

The spider family Salticidae (Araneae) from Tuva. II.
An annotated check list of species.

Пауки семейства Salticidae (Araneae) Тувы. II.
Аннотированный список видов.

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КЛЮЧЕВЫЕ СЛОВА: Salticidae (пауки-скакунчики), аннотированный список, Тува.

ABSTRACT: The paper gives a faunistic summary of the jumping spiders of Tuva. The annotated check-list includes 45 species out of fifty collected ones from this territory. Notes on their distribution, habitats and natural history are given. Salticids reported in Siberia for the first time are *Pellenes gobiensis* Schenkel, 1936; *Sitticus distinguendus* (Simon, 1868); *S. saltator* (O.Pickard-Cambridge in Simon, 1868) and *Yllenus kulczynskii* Punda, 1975. The females of *P. gobiensis* and *Sitticus tannuolana* Logunov, 1991 are described for the first time. Redescriptions of *P. gobiensis*, *P. limbatus* (Kulczynski, 1895) are also provided. Three new synonyms have been established: *Pellenes chanujnensis* Proszynski, 1982 = *P. limbatus* (Kulczynski, 1895); *Heliophanus falcatus* Xiao, Yin, 1991 = *H. baicalensis* (Kulczynski, 1895); *Yllenus staregai* Punda, 1975 = *Y. kulczynskii* Punda, 1975 (valid names given second). A new species, *Evarcha michailovi* sp.n., closely related to *E. laetabunda* (C.L.Koch, 1848), is also described and pictured.

РЕЗЮМЕ: Статья представляет собой фаунистический обзор пауков-скакунчиков Тувы. Аннотированный список включает 45 видов из 50 собранных на этой территории. Представлены данные по распространению и местообитанию каждого вида. Впервые отмечены

в фауне Сибири следующие виды: *Pellenes gobiensis* Schenkel, 1936; *Sitticus distinguendus* (Simon, 1868); *S. saltator* (O.Pickard-Cambridge in Simon, 1868) и *Yllenus kulczynskii* Punda, 1975. Впервые описаны самки *P. gobiensis* и *Sitticus tannuolana* Logunov, 1991. Переописаны *P. gobiensis* и *P. limbatus* (Kulczynski, 1895). Обнаружены три новых синонима: *Pellenes chanujnensis* Proszynski, 1982 = *P. limbatus* (Kulczynski, 1895); *Heliophanus falcatus* Xiao, Yin, 1991 = *H. baicalensis* (Kulczynski, 1895); *Yllenus staregai* Punda, 1975 = *Y. kulczynskii* Punda, 1975 (валидные названия справа). Описан также новый вид, *Evarcha michailovi* sp.n., близкий к *E. laetabunda* (C.L.Koch, 1848).

Introduction.

Only a few studies concerning the salticid fauna of Tuva have been published. The first record of *Yllenus mongolicus* Proszynski, 1968 was made by J.Proszynski [1982] who mentioned the species among Mongolian salticids with giving no exact locality. D.Logunov and Y.Marusik [1991] reported on two Siberian salticid species, of which one, *Bianor aemulus* (Gertsch, 1934), was also found in Tuva. And quite recently, D.Logunov [1991] has described six new species from Tuva: *Sitticus tannuolana* Logunov, 1991; *Bianor inexploratus* Logunov,

1991; *B. latens* Logunov, 1991; *B. stepposus* Logunov, 1991; *Dendryphantes tuvinensis* Logunov, 1991; and *D. insolitus* Logunov, 1991. These three above works reporting upon eight species exhaust all the data about Salticidae of Tuva available today.

The present paper is a faunistic review of the jumping spiders (Salticidae) of Tuva, based on a number of rather extensive collections covering practically all the territory of this land (Fig.1), except the Khemchik Valley and the Sangilen Plateau. In the text, each locality is followed by the respective number put in square brackets ([]) and referring to the number in Fig.1. The aim of the present paper is to summarize the faunistic records and habitat information for Salticidae of Tuva.

Material and methods.

The majority of the materials (about 1040 salticid specimens) used for the preparation of this paper (see also Fig.1) were collected by the author, D.V. Logunov (D.L.), during his expeditions to Tuva in 1989-1991. Besides, some further sporadic collections of Mr. Y.P. Krasnobayev (Y.K.) (Zhiguli Reserve), Dr. E.I. Khlebosolov (E.K.) (Magadan), Mr. V.K. Zinchenko (V.Z.) and Dr. V.P. Pekin (V.P.) (Novosibirsk), Mr. O.V. Lyakhov (O.L.) (Pavlodar), Dr. M.T. Sternbergs (M.S.) (Riga) and Dr. K.Y. Eskov (K.E.) (Moscow) both from Tuva and from other parts of Siberia have been incorporated. The above names are referred to below only by the respective abbreviations.

To provide for certain species a more accurate distributional pattern, some additional materials collected in different parts of Siberia (Khakassia, the SE Altais, the East Kazakhstan Area, Yakutia, Buryatia and others) have been incorporated as well.

All the above materials have been shared between the collections of the Zoological Museum of the Biological Institute (BI; Novosibirsk), the Zoological Museum of the Moscow State University (ZMMU) and the Institute of Zoology PAN (IZW; Warszawa).

In addition, the salticid part of E.Schenkel's collection from China deposited in the Swedith Museum of Natural History (SMNH; Stockholm), and some materials from the Na-

tional Museum of Natural History (NMNH; Paris), the Hungarian Natural History Museum (HNHM; Budapest), the Senckenberg Museum (SMF; Frankfurt a.M.), the Zoological Department of the Perm State University (PSU; Perm) and the Zoological Institute of the Russian Academy of Sciences (ZIS; Sankt-Petersburg) have been revised for comparative purposes.

The material studied numbers 50 species, although five of them have not been listed below. Due to unsettled taxonomical problems, two species of *Yllenus* have not been introduced in the list, as well as two others represented by juvenile specimens. One species being new and belonging to a new genus, it seems more expedient to describe it in a separate paper. Thus, the annotated list of the jumping spiders from Tuva is here limited by 45 species only.

Habitat determination for each reported species was based on a 50% or greater occurrence in a particular ecotope. All data are original.

The following abbreviations have been accepted in the text: AME - anterior medial eyes, PLE - posterior lateral eyes; d.- dorsally, v.- ventrally, pr.- prolaterally, rt.- retrolaterally, a - apically, N - number of observations. The sequence of leg segments in measurement data is the following: femur + patella + tibia + metatarsus + tarsus. Names for distributional patterns are those proposed by K.B. Gorodkov [1984]. All measurements are in mm.

Annotated list of species.

Family Salticidae.

Aelurillus festivus (C.L.Koch, 1846).

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 1m,1f (ZMMU), 15 km SE of Mugur-Aksy Vill. [4], 1800 m alt., 10-25.05.1989, E.K.; 1m,1f (BI), 6-7 km E of Mugur-Aksy Vill., the upper flow of Kuge-Davaa River, 2100-2200 m alt., 18.05.1990, D.L., O.L.; 7m,2f (BI), 3-4 km SE of Mugur-Aksy Vill., valley of Kuge-Davaa River just opposite of Antiplaque station, 1800-1850 m alt., 16.05.1990, D.L. Tes-Khem Distr.: 1f (BI), 10 km NE of Khol'-Oozhu Vill. [14], 1300-1400

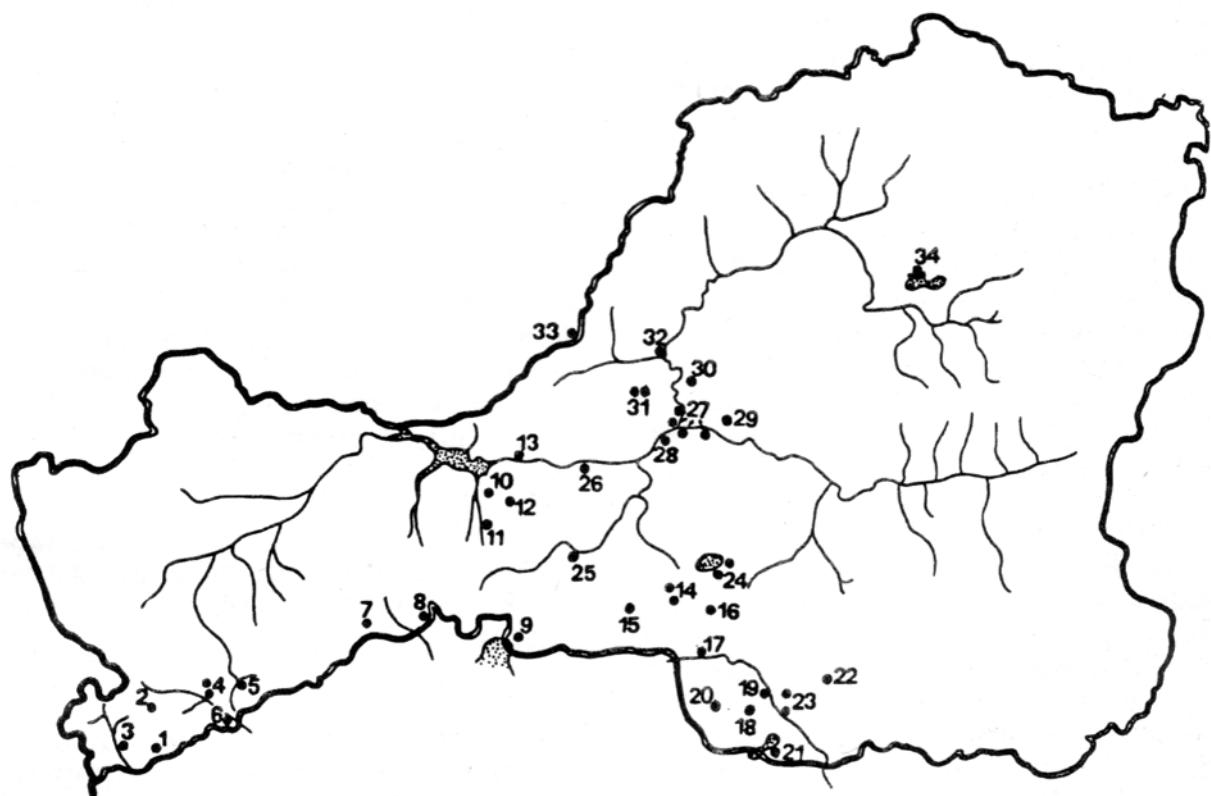


Fig.1. Localities of Salticidae in Tuva. Mongun-Taiginsky Distr.: 1 - 45-50 km SW of Mugur-Aksy Vill.; 2 - 45-50 km W of Mugur-Aksy Vill.; 3 - 3-5 km N of Kyzyl-Khaya Vill.; 4 - 3-7 km SE of Mugur-Aksy Vill.; 5 - confluence of Onachy and Barlyk Rivers; 6 - 30-35 km SE of Mugur-Aksy Vill., Semigorki. Ovyurski Distr.: 7 - 20-25 km NW of Solchur Vill.; 8 - 15 km E of Khandagaity Vill.; 9 - NE bank of Ubsu-Nur Lake. Ulug-Khem Distr.: 10 - 10-15 km SW of Shagonar Town; 11 - 5-8 km S of Torgalyg Vill.; 12 - 6-7 km E of Choduraa Vill.; 13 - 5-7 km E of Shagonar Town, Khaiyrkan Mountain. Tes-Khem Distr.: 14 - 10-15 km NW of Khol'-Oozhu Vill.; 15 - 20 km N of Oo-Shinaa Vill.; 16 - 8-10 km E of Khol'-Oozhu Vill. Erzin Distr.: 18 - 20-25 km W of Erzin Vill., Onchalaan Mt. Range; 19 - 20 km NW of Erzin Vill.; 20 - 50 km W of Erzin Vill.; 21 - Tere-Khol' Lake; 22 - 30-35 km NE of Erzin Vill.; 23 - environs of Erzin Vill. Tandinsky Distr.: 24- Chagytai Lake; 25 - 3-5 km SW of Khovu-Aksy Vill. Kyzyl Distr.: 26 - 65 km W of Kyzyl. Environs of Kyzyl: 27 - nearest environs; 28 - 5-7 km W of Kyzyl. Kaa-Khem Distr.: 29 - 5 km N of Sug-Bazhi Vill. Piy-Khem Distr.: 30 - 4-5 km NW of Cherbi Vill.; 31 - 5-10 km NW Seserlig Vill.; 32 - confluence of Uyuk and Yenisei Rivers, Ust'-Uyuk Vill.; 33 - 10 km NW of Shivilig Vill. Todzhinsky Distr.: 34 - Azas Lake, "Azas" State Reserve.

Рис.1. Места сбора материала на территории Тувы. Монгун-Тайгинский район: 1 - 45-50 км ЮЗ пос. Мугур-Аксы; 2 - 45-50 км З пос.Мугур-Аксы; 3 - 3-5 км С пос.Кызыл-Хая; 4 - 3-7 км ЮВ пос.Мугур-Аксы; 5 - место впадения р.Оначы в р.Барлык; 6 - 30-35 км ЮВ пос.Мугур-Аксы. Овюрский район: 7 - 20-25 км СЗ пос.Солчур; 8 - 15 км В пос.Хандагайты; 9 - СВ побережье оз.Убсу-Нур. Улуг-Хемский район: 10 - 10-15 км ЮЗ Шагонара; 11 - 5-8 км Ю пос.Торгальг; 12 - 6-7 км В пос.Чодураа; 13 - 5-7 км В Шагонара. Тес-Хемский район: 14 - 10-15 км СЗ пос.Холь-Оожу; 15 - 20 км С пос.Оо-Шинаа; 16 - 8-10 км СЗ пос.Холь-Оожу. Эрзинский район: 18 - 25 км З пос.Эрзин; 19 - 20 км СЗ пос.Эрзин; 20 - 50 км З пос.Эрзин; 21 - оз.Тере-Холь; 22 - 30-35 км СВ пос.Эрзин, р.Улар-Хем; 23 - окрестности пос.Эрзин. Тандинский район: 24 - оз.Чагытай; 25 - 3-5 км ЮЗ пос.Хову-Аксы. Кызылский район: 26 - 65 км З Кызыла. Окрестности Кызыла: 27 - окрестности города; 28 - 5-7 км З Кызыла. Каа-Хемский район: 29 - 5 км С пос.Суг-Бажи. Пий-Хемский район: 30 - 4-5 км СЗ пос.Черби; 31 - 5-10 км СЗ пос.Сесерлиг; 32 - слияние р.Уюк и р.Енисей, с.Усть-Уюк; 33 - 10 км СЗ пос.Шивилиг. Тоджинский район: 34 - оз.Азас, заповедник "Азас".

m alt., 12.07.1989, D.L. Erzin Distr.: 1f (ZMMU), 4f (BI), 20-25 km W of Erzin Vill. [18], environs of Onchalaan Mt. Range, 1000-1200 m alt., 28.05.1989, D.L.; 2m,1f (ZMMU), 15-20 km NW of Erzin Vill. [19], valley of Tes-Khem River, 800-900 m alt., 2-4.06.1989, D.L.; 12m,1f (BI), 20 km NW of Erzin Vill., Dus-Khol' Lake, 800-900 m alt., 21.05.1989, D.L.; 5m,1f (BI), 5-7 km SW of Erzin [23], valley of Tes-Khem River, 1000 m alt., 24.05.1990, D.L., O.L. Ulug-Khem Distr.: 8m,7f (BI), 10-15 km SW of Shagonar, bridge on Chaaty River [10], 8.05.1990, D.L.; 2m (BI), 6-7 km E of Choduraa Vill. [12], Chylaanyg Reserve, 10.05.1990, V.Z.; 4m,4f (BI), 5-7 km E of Shagonar Town [13], Khaiyrkan Mountain, 10.05.1990, D.L.; 1m (BI), 5-8 km S of Torgalyk Vill., 900-950 m alt., 8-9.05.1990, D.L.; 3f (BI), same locality, 1100-1250 m alt., 9.05.1990, D.L. Tandinsky Distr.: 1f (BI), Chagytai Lake [24], 1100-1200 m alt., 28.06.1989, D.L.; 5m,3f (BI), 5 km SW of Khovu-Aksy Vill. [25], 4-6.05.1990, D.L.; 2m,3f (BI), same locality, valley of Elegest River, 4-5.05.1990, D.L. Environs of Kyzyl: 1m (BI), 5-7 km W of Kyzyl [28], Valley of Yenisei River, Agricultural Station, 700 m alt., 4-7.06.1989, D.L.; 2m,3f (IZW), same locality, 13.05.1990, D.L.; 2m,3f (ZMMU), timber enterprise [27], 13.05.1990, V.Z.; 1m,1f (BI), 3-5 km N of Kyzyl [27], 700-800 m alt., 5-7.06.1989, D.L.; 1m,2f (BI), same locality, 7-11.05.1990, D.L.; 3f (ZMMU), same locality, 17-20.05.1990, O.L. Piy-Khem Distr.: 3m,4f (BI), Uyuksky Mt. Range, Ust'-Uyuk Vill. [32], 700-900 m alt., 21.05.1989, D.L.; 3m (ZMMU), same locality, 21.05.1989, D.L.; 1m,1f (ZMMU), 10 km SE of Seserlig Vill. [31], 1100 m alt., 2.05.1990, D.L.; 1f (BI), Sayany, Kurtushibinski Mt. Range [33], 10 km NW Shivilig Vill., 1200-1300 m alt., 5-6.07.1990, D.L.

DISTRIBUTION. A trans-Eurasian temperate species known from West Europe east up to the Okhotsk Sea coast and Japan, northward reaching to the subzone of southern tundra, southward to Central Mongolia.

NATURAL HISTORY. Habitat data indicate that *A. festivus* can be found in slope stone steppes, where it usually is restricted to rocky outcrops and stony plots (description of the

biotope see in Sobolevskaya, 1950), talus (or scree) and from time to time in shingle (rubble) beds near rivers and lakes. This is a univoltine species, males have been collected from May till the middle of June, females a little longer, in May - July.

Aelurillus cf. potanini (Schenkel, 1963).

MATERIAL. TUVA, Ovyursky Distr.: 1m (BI), Ubsu-nur Lake [9], 760 m alt., 12.06.1989, D.L. Tes-Khem Distr.: 2m,1f (IZW), 8-10 km W of Ak-Erik Vill. [17], valley of Tes-Khem River, 29.05.1990, O.L. Erzin Distr.: 6m (BI), Tere-Khol' Lake [21], Eder-Elezin Sands, 1150-1200 m alt., 3.06.1989, D.L.; 1m (BI), same locality, 26.05.1990, O.L.; 15m,1f (BI), 20-25 km W of Erzin [18], Onchalaan Mt. Range, 1000-1200 m alt., 27.05.-3.06.1989, D.L.; 1f (BI), same locality, 24.05.1990, V.V.Dubatolov; 4m,1f (BI), same locality, 26.05.1990, O.L.; 4m,3f (BI), 3-5 km E of Erzin Vill. [23], 1000-1200 m alt., 23-25.05.1990, D.L.; 9m,4f (BI), same locality, valley of Erzin River, 1000 m alt., 23.05.1990, D.L., O.L. Ulug-Khem Distr.: 3m,2f (BI), 10-15 km SW of Shagonar Town [10], bridge on Chaaty River, 8.05.1990, D.L.; 1m (ZMMU), 5-7 km E of Shagonar Town [13], Khaiyrkan Mountain, 10.05.1990, D.L.. Environs of Kyzyl: 11m,7f (BI), 3-5 km N of Kyzyl [27], 700-800 m alt., 20.05.-3.06.1989, D.L.; 20m,9f, (BI), 5m,11f (ZMMU), same locality, 1-20.05.1990, D.L., O.L.; 4m,5f (BI), 5 km E Kyzyl [27], near airport, 700-800 m alt., 25.06-3.07.1989, D.L.; 1m,1f (ZMMU), same locality, 7.05.1990, D.L. Kyzyl Distr.: 3f (BI), 23-25 km E of Kyzyl [27], 700 m alt., 30.06.1990, D.L. Kaa-Khem Distr.: 1f (ZMMU), 33-35 km E of Kyzyl [29], 5 km N of Sug-Bazhi Vill., 900 m alt., 30.06.1990, D.L.

DISTRIBUTION. *Aelurillus potanini* has hitherto been known from Mongolia [Schenkel, 1963; Wesolowska, 1981; Proszynski, 1982] and China [Yin, Wang, 1979, as *Phlegra pichonii*], being thus a Central Asian subboreal species.

REMARKS. All females at our disposal differ in the genital structure from Proszynski's drawings [Proszynski, 1982, figs.2,5], but do agree to those of Yin and Wang [1979, fig.20].

It is very possible that two independent species have been mentioned under the name *Aelurillus potanini*, and a solution of this problem needs a restudy of type material.

NATURAL HISTORY. Unlike *A. festivus*, this species does not occur in talus (Siberian name "kurumy") and is primarily associated with hollow nanophanerophyte (*Nanophyton erinaceus*) and grass-wormwood (*Stipa - Artemisia*) steppes (biotope description see in Slobolevskaya, 1950). In the last case, it is usually restricted to sandy plots with *Caragana bungei* (L.) Ldb. This is an univoltine species, adults have been collected from May till the beginning of July. Mating has been recorded in the second half of May.

Bianor aemulus (Gertsch, 1934).

MATERIAL. TUVA, Piy-Khem Distr.: 2m (BI), Sayany, Kurtushibinsky Mt. Range, 10 km NW of Shivilig Vill. [33], Sayany Vill., 1100 m alt., 6.07.1990, D.L.

Other materials. KHAKASSIA, Askiz Distr.: 1m (BI), 3 km W of Birikchul' Vill., pine forest, 1000-1100 m alt., 18.07.1990, D.L.

DISTRIBUTION. A Siberio-American boreal pattern (see also Logunov, Marusik, 1991).

Bianor latens Logunov, 1991.

Material examined and male description see in Logunov [1991], the description of the female and other material in Logunov, Wesolowska (in press).

DISTRIBUTION. South Siberia, west from Tuva and Khakassia eastward to the southern part of the Khabarovsk Prov.

Bianor inexploratus Logunov, 1991.

Material and description see in Logunov [1991].

DISTRIBUTION. Tuva, Azerbaijan.

Bianor stepposus Logunov, 1991.

MATERIAL. TUVA, Tes-Khem Distr.: 1m (BI), 8-10 km W of Ak-Erik Vill. [7], valley of Tes-Khem River, 29.05.1990, O.L. Erzin Distr.: 2m (BI), Tere-Khol' Lake [21], Eder-Elezin

sands, 1150-1200 m alt., 26.05.1990, O.L. Environ of Kyzyl: 1f (BI), 5-7 km W of Kyzyl [28], valley of Yenisei River, 700 m alt., 1.07.1990, D.L.

Other materials. KHAKASSIA, Altaisky Distr.: 1m,1f (BI), 40 km SE of Belyi Yar Vill., 3-5 km E of Novorossiyskoye, Beregovskoye Lake, 350-380 m alt., 22-23.06.1990, D.L. Askiz Distr.: 1f (BI), 25-27 km NE of Askiz Vill., 21-22.07.1990, D.L. YAKUTIA: 3f (University of Turku, Finland), Ulaakh-Aan, 11.07.1977, S.Kopponen.

Description and other materials see in Logunov [1991,1992].

DISTRIBUTION. Tuva, Khakassia, Chita Area, Yakutia and SE Kazakhstan.

HABITAT. This species is a common dweller of slope shrub steppes (near rocks on alder leaf litter) as well as hollow grass-wormwood (*Stipa - Artemisia*) and *Lasiogrostis splendens* steppes.

Chalcoscirtus glacialis (Caporiacco, 1935).

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 1m (BI), 40-45 km SW of Mugur-Aksy Vill. [1], Khara-Kharagai River, 2200-2300 m alt., 14.06.1989, D.L.; 2f (BI), 30-35 km S of Mugur-Aksy Vill. [6], lower flow of Kargy River, Semigorki, 1700 m alt., 15.06.1989, D.L.; 1f (ZMMU), 3-5 km SE Mugur-Aksy Vill. [4], the Antiplaque Station, 1800-1850 m alt., 14.06.1989, D.L.; 5m (ZMMU), 1m,3f (BI), 1m,1f (IZW), same locality, 16.05.-11.06.1990, D.L.,O.L.; 1m (BI), 6-7 km E of Mugur-Aksy Vill. [4], upper flow of Kuge-Davaa River, 2100-2200 m alt., 18.05.1990, D.L. Erzin Distr.: 13m (BI), 2-5 km E of Erzin Vill. [23], 1100 m alt., 23-25.05.1990, D.L.,O.L.; 2m (BI), 6-7 km SW of Erzin Vill. [23], valley of Tes-Khem River, 1000 m alt., 24.05.1990, D.L.,O.L. Ulug-Khem Distr.: 1m (BI), 10-15 km SW of Shagonar Town [10], 3 km S off turn to Torgalyk Vill., 16.05.1990, D.L. Kyzyl Distr.: 2f (BI), 23-25 km E of Kyzyl [27], 700 m alt., 30.05.1990, D.L.

DISTRIBUTION. A Siberian boreal species represented in Siberia by two subspecies: *Chalcoscirtus g. glacialis* (Tuva, Mongolia) and *Ch.g.sibiricus* Marusik, 1991 (Yakutia, Magadan Area, Chukotka) (other details see in Marusik, 1991).

NATURAL HISTORY. The species is common in cryophytic mountain steppes within subalpine and alpine altitude belts (1800-2400 m alt.) (for biotope description see Namzalov, Korylyuk, 1991), but may also be found lower, in hollow stone-detritus steppes (among rubbles) (600-1000 m alt.). Males have been collected from the middle of May till the middle of June, females appeared in the middle of June.

Dendryphantes fusconotatus (Grube, 1861).

MATERIAL. TUVA, Ovyursky Distr.: 3f (BI), 15 km E Khandagaity Vill. [8], valley of Ulatai River, 1000-1100 m alt., 12.06.1989, D.L.; 4m,18f (BI), Ubsu-Nur Lake [9], 730-750 m alt., 12.06.1990, D.L.; 1f (BI), way Solchur-Sagly [7], 20-25 km NW of Solchur Vill., pass, 1500-1600 m alt., 13.06.1990, D.L. Tes-Khem Distr.: 3f (ZMMU), 10-12 km NW of Khol'-Khoozhu Vill. [14], Belengish Reserve, 1700-1800 m alt., 9-11.06.1989, D.L. Erzin Distr.: 2m,5f (IZW), 15-20 km NW of Erzin Vill. [19], valley of Tes-Khem River, 800 m alt., 31.05.1989, D.L.; 1m (BI), 20 km NW of Erzin Vill. [19], Dus-Khol' Lake, 800-900 m alt., 31.05.1989, D.L.; 2m,3f (ZMMU), 1m,14f (BI), Tere-Khol' Lake [21], Eder-Elezin sands, 1150-1200 m alt., 29.05.-3.06.1989, D.L.; 2f (BI), 35 km NE of Erzin Vill. [22], valley of Ular-Khem River, 1200 m alt., 11.06.1989, D.L.; 2m,6f (ZMMU), 5-7 km SW of Erzin Vill. [23], valley of Tes-Khem River, 1000 m alt., 24.05.1990, D.L. Ulug-Khem distr.: 7m,3f (BI), 15-20 km SW Shagonar Town [10], bridge on Chaaty River, 8.05.1990, D.L. Tandinsky Distr.: 1m,1f (BI), Chagytai Lake [24], 1100-1200 m alt., 28.06.1989, D.L.; 7m,2f (BI), 5 km SW Khovu-Aksy Vill. [25], 4-5.05.1990, D.L. Piy-Khem Distr.: 10m,27f (BI), Uyuksky Mt. Range, Ust'-Uyuk Vill. [32], 700-800 m alt., 21.05.1989, D.L. Todzhinsky Distr.: 1f (BI), Azas State Reserve, 900 m alt., 19-23.06.1989, D.L.

DISTRIBUTION. A Siberian boreal species in the west known from Tuva and eastward through Transbaikalia and Yakutia up to the Magadan Area, northward reaching to the hyperarctic zone, southward to Mongolia.

NATURAL HISTORY. This species is primarily associated with slope shrub steppes,

where it occurs on various shrubs, mainly *Caragana arborescens* Lam. and *C. bungei*, more rarely on *Spiraea* spp. and *Cotoneaster* sp. Besides, it is often common on *Caragana spinosa* (L.) DC. in river valleys. Adults have been collected from the middle of May till the beginning of June, later only females may be found in the litter under above shrubs, being in nests with egg sacs.

Dendryphantes hastatus (Clerck, 1757).

MATERIAL. TUVA, Piy-Khem Distr.: 4m,2f (BI), Sayany, Kurtushibinsky Mt. Range, 10 km NW of Shivilig Vill. [33], 1100-1200 m alt., 7.07.1990, D.L.

DISTRIBUTION. The species has a Euro-Baikal temperate pattern, in the west occurring from Central Europe, eastward to Transbaikalia.

HABITAT. Typical crown-dweller of coniferous trees, mainly *Pinus* spp.

Dendryphantes rufus (Sundevall, 1832).

MATERIAL. TUVA, Todzhinsky Distr.: 2m,5f (BI), environs of Yirban Vill., 15.07.1973, M.S.

Other materials. KRASNOYARSK PROVINCE, Boguchansky Distr.: 3f (BI), Sosnovka Vill., 12.06.1974, M.S.; 1f (BI), same locality, Chunoyar Natural Station, July-August 1984, E.P.Bessolitsyna; 1m,3f (ZIS), same locality, 13.06.1980, coll.? BURYATIA: 1m,1f (BI), environs of Ulan-Ude Town, 24.07.1990, M.S.

DISTRIBUTION. This is a trans-Eurasian boreal species known from West Europe eastward up to the Magadan Area.

HABITAT. The species occurs in crowns of coniferous trees, mainly *Pinus* spp.

Dendryphantes tuvinensis Logunov, 1991.

MATERIAL. TUVA, Tes-Khem Distr.: 1m (BI), 8-10 km W of Ak-Erik Vill. [17], valley of Tes-Khem River, 29.05.1990, O.L.

Other materials. EAST-KAZAKHSTAN AREA, Zaisan Distr.: 1f (BI), Saur Mt. Range, valley of Akkolka River (Kenderlyk River basin), 5-27.06.1990, K.E. BURYATIA: 1m (BI), Ulan-Ude Town, 24.07.1990, M.S.

CHITA AREA, Kyra Distr.: 1m (BI), 3-5 km E of Kyra Vill., 900-950 m alt., 19.06.1991, D.L.; 1m (BI), Sokhondo State Reserve, confluence of Bukukun River and Ernichniy Spring, 1200-1300 m alt., 4.06.1991, D.L.

Other materials see in Logunov [1991].

DISTRIBUTION. East Kazakhstan, Tuva, Mongolia and Buryatia.

NATURAL HISTORY. The species is common in hollow xeric shrub grass-wormwood (*Stipa - Artemisia*) steppes, where it can be readily swept from *Caragana bungei* and other shrubs. Mature males have been collected only in May, females from the middle of May till the middle of July.

"*Dendryphantes*" *insolitus* Logunov, 1991.

Material and description see in Logunov [1991]. Now it is clear that this species belongs to a new genus and is due to be removed from *Dendryphantes*.

DISTRIBUTION. Tuva.

REMARK. There is still a new species at our disposal that belongs to the same genus as well. Description of this genus will be made in a separate paper.

Euophrys erratica (Walckenaer, 1825).

MATERIAL. TUVA, Todzhinsky Distr.: 1m (BI), Azas State Reserve, wood along Karatysh River, 5.09.1987, Y.K.

DISTRIBUTION. This is a Euro-Baikalian temperate species ranging from Central Europe in the west to Transbaikalia in the east.

HABITAT. The species lives on the bark and in crowns of coniferous trees, mainly *Pinus* sp. (habitat information as given here uses additional data from other parts of Siberia).

Euophrys flavoater (Grube, 1861).

MATERIAL. TUVA, Piy-Khem Distr.: 6m (BI), 1m (ZMMU), Uyuksky Mt. Ridge, 10 km NW Seserlig [31], larch-birch forest, in litter, 1100-1400 m alt., 25.07.1989, D.L.; 2m (BI), Sayany, Kurtushibinsky Mt. Ridge, 10 km NW of Shivilig Vill. [33], larch-birch forest, in litter, 1100-1200 m alt., 7.07.1990, D.L.

DISTRIBUTION. A Siberian boreal pattern.

REMARKS. This species has erroneously been synonymized with *E. frontalis* (Walckenaer, 1802) [Proszynski, 1979]. The problem will be considered later in due detail.

Euophrys sp.

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 2f (BI), upper flow of Barlyk River, near confluence with Onachy River [5], talus (scree) with larch, under stones, 6.07.1990, O.L. Tes-Khem Distr.: 2m (BI), 20 km NW of Khol'-Oozhu [14], 2000 m alt., 8-9.07.1989, D.L.

REMARKS. This is a new species closely related to *E. frontalis* (Walckenaer, 1802), being widely distributed from the Yenisei River in the west and up to the Magadan Area and Chukotka in the east. Its description will be made in a separate paper.

Evarcha arcuata (Clerck, 1757).

MATERIAL. TUVA, Erzin Distr.: 3m,1f (BI), 3-5 km S of Erzin Vill. [23], valley of Tes-Khem River, birch-willow-elm forest, 1100 m alt., in litter, 14.08.1989, D.L.; 1m (BI), same locality, 24.05.1990, D.L. Ulug-Khem Distr.: 2m (BI), 15-20 km SW of Shagonar Town [10], valley Chaaty River, poplar-willow forest, in litter, 8.05.1990, D.L.; 1m (IZW), 5-8 km S of Torgalyk Vill. [11], valley of Torgalyk River, stone bank, 900-950 m alt., 8-9.05.1990, D.L. Piy-Khem Distr.; 2f (BI), Uyuksky Mt. Ridge, Ust'-Uyuk Vill. [32], open slopes, sweeping, 700-800 m alt., 21.05.1989, D.L.

DISTRIBUTION. A trans-Eurasian temperate pattern.

Evarcha falcata (Clerck, 1757).

MATERIAL. TUVA, Piy-Khem Distr.: 3f (BI), Uyuksky Mt. Range, Ust'-Uyuk Vill. [32], sweeping on grass, 700-800 m alt., 21.05.1989, D.L.; 2m,3f (BI), 10 km NW Seserlig Vill. [31], 1200-1300 m alt., edge of birch-larch forest, 25.07.1989, D.L. Tandinsky Distr.: 2m (BI), Chagytai Lake [24], larch forest, 1200 m alt., 28-30.06.1989, D.L. Todzhinsky Distr.: 2m,3f (BI), Azas State Reserve [34], Azas Lake, mixed forest, 900 m alt., 19-23.06.1989, D.L.

DISTRIBUTION. A trans-Eurasian temperate pattern.

Evarcha michailovi Logunov, sp.n.
Figs. 2-4.

MATERIAL. Holotype: 1m (ZMMU, Ta-4699), West Sayany Mts., Sayano-Shushensky State Reserve, "Uzunsuk", 12.08.1988, Y.K. Paratypes: TUVA, Piy-Khem Distr.: 4f (BI-394), 5-7 m NW of Seserlig Vill.[31], Uyuksky Mt. Ridge, 1200-1400 m alt., 29.06.1990, D.L. Todzhinsky Distr.: 4f (BI-395), 1f (B.Cutler, personal collection), Azas State Reserve [34], Azas Lake, 900 m alt., 19-23.1989, D.L. CHE-LAYBINSK AREA, Troitsk Distr.: 2m,3f (PSU), 2m,2f (BI-1194), Troitsk Nature Reserve, 9.06.1987, S.L.Esyunin. PERM AREA: 2f (PSU), environs of Perm, 3.06.1984, A.G.Ryabinina. NOVOSIBIRSK AREA, Krasnoyorsk Distr.: 2m (BI-1193), 1m (ZMMU), Krasnoyorka Vill., 19-26.07.1989, A.A.Alekseev. KHAKASSIA, Askiz Distr.: 2m (BI-397), 1m (B.Cutler, personal collection), 8 km E of Birikchul' Vill., 1 km N of P-Maika Vill., 1100 m alt., 16-18.07.1990, D.L. EAST-KAZAKHSTAN AREA, Zaisan Distr.: 2f (ZMMU), Saur Mt. Range, Karaungur River (basin of Kenderlyk River), 1800 m alt., 19.06.1990, K.E.

COMPARATIVE MATERIALS on *Evarcha laetabunda* (C.L.Koch, 1835). HUNGARY: 5m,8f (HNHM), coll.Chyzer,1187. CHE-LAYBINSK AREA, Troitsk Distr.: 1m,2f (PSU), 2m,4f (BI), Troitsk Nature Reserve, 9.06.1984, S.L.Esyunin. PERM AREA: 2f (PSU), environs of Perm, 3.06.1984, A.G.Ryabinina. NOVOSIBIRSK AREA, Krasnoyorsk Distr.: 1m (BI), Krasnoyorka Vill., 19-26.07.1989, A.A.Alekseev. SAKHALIN, Okha Distr.: 2f (BI), Beryozovka River (tributary of Bol'shaya River), 29.08.-26.09.1990, A.M.Basarukin.

DESCRIPTION. MALE. Measurements. Carapace 2.08-2.85 long, 1.53-2.13 wide, 0.98-1.13 high at PLE. Ocular area 1.00-1.23 long, 1.25-1.63 wide anteriorly and 1.28-1.68 wide posteriorly. Diameter of AME 0.35-0.45. Abdomen 1.88-2.75 long, 1.25-2.00 wide. Cheliceral length 0.78-1.10. Clypeal height 0.20-0.25. Length of leg segments: leg I - 1.35-1.88 +

0.78-1.20 + 0.93-1.30 + 0.53-0.90 + 0.45-0.98; leg II - 1.15-1.58 + 0.63-0.93 + 0.68-1.00 + 0.53-0.75 + 0.43-0.53; leg III - 1.30-1.88 + 0.58-0.90 + 0.65-0.95 + 0.78-1.08 + 0.45-0.58; leg IV - 1.25-1.73 + 0.56-0.85 + 0.73-0.93 + 0.88-1.25 + 0.40-0.58. Leg spination. Leg I: femur d.0-1-1-3; patella pr.0-1-0; tibia pr.1-1, v.2-2-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-5; patella pr.0-1-0; tibia pr.1-1-1, v.1-2ap; metatarsus v.2-2ap. Leg III: femur d.0-1-1-5; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-2ap; metatarsus pr., rt. and v.2-2ap. Leg IV: femur d.0-1-1-4; patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-2ap; metatarsus pr. and rt.2-1-2ap, v.2ap. Colouration. Carapace brown to dark brown, with two longitudinal stripes composed of white hairs. Black around eyes and transverse line of white hairs above anterior row of eyes. Clypeus orange, covered with thin white and orange hairs. Sternum and chelicerae orange-brown. Maxillae and labium orange-brown with white tips. Abdomen: dorsum either monochromously dark grey or dark grey with markings of a longitudinal black line, two white oval spots on front line and transverse black lines on sides; ventrum lighter, brown-grey. Book-lung covers and spinnerets brownish-grey. Legs brown with yellowish metatarsi and tarsi. Femora and tibiae darker, usually dark brown. Palp structure as shown in Fig.2.

FEMALE. Measurements. Carapace 2.38-2.75 long, 1.80-2.00 wide, 0.98-1.15 high at PLE. Ocular area 1.08-1.15 long, 1.40-1.55 wide anteriorly and 1.50-1.65 wide posteriorly. Diameter of AME 0.43-0.45. Abdomen 3.00-3.13 long, 1.50-1.65 wide. Cheliceral length 0.73-1.05. Clypeal height 0.18-0.25. Length of leg segments: leg I - 1.28-1.55 + 0.85-1.00 + 0.88-1.05 + 0.68-0.78 + 0.45-0.55; leg II - 1.18-1.38 + 0.73-0.85 + 0.70-0.85 + 0.60-0.70 + 0.45-0.53; leg III - 1.45-1.80 + 0.80-0.90 + 0.68-0.92 + 0.83-1.00 + 0.58-0.60; leg IV - 1.48-1.75 + 0.73-0.80 + 0.88-1.08 + 1.05-1.28 + 0.60. Leg spination. Leg I: femur d.0-1-1-3; patella pr.0-1-0; tibia pr. and rt.1-1, v.2-2-2ap; metatarsus v.2-2ap. Leg II: femur d.0-1-1-5; patella pr.0-1-0; tibia pr.1-1, v.1-2-2ap; metatarsus v.2-2ap. Leg III: femur d.0-1-2-4; patella pr. and rt.0-1-0; tibia pr. and rt.1-1-1, v.1-2ap; metatarsus pr., rt. and v.2-2ap. Leg IV: femur

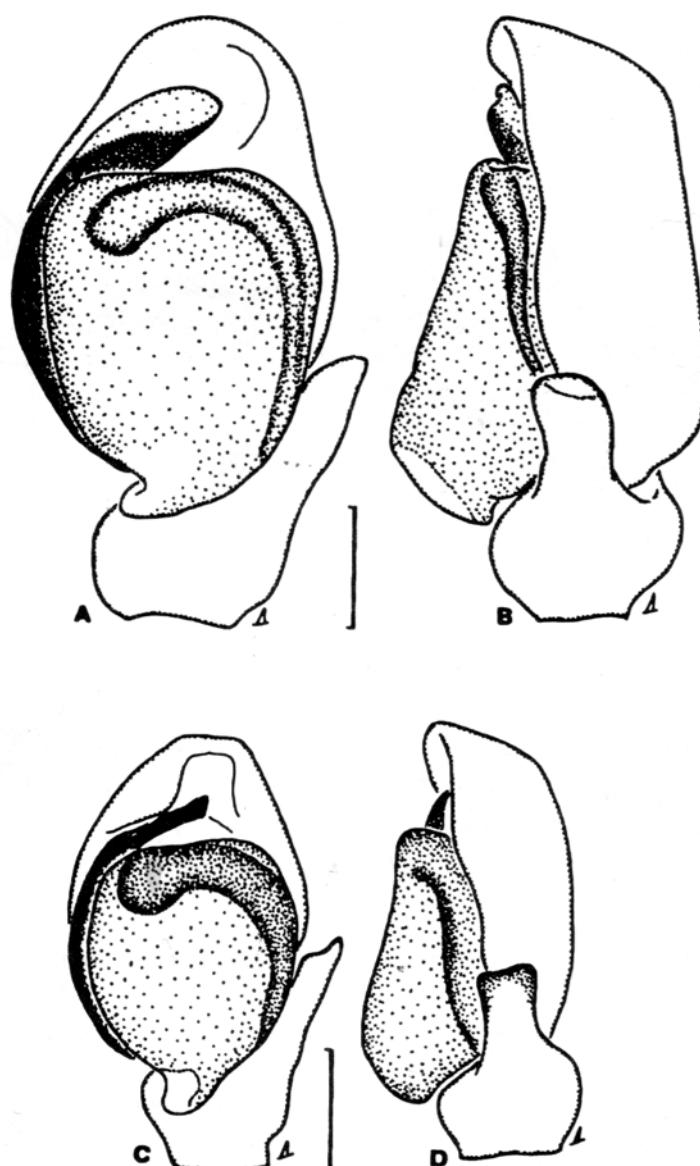


Fig.2. *Evarcha michailovi* sp.n. (a,b) and *E. laetabunda* (C.L.Koch, 1848) (c,d): a,c - male palp, ventral view; b,d - ditto, lateral view. Scale 0.2 mm.

Рис.2. *Evarcha michailovi* sp.n.(a,b) и *E. laetabunda* (C.L.Koch, 1848) (c,d): a,c - пальпус вентрально; b,d - то же латерально. Масштаб 0.2 мм.

d.0-1-1-2, patella pr. and rt.0-1-0; tibia d.1-0, pr. and rt.1-1-1, v.1-2ap; metatarsus pr. and rt.1-1-2ap, v.2ap. Colouration as in male (slightly lighter), except as follows: coxae and basal parts of femora of all legs yellow. Epigyne and vulva as shown in Fig.3.

DIAGNOSIS. Males may be easily separated from those of *Evarcha laetabunda* by the thicker embolus rounded at tip, structure of the tibial apophysis (Fig.2a), and larger size. Females have a more heavily sclerotized epigynal plate (Fig.3a) and a different structure of the

spermathecae (Fig.3b). The differences between these species have already been mentioned by J.Proszynski [1982], but he regarded them as an example of intraspecific variation, apparently due to a small number of specimens studied. Our data indicate that the structure of the genitalia of these species is relatively uniform, and it shows some variation in size only. Therefore it seems correct to consider them as different species.

DISTRIBUTION. A Siberian subboreal pattern (?) (Fig.4), the species has been found

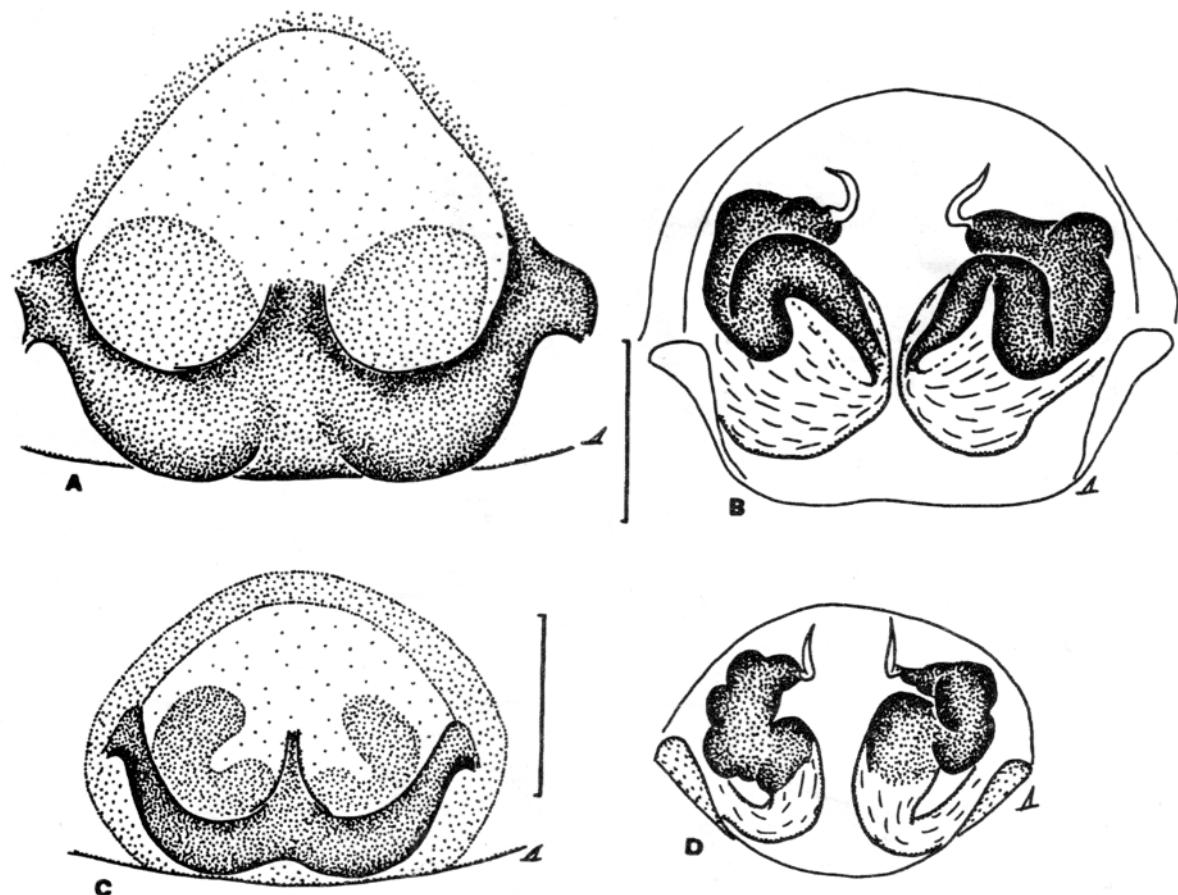


Fig.3. *Evarcha michailovi* sp.n. (a,b) and *E. laetabunda* (C.L.Koch, 1848) (c,d): a,c - epigyne; b,d - vulva. Scale 0.2 mm.
Рис.3. *Evarcha michailovi* sp.n. (a,b) и *E. laetabunda* (C.L.Koch, 1848) (c,d): a,c - эпигина; b,d - вульва. Масштаб 0.2 мм.

from the Ural Mt. Ridge in the west to Tuva in the east, southward to Mongolia [Proszynski, 1982, as *E. laetabunda*]. As can be seen from Fig.4, both species appear to be geographical vicariants, *E. michailovi* sp.n. occurs in Siberia, while *E. laetabunda* is widely distributed in Europe West Siberia and the Far East [Proszynski, 1976; Dunin, 1984; Nenilin, 1985], but it is entirely absent from East Siberia.

HABITAT. The species has been swept from different shrubs (*Cotoneaster* sp., *Alnus* sp.) in slope steppes and glades along edges of a mixed forest.

ETIMOLOGY. The species has gladly been named after the well-known Russian arachnologist, the curator of ZMMU, Dr. Kirill G. Mikhailov.

Heliophanus auratus C.L.Koch, 1835.

MATERIAL. TUVA, Erzin Distr.: 1m (IZW), 3-7 km S of Erzin [23], valley of Tes-Khem River, swamp with *Carex* and horse-tail, 1100 m alt., 14-15.08.1989, D.L. Environs of Kyzyl: 1m (ZMMU), 5-7 km W of Kyzyl, valley of Yenisei River [28], Agricultural Station, 700 m alt., 13.05.1990, D.L.

Other materials. KHAKASSIA, Askiz Distr.: 1m (BI), 10-15 km W of Birikchul' Vill., *Carex* damp meadow, 1400 m alt., 17.07.1990, D.L. Altaisky Distr.: 1f (BI), 40 km SE of Belyi Yar Vill., 15-17 km E of Novorossiyskoye Vill., valley of Yenisei River, 300-380 m alt., 24.06.1990, D.L. BURYATIA, Kyakhta Distr.: 1m (BI), Chikoi River, Duren Vill., 2.08.1986, B.P. Lekharov. MONGOLIA, Selenginsky Aimak: 2m (ZMMU), Shamor, 29.07.1982, K.G. Mikhailov.

DISTRIBUTION. The species has a Euro-Siberian Central Asian pattern.

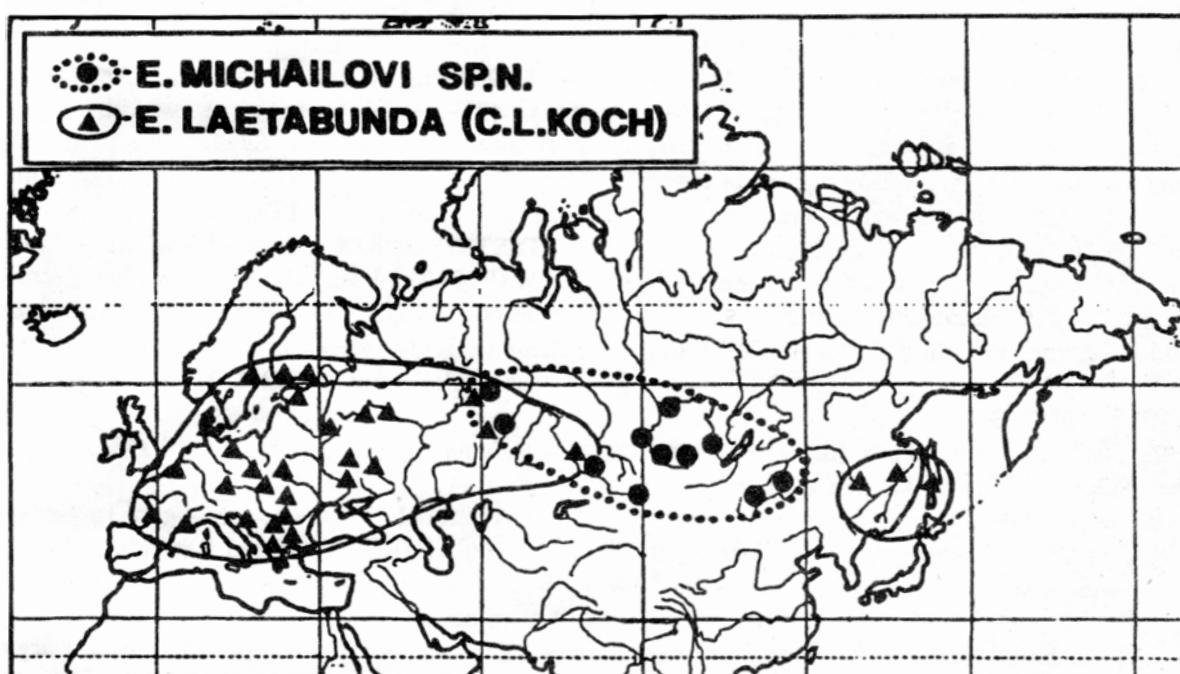


Fig.4. Distribution of *Evarcha michailovi* sp.n. (circles) and *E. laetabunda* (C.L.Koch, 1848) (triangles).
Рис.4. Распространение *Evarcha michailovi* sp.n. (кружки) и *E. laetabunda* (C.L.Koch, 1848) (треугольники).

Heliophanus baicalensis (Kulczynski, 1895).

H. falcatus Xiao, Yin, 1991, syn. nov.

MATERIAL. TUVA, Erzin Distr.: 1f (BI), 3-7 km S of Erzin Vill. [23], valley of Tes-Khem River, 1100 m alt., 14.08.1989, D.L. Tandinsky Distr.: 1f (BI), Chagytai Lake [24], 1200 m alt., 27.06.1989, D.L. Piy-Khem Distr.: 1f (BI), 5 km NW of Seserlig Vill. [31], Uyuksky Mt. Ridge, 1000-1100 m alt., 24. 07.1989, D.L.; 1f (BI), same locality, 29.07.1990, D.L.; 1m (BI), same locality, 2.05.1990, D.L.

Other materials. BURYATIA, Selenginsky Distr.: 1m (BI), Tayozhnyi Vill., 11.07.1984, P.Y.Ustyuzhanin. CHITA AREA, Kyra Distr.: 1m (BI), Sokhondo State Reserve, confluence of Larionov (Talgikta) Spring and Agutsa River, 1350 m alt., 8.06.1991, D.L.; 4m, 1f (BI), same reserve, 2-3 km upper of confluence of Bukukun River and Ernichny Spring, 1400-1500 m alt., 2-3.06.1991, D.L.; 1m, 2f (BI), same reserve, 9 km E of confluence of Ingoda River and Ubur-Ashaglei Spring, valley of Changinandui River, 1400 m alt., 10.06.1991, D.L.

DISTRIBUTION. This species has a Siberian temperate pattern ranging from Tuva (the known western limit), Mongolia [Proszynski, 1982] and China (Inner Mongolia) [Xiao, Yin, 1991, as *H.falcatus*] through Transbaikalia [Wesolowska, 1986; Marusik, Cutler, 1989; Danilov, 1990] eastward and northeastward up to Amur [Proszynski, 1976, 1979] and Magadan [Marusik, 1988] Areas, respectively.

REMARKS. *H. falcatus* was recently described by X.Xiao and C.Yin [1991], but their drawings (Figs.10-21) and distributional data are convincing enough that the authors actually dealt with *H.baicalensis* Kulcz.

HABITAT. This species is a common dweller of mixed (birch-larch or elm-birch-larch) valley forests, where it can be swept from grass and shrubs along forest edges and on glades.

Heliophanus camtschadalicus (Kulczynski, 1895).

MATERIAL. TUVA, Piy-Khem Distr.: 1f (BI), Sayany, Kurtushibinsky Mt. Ridge, 10

km NW of Shivilig Vill. [33], 1100 m alt., 7.07.1990, D.L.

Other materials. KHAKASSIA, Askiz Distr.: 1m, 1f (BI), 8 km E of Birikchul' Vill., 1 km N of P-Maika, 1000 m alt., 16.07.1990, D.L. CHITA AREA, Kyra Distr.: 1m, 1f (BI), Sokhondo State Reserve, valley of Ingoda River near confluence with Ubur-Ashaglei Spring, 1300-1350 m alt., 9.06.1991, D.L.; 1m (BI), same reserve, Bukukunskoye Lake, 3-8.08.1991, V.P.; 13m, 5f (BI), confluence of Bukukun River and Ernichny Spring, 1200 m alt., 7.08.1991, V.P.

DISTRIBUTION. A Siberian temperate species distributed from Tuva (the westernmost locality) east to Kamchatka (see also Wesolowska, Marusik, 1990).

HABITAT. Habitat data indicate that *H. camtschadalicus* prefers valley willow-birch forests or low alder thickets (alder ernik), where it can be swept from grass and shrubs or found on the bark of trees.

Heliophanus flavipes Hahn, 1832.

MATERIAL. TUVA, Piy-Khem Distr.: 1m, 1f (BI), Uyuksky Mt. Ridge, Ust'-Uyuk Vill. [32], open slopes, 700-800 m alt., 21.05.1989, D.L.; 1m (BI), 5-7 km NW of Sesarlig [31], slope steppes, in grass, 1400 m alt., 29.07.1990, D.L.; 1f (BI), 4-5 km NW of Cherbi Vill. [30], 850-1000 m alt., 1.07.1990, D.L. Tandinsky Distr.: 1f (BI), 1f (IZW), Chagyta Lake [24], larch forest, sweeping, 1200 m alt., 26-27.07.1989, D.L. Todzhinsky Distr.: 4f (BI), Azas State Reserve [34], Azas Lake, 900 m alt., 19-23.06.1989, D.L.

DISTRIBUTION. This is a Euro-Siberian Central Asian temperate species, and Transbaikalia is apparently the easternmost limit of its range.

Heliophanus lineiventris Simon, 1868.

MATERIAL. TUVA, Tes-Khem Distr.: 1f (BI), 8-10 km E of Khol'-Oozhu [14], 1150-1200 m alt., 15-16.07.1989, D.L. Erzin Distr.: 2m (ZMMU), Tere-Khol' Lake [21], Eder-Elezin sands, 1150-1200 m alt., 8-9.08.1989, D.L. Ulug-Khem Distr.: 1m (BI), 10-15 km SW of Shagonar [10], 3 km S of the turn to Torga-

lyk Vill., 8.05.1990, D.L. Environs of Kyzyl: 1m (BI), 5-7 km W of Kyzyl [28], valley of Yenisei River, Agricultural Station, 700 m alt., 25.05.1989, D.L.; 1m, 1f (BI), 3-5 km N of Kyzyl [27], 800-900 m alt., 20.05.1989, D.L. Piy-Khem Distr.: 1f (BI), Sayany, Kurtushibinsky Mt. Ridge, 10 km NW of Shivilig Vill. [33], 1100 m alt., 6.07.1990, D.L.

DISTRIBUTION. A trans-Eurasian pattern.

HABITAT. Usual dweller of hollow grass-wormwood (*Stipa - Artemisia*) or *Lasiogrostis splendens* (chiy) steppes, where it is restricted to tussocks of *Stipa* spp. or *L. splendens*.

Heliophanus patagiatus Thorell, 1875.

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 1m, 1f (BI), 30-35 km S of Mugur-Aksy Vill. [6], lower flow of Kargy River, Semigorki, 1700 m alt., 15.06.1989, D.L.; 1m, 1f (BI), 5-8 km SE Mugur-Aksy Vill. [4], valley of Kargy River, 1800 m alt., 20.05.1990, D.L.; 15m, 6f (BI), same locality, 7.06.1990, O.L. Tes-Khem Distr.: 1m (BI), 8-10 km W of Ak-Erik Vill. [17], valley of Tes-Khem River, 29.05.1990, O.L. Erzin Distr.: 11f (BI), 20 km NW of Erzin Vill. [19], valley of Tes-Khem River, 800-900 m alt., 13.08.1989, D.L.; 3m (BI), 5-7 km SW of Erzin Vill. [23], valley of Tes-Khem River, 1000 m alt., 14.05.1990, D.L. Ulug-Khem Distr.: 2m, 1f (BI), 5-8 km S of Torgalyk Vill. [11], valley of Torgalyk River, 900-950 m alt., 8-9.05.1990, D.L. Tandinsky Distr.: 3m, 3f (BI), 5 km SW Khovu-Aksy Vill. [25], valley of Elegest River, 4-5.05.1990, D.L. Environs of Kyzyl: 1m (BI), 5-7 km W of Kyzyl [28], valley of Yenisei River, Agricultural Station, 650-700 m alt., 15-22.05.1990, D.L.

DISTRIBUTION. A trans-Eurasian temperate species.

NATURAL HISTORY. This is a typical resident of river and lake rubble banks, often without any vegetation. *H. patagiatus* usually coexists with *Sitticus albolineatus* (Kulczynski, 1895), and both species have almost never been found separately without each other. Mature males have been collected from the middle of May till the end of June, females from the beginning of June till mid-August. Nests with egg sacs are usually made under pebbles, and each

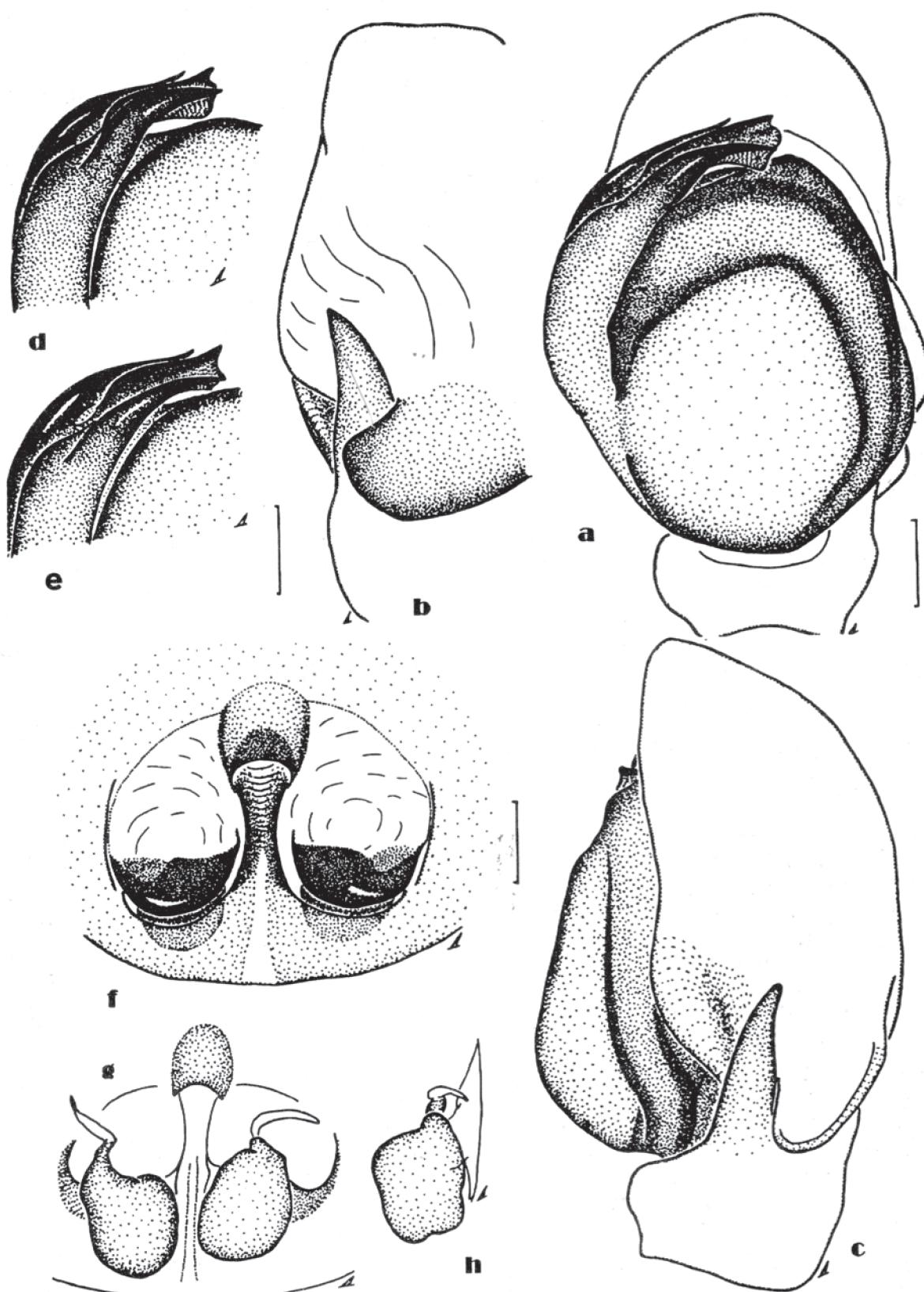


Fig.5. *Pellenes gobiensis* Schenkel, 1936: a - male palp, ventral view; b - ditto, rear view; c - ditto, lateral view; d,e - embolus and conductor, variations; f - epigyne; g - vulva; h - receptacle, lateral view. Scale 0.1 mm.
Рис.5. *Pellenes gobiensis* Schenkel, 1936: а - пальпус вентрально; б - то же, сзади; в - то же, латерально; д,е - эмболюс и кондуктор, вариации; ф - эпигина; г - вульва; х - рецепентакул, вид сбоку. Масштаб 0.1 мм.

nest has one sac containing from 8 to 32 eggs (average 15, N=13).

Marpissa radiata (Grube, 1859).

MATERIAL. TUVA, Tandinsky Distr.: 1m, 2f (BI), Chagytai Lake [24], Carex swamp, 1000 m alt., 29.06.1989, D.L.

DISTRIBUTION. A Euro-Baikalian boreal species. As we now know, its eastern limit of the range lies in Tuva. The record in Kamchatka [Sytchevskaja, 1935] has been ignored here, as most probably it belongs to *M.pomatia* (Walckenaer, 1802) and should be verified upon new materials.

Pellenes ignifrons (Grube, 1861).

MATERIAL. TUVA, Piy-Khem Distr.: 2f (BI), Sayany, Kurtushibinsky Mt. Range, 10 km NW Shivilig Vill. [33], 1100 m alt., mesophytic meadow, 6.07.1990, D.L.

Other materials. KRASNOYARSK PROVINCE, Evenkiya: 1f (ZIS), Taymura River, mouth of Nentene River, 1.08.1982, K.E. BURYATIA, Selenginsky Distr.: 4f (BI), Tayozhnyi Vill., 4.07-13.08.1984, B.P. Zakharov. Severo-Baikal'sk Distr.: 1m (BI), Barguzin State Reserve, Antonovskoye, 31.07.1990, M.S. CHITA AREA, Kyra Distr.: 3m (ZMMU), Sokhondo State Reserve, Sagan-Ula slope, 1700 m alt., June 1982, N. Shevyryova; 9m, 1f (BI), 2-3 km upper of confluence of Bukukun River with Ernichnyi Spring, 1400-1500 m alt., 2-3.06.1991, D.L., S.E. Chernyshov; 3m, 8f (BI), confluence of Ingoda River and Ubur-Ashaglei Spring, 1350 m alt., 8-9.06.1991, D.L.

DISTRIBUTION. A Siberio-American temperate species ranging from Tuva throughout Siberia east to Alberta Province (Canada) [as *Pellenes laggani* Peckham & Peckham, 1909, the synonymy with this species has been proposed by W. Maddison (see Proszynski, 1990)].

Pellenes gobiensis Schenkel, 1936.

Fig.5.

MATERIAL. TUVA, Erzin Distr.: 4m (BI), 2 km E of Erzin Vill. [23], valley of Erzin River, 1000 m alt., 23.05.1990, D.L. Environs of Kyzyl: 2m, 2f (SMNH), 6m, 2f (ZMMU),

18m, 10f (BI), 2-3 km N of Kyzyl [27], 700 m alt., 7-20.05.1990, D.L., O.L.

Other materials. ALTAI, Gorno-Altaiskaya Region: 2m, 2f (BI), Kosh-Agatch Vill., June 1972, A.P. Kononenko.

COMPARATIVE MATERIAL. Holotype of *P.gobiensis* Schenkel- 1f (SMNH), "S-W Mongolia, Norins Exped., Lager 25, 30.07.1927, G. Soderbom".

DESCRIPTION. MALE. Measurements. Carapace 2.20-2.38 long, 1.60-1.68 wide, 1.00-1.13 high at PLE. Ocular area 0.95-1.08 long, 1.18-1.20 wide anteriorly and 1.25-1.28 wide posteriorly. Diameter of AME 0.38-0.40. Abdomen 2.13-2.45 long, 1.60-1.75 wide. Cheliceral length 0.85-0.88. Clypeal height 0.15. Length of leg segments: leg I - 1.13-1.38 + 1.28-0.73 + 0.70-0.88 + 0.58-0.70 + 0.45-0.58; leg II - 0.98-1.10 + 0.58-0.63 + 0.53-0.63 + 0.40-0.53 + 0.38-0.40; leg III - 1.45-1.63 + 0.78-0.80 + 0.80-0.90 + 0.75-0.78 + 0.40-0.50; leg IV - 1.20-1.45 + 0.58-0.65 + 0.70-0.83 + 0.75-0.90 + 0.45-0.90. Leg spination: femur I-II d.0-1-2, III d.3ap; tibia I v.1-2, II v.1-1, III pr. and rt.0-1-0, v.1-2ap; IV rt.1-1, v.1-2ap; patella III-IV rt.1; metatarsus I-II v.2-2; III pr. and rt.2ap, v.2-2ap; IV pr. and rt.2ap, v.1-2ap. Colouration. Carapace dark brown, covered with flat white hairs, especially thick on eye field and around eyes. Eye field also covered with long, erect, black hairs. Clypeus and lower edge of AME covered with thick orange hairs. Sternum, maxillae, labium and chelicerae dark brown. Sternum covered with thin white hairs. Abdomen. Dorsum dark, grey-brown with a medial longitudinal "fir"-like stripe composed of white hairs. Dorsum, like carapace, covered with thick, erect, black hairs. Ventrum and sides brown, covered with white adpressed scales. Spinnerets grey-brown. Legs dark brown with yellow distal parts of tarsi. Tibia and metatarsus I reddish. Coxae I brown, II-IV greyish-yellow. All legs covered with thick black and white erect hairs and flat scales. Especially thick brushes of hairs on ventral sides of tibia and patella of first legs. Palp dark-brown, its structure as in Fig.5.

FEMALE. Measurements. Carapace 2.35-2.50 long, 1.68-1.75 wide, 0.98-1.10 high at PLE. Ocular area 0.95-1.15 long, 1.25-1.33 wide anteriorly and 1.38-1.40 wide posteriorly.

Diameter of AME 0.38-0.43. Abdomen 2.45-2.70 long, 1.58-1.95 wide. Cheliceral length 0.80-0.83. Clypeal height 0.13-0.18. Length of leg segments: leg I - 1.20-1.28 + 0.73-0.75 + 0.70-0.88 + 0.58-0.70 + 0.40-0.45; leg II - 1.10-1.13 + 0.65-0.68 + 0.63 + 0.50 + 0.40; leg III - 1.70-1.80 + 0.85-0.90 + 0.88-0.98 + 0.70-0.88 + 0.53-0.58; leg IV - 1.43-1.50 + 0.68-0.73 + 0.85-0.88 + 0.93-1.00 + 0.55-0.58. Leg spination: femur I d.2ap; II-III d.0-1-3; IV d.1-0; patella III rt.1; tibia I v.1-2-2ap or 1-2ap; II v.1-1; III pr. and rt.1-1, v.1ap; IV rt.1-1, v.1-1ap; metatarsus I-II v.2-2, III pr.2ap, rt.1-2ap, v.2-2ap; IV pr.2ap, rt. and v.1-2ap. Colouration: Carapace dark brown, covered with thick white scales and long black hairs. Clypeus with thick white hairs. Sternum, maxillae and labium brown, sternum covered with white hairs. Chelicerae dark brown. Abdomen yellowish-grey. Dorsum with a longitudinal white "fir"-like stripe, covered with erect black hairs. Each side of abdomen with a wide brown band. Spinnerets grey-brown. Palps yellow with brownish femora. Coxae of all legs yellowish-grey. Legs yellowish-brown, but femora IV almost fully yellow. All legs covered with black hairs and white scales. Epigyne and vulva as shown in Fig.5.

DISTRIBUTION. Tuva, China (Inner Mongolia, Bailinmyao?).

HABITAT. The species has been collected only in xeric nanophanerophyte steppes (with *Nanophyton erinaceus*).

Pellenes limbatus (Kulczynski, 1895).

Fig.6.

P. chanujnensis Proszynski, 1982, syn. nov.

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 1m (BI), 3-5 km N of Kyzyl-Khaya Vill. [3], right bank of Mogen-Buren River, moraine, 2000-2200 m alt., among stones, 13.06.1989, D.L.; 1m (IZW), 3m, 1f (BI), 3 km SE of Mugur-Aksy Vill. [4], Nature Station, 1800-1850 m alt., among stones, 14.06.1989, D.L.; 1m (BI), 6-7 km E of Mugur-Aksy Vill. [4], upper flow of Kuge-Davaa River, stone slope, 2100-2200 m alt., 18.05.1990, D.L.; 1f (IZW), 10-12 km SW of Mugur-Aksy [4], 2000 m alt., 8.06.1990, O.L.; 2m (ZMMU), 45-50 km W of Mugur-Aksy Vill. [2], upper flow of Kargy River, Chalyyasha Reserve, 2200-2300

m alt., among stones, 18.05.1990, D.L. Erzin Distr.: 2f (BI), 2 km E of Erzin Vill. [23], valley of Erzin River, among stones, 1000 m alt., 23.05.1990, D.L.

Other materials. MAGADAN AREA, Ten'kino Distr.: 3m, 6f (BI), Sibit-Tyellakh, summer 1987, Y.M. Marusik. KHAKASSIA, Altaijsky Distr.: 1f (BI), 40 km SE of Belyi Yar Vill., 15-17 km E of Novorossiyskoye, 380-400 m alt., steppe, 23-24.06.1990, D.L.; 1m (Lukyantsev's personal collection), Abakan, Nizhnyaya Sogra, 20.05.1990, S.V. Lukyantsev; 1f (Lukyantsev's personal collection), same locality, bank of Tasheba River, 18.05.1990, S.V. Lukyantsev. KIRGHIZIA: 1m (BI), Sary-Djaz, Adyr-Tor, 15.08.1986, S.V. Ovchinnikov.

COMPARATIVE MATERIAL. Holotype of *P. chanujnensis* Proszynski, 1982. 1f (HNHM, 547), Mongolei, Archangaj Aimak: Changaj Gebirge zw. Somon Ichtamit und Somon Culuut, 20 km N v. Somon Ichtamit, 3 km S v. Tal des Flusses Chanuj gol, 2150 m, 19.06.1966, Exp. Kaszab.

DESCRIPTION. MALE. Measurements. Carapace 1.90-2.28 long, 1.33-1.60 wide, 0.83-1.00 high at PLE. Ocular area 0.78-1.05 long, 1.03-1.23 wide anteriorly and 1.13-1.38 wide posteriorly. Diameter of AME 0.30-0.38. Abdomen 1.80-2.28 long, 1.28-1.80 wide. Cheliceral length 0.63-0.90. Clypeal height 0.10-0.16. Length of leg segments: leg I - 0.88-1.35 + 0.58-0.85 + 0.53-0.93 + 0.38-0.65 + 0.33-0.45; leg II - 0.78-1.03 + 0.53-0.68 + 0.40-0.53 + 0.33-0.48 + 0.30-0.40; leg III - 1.25-1.53 + 0.63-0.78 + 0.63-0.78 + 0.48-0.73 + 0.40-0.48; leg IV - 1.03-1.28 + 0.48-0.63 + 0.53-0.73 + 0.55-0.80 + 0.40-0.53. Leg spination: femur I-II d.0-1-1-2; III d.0-0-1-3; IV d.1-1-1; patella II pr.1; III pr. and rt.1; IV pr. and rt.1ap.; tibia I v.1-1; II pr.0-1, v.1-1-1ap; III pr.1-1, v.1-2ap; IV pr.0-1 or 1-1, rt.1-1, v.1-2ap; metatarsus I-II v.2-2; III-IV d. and v.2-2ap, pr. and rt.1ap; IV d.2ap, pr. and rt.1ap, v.1-2ap. Colouration: Carapace dark brown, eye field black, covered with white flat scales and white hairs. Clypeus lighter, red-brown. White scales above AME and ALE. Sternum brown, covered with white hairs. Maxillae and labium brown with yellow tips. Chelicerae brown. Abdomen. Dorsum dark grey, almost black, sometimes with a longitudinal medial white line. Ventrum dark grey to

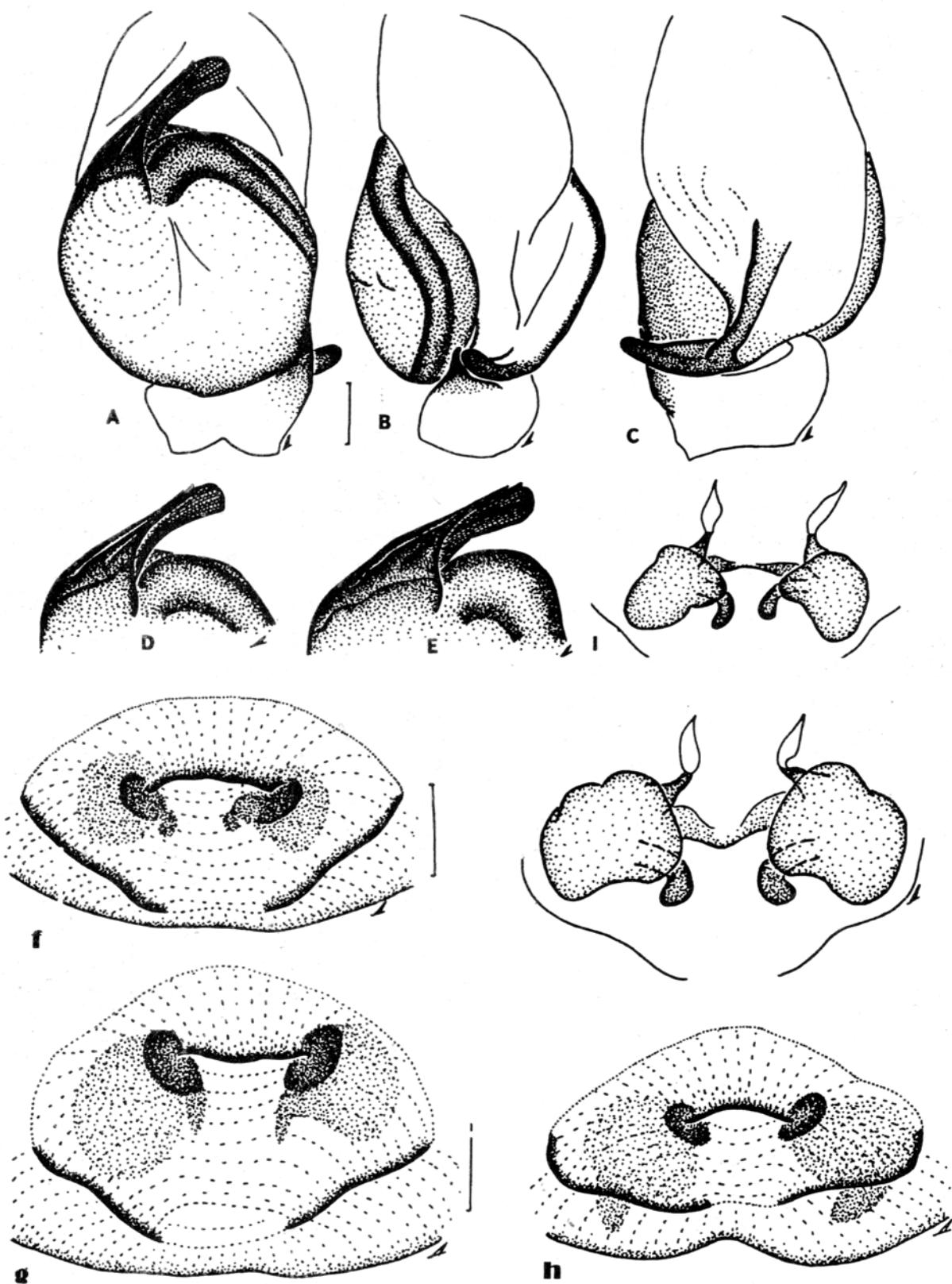


Fig.6. *Pellenes limbatus* (Kulczynski, 1895): a - male palp, ventral view; b - ditto, lateral view; c - ditto, rear view; d,e - embolus and conductor, variations; f-h - epigyne; i,j - vulva. Scale 0.1 mm.

Рис.6. *Pellenes limbatus* (Kulczynski, 1895): а - пальпус вентрально; б - то же, латерально; в - то же, сзади; д,е - эмболюс и кондуктор, вариации; ф - эпигина; г - вульва. Масштаб 0.1 мм.

light brown, in the last case with 4 longitudinal yellow stripes. Book-lung covers yellowish, spinnerets brown. Legs: coxae and tarsi yellowish (dark specimens have only yellow tarsi), remaining segments brown. All body and legs covered with numerous, white, flat scales. Palp: femur brown, remaining segments yellowish-brown. Femur and patella of palp with dorsal white scales. Palp structure as in fig.6.

FEMALE. Measurements. Carapace 2.18-2.65 long, 1.60-1.88 wide, 0.88-1.03 high at PLE. Ocular area 0.98-1.08 long, 1.19-1.38 wide anteriorly and 1.38-1.56 wide posteriorly. Diameter of AME 0.40-0.45. Abdomen 2.90-3.50 long, 2.25-2.38 wide. Cheliceral length 0.65-0.90. Clypeal height 0.18-0.20. Length of leg segments: leg I - 1.00-1.20 + 0.65-0.88 + 0.53-0.78 + 0.48-0.60 + 0.35-0.40; leg II - 0.90-1.10 + 0.58-0.70 + 0.50-0.63 + 0.38-0.50 + 0.35-0.38; leg III - 1.45-1.83 + 0.75-0.93 + 0.75-0.95 + 0.65-0.78 + 0.43-0.53; leg IV - 1.28-1.60 + 0.55-0.73 + 0.70-0.83 + 0.75-0.95 + 0.43-0.55. Leg spination: femur I d.0-1-1-2; II d.0-1-1-3; III d.0-0-2-3; IV d.1-1-1; patella II pr.1; III pr. and rt.1; IV rt.1; tibia v.1-1; II v.0-1-0; III pr.1-1, rt.1-1-1, v.1-1ap; IV pr.0-1, rt.1-1-1, v.1-1ap; metatarsus I-II v.2-2; III d. and v.2-2ap, pr. and rt.1ap; IV d.1-1-0-2, pr.1ap, rt.1-1ap, v.1-2ap. Colouration. Carapace dark brown, eye field black, all carapace covered with white hairs. Clypeus red-brown, covered with thick white hairs. Abdomen. Dorsum brown-grey with three wide, longitudinal, white stripes. Hind part of abdomen with two pairs of yellowish lines. Ventrum greyish with 4 longitudinal yellow stripes. Book-lung covers yellowish, spinnerets brownish. Palp yellow. All legs yellow, but distal parts of femora, patellae and tibiae with a brownish thin coating. Femora of all legs covered with white hairs. Structure of epigyne and vulva as shown in Fig.6.

DISTRIBUTION. All Siberia (from Tuva and Khakassia in the west through Yakutia to Magadan Area in the east). Kirghizia, Mongolia.

REMARKS. A study of variation in the structure of the female genitalia (Fig.6f-h), as well as a restudy of the holotype of *Pellenes chajunensis* Proszynski, 1982, has proven that *P. limbatus* (Kulczynski, 1895) is a senior synonym of *P. chanujnensis*.

Pellenes cf. *tripunctatus* (Walckenaer, 1802).

MATERIAL. TUVA, Ovyursky Distr.: 1m (ZMMU), Ubsu-Nur Lake [9], 730-750 m alt., 12.06.1989, D.L. Tandinsky Distr.: 2m, 8f (BI), Chagytai Lake [24], 1100-1200 m alt., 26.06.1989, D.L.; 1m (BI), 5 km SW of Khovu-Aksy Lake [25], valley of Elegest River, 4-5.05.1990, D.L. Environs of Kyzyl: 1f (ZMMU), 5-7 km W of Kyzyl [28], valley of Yenisei River, Agricultural Station, 700 m alt., 1.07.1990, D.L. Piy-Khem Distr.: 1f (IZW), 5-7 km NW of Seserlig Vill. [31], Uyuksky Mt. Range, 1200 m alt., 29.06.1990, D.L.; 1m, 3f (BI), Sayany, Kurtushibinsky Mt. Ridge, 10 km NW of Shivilig Vill. [33], 1100 m alt., 5-6.07.1990, D.L.

REMARKS. Siberian specimens of *Pellenes tripunctatus* differ from European ones in the larger size and structure of the tibial apophysis, the latter being longer and more sharp. The taxonomic significance of the mentioned differences requires further studies.

NATURAL HISTORY. The species is common in forest-steppe landscapes, where it has been swept in shrubs (*Cotoneaster* sp.) and grass. Females usually make their nests under the bark of fallen trunks or stubs, as well as between branches of shrubs about 15-20 centimeters above ground-level. The nest usually contains 1-2 egg sacs (sometimes 4 ones) with about 13-66 eggs in each sac (average 37, N=15).

Philaeus chrysops (Poda, 1761).

MATERIAL. TUVA, Tandinsky Distr.: 1f (BI), Chagytai Lake [24], stone steppe slopes, under stones, 1100-1200 m alt., 28.06.1989, D.L. Ulug-Khem Distr.: 1m subad. (BI), 5-7 km E of Shagonar Town [13], Khaiyrkan Mt., among stones, 10.06.1990, D.L. Piy-Khem Distr.: 1f (BI), 5-7 km NW of Seserli Vill. [31], slope steppe, among stones, 1400 m alt., 29.06.1990, D.L.; 1f (BI), Sayany, Kurtushibinsky Mt. Ridge, 10 km NW of Shivilig Vill. [33], slope steppe, among stones, 1200 m alt., 5-6.07.1990, D.L.

DISTRIBUTION. A trans-Eurasian subboreal pattern.

Phlegra fuscipes Kulczynski in Chyzer et Kulczynski, 1891.

MATERIAL. TUVA, Tes-Khem Distr.: 2m (ZMMU), 10-12 km NE of Khol'-Oozhu Vill. [14], Belengish Reserve, 1700-1800 m alt., 9-11.07.1989, D.L. Ulug-Khem Distr.: 1m (BI), 15-20 km SW of Shagonar Town [10], bridge on Chaaty River, 8.05.1990, D.L.; 2f (BI), 5-7 km E of Shagonar Town [13], Khaiyrkan Mountain, 10.05.1990, D.L. Environs of Kyzyl: 1m (IZW), 2 km N of Kyzyl [27], 700 m alt., 20.05.1989, D.L.; 2f (IZW), 3-5 km S of Kyzyl [27], 700 m alt., 25.06.1989, D.L.

DISTRIBUTION. A Euro-Baikalian subboreal pattern.

REMARKS. In S.Henciak's opinion (personal communication), the well-known species *P.fuscipes* Kulczynski should be treated as a junior synonym of *P.cinereofasciata* (Simon, 1868).

HABITAT. The species can be found in slope shrub-stony steppes among stones. Adults have been collected from the end of May till the end of July.

Phlegra cf. sogdiana Charitonov, 1946.

MATERIAL. TUVA, Environs of Kyzyl: 1m, 7f (BI), 3-5 km N of Kyzyl [27], *Nanophyton erinaceus* steppe, 700-900 m alt., 20.05-7.06.1989, D.L.; 1m, 5f (BI), same locality, 3-22.07.1989, D.L.; 1m, 2f (BI), same locality, 21.09.1989, D.L.; 7f (BI), same locality, 7.05-3.07.1990, D.L. Kyzyl Distr.: 1f (BI), 65 km W of Kyzyl [26], Otuk-Dash Reserve, *Nanophyton erinaceus* steppe, 10.05.1990, D.L.

REMARKS. Specimens of this species from Tuva are visibly distinguished in coloration, size and genital structure from those from Middle Asia. Probably they ought to be treated as a new species. We leave the question open before a restudy of the type series of *P.sogdiana* has been accomplished.

Salticus cingulatus (Panzer, 1791).

MATERIAL. TUVA, Erzin Distr.: 2f (BI), 3-5 km S of Erzin Vill. [23], valley of Tes-Khem River, 1000 m alt., 14-15.08.1989, D.L.; 1m (ZMMU), same locality, 24.05.1990, D.L.

1m, 1f (ZMMU), 20 km NW of Erzin Vill. [19], valley of Tes-Khem River, 800-900 m alt., 31.05.1989, D.L. Environs of Kyzyl: 7m (BI), 1m (IZW), 5-7 km W of Kyzyl [27], valley of Yenisei River, Agricultural Station, 700 m alt., 13-22.05.1990, D.L.; 5m (BI), same locality, 7.06.1989, D.L.; 11f (BI), same locality, 650-700 m alt., 22.07.1989, D.L.; 1m (BI), park in Kyzyl, 12.05.1990, D.L.

DISTRIBUTION. This is a trans-Eurasian temperate species.

HABITAT. These spiders are usually found on the bark of trees (poplars and birches) in valley forests. Males have been collected from the middle of May till the middle of June, and females from May till the middle of August.

Sitticus albolineatus (Kulczynski, 1895).

MATERIAL. TUVA, Erzin Distr.: 3m, 13f (BI), valley of Erzin near Erzin Vill. [23], 1000 m alt., 26.05.1990, D.L. Ulug-Khem Distr.: 8m, 10f (BI), 5-8 km S of Torgalyk [11], valley of Torgalyk River, 900-950 m alt., 8-9.05.1990, D.L. Tandinsky Distr.: 11m, 12f (BI), 5 km SW of Khovu-Aksy Vill. [25], valley of Elegest River, 4-5.05.1990, D.L.

Other materials. KRASNOYARSK PROVINCE, Ermakovo Distr.: 2m, 2f (BI), 2-3 km N of Aradan Vill., valley of Us River, 840-850 m alt., 8-9.07.1990, D.L. KHAKASSIA, Askiz Distr.: 2m, 4f (ZMMU), 10-15 km SW of Birikchul' Vill., Tryokhrechye Reserve, 1200 m alt., 17.07.1990, D.L. Altaisky Distr.: 3m, 6f (BI), 40 km SE of Belyi Yar, 17 km E of Novorossiyskoye Vill., valley of the Yenisei River, 300-350 m alt., 24.06.1990, D.L.

DISTRIBUTION. This is a Siberian boreal species, and the records in Tuva and Khakassia reflect the westernmost limit of its range.

NATURAL HISTORY. The only biotope where the species can be found is river and lake rubble banks, often without any vegetation. It coexists with *H.patagiatus* (see also above). Mature specimens have been collected from the middle of May till mid-July. Females make their nests on the underside of stones and rubbles, and each nest contains a single egg sac with about 14-28 eggs (average 21, N=6).

Sitticus avocator (O.Pickard-Cambridge, 1885).

MATERIAL. TUVA, Tes-Khem Distr.: 2m (IZW), 10 km NE Khol'-Oozhu Vill. [14], 1300-1400 m alt., 12.07.1989, D.L. Erzin Distr.: 1m (BI), 20-25 km W Erzin Vill. [18], Onchalaan Mt. Range, 1300 m alt., 1.06.1989, D.L. Kyzyl Distr.: 1m (BI), 65 km W of Kyzyl [26], Otuk-Dash Reserve, 10.05.1990, D.L. Environs of Kyzyl: 5m, 2f (BI), 2-3 km N of Kyzyl [27], 700-800 m alt., 22.07.1989, D.L.; 1m (ZMMU), same locality, 21.09.1989, D.L.

DISTRIBUTION. A Siberian subboreal species, ranging from East Kazakhstan and Kirghizia (Kyrgyzstan) in the west up to the Maritime Province (Primorye) and Japan in the east, and from latitudes 35 to 50 degrees North (see also Proszynski, 1983).

HABITAT. This species is common on talus (Siberian name "kurumy"), scree and rocky outcrops, being both an ecological and a geographical vicariant of *S. distinguendus*.

Sitticus distinguendus (Simon, 1868).

MATERIAL. TUVA, Piy-Khem Distr.: 10m (BI), Ust'-Uyuk Vill. [32], 800-900 m alt., 21.05.1989, D.L. Environs of Kyzyl: 2m, 1f (BI), 2-3 km N of Kyzyl [27], 700-800 m alt., 20.05.1989, D.L.

Other materials. KHAKASSIA, Askiz Distr.: 8m, 2f (BI), 3 km W of Birikchul' Vill., 1000-1100 m alt., 18.07.1990, D.L.; 2m, 1f (BI), 25-27 km NE of Askiz Vill., hill near Abakan River, 15.07.1990, D.L.

COMPARATIVE MATERIAL. POLAND: 2f (SMF), "Slowinski NP: Lacka Gora (XA 57), Nordfuss, bewachs. Dune", 19.05.1980, W. Starega; 1m (SMF), "Bodolice bei Myszkow (CB 90), sandiges Odland am Fuss der Burgruine", 19.08.1980, W. Starega.

DISTRIBUTION. A Euro-Baikalian temperate species ranging from West Europe to West Sayany, and from latitudes 50 to 60-65 degrees North. East of the West Sayany, this species is substituted by the parapatric *S. avocator* (see above).

HABITAT. The species dwells in talus, scree and on open rocks, being a vicariant of *S. avocator*.

Sitticus floricola (C.L.Koch, 1837).

MATERIAL. TUVA, Erzin Distr.: 1m (ZMMU), 5-7 km SW of Erzin Vill. [23], valley of Tes-Khem River, 1000 m alt., 24.05.1990, D.L. Tandinsky Distr.: 3m, 1f (BI), Chagytai Lake [24], 1000 m alt., 29.06.1989, D.L.; 1m (IZW), Balgazyn Vill., 26.05.1989, D.L. Piy-Khem Distr.: 2m (ZMMU), Sayany, Kurtushibinsky Mt. Ridge, 10 km NW of Shivilig Vill. [33], 1100 m alt., 6.07.1990, D.L. Todzhinsky Distr.: 1m (BI), Azas State Reserve [34], Azas Lake, 800-900 m alt., 21.06.1989, D.L.; 1f (BI), same locality, 1.09.1987, Y.K.

DISTRIBUTION. A Holarctic (circumtemperate) species.

HABITAT. This species is common in *Carex* or *Equisetum* swamps and swampy meadows, sometimes it can be found at puddle river banks with a litter of dried foliage.

Sitticus lineolatus (Grube, 1861).

MATERIAL. TUVA, Tes-Khem Distr.: 1m, 1f, 5f juv. (BI), 20 km NW of Khol'-Oozhu Vill. [14], Kangai-Kary Mt., 2100-2170 m alt., stone places, among stones, 9.07.1989, D.L.

DISTRIBUTION. A Siberio-American boreo-montane pattern.

Sitticus penicillatus (Simon, 1875).

MATERIAL. TUVA, Tes-Khem Distr.: 8m, 1f (ZMMU), 8-10 km W of Ak-Erik Vill. [17], valley of Tes-Khem River, 29.05.1990, O.L. Erzin Distr.: 13m, 4f (BI), valley of Erzin River near Erzin Vill. [23], 1000 m alt., 26.05.1990, D.L.; 9m (BI), 5-7 km SW of Erzin Vill. [23], valley of Tes-Khem River, 1000-1100 m alt., 24.05.1990, D.L. Tandinsky Distr.: 2m (IZW), 3-5 km SW of Khovu-Aksy Vill. [25], valley of Elegest River, 4-5.05.1990, D.L.

COMPARATIVE MATERIAL. EUROPE: 1m, 1f (NMNH, 997), Digus? (label illegible); 1m, 1juv. (NMNH, 5.585), Tokaj (Md) (label illegible); 8f (NMNH, 996), Alpes.

DISTRIBUTION. A trans-Eurasian temperate species.

HABITAT. This is an early-springtime species dwelling at rubble river banks.

Sitticus saltator (O.Pickard-Cambridge in Simon, 1868).

MATERIAL. TUVA, Erzin Distr.: 1m (BI), 20 km W of Erzin Vill. [18], Onchalaan Mt. Range, stone-shrub slope steppe, 1300 m alt., 9.07.1989, D.L.

COMPARATIVE MATERIAL. CHELYABINSK AREA, Troitsk Distr.: 1f (PSU), Troitsk State Reserve, meadow, summer 1988, S.L.Esyunin. POLAND: 10m,5f (SMF), "Torun-Przedmiescie Bydgoskie (CD 37)," "Prochem"-Werke: "rekultiviert", 26.07.1977, Lacka. FRANCE: mm,ff (NMNH,883), "Gallia", E.Simon. DENMARK: 1m,1f (NMNH), W coast of Jutland, sand dunes near Ulfforg, 12-15.05.1967, M.J.Proczynski.

DISTRIBUTION. A Euro-Baikalian temperate species ranging from West Europe to Tuva (the easternmost locality). Up to now, it has been known only in Europe [Harm, 1973; Proszynski, 1976] and the European part of Russia [Nenilin, 1985].

Sitticus tannuolana Logunov, 1991.

Fig.7.

MATERIAL. TUVA, Piy-Khem Distr.: 3m,6f (BI), Sayany, Kurtushibinsky Mt. Range, 10 klm NW of Shivilig Vill. [33], *Abies-Larix* forest, on tree bark, 1100 m alt., 7.07.1990, D.L.

Other materials. KRASNOYARSK PROVINCE, Boguchansky Distr.: 2m,2f (BI), Sosnovka Vill., Chunoyar Station, 12.06.1974, M.S.; 1m,5f (ZIS), same locality, 1-18.06.1980, D.B.Verzhutsky; 3f (BI), same locality, July-August 1984, E.P.Bessolitsyna. Ermakovo Distr.: 1m (BI), 180 km of highway Abakan-Kyzyl, 1000-1200 m alt., 21.08.1988, D.L. Grodnitskiy.

DESCRIPTION. FEMALE. Measurements. Carapace 2.08-2.65 long, 1.63 wide, 0.88 high at PLE. Ocular area 0.95-1.00 long, 1.28-1.30 wide anteriorly and 1.28-1.33 wide posteriorly. Diameter of AME 0.38. Abdomen 2.63-3.03 long, 1.83-2.75 wide. Cheliceral length 0.70-0.80. Clypeal height 0.10. Length of leg segments: leg I - 1.03-1.08 + 0.63-0.65 + 0.63-0.70 + 0.53-0.58 + 0.40-0.45; leg II - 0.98-1.03 + 0.50-0.55 + 0.58-0.63 + 0.53-0.55 + 0.40-0.43; leg III - 1.00-1.05 + 0.50-0.55 + 0.63-0.65 + 0.58-0.63 + 0.45-0.50; Leg IV - 1.58-1.63 +

0.65 + 1.08-1.13 + 0.93-0.98 + 0.60-0.63. Leg spination: femur I d.0-1-1-2; II-III d.1-1-2; IV 1-1-1; tibia I v.2-2-2; II v.1-2; III pr. and rt.0-1, v.1ap; IV pr.1-1, rt.1-1-1, v.1-2ap; metatarsus I-II v.2-2; III pr.2-2ap, rt.1ap, v.2ap; IV pr.1-2ap, rt.1-1-2ap, v.1ap. Colouration. Carapace brown, covered with thick white and black hairs. Eye field black, with a white spot composed of white hairs in the place of fovea. Sternum, maxillae, labium and chelicerae lightbrown, sternum covered with white hairs. Dorsum dark grey, covered with black, white and orange hairs forming markings: two wide black longitudinal stripes with a light stripe between them. Ventrum lightbrown to yellowish. Book-lung covers brownish, spinnerets grey-brownish. Legs yellowish with numerous brown rings. Coxae of all legs yellowish. Epigyne and vulva are in Fig.7c,d,f.

DIAGNOSIS. Females differ from those of *S. finschi* (L.Koch, 1879) by the structure of the genitalia (Fig.5), as well as by the colouration of the palpal femur. The latter in *S. tannuolana* is yellow with a brown ring in the basal part, being brown all along its length in *S. finschi*. The remaining segments of the palp in both species are yellow.

DISTRIBUTION. Tuva, the southern part of the Krasnoyarsk Prov., including the West Sayany.

NATURAL HISTORY. The species lives on the bark of coniferous trees (firs, pines), females make their nests under the bark. Each nest contains one egg sac with 11-12 eggs (N=3).

Synageles hilarulus (C.L.Koch, 1846).

MATERIAL. TUVA, Environs of Kyzyl: 1m (BI), 5-7 km W of Kyzyl [28], valley of Yenisei River, Agricultural Station, 700 m alt., 27.05.1990, D.L. Erzin Distr.: 1f juv. (BI), 3-5 km S of Erzin Vill. [23], valley Tes-Khem River, *Caragana*-willow-birch forest, litter, 1000 m alt., 14.08.1989, D.L.

DISTRIBUTION. A trans-Eurasian subboreal pattern.

Talavera aequipes (O.Pickard-Cambridge, 1871).

MATERIAL. TUVA, Mongun-Taiginsky Distr.: 1m (BI), 5 km SE Mugur-Aksy [4], stone slope, 2000 m alt., 11.06.1990, O.L.

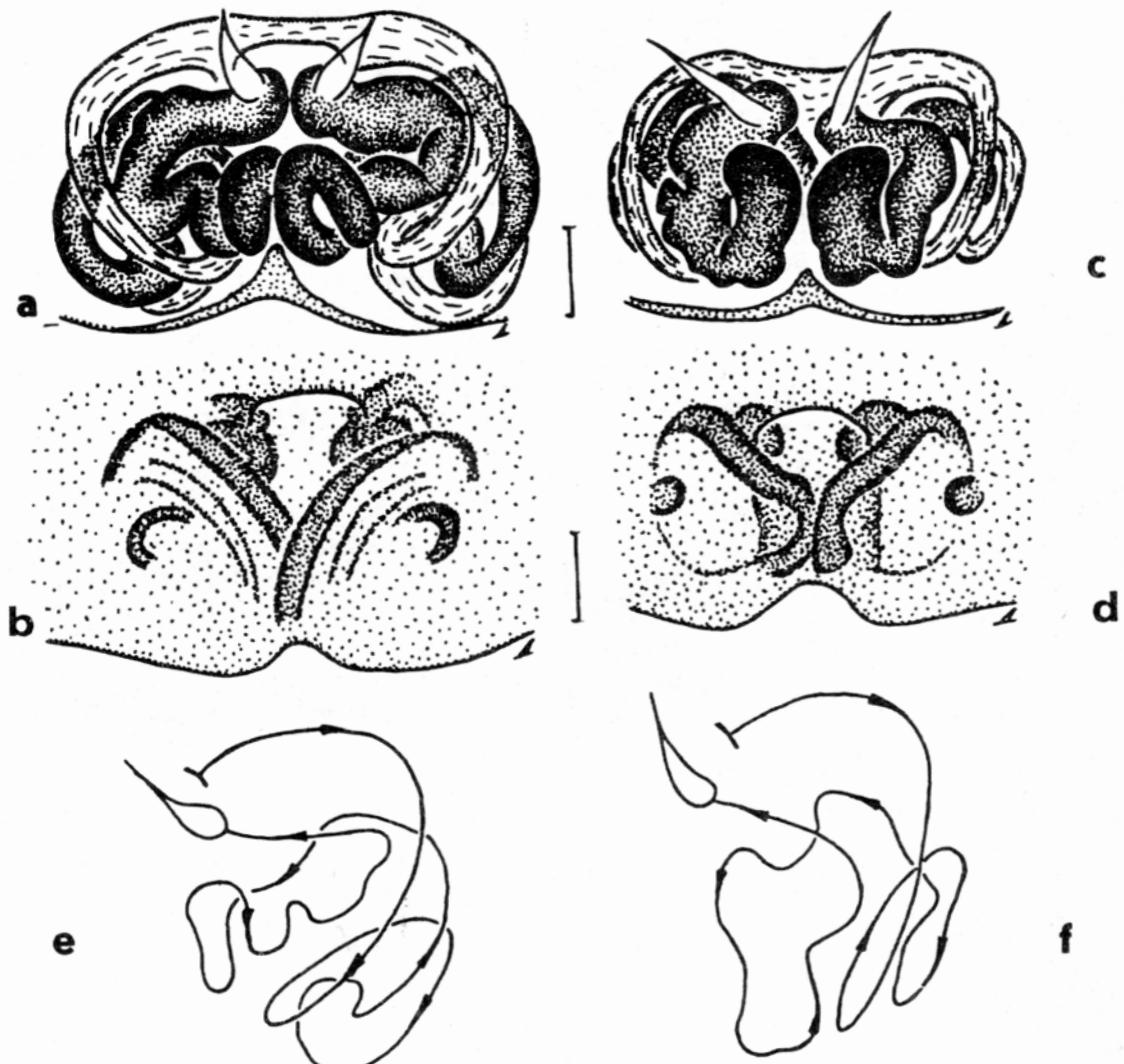


Fig.7. *Sitticus finschi* (L.Koch, 1879) (a,b,e) and *S. tannuolana* Logunov, 1991 (c,d,f): a,c - vulva; b,d - epigyne; e,f - diagrammatic course of spermathecal duct. Scale 0.1 mm.

Рис.7. *Sitticus finschi* (L.Koch, 1879) (a,b,e) и *S. tannuolana* Logunov, 1991 (c,d,f): а,с - вульва; б,д - эпигина; е,ф - схематическое изображение протока семяприемника. Масштаб 0.1 мм.

Other materials. KHAKASSIA, Altaisky Distr.: 1f 40 km SE Belyi Yar, 15-17 km E of Novorossiyskoe, steppe, 380-400 m alt., 23-24.06.1990, D.L. CHITA AREA, Kyra Distr.: 1f (BI), confluence of Ingoda River and Ubur-Ashaglei Spread, 1350 m alt., 8-9.06.1991, D.L.

DISTRIBUTION. This is a Euro-Siberian Middle Asian temperate species, well-known from Europe [Proszynski, 1976, and others], but for all that its distributional pattern in Asia is poorly known. The species has actually been recorded in China [Zhou, Song, 1987], Kirghizia (=Kyrgyzstan) [Nenlin, 1984b] (Nenlin's material, examined), East Kazakhstan [Proszynski,

1976] and the southern part of Krasnoyarsk Province ("Stolby" State Reserve) [Sternbergs, 1977]. The record in the Maritime Province [Nenlin, 1984a, 1985] requires re-examination of pertinent specimens. Thus, Chita Area (Sokhondo State Reserve) is presently the easternmost limit of the range of *T. aequipes*.

Yllenus kulczynskii Punda, 1975.

Figs.8,9.

Y. staregai Punda 1975, syn. nov.

MATERIAL. TUVA, Erzin Distr.; 1m, 2f (BI), Tere-Khol' Lake, Eder-Elezin sands, 1150-1200 m alt., 29.05-3.06.1989, D.L.;

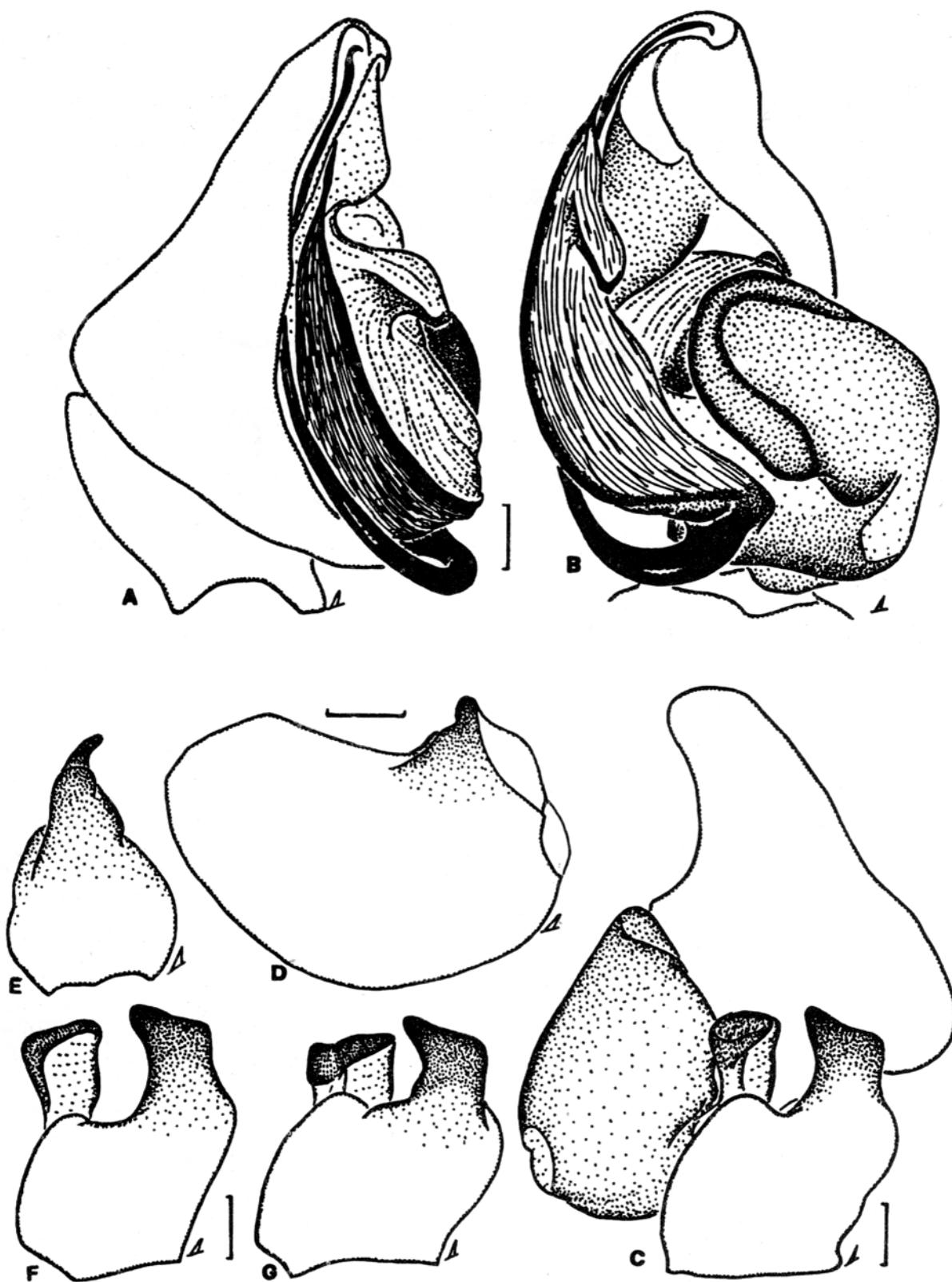


Fig.8. *Yllenus kulczynskii* Punda, 1975: a - male palp, medial view; b - ditto, ventral view; c - ditto, lateral view; d - palpal femur, lateral view; e - tibial apophysis, rear view; f,g - ditto, lateral view, variations. Scale 0.2 mm.

Рис.8. *Yllenus kulczynskii* Punda, 1975: а - пальпус медиально; б - то же, вентрально; в - то же, латерально; д - бедро пальпы, латерально; е - тибиональный отросток, сзади; ф, г - то же, латерально, вариации. Масштаб 0.2 мм.

8m, 16f (BI), same locality, 26-28.05.1990, O.L.; 1f (ZMMU), 25-30 km W of Erzin Vill., near Onchalaan Mt. Ridge, 1100-1200 m alt., 28.05.1989, D.L.; 3m (ZMMU), same locality, 26.05.1990, O.L.; 1m, 3f (BI), 20 km NW of Erzin Vill., near bridge on Tes-Khem River, 900-1000 m alt., 31.05-2.06.1989, D.L.; 1f (ZMMU), 3-5 km E of Erzin Vill., 1000-1200 m alt., 23-25.05.1990, D.L. Tes-Khem Distr.: 2f (ZMMU), 8-10 km W of Ak-Erik Vill., valley of Tes-Khem River, 29.05.1990, O.L.

Other materials. BURYATIA: 1m (BI), Ust'-Barguzinsk, 5.09.1976, M.S. MONGOLIA, Central Aimak: 1f (HNHM, 774), 12 km S of Somon Bajanbataat, 1380 m alt., 8.06-14.07.1967, Exp. Kaszab.

DESCRIPTION. MALE. Measurements. Carapace 3.00-3.20 long, 2.30-2.50 wide, 1.40-1.55 high at PLE. Ocular area 1.20 long, 1.50-1.65 wide anteriorly and 1.65-1.75 wide posteriorly. Diameter of AME 0.35-0.45. Abdomen 2.70-3.40 long, 2.00-2.40 wide. Cheliceral length 0.65-0.95. Clypeal height 0.25. Length of leg segments: leg I - 1.80-1.85 + 1.15-1.25 + 1.00-1.15 + 0.65-0.75 + 0.55; leg II - 1.65-1.80 + 0.90-1.05 + 1.00-1.05 + 0.70-0.80 + 0.55-0.60; leg III - 1.90-2.05 + 0.85-1.00 + 0.90-1.10 + 0.90-1.00 + 0.65-0.80; leg IV - 2.60-2.90 + 1.20-1.40 + 1.50-1.65 + 1.10-1.15 + 0.65-0.70. Leg spination. Leg I: femur d.0-1-1-1; tibia pr.0-1-0, v.1-2-2ap; metatarsus v.2-2ap. Leg II:

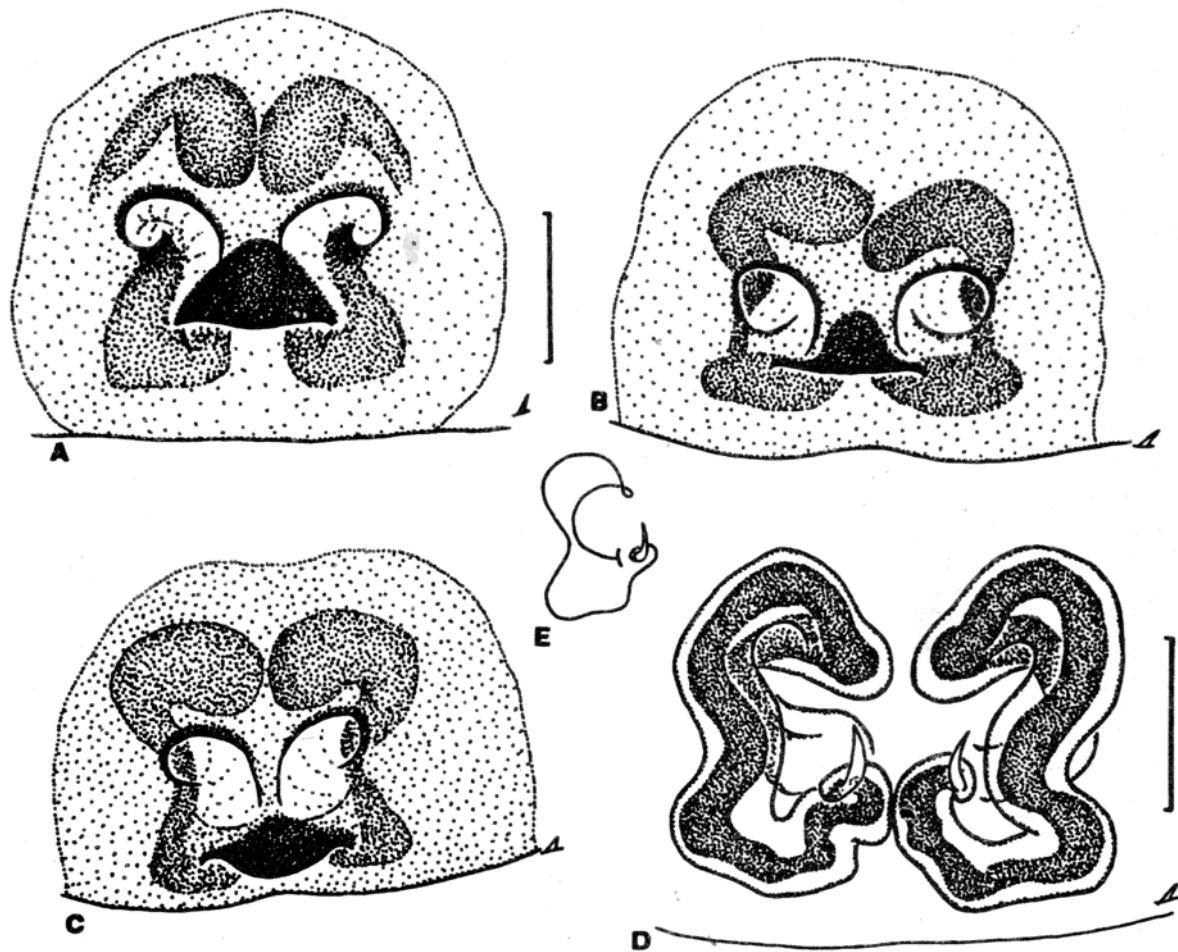


Fig.9. *Yllenus kulczynskii* Punda, 1975: a-c - epigyne, variations; d - vulva; e - diagrammatic course of spermathecal duct. Scale 0.2 mm.

Рис.9. *Yllenus kulczynskii* Punda, 1975: а-с - эпигина, вариации; д - вульва; е - схематическое изображение протока семяприемника. Масштаб 0.2 мм

femur d.0-0-1-1; tibia pr.1-1, v.1-2ap; metatarsus v.2-2ap. Leg III: femur d.0-1-1; patella pr. and rt.0-1-0; tibia pr. and rt.1-1; metatarsus pr. and rt.1-2ap, v.1ap. Leg IV: femur d.0-0-1-1; patella pr. and rt.0-1-0; tibia pr. and rt.1-1; metatarsus pr.1-0-1-1ap, rt.2-2ap, v.1ap. Colouration. Carapace black, covered with white and yellow scales. Eye field with a white triangle composed of white scales. Clypeus reddish, covered with thick white hairs and scales. Sternum, labium and chelicerae black. Maxillae black with yellow tips. Dorsum covered with light, blueish bright scales, with dark brown stripes on edges of abdomen. Sides of abdomen covered with yellow and brownish scales. Ventrum covered with light white scales. Spinnerets dark brown. Coxae and femora yellow ventrally and brown dorsally. Remaining segments yellow with brown spots and stripes, but tibia usually dark brown and tarsi and metatarsi lighter than other segments. All legs covered with white scales, especially thick on dorsal sides of metatarsi and tarsi. Palp: femur, cymbium and tibia yellow; around femoral apophysis brown (Fig.8d); tibia brownish; medial sides of palpal tibia and patella with a clump of long white hairs. Palp structure as shown in fig.8.

FEMALE. Measurements. Carapace 2.40-3.00 long, 1.95-2.45 wide, 1.15-1.45 high at PLE. Ocular area 1.05-1.20 long, 1.35-1.65 wide anteriorly and 1.50-1.75 wide posteriorly. Diameter of AME 0.35. Abdomen 2.80-3.60 long, 2.30-2.80 wide. Cheliceral length 0.45. Clypeal height 0.25. Length of leg segments: leg I - 1.25-1.70 + 0.80 - 1.00 + 0.65-0.80 + 0.45-0.50 + 0.40-0.50; leg II - 1.10 + 0.70-0.90 + 0.60-0.75 + 0.45-0.55 + 0.40-0.50; leg III - 1.40-1.70 + 0.70-0.85 + 0.70-0.85 + 0.65-0.75 + 0.55-0.65; leg IV - 2.15-2.70 + 0.90-1.30 + 1.20-1.45 + 0.85-1.05 + 0.55-0.65. Leg spination. Leg I: femur d.1ap; tibia v.1-2-2ap; metatarsus v.2-2. Leg II: femur d.1ap; tibia pr.1-1, v.0-1; metatarsus v.2-2. Leg III: femur d.1ap; patella pr. and rt.0-1-0; tibia pr. and rt.1-1, v.1ap; metatarsus pr. and rt.1-2ap, v.2ap. Leg IV: femur d.1-1ap; patella pr. and rt.0-1-0; tibia pr. and rt.1-1, v.1ap; metatarsus pr. and rt.1-2ap. Colouration. Carapace dark brown, eye field black, covered with thick blueish-white and yellowish scales. Clypeus covered with thick white scales. Sternum brown, sometimes hind half yellow. Labium and maxillae brown with yellow tips.

Chelicerae dark brown. Abdomen light. Dorsum with numerous white, yellowish and blueish-yellow spots composed of scales. Ventrum white. Spinnerets brownish, palps yellow. All legs yellow with numerous brown spots and bands. Epigyne and vulva as shown in Fig.9.

DISTRIBUTION. Tuva, Buryatia, Mongolia.

HABITAT. The species is primarily associated with hollow xeric grass-wormwood (*Stipa-Artemisia*) steppes, where it is usually restricted to sandy plots and dunes.

REMARKS. H.Punda [1975] described two species of *Yllenus* in the same paper: *Y. kulczynskii* by a single male and *Y. staregai* by females only. Examination of serial materials from Tuva leaves no doubts that both male and females described by H.Punda are conspecific. Therefore, both species are synonymized in the present paper, and the name "*kulczynskii*" is kept as the valid one, for the description of *Y. kulczynskii* precedes that of *Y. staregai*.

Yllenus mongolicus Proszynski, 1968.

MATERIAL. TUVA, Erzin Distr.: 1f (BI), Tere-Khol' Lake [21], Eder-Elezin sands, sweeping on *Caragana* spp., 1150-1200 m alt., 3.06.1989, D.L.; 1m (BI), same locality, 26.05.1990, O.L. Environs of Kyzyl [27]: 2m (BI), 2-3 km N of Kyzyl, *Nanophyton* steppe, 700-800 m alt., 20.05.1989, D.L.; 3m (BI), 1m (IZW), same locality, 7-14.05.1990, D.L., V.Z.; 1m, 1f (BI), 3-5 km S of Kyzyl, near airport, 25.06.1989, D.L.

Other materials. ALTAIS: 1m, 2f (BI), Kosh-Agach Vill., June 1972, A.P.Kononenko. MONGOLIA: 3f (ZIS), West Gobi, 4-17.07.1981, coll.?. BURYATIA: 2m, 1f (S.Danilov's personal collection, Ulan-Ude), Mostovoy, sand plots, 7.06.1990, S.N.Danilov.

DISTRIBUTION. This species has been found in Kalmykiya [Ponomaryov, 1978], Turkmenia [Nenlin, 1985], SE Altais, Tuva, Buryatia (original data) and Mongolia [Proszynski, 1968, 1976, 1982].

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