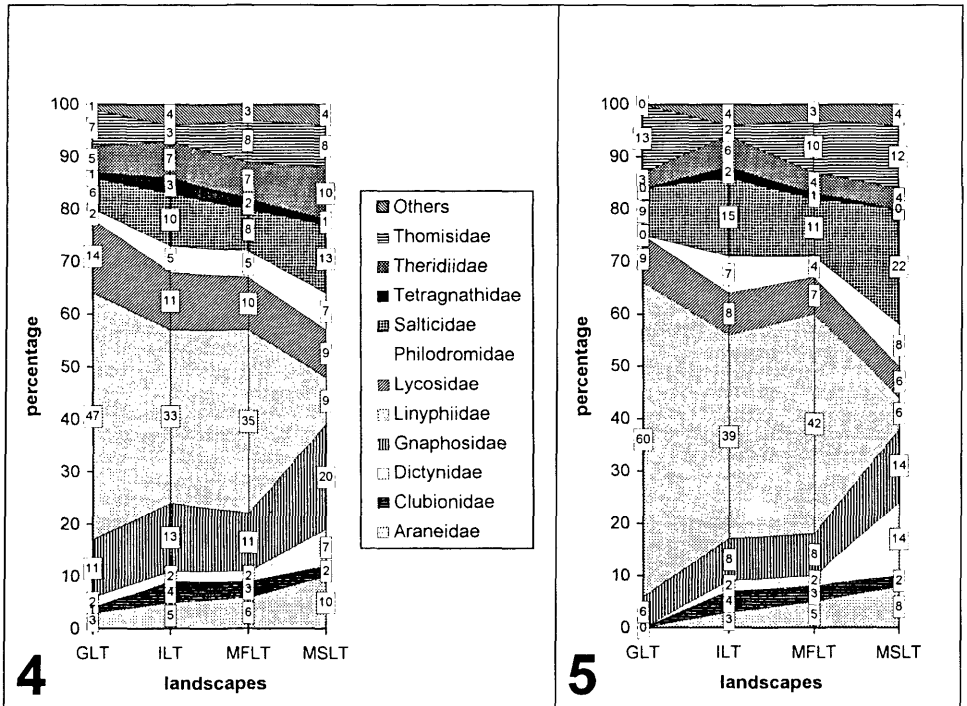


Abb. 4-5: Proportion of selected families as percentage of species number (4) and percentages of exclusive (indicator) species within families (5) in different landscapes of Tuva. For abbreviations, see "Material and methods".

below. It is also important to note that although the taxonomic patterns of the GLT and the MSLT are quite different (see fig. 4), the number of found species and the percentage of exclusive species are practically the same, 124 (26 %) and 154 (32 %) respectively. The MSLT turned out to be the best studied Tuvan ecosystem from the arachnological point of view and, thus, the number of spider species found there is quite reliable.

Both large clusters (A and B) presented in fig. 3 can be further classified into smaller ones at the Ics value of ca. 0.2-0.3. Brief characteristics of them are given below in discussing the spider communities of the landscapes considered.

The goltsy (mountain tundra) landscape, GLT (figs. 2, 4, 5, 6; table 1, 2).

This is an easily delimited but rather poorly studied landscape and hence all figures discussed below are very preliminary. Altogether 124 spider species have been encountered, of which 32 (or 26 %) can be considered exclusive species (fig. 2). Almost a half of the entire GLT fauna is represented by the Linyphiidae (47 %, fig. 4), but the proportions of the Lycosidae (14 %) and Gnaphosidae (11 %) are also marked. The GLT taxonomic index is Lin-Lyc (can even be treated as Lin). Actually, the GLT originality is provided only by six spider families (of 23 recorded in Tuva), of which the most species-rich is Linyphiidae (60 %, fig. 5) and hence the index of originality is Lin. However, distribution of the latter index over GLT vegetation types shows clear differences between the moss-tussock-shrubby wet tundra (mwt) on the one hand and other formations on the other (table 2). Most probably, this is due to insufficient collecting in all the GLT veg-



Table 2: Exclusive (indicator) species in different vegetation types of Tuva. For abbreviations, see "Material and methods"; figures in parentheses after family names refer to the number of exclusive species and to their proportion (%) of all exclusive species in this vegetation type; the index of originality is in square brackets.

GLT	
mwt	LINYPHIIDAE (3; 38%): <i>Agyneta affinisoides</i> , <i>A. fuscipalpus</i> , <i>Panamomops dybowskii</i> ; THOMISIDAE (1; 13%): <i>Ozyptila arctica</i> ; SALTICIDAE (4; 50%): <i>Chalcoscirtus</i> sp. 1, <i>Dendryphantes chekanowskii</i> , <i>Pellenes lapponicus</i> , <i>Sitticus lineolatus</i> – [Sal].
mst	GNAPHOSIDAE (2; 22%): <i>Gnaphosa</i> sp. 1; <i>Parasyrisca logunovi</i> ; LYCOSIDAE (2; 22%): <i>Acantholycosa triangulata</i> , <i>Pardosa baraani</i> ; LINYPHIIDAE (9, 56%): <i>Erigone remota</i> , <i>Hilaira glacialis</i> , <i>Monocerellus montanus</i> , <i>Poeciloneta petrophila</i> , <i>Walckenaeria koenboutjei</i> – [Lin].
sm	LYCOSIDAE (1; 13%): <i>Xerolycosa nemoralis</i> ; LINYPHIIDAE (6; 74%): <i>Anguliphantes cerinus</i> , <i>Araeoncus vorkutensis</i> , <i>Drepanotylus borealis</i> , <i>Leptorhoptrum robustum</i> , <i>Oreonetides sajanensis</i> , <i>Thyreostenius biovatus</i> ; THOMISIDAE (1; 13%): <i>Ozyptila rauda</i> – [Lin].
s	THERIDIIDAE: <i>Theridion</i> sp. 2.
ILT	
u	ARANEIDAE (2; 6%): <i>Araniella proxima</i> , <i>A. yaginumai</i> ; THERIDIIDAE (2; 6%): <i>Achaearanea tepidariorum</i> , <i>Euryopis levii</i> ; PISAUROIDAE (1; 3%): <i>Pisaura ancora</i> ; CLUBIONIDAE (3; 9%): <i>Clubiona lutescens</i> , <i>C. pseudosaxatilis</i> , <i>C. subsultans</i> ; GNAPHOSIDAE (3; 9%): <i>Drassyllus pusillus</i> , <i>Micaria aenea</i> , <i>Zelotes barkol</i> ; LINYPHIIDAE (15; 46%): <i>Abacoproeces saltuum</i> , <i>Bathyphantes setiger</i> , <i>Collinsia submissa</i> , <i>Dactylopiastes video</i> , <i>Diplocephalus marusiki</i> , <i>Hilaira</i> sp. 1, <i>Kaestneria pullata</i> , <i>Lepthyphantes taszanowskii</i> , <i>Poeciloneta variegata</i> , <i>Praestigia kulczynskii</i> , <i>Savignia centrasiatica</i> , <i>Stemonyphantes sibiricus</i> , <i>Trematocephalus cristatus</i> , <i>Walckenaeria auranticeps</i> , <i>W. kazakhstanica</i> ; PHILODROMIDAE (1; 3%): <i>Philodromus</i> sp. 3; SALTICIDAE (5; 15%): <i>Heliophanus dubius</i> , <i>Neon rayi</i> , <i>N. reticulatus</i> , <i>Salticus cingulatus</i> , <i>Sitticus mirandus</i> ; ZORIDAE (1; 3%): <i>Zora</i> sp. 1 – [Lin-Sal].
ism	LYCOSIDAE (1; 11%): <i>Alopecosa subrufa</i> ; LINYPHIIDAE (6; 67%): <i>Araeoncus crassiceps</i> , <i>Dactylopiastes video</i> , <i>Erigone dentipalpis</i> , <i>Lepthyphantes kaszabi</i> , <i>Microlinyphia impigra</i> , <i>Pelecopsis minor</i> ; THOMISIDAE (1; 11%): <i>Xysticus hedinii</i> ; SALTICIDAE (1; 11%): <i>Tuvaphantes arat.</i> – [Lin].
mm	DICTYNIDAE (1; 17%): <i>Dictyna major</i> ; LINYPHIIDAE (4; 66%): <i>Allomengea scopigera</i> , <i>A. dentisetis</i> , <i>Bolyphantes aliceps</i> , <i>Floronia bucculenta</i> ; PHILODROMIDAE (1; 17%): <i>Philodromus</i> sp. 1 – [Lin].
as	TETRAGNATHIDAE (1; 14%): <i>Tetragnatha obtusa</i> ; DICTYNIDAE (1; 14%): <i>Argenna</i> sp. 1; GNAPHOSIDAE (1; 14%): <i>Micaria</i> sp. 1; LYCOSIDAE (1; 14%): <i>Allohogna singoriensis</i> ; LINYPHIIDAE (1; 14%): <i>Epigytholus tuvensis</i> ; SALTICIDAE (2; 29%): <i>Bianor inexploratus</i> , <i>Harmochirus latens</i> .
bf	ARGYRONETIDAE (1; 17%): <i>Argyroneta aquatica</i> ; CLUBIONIDAE (1; 17%): <i>Clubiona phragmitis</i> ; LINYPHIIDAE (2; 33%): <i>Lepthyphantes</i> sp.1, <i>Walckenaerianus aimakensis</i> ; PHILODROMIDAE (2; 33%): <i>Philodromus praedatus</i> , <i>Thanatus striatus</i> – [Lin-Phi].
rpb	ARANEIDAE (1; 8%): <i>Singa nitidula</i> ; TITANOECIDAE (1; 8%): <i>Titanoeca</i> sp. 1; GNAPHOSIDAE (2; 17%): <i>Gnaphosa chola</i> , <i>Poecilochroa variana</i> ; LYCOSIDAE (2; 17%): <i>Alopecosa</i> sp. 3, <i>Pirata hygrophilus</i> ; LINYPHIIDAE (3; 25%): <i>Collinsia caliginosa</i> , <i>C. dentata</i> , <i>Sibirocyba incerta</i> ; SALTICIDAE (3; 25%): <i>Heliophanus patagiatus</i> , <i>Sitticus albolineatus</i> , <i>S. penicillatus</i> – [Lin-Sal].
MFLT	
sss	AGELENIDAE (1; 20%): <i>Coelotes</i> sp. 1; GNAPHOSIDAE (3; 60%): <i>Drassodes pseudolesserti</i> , <i>Parasyrisca belengish</i> , <i>Zelotes puritanus</i> ; LINYPHIIDAE (1; 20%): <i>Trichoncus vasconicus</i> – [Gna].

- sms THERIDIIDAE (1; 13%): *Crustulina sticta*; GNAPHOSIDAE (1; 13%): *Micaria guttulata*; LYCOSIDAE (1; 13%): *Alopecosa sibirica*; LINYPHIIDAE (2; 25%): *Hilaira gibbosa*, *Panamomops depilis*; THOMISIDAE (2; 25%): *Ozyptila scabricula*, *Synaema globosum*; SALTICIDAE (1; 13%): *Tuvaphantes insolitus* – [Lin-Tho].
- lf CLUBIONIDAE (1; 8%): *Clubiona stagnatilis*; HAHNIIDAE (1; 8%): *Cryphoeca silvicola*; GNAPHOSIDAE (1; 8%): *Gnaphosa microps*; LYCOSIDAE (1; 8%): *Alopecosa albostrata*; LINYPHIIDAE (7; 58%): *Incestophantes ancus*, *Lasiargus pilipes*, *Lepthyphantes expunctus*, *L. laricetorum*, *Maro saaristoi*, *Perlongipalpus* sp. 1, *Walckenaeria antica*; THOMISIDAE (1; 8%): *Ozyptila atomaria* – [Lin].
- mf ARANEIDAE (1; 2%): *Araneus nordmanni*; THERIDIIDAE (1; 2%): *Theridion palmgreni*; DICTYNIDAE (1; 2%): *Dictyna alaskae*; AGELENIDAE (1; 2%): *Coelotes* sp. 2; LIOCRANIDAE (1; 2%): *Agroeca maculata*; LYCOSIDAE (1; 2%): *Alopecosa pinetorum*; LINYPHIIDAE (33; 65%): *Agyreta beata*, *A. conigera*, *Anguliphantes dybowskii*, *A. karpinskii*, *Ceratinella brevis*, *Collinsia distincta*, *Cnephlocotes obscurus*, *Dicymbium facetum*, *Diplocentria bidentata*, *Erigone hypoarctica*, *Estrandia grandaeva*, *Goniatium rubellum*, *Hilaira frigida intercepta*, *Holminaria prolata*, *Lepthyphantes abiskoensis*, *L. pseudoobscurus*, *L. quadrimaculatus*, *Lophomma cognatum*, *Maro sibiricus*, *Notioscopus jamalensis*, *Oryphantes geminus*, *Paraeboria jenseica*, *Pelecopsis palmgreni*, *Perregrinus deformis*, *Pityohyphantes phrygianus*, *Poeciloneta theridiformis*, *Porrhomma pygmaeum*, *Satilatlas marxi*, *Scotinotylus alpinus*, *Silometopoides sphagnicola*, *Silometopus elegans*, *Thaleria orientalis*, *Walckenaeria capito*; THOMISIDAE (6; 12%): *Coriarachne depressa*, *Lysiteles maius*, *Ozyptila trux*, *Pistiurus undulatus*, *Tmarus rimosus*, *Xysticus sibiricus*; SALTICIDAE (6; 12%): *Bianor aemulus*, *Dendryphantes hastatus*, *D. rudis*, *Evarcha falcata*, *E. prozysinskii*, *Pseudeuophrys erratica* – [Lin].
- bef LYCOSIDAE (1): *Acantholycosa lignaria*.
- sm CLUBIONIDAE (1; 20%): *Clubiona latericia*; LYCOSIDAE (2; 40%): *Pardosa nenilini*, *P. sphagnicola*; LINYPHIIDAE (1; 20%): *Asiophantes sibiricus*; SALTICIDAE (1; 20%): *Marpissa radiata* – [Lyc-Lin].
- sgg ARANEIDAE (2; 20%): *Araneus alsine*, *Cercidia prominens*; TETRAGNATHIDAE (1; 10%): *Pachygnatha degeeri*; GNAPHOSIDAE (1; 10%): *Haplodrassus cognatus*; LYCOSIDAE (2; 20%): *Pardosa amenata*, *P. luisisi*; LINYPHIIDAE (2; 20%): *Bolyphantes index*, *Minicia marginella*; PHILODROMIDAE (1; 10%): *Tibellus oblongus*; SALTICIDAE (1; 10%): *Synageles venator* – [Lin-Lyc-Ara].
- s THERIDIIDAE (1, 50%): *Thymoites oleatus*; PHILODROMIDAE (1, 50%): *Philodromus margaritatus*.

## MSLT

- dns ARANEIDAE (1; 7%): *Araneus grossus*; DICTYNIDAE (3; 21%): *Dictyna uvus*, *Emblyna mongolica*, *E. logunovi*; ERESIDAE (1; 7%): *Eresus cinnaberinus*; GNAPHOSIDAE (2; 14%): *Drassodes* sp. 1, *Drassyllus vinealis*; LINYPHIIDAE (1; 7%): *Agyreta levii*; PHILODROMIDAE (1; 7%): *Thanatus absunurensis*; THOMISIDAE (3; 21%): *Ozyptila pseudoblitea*, *Xysticus inaequalis*, *X. laticeps*; SALTICIDAE (2; 14%): *Pellenes pulcher*, *Phlegra profuga* – [Tho-Dic-Gna/Sal].
- dfs THERIDIIDAE (1; 1%): *Achaearanea* sp. 1; DICTYNIDAE (2; 22%): *Dictyna obydoovi*, *Devade indistincta*; LYCOSIDAE (1; 1%): *Alopecosa licenti*; LINYPHIIDAE (1; 11%): *Incestophantes logunovi*; THOMISIDAE (2; 22%): *Xysticus seserlig*, *X. striatipes*; SALTICIDAE (2; 22%): *Chalcoscirtus nigrinus*, *Talavera* sp. 1 – [Dic-Tho-Sal].
- sds LYCOSIDAE (1): *Alopecosa* sp. 2; PHILODROMIDAE (1): *Thanatus* sp. 1; SALTICIDAE (1): *Synageles ramitus*.
- cxs DICTYNIDAE (2; 22%): *Archaeodictyna consecuta*, *Arctella lapponica*; GNAPHOSIDAE (4; 44%): *Drassodes kaszabi*, *Echemus sibiricus*, *Gnaphosa tuvunica*, *Micaria mongunica*; LINYPHIIDAE (1;

11%); *Oedothorax mongolensis*; THOMISIDAE (1; 1%); *Xysticus mugur*; SALTICIDAE (1; 11%); *Talavera aequipes* – [Gna-Dic].

s ARANEIDAE (1): *Araneus mongolicus*; THERIDIIDAE (1): *Dipoena* sp. 2; SALTICIDAE (1): *Sitticus saltator*.

etation types and poor/wrong differentiation between the mst and the mwt. Therefore, we assume that the separation of the mst and the mwt shown in fig. 3 (clusters Aa and Ab), as well as the differences in the index of originality (table 2), must now be treated as an artifact and a matter for further more detailed studies. The dendrogram (fig. 3) could easily be explained if both Aa and Ab clusters are combined.

The proportion of exclusive species turned out to be highest in the moss-lichen-stony tundra (mst). However, such disproportion also seems to be due to insufficient collecting. For instance, only 14 spider species have been collected in mountain scree (fig. 6: s), while the similar biotope of the MFLT is already represented by 35 species (fig. 8). So, insufficient collecting in the screes of mountain tundra, to our mind, is one reason why the spider community of this biome is outside any cluster (fig. 3), while its real position seems to be in cluster Aa.

The inundated landscape, ILT (figs. 2, 4, 5, 7; table 1, 2).

This unique landscape consists of a set of unrelated vegetation types differing both physiognomically and in species composition (both plants and animals). The number of spider species found is 270, of which 96 (36%) are exclusive (fig. 2); the taxonomic pattern is shown in fig. 4, with the taxonomic index, like in most Siberian faunas, Lin-Gna-Lyc and the index of originality Lin-Sal (fig. 5). The taxonomic originality over the ILT vegetation types is shown in table 2. Practically everywhere linyphiids form the bulk of exclusive species, with the exception of the urema and especially the river pebble banks where the salticids number 15 and 25 percent of exclusive species, respectively.

Among the treated vegetation types of the ILT (fig. 7; table 1), the urema is characterized by the highest level of both species diversity (140) and taxonomic originality (24%). In almost all vegetation types, except the river pebble banks where the gnaphosids and lycosids are more numerous, the Linyphiidae noticeably predominate. It is important to note that although the urema is a forest vegetation type, its spider community is situated in the dendrogram close to meadow and swampy formations (fig. 3: cluster Ac), but not close to other forests involved (cluster Ab). Thus, being physiognomically a forest, the urema can be considered a "meadow" from the arachnological point of view. This observation agrees well with the botanical data provided by KUMINOVA et al. (1985), showing poor floristic linkages of the urema with Tuvan forests.

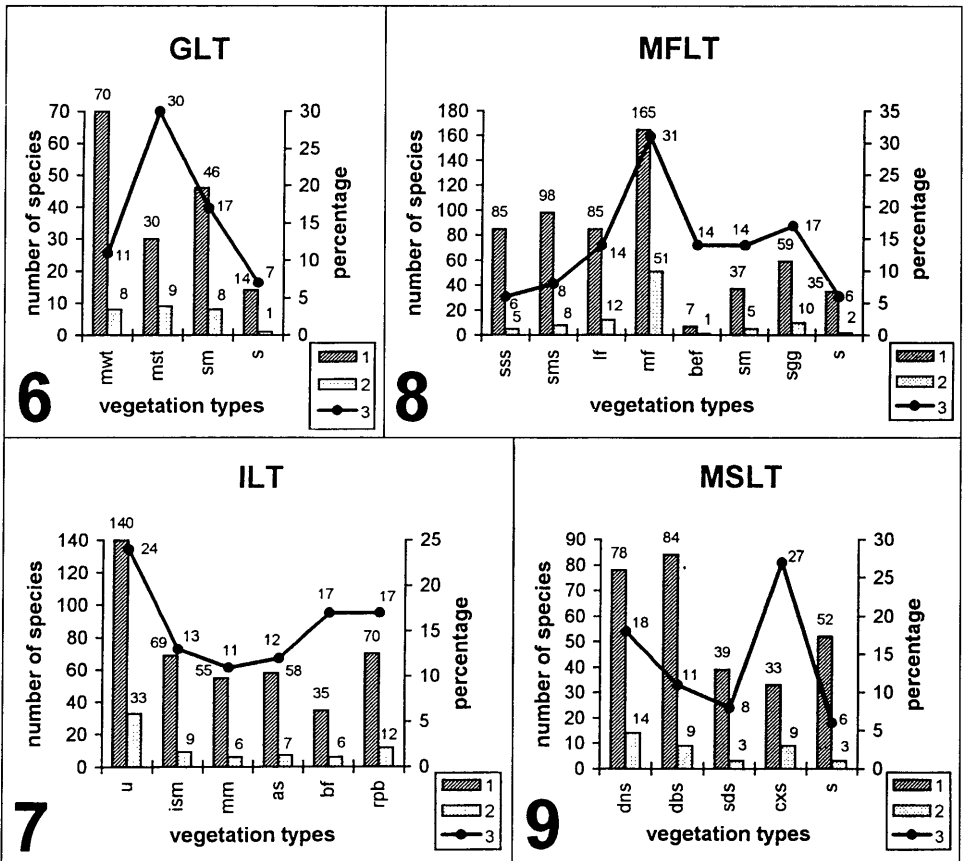
The spider community of the bulrush fen (35 species) is not included in any cluster (fig. 3) despite a low percentage of originality (fig. 7: 17%). This could mean that its spider community is formed by an occasional set of species.

The spider communities of three vegetation types of the ILT (as, ism and rpb) represent a well marked separate cluster (fig. 3: Ba) of inundated (semi)arid ecosystems. Practically all of them show no differences in the level of species diversity, the taxonomic pattern (fig. 7; table 1) and the index of originality (table 2).

The rest of the ILT vegetation types (mm) is linked with the meadow formations of the mountain forest-steppe landscape (fig. 3: Ac); for other details see below.

The mountain forest-steppe landscape, MFLT (figs. 2, 4, 5, 8; table 1, 2).

This is the best-represented and most complicated landscape often called "exposure forest-steppe" (LAVRENKO et al. 1991), pointing to the dependence of both steppe (S-slopes) and for-



Figs. 6-9: Distribution of species numbers (1), numbers of exclusive (indicator) species (2) and percentages of exclusive species (3) in different vegetation types of four Tuvan landscapes studied. For abbreviations, see "Material and methods".

est (N-slopes) ecosystems upon their slope exposition (i.e. the so-called exposure differentiating of landscape). Analogues of this landscape can be found only in Mongolia and in S. Siberian regions neighbouring Tuva. Altogether 354 spider species have been found in the MFLT, of which 132 (or 37%) are treated as exclusive (fig. 2). The MFLT taxonomic index is Lin-Gna-Lyc (fig. 4), the index of originality is Lin-Sal (fig. 5), both indices being the same as in the ILT and in most Siberian spider faunas (see MIKHAILOV 1997: fig. 1). The taxonomic originality over the MFLT vegetation types is shown in table 2.

Among the MFLT vegetation types, the Linyphiidae predominate in the forest formations (44% of all forest spider species), while the Gnaphosidae and the Lycosidae predominate in the steppe-like ones (see table 1). However, the spider community of the sloping shrub-stony steppes (sss) is the only one combined with those of the mountain steppe formations (fig. 3: cluster Bb), while the sloping meadow shrubby steppe (sms) is found among other meadow formations (fig. 3: cluster Ac). This can be easily explained by considering the taxonomic indices of both the sss and the sms, Gna-Lyc-The and Gna-Lin-Lyc, respectively. Thus, in spite of the dominating gnaphosids in both vegetation types, occurrence of the linyphiids is more important in linking the

sms together with other meadow formations. Furthermore, the indices of originality in these formations are quite different as well; Gna in the sss and Lin-Tho in the sms (table 2). So, while occurring in physiognomically similar vegetation types (sss and sms), these two spider communities have nothing in common when analysed in detail.

The spider community of the taiga forest (fig. 8: mf) turned out to be the richest, 165 species with 31 % of them being exclusive. At the same time, the spiders of the birch forest (fig. 8: bef; table 1) have remained practically unstudied, 7 recorded species constitute, in our view, no more than 5-7 % of the expected fauna. This is why the spider community of the birch forest is outside any of the large clusters shown in fig. 3. It is also important to note that 73 exclusive species, or 55 % of all exclusive species, recorded from the MFLT, are those of the forest formations, most of them being naturally linyphiids. Contrary to forest spiders, the spider communities of sloping steppes (sss, sms) and meadow glades (sgg) show a rather low percentage of exclusive species (fig. 8), probably due to the fact that most of these species also occur either in the steppe formations of the MSLT or the meadow formations, including the urema (see above). Such differences between the number of exclusive species of forest and steppe formations could be partially explained by the lack of reliable arachnological data from the true mountain forest landscape (sensu KUMINOVA et al. 1985). As noted above, this landscape has remained unstudied, and a part of its species is in fact included in the taiga forest community (table 1: mf). Thus, in reality, some/most exclusive species of the mf are common for the MFLT and mountain forest landscapes and the actual level of originality must be lower than that shown in fig. 8: mf.

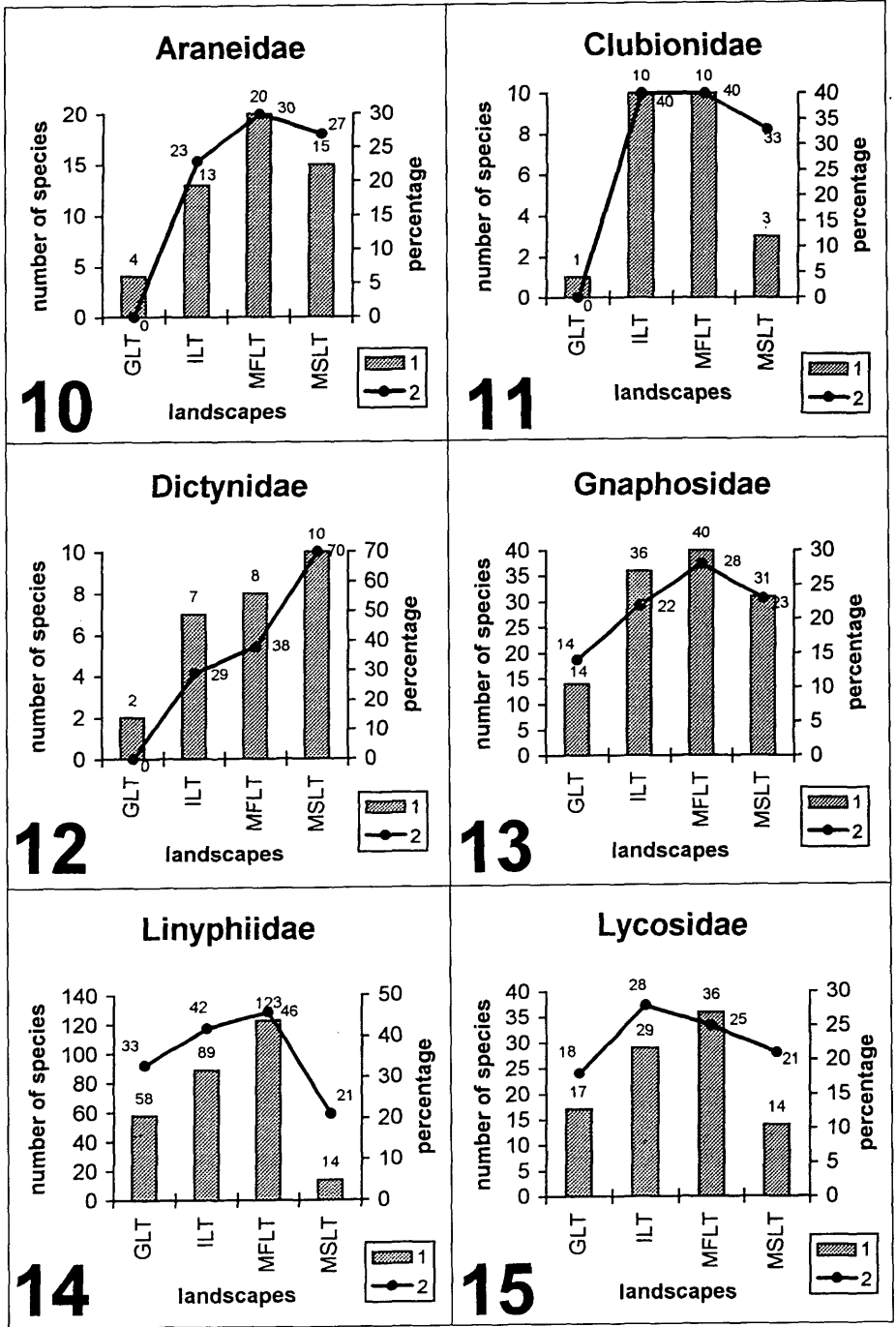
The spider communities of all the meadow and swampy formations of the MFLT, as well as those of the urema and the inundated mesophytic meadows, are combined into a single cluster (fig. 3: Ac). These are all similar: a clear dominant group with regard to species diversity is lacking (but everywhere linyphiids are rather numerous) and values of originality are low (8-14 %, see figs. 7, 8). Both the taxonomic index and the index of originality over these spider communities show no consistency (tables 1, 2), e.g. the latter index of the sms is Lin-Tho but that of the sgg is Lin-Lyc-Ara, etc. Thus, most of the spider communities combined into cluster Ac (fig. 3) show mixed composition and their closeness to each other is largely explained by the occurrence of eurytopic species.

The mountain steppe landscape, MSLT (figs. 2, 4, 5, 9; table 1, 2).

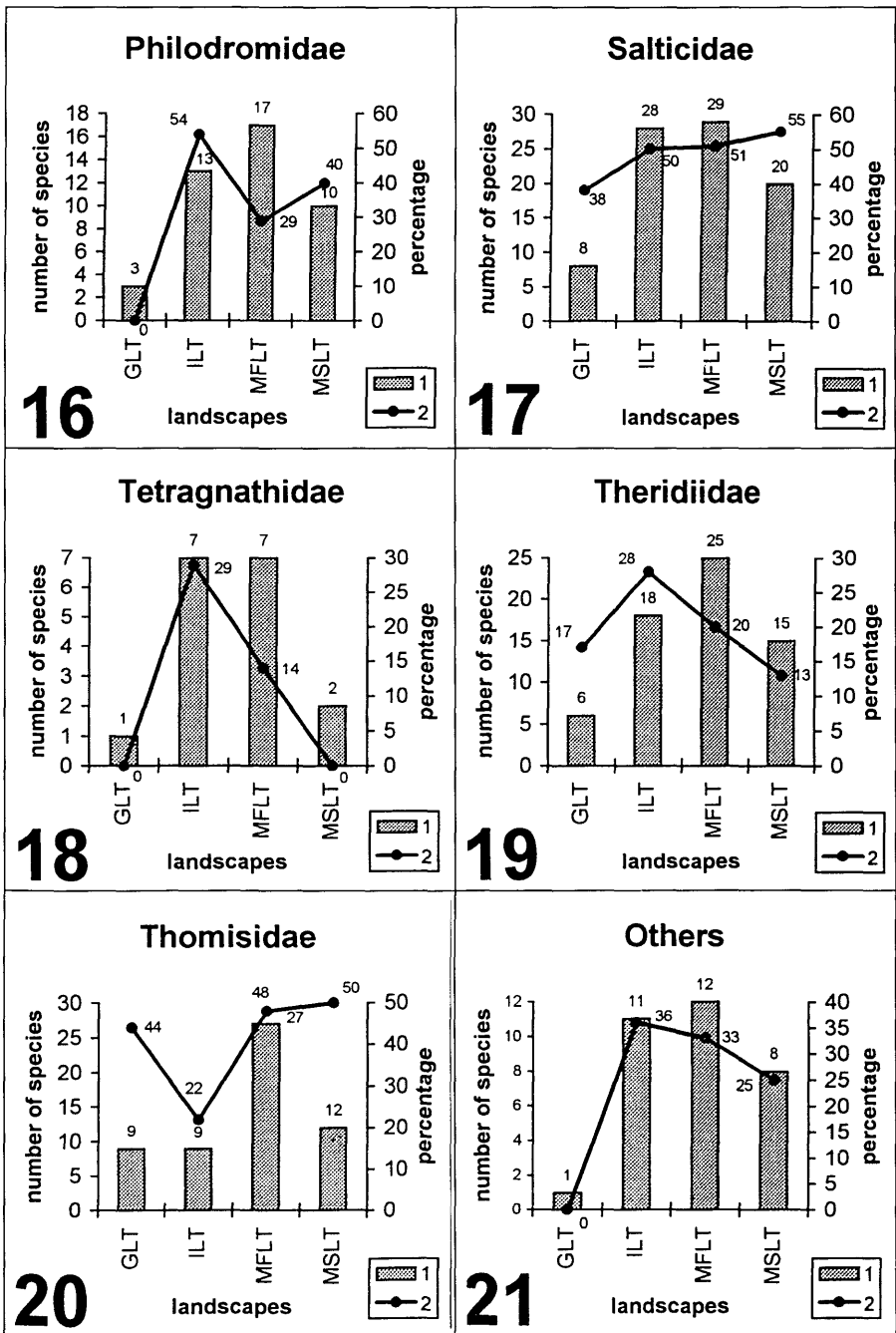
This is the most peculiar landscape in Tuva (and in all S. Siberia), as a number of Turanian and North Turanian-Dzhungarian biotic elements are shown (LAVRENKO et al. 1991; EMELIANOV 1972) to occur there; this points to the old (floro)faunogenetic connections between the semiarid regions of S. Siberia and those of the Ancient Mediterranean. Therefore, both the taxonomic pattern and the index of originality of the MSLT are found to be close to those of Middle Asian spider faunas (cf. MIKHAILOV 1997: fig. 1). This is well seen in the composition of indices of originality over the MSLT vegetation types as shown in table 2, with the Gnaphosidae, Dictynidae and Salticidae predominating.

The MSLT taxonomic index is Gna-Sal-The-Ara (fig. 4) and the index of originality is Sal-Gna-Dic (fig. 5), i.e. both species diversity and taxonomic originality are mostly formed by two families: Gnaphosidae and Salticidae. Another oddity of the MSLT is that it is the only landscape where the Dictynidae play a role in forming the index of originality (fig. 5; table 2). Both these peculiarities obviously separate the MSLT spider community from those of all other landscapes discussed above. Altogether 154 spider species have been encountered in the MSLT, of which 50 (or 32 %) are found to be exclusive species (fig. 2). Most of the MSLT exclusive species (32 species, 64 %) are gathered in the dns, dbs and cxs (fig. 9; table 1).

However, the spider community of the high-mountain (= cryophyte) steppe (cxs) differs from the others in all taxonomic parameters. Firstly, its taxonomic pattern is of mixed nature, i.e. there is no clear dominant group (table 1). Secondly, despite the lowest level of species diversity



Figs. 10-15: Distribution of species numbers (1) and percentages of exclusive (indicator) species (2) of six spider families in different landscapes of Tuva. For abbreviations, see "Material and methods".



Figs. 16-21: Distribution of species numbers (1) and percentages of exclusive (indicator) species (2) of 18 spiders families in different landscapes of Tuva. Fig. 21 shows generalized data for 13 families with 1-3 species. For abbreviations, see "Material and methods".

(33 species), the cxs spider community had the highest taxonomic originality (fig. 9) formed by two spider groups only: gnaphosids and dictynids (66% of exclusive species, see table 2). So, this spider community is small but quite specialized; and due to this it is placed in a separate position in the dendrogram (fig. 3: Bd), outside other steppe formations of Tuva.

The separate position of the desert sandy shrub-grass steppe (sds) community in the dendrogram (fig. 3: Bc) is somewhat unexpected. From general considerations, one could assume it should be near/inside cluster Bb, as the dry shrub-grass steppes (dbs) and the sds are always neighboring and, moreover, the former are transformed into the latter under special edaphic factors and when destroyed by human activity (KUMINOVA et al. 1985). Probably the last fact is very important, and we can consider the spider community of the sds to be primarily formed by a mixed set of migrants from other steppe formations. If so, this explains the low level of diversity in this community (39 species) and the lowest value of its taxonomic originality (fig. 9), as well as its separate position within the large "steppe" cluster B on the dendrogram.

The last cluster to be discussed is Bb (fig. 3). It consists of true steppe formations, which show a similar level of spider diversity (figs. 8, 9) and differ from other formations by the dominance of gnaphosids in their taxonomic indices (table 1). At the same time, the indices of originality are quite different (table 2), e.g. Gna in the sss and Dic-Tho-Sal in the dbs. This means that the strong closeness of these spider communities (the Icz ca. 0.4) seen in fig. 3 is explained by the species mainly/only restricted to steppe vegetation types, i.e. steppe stenobionts.

The distribution of species numbers and percentages of exclusive species over the landscapes studied are shown in figs. 10-21 for selected spider families with 9 or more encountered species ("Others" shows generalized data for 13 small families with 1-3 species, see the check-list above). On the basis of these diagrams, the following conclusions seem to be possible.

(1) Most of the families show their maximal diversity and percentage of exclusive species in the inundated and forest-steppe landscapes, this being in good agreement with the general picture for all the families (fig. 2).

(2) In most families, maximum of originality is shown in either the ILT (figs. 15, 16, 18, 19) or the MFLT (figs. 10, 13, 14), with the exception of the dictynid and jumping spiders (fig. 12, 17), which show a consistent increase in this percentage of originality from the GLT to the MSLT.

(3) The Thomisidae show the minimum of both species diversity and level of originality in the ILT, and this could mean that they avoid the inundated communities (at least in Tuva).

(4) Only six families have exclusive species in the GLT, namely Gnaphosidae, Linyphiidae, Lycosidae, Salticidae, Theridiidae and Thomisidae; for their composition see fig. 5.

(5) Although the Linyphiidae show the minimum of species diversity (14 species or 9%; fig. 4, 14) in the MSLT, at least one species is always found to be exclusive in all vegetation types (table 2). This could indicate that the linyphiid fauna of arid communities is mainly/only formed by very specialized species.

(6) Both the salticids and gnaphosids (figs. 13, 17) are richest in the ILT and the MFLT, but not in the MSLT as might be expected. Thus, their marked contribution to arid spider communities is caused not by their increase but is due to the decrease of the species number of the linyphiids (cf. fig. 14).

**Acknowledgements:** We are grateful to a number of specialists who participated in identifications: Dr. V.E. Efimik (Perm), Dr. K.Y. Eskov (Moscow), Dr. A.V. Tanasevitch (Moscow), Dr. K.G. Mikhailov (Moscow) and Dr. M.I. Saaristo (Turku). We are additionally indebted to Prof. V.G. Mordkovitch (Novosibirsk) for providing fruitful ideas for analysing our data. We are very grateful to Dr. D.V. Dubatolov (Novosibirsk) for help with the cluster analysis and to Dr. V.V. Glupov and Mrs. O.G. Berezina (both from Novosibirsk) for help



with preparing the diagrams. Dr. V.V. Zaika (Kyzyl) kindly helped in organizing expeditions in 1995-96, and the Academy of Finland financially supported the Finnish-Russian joint-expedition, 1995. Finally, we are indebted to Dr. K. Thaler (Innsbruck) who helped with both the critical review and publication. This work was partly supported by the INTAS grant 94-3708.

## 5. Literature:

- BAERT, L. (1994): *Walckenaeria koenboutjei*, a new Siberian erigonid spider (Araneae, Linyphiidae). — Bull. Inst. r. Sci. nat. Belg., Entomol. **64**: 5 - 7.
- BAEV, P.V. & L.D. PENEV (1991): BIODIV — a program for calculating biological diversity parameters and cluster analysis. — 1st Evolutionary Morphol. & Ecol. Animals, Moscow.
- CHERNOV, Yu.I. (1975): [Nature Zonation and Terrestrial Animal Life.] — "Mysl" Publrs, Moscow, 222 pp. [in Russian].
- DANILOV, S.N. (1993): Spiders of the genus *Micaria* WESTRING (Araneae, Gnaphosidae) from Siberia. — Ann. Naturhist. Mus. Wien. **94/95B**: 427 - 431.
- (1996): New data on the spider genus *Micaria* WESTRING, 1851 in Asia (Aranei Gnaphosidae). — Arthropoda Selecta **5(3/4)**: 113 - 116.
- DANILOV, S.N. & D.V. LOGUNOV (1993): Faunistic review of the jumping spiders of Transbaikalia (Aranei, Salticidae). — Arthropoda Selecta **2(4)**: 25 - 39.
- EMELIANOV, A.F. (1972): [A review of views on the history forming of the biota of Central Asian deserts]. — [Insects of Mongolia]: 11 - 49 [in Russian].
- ESKOV, K.Yu. (1991): [A spider genus *Savignya* (*S. str.*) (Aranei, Linyphiidae) in the fauna of the Far East and Central Asia]. — Zool. Zhurnal **70(5)**: 140 - 144 [in Russian with English summary].
- (1992): New data on the linyphiid spider fauna of South Siberia (Aranei Linyphiidae). — Arthropoda Selecta **1(2)**: 73 - 82.
- (1993): Several new linyphiid spider genera (Araneida Linyphiidae) from the Russian Far East. — Arthropoda Selecta **2(3)**: 43 - 60.
- ESKOV, K.Yu. & Yu.M. MARUSIK (1992a): On the mainly Siberian spider genera *Wubanoides*, *Parawubanoides* gen. n. and *Poeciloneta* (Aranei Linyphiidae). — Arthropoda Selecta **1(1)**: 21 - 38.
- (1992b): The spider genus *Centromerus* (Aranei Linyphiidae) in the fauna of Siberia and the Russian Far East, with an analysis of its distribution. — Arthropoda Selecta **1(2)**: 33 - 46.
- (1994): New data on the taxonomy and faunistics of North Asian linyphiid spiders (Aranei Linyphiidae). — Arthropoda Selecta **2(4)**: 41 - 79.
- (1998): A new species of erigonine spider genus *Erigonoplus* (Aranei, Linyphiidae) from south Siberia. — Arthropoda Selecta **6(1/2)**: 91 - 93.
- KOPONEN, S. (1996): Diversity and similarity of northern spider faunas. — Acta Zool. Fennica **201**: 3 - 5.
- KUMINOVA, A.V., V.P. SEDELNIKOV & Yu.M. MASKAEV (1985): [Plant cover and natural grasslands of Tuvan ASSR]. — Novosibirsk: Nauka, Siberian Branch, 256 pp. [in Russian].
- LEHTINEN, P.T. (1967): Classification of the Cribellate spiders and some allied families, with notes on the evolution of the suborder Araneomorpha. — Ann. Zool. Fennica **4**: 199 - 468.
- LOGUNOV, D.V. (1990): [New data of the spider families Atypidae, Araneidae, Pisauridae and Thomisidae in the USSR fauna]. — In: (Ed. G.S. ZOLOTARENKO) Tchel'ninstonogie i gel'minty, Nauka, Novosibirsk: 33 - 43 [in Russian].
- (1991): [The spider family Salticidae (Aranei) of Tuva. I. Six new species from the genera *Sitticus*, *Bianor* and *Dendryphantes*]. — Zool. Zhurnal **70(6)**: 50 - 60 [in Russian].
- (1992a): [A review of the spiders genus *Tmarus* SIMON, 1875 (Araneae, Thomisidae) in the USSR fauna, with a description of a new species]. — Siberian Biol. Journal **1**: 61 - 73 [in Russian with English summary].
- (1992b): [On the spider fauna of the Bolshekhkhtsyrskiy Reservation (Khabarovsk Province). I. Families Araneidae, Lycosidae, Philodromidae, Tetragnathidae, Theridiidae, Thomisidae]. — Siberian Biol. Journal **4**: 56 - 68 [in Russian with English summary].
- (1992c): The spider family Salticidae (Araneae) from Tuva. II. An annotated check list of species. — Arthropoda Selecta **1(2)**: 47 - 71.
- (1993a): New data on the jumping spiders (Aranei, Salticidae) of Mongolia and Tuva. — Arthropoda Selecta **2(2)**: 47 - 53.
- (1993b): Notes on the *penicillatus* species group of *Sitticus* SIMON, 1901, with a description of a new species (Araneae, Salticidae). — Genus **4(1)**: 1 - 15.

- LOGUNOV, D.V. (1995): New and little known species of the jumping spiders from Central Asia (Araneae: Salticidae). — *Zoosystematica Rossica* **3(2)**: 237 - 246.
- (1996a): A critical review of the genera *Apollophanes* O.P.-CAMBRIDGE, 1898 and *Tha-natus* C.L. KOCH, 1837 in North Asia (Araneae, Philodromidae). — *Revue Arachnologique* **11 (13)**: 133 - 202.
- (1996b): A review of the genus *Phlegra* SIMON, 1876 in the fauna of Russia and adjacent countries (Araneae: Salticidae: Aelurilinae). — *Genus* **7(3)**: 533 - 567.
- (1997b): Taxonomic notes on some Central Asian philodromid species (Araneae Philodromidae). — *Arthropoda Selecta* **6(1/2)**: 99 - 104.
- LOGUNOV, D.V. & S. HECHIAK (1996): *Asianellus*, a new genus of the subfamily Aelurillinae (Araneae, Salticidae). — *Entomologica Scandinavica* **26**: 103 - 117.
- LOGUNOV, D.V. & Yu. M. MARUSIK (1991): [Redescriptions and morphological differences of *Bianor aurocinctus* (OHLERT) and *B. aemulus* (GERTSCH) (Aranei, Salticidae)]. — *Siberian Biol. Journal* **2**: 39 - 47 [in Russian with English summary].
- (1994a): A faunistic review of the crab spiders (Araneae, Thomisidae) from the Mountains of South Siberia. — *Bull. Inst. r. Sci. nat. Belg., Entomol.* **64**: 177 - 197.
- (1994b): New data on the jumping spiders of the Palaearctic fauna. — *Arthropoda Selecta* **3(1-2)**: 101 - 115.
- (1995): Spiders of the family Lycosidae (Aranei) from the Sokhondo Reserve (Chita Area, East Siberia). — *Beitr. Araneol.* **4**: 109 - 122.
- (1998): A new species of the genus *Xysticus* from the mountains of South Siberia (Araneae, Thomisidae). — *Bull. Br. arachn. Soc.* (in press).
- LOGUNOV, D.V. & S. Yu. RAKOV (1996): A review of the spider genus *Synageles* SIMON, 1876 (Araneae, Salticidae) in the fauna of Central Asia. — *Bull. Inst. r. Sci. nat. Belg., Entomol.* **66**: 65 - 74.
- LOGUNOV, D.V., B. CUTLER & Yu.M. MARUSIK (1993): A review of the genus *Euophrys* C.L. KOCH in Siberia and the Russian Far East (Araneae, Salticidae). — *Ann. Zool. Fennici* **30**: 101 - 124.
- MARUSIK, Yu.M. (1989): [Two new species of the spider genus *Xysticus* and synonymy of crab spiders (Aranei, Thomisidae, Philodromidae) from Siberia]. — *Zool. Zhurnal* **63(4)**: 140 - 145 [in Russian with English summary].
- MARUSIK, Yu.M. & B.P. CHEVRISOV (1990): Three new spiders from the Asian part of the USSR. — *Reichenbachia* **27(15)**: 89 - 93.
- MARUSIK, Yu.M. & S.L. ESYUNIN (1998): A new species of the spider genus *Pelecopsis* Simon, 1864 (Aranei, Linyphiidae) from South Siberia. — *Arthropoda Selecta* **6(3/4)**: 105 - 108.
- MARUSIK, Yu.M. & S. KOPONEN (1998): New and poorly known spiders of the subfamily Dictyninae (Araneae, Dictynidae) from South Siberia. — *Entomol. Probl.* (in press).
- MARUSIK, Yu.M. & R. LEECH (1993): The spider genus *Hypselistes*, including two new species, from Siberia and the Russian Far East (Araneida: Erigonidae). — *Can. Entomol.* **125**: 1115 - 1126.
- MARUSIK, Yu.M. & D.V. LOGUNOV (1995): Gnaphosid spiders from Tuva and adjacent territories, Russia. — *Beitr. Araneol.* **4**: 177 - 210.
- (1998): Taxonomic notes on the *Evarcha falcata* species complex (Aranei, Salticidae). — *Arthropoda Selecta* **6(3/4)**: 95 - 104.
- MEDVEDEV, L.N. (1984): [Quantitative method of zoogeographic analysis of a fauna.] — [VII All-Union Zoogeographic Conference, Theses of papers]: 211 - 215 [in Russian].
- MIKHAILOV, K.G. (1992): The spider genus *Clubiona* LATREILLE, 1804 (Arachnida Aranei Clubionidae) in the USSR fauna: a critical review with taxonomic remarks. — *Arthropoda Selecta* **1(3)**: 3 - 34.
- (1996): A checklist of the spiders of Russia and other territories of the former USSR. — *Arthropoda Selecta* **5(1-2)**: 75 - 137.
- (1997): Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). — Moscow: Zoological Museum of the Moscow State University, 416 pp.
- NAMZALOV, B.B. & A. Yu. KOROLYUK (1991): [Classification of the steppe vegetation of Tuva and SE Altai, Preprint]. — Novosibirsk, 84 pp. [in Russian].
- OVTSHARENKO, V.I., N.I. PLATNICK & D.X. SONG (1992): A review of the North Asian ground spiders of the genus *Gnaphosa* (Araneae, Gnaphosidae). — *Bull. Amer. Mus. Nat. Hist.* **212**: 1 - 88.
- OVTSHARENKO, V.I., N.I. PLATNICK & Yu.M. MARUSIK (1995): A review of the Holarctic ground spider genus *Parasyrisca* (Araneae, Gnaphosidae). — *Amer. Mus. Nov.* **3147**: 1 - 55.
- PRAVDIN, F.N. (1978): [Ecological geography of insects of Middle Asia.] — Nauka, Moscow, 271 pp. [in Russian].

- PRAVDIN, F.N. & L.L. MISHENKO (1980): [Forming and evolution of ecological faunas in Middle Asia.] – Nauka, Moscow, 156 pp. [in Russian].
- PROSZYNSKI, J. (1982): Salticidae (Araneae) from Mongolia. – *Ann. hist. nat. Mus. Hung.* **74**: 273 - 294.
- SAARISTO, M. & K.Yu. ESKOV (1996): Taxonomy and zoogeography of the hypoarctic erigonine spider genus *Semljicola* (Araneida, Linyphiidae). – *Acta Zool. Fennica* **201**: 47 - 69.
- STERNBERGS, M.T. (1981): [*Pardosa lusisi* – a new spider species of the family Lycosidae from Tuva]. – *Latvijas Entomologs* **24**: 60 - 62 [in Russian with English summary].
- TANASEVITCH, A.V. (1995): Two new genera of the family Linyphiidae from Tuva, South Siberia, Russia (Arachnida Aranei Linyphiidae). – *Arthropoda Selecta* **4(3/4)**: 65 - 69.
- (1996): New species of genus *Incestophantes* TANASEVITCH, 1992 from southern Siberia and the Far East, with notes on systematics of this genus (Arachnida: Araneae: Linyphiidae: Microneptinae). – *Reichenbachia* **31(22)**: 113 - 122.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte des naturwissenschaftlichen-medizinischen Verein Innsbruck](#)

Jahr/Year: 1998

Band/Volume: [85](#)

Autor(en)/Author(s): Koponen Seppo, Logunov Dmitri V., Marusik Yuri M.

Artikel/Article: [A Check-List of the Spiders in Tuva, South Siberia eith Analysis of their Habitat Distribution \(Arachnida: Araneae\). 125-159](#)