

## Spiders (Arachnida: Aranei) of Azerbaijan. 2. Critical survey of wolf spiders (Lycosidae) found in the country with description of three new species and brief review of Palaearctic *Evippa* Simon, 1885

## Пауки (Arachnida: Aranei) Азербайджана. 2. Обзор пауков-волков (Lycosidae) отмеченных в фауне республики с описанием трёх новых видов и краткий обзор пауков рода *Evippa* Simon, 1885 Восточной Палеарктики

Yuri M. Marusik<sup>1</sup>, Elchin F. Guseinov<sup>2</sup> & Seppo Koponen<sup>3</sup>  
Ю.М. Марусик<sup>1</sup>, Э.Ф. Гусейнов<sup>2</sup>, С. Копонен<sup>3</sup>

<sup>1</sup> Institute for Biological Problems of the North, Portovaya Str. 18, Magadan, 685000 Russia. E-mail: yurmar@mail.ru

<sup>1</sup> Институт биологических проблем Севера, ДВО РАН, ул. Портовая 18, Магадан 685000 Россия.

<sup>2</sup> Institute of Zoology, block 504, passage 1128, Baku 370073 Azerbaijan. E-mail: elchin-f@artel.net.az

<sup>2</sup> Институт зоологии АН Азербайджана, квартал 504, проезд 1128, Баку 370073 Азербайджан.

<sup>3</sup> Zoological Museum, University of Turku, FIN-20014 Turku Finland. E-mail: seppoko@utu.fi

KEY WORDS: Aranei, Lycosidae, *Evippa*, wolf spiders, check-list, Caucasus, Azerbaijan, new records, new species.

КЛЮЧЕВЫЕ СЛОВА: Aranei, Lycosidae, *Evippa*, пауки-волки, систематический список, Кавказ, Азербайджан, новые находки, новые виды.

ABSTRACT: Three species new to science are described from Azerbaijan: *Evippa apsheronica* sp.n. (♀), *E. caucasica* sp.n. (♂) and *Pardosa gusarensis* sp.n. (♀). A survey of *Evippa* Simon, 1882 reported from the former USSR is given and six species are illustrated. *Evippa potanini* Schenkel, 1963 syn.n. was found to be a junior synonym of *E. sjostedti* Schenkel, 1936. Taxonomic status of *Allohogna* Roewer, 1955 and generic placement of some species are discussed. *Trochosa hispanica* Simon, 1870 was found in Azerbaijan and Caucasus for the first time. According to literature data and material studied the check-list of Azerbaijanian lycosids encompass 69 species belonging to 14 genera: *Allohogna* (1), *Alopecosa* (14), *Arctosa* (4), *Aulonia* (2), *Evippa* (2), *Geolycosa* (1), *Hogna* (4), *Lycosa* (1), *Mustelicos* (1), *Pardosa* (29), *Pirata* (3), *Trochosa* (4), *Wadicosa* (1), *Xerolycosa* (2). Records of 12 species and one genus are doubtful and require confirmation.

РЕЗЮМЕ: Описаны три новых вида из Азербайджана: *Evippa apsheronica* sp.n. (♀), *E. caucasica* sp.n. (♂) и *Pardosa gusarensis* sp.n. (♀). Приведен обзор видов рода *Evippa* Simon, 1882 зарегистрированных в СССР и проиллюстрированы 6 видов. Обнаружено, что *Evippa potanini* Schenkel, 1963 sup.n. является младшим синонимом *E. sjostedti* Schenkel, 1936. Обсуждается таксономический статус рода *Allohogna* Roewer, 1955 и родовая принадлежность некоторых видов. *Trochosa hispanica* Si-

mon, 1870 обнаружена впервые в фауне Азербайджана и всего Кавказа. Согласно литературным и новым данным фауна пауков-волков республики включает 69 видов относимых к 14 родам: *Allohogna* (1), *Alopecosa* (14), *Arctosa* (4), *Aulonia* (2), *Evippa* (2), *Geolycosa* (1), *Hogna* (4), *Lycosa* (1), *Mustelicos* (1), *Pardosa* (29), *Pirata* (3), *Trochosa* (4), *Wadicosa* (1), *Xerolycosa* (2). Находки 12 видов и одного рода являются сомнительными и нуждаются в подтверждении.

### Introduction

Spiders of the family Lycosidae are rather well studied in Caucasus. The first species of wolf spiders were reported and described from Azerbaijan by L. Koch [1878] in his survey of Caucasian arachnids. Later, Schmidt [1895] added a few more species for Caucasus and Azerbaijan. A detailed survey of Caucasian spiders was provided by Verzhbitsky [1902]. He listed 147 species and 3 subspecies. According to the latest data [Marusik & Guseinov, 2003] 83 species of wolf spiders belonging to 12 genera were known to occur in Caucasus, of them 59 species belonging to 12 genera were known from Azerbaijan. Two additional genera *Evippa* and *Wadicosa* were added by us [Marusik & Guseinov, 2003] to Azerbaijan and Caucasian faunas. By the number of species known in Azerbaijan wolf spiders are the third largest family. Higher species diversity was reported for Linyphiidae [89 species, cf.

Mikhailov, 2002] and Salticidae [82 species, cf. Logunov & Guseinov, 2001]. Only one paper was devoted specifically to lycosids from Azerbaijan [Zyuzin & Logunov, 2000].

In the beginning of this project, the main goal of our paper was to survey all literature data about wolf spiders of Azerbaijan and to give comments on the status of species and genera found there. However the scope of our study was extended when, in checking some old and new material, we found three new species belonging to *Evippa* and *Pardosa*. Because *Evippa* is a poorly studied genus in east Palaearctic we decided to provide a brief illustrated review of species known in the former Soviet Union.

While it was found that several species records from Azerbaijan are doubtful we are not removing these species from the country-list until more material is studied and necessary revisions done. *Lycosa felina* L. Koch, 1878, mentioned from Azerbaijan [cf. Mikhailov, 1997], is not listed here. It was described from Georgia (Azkhur) and was mistakenly assigned to Azerbaijan.

## Material and methods

All L. Koch's [1878] records were made around Baku and here we list these records as Apsheron Peninsula.

Below we list geographical names which are spelled in more than one way: Absheron = Apsheron; Kusary = Gusar; Nakhchyvan = Nakhitchevan; Zakataly = Zagatala.

The city presently known as Gyandzha, had the name Elisabetpol = Elisawetpol early in the 19<sup>th</sup> century to beginning of 20<sup>th</sup>. Later, in Soviet times (mid 1930<sup>s</sup>) its name was changed to Kirovabad, and in the 1990<sup>s</sup> its name was name was changed again to the Gyandzha (name used before 19<sup>th</sup> century).

Illustrations were made using both reflected and transmitted light microscopes with drawing "devices". Microphotographs were made with a Jeol JSM-5200 SEM in the Zoological Museum, University of Turku.

The following abbreviations have been used for collections and museums: CAS — Californian Academy of Sciences, San-Francisco; IZBA — Institute of Zoology, Baku; YMT — Yuri M. Marusik's temporary collection in Zoological Museum, University of Turku; ZMMU — Zoological Museum, Moscow University; ZMUT — Zoological Museum, University of Turku.

Collectors' names are also abbreviated: EG — Elchin F. Guseinov, YM — Yuri M. Marusik.

Some standard abbreviations have been used for eyes and their interdistances: AME — anterior median eyes; ALE — anterior lateral eyes; PME — posterior median eyes; AME-PME — distance between AME & PME,  $\emptyset$  — diameter.

## Descriptions of new species and survey of *Evippa* reported from the former Soviet Union

### *Evippa* Simon, 1882

Thirty-four species are known to belong to this genus. *Evippa* species occur in south Palaearctic, southern China, northern parts of India and Africa south to the Congo River. Ten species of this genus were listed from the former USSR [Mikhailov, 1997]. All of them, except for *E. eltonica* Dunin, 1994 were known from the Asian part of the former USSR. Until recently this genus was unknown from Azerbaijan and the Caucasus as a whole. The nearest records of *Evippa* lie in northern Ciscausia (Elton Lake) and Turkmenistan.

Thanks to the courtesy of Drs D.V. Logunov & A.A. Zyuzin we were able to examine all central Asian *Evippa*. Taking this opportunity we give figures of these species, but without text, which will be provided in a special revision.

### *Evippa kronebergi* Roewer, 1955

*Lycosa aculeata* Kroneberg, 1875: 38, pl. 5, fig. 46a–c (♀).

*Evippa aculeata*: Simon, 1895: 342; Mikhailov, 1997: 124.

*Pardosa a.*: Charitonov, 1932: 42

*Acantholycosa a.*: Reimoser, 1935: 171; Bonnet, 1955: 132.

*Evippa kronebergi* Roewer, 1955: 154 (replacement name, by thought that *Lycosa aculeata* preoccupied by Sundevall, 1833); Mikhailov, 1998: 19; Platnick, 2002.

Study of all catalogues reveals that *Lycosa aculeata* Sundevall, mentioned by Roewer [1955] was never described. Sundevall [1833] just listed in his paper *Lycosa aculeata* (Clerck, 1757) (= *Alopecosa aculeata*). According to Bonnet [1955] this combination (*Lycosa a.*) was never used by other authors, and at the time of Kroneberg's description his species name was not a homonym of the Clerck's name. However Roewer's [1955] replacement name is valid, because it was made before 1960 (cf. Article 59.2. of ICZN, 4<sup>th</sup> edition).

Unfortunately the type of this species was lost. Figure 46c provided by Kroneberg [1875] for epigyne resembles those of *E. schenkeli* Šternbergs, 1979 and another species belonging to *sjostedti* group.

### *Evippa badchysica* Šternbergs, 1979 Figs. 23–24.

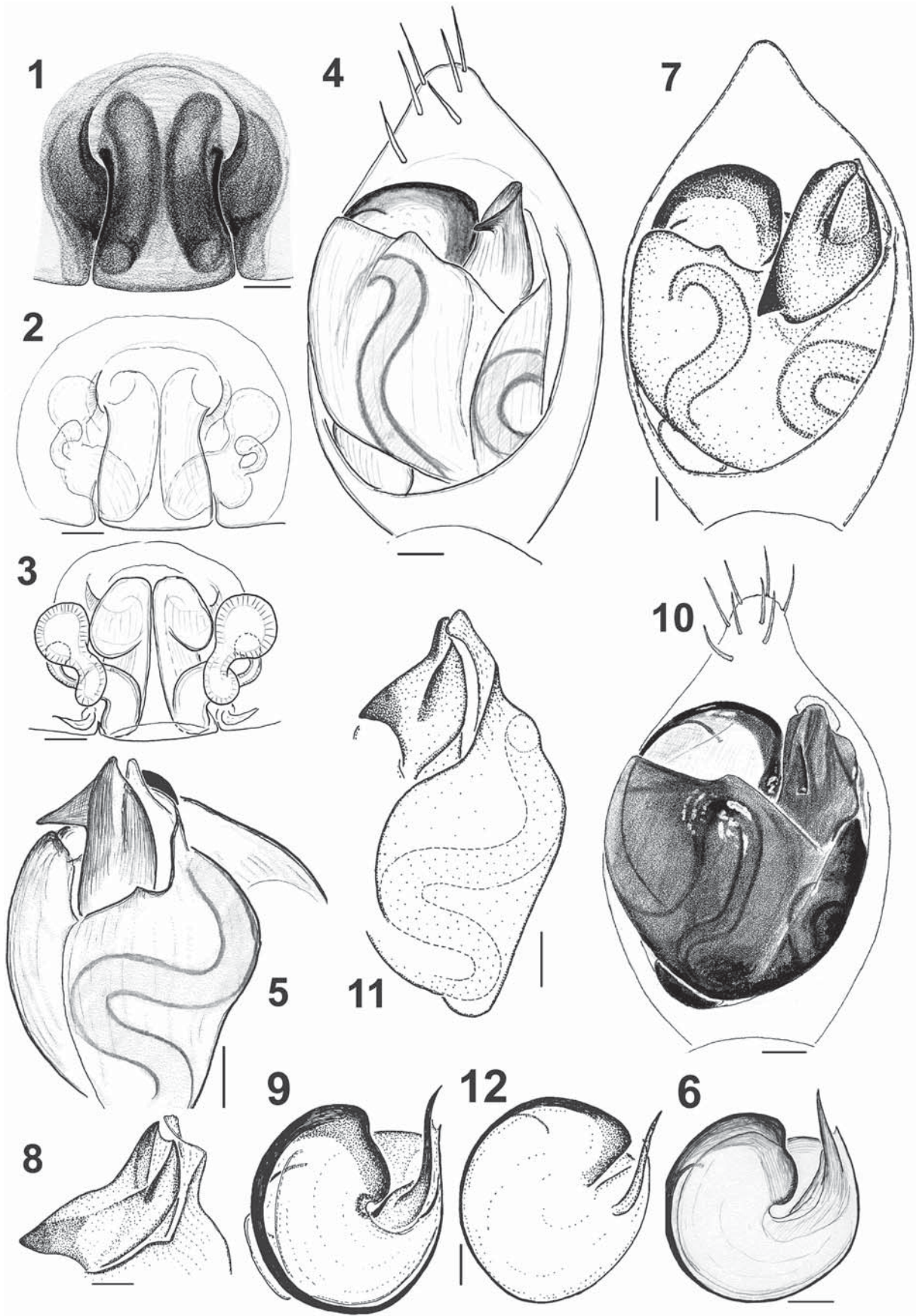
*Evippa badchysica* Šternbergs, 1979: 65, fig. 1 (♀).

COMMENTS. Known so far only from the type locality, southwestern Turkmenistan.

*Evippa beshkentica* Andreeva, 1976 — *nomen nudum* [cf. Mikhailov, 1997]. Illustrations and list of material were given, but there was no formal description.

Figs. 1–12. Copulatory organs of *Evippa apsheronica* sp.n. (1–3), *E. caucasica* sp.n. (4–6), *E. eltonica* Dunin (7–9) and *E. sibirica* Marusik (10–12). 1–2 — epigyne, ventral view, before and after maceration respectively; 3 — epigyne, dorsal view; 4, 7, 10 — male palp, ventral view; 5, 11 — part of tegulum with tegular apophysis and conductor, retrolateral view; 6, 9, 12 — embolus complex; 8 — tegular apophysis and conductor, retrolateral view. Scale = 0.1 mm.

Рис. 1–12. Копулятивные органы *Evippa apsheronica* sp.n. (1–3), *E. caucasica* sp.n. (4–6), *E. eltonica* Dunin (7–9) и *E. sibirica* Marusik (10–12). 1–2 — эпигина, вид снизу, перед и после мацерации; 3 — эпигина, вид сверху; 4, 7, 10 — пальпа самца, вид снизу; 5, 11 — часть тегулюма с тегулярным отростком и кондуктором, вид сбоку-сзади; 6, 9, 12 — эмболюсный отдел; 8 — тегулярный отросток и кондуктор, вид сбоку-сзади. Масштаб 0,1 мм.



*Evippa concolor* (Kroneberg, 1875)

*Lycosa concolor* Kroneberg, 1875: 38, pl. 4, fig. 26a–c (♂).  
*Evippa c.*: Simon, 1895: 342.

COMMENTS. This species was described from Tajikistan. Its type was lost (Mikhailov, personal communication). Judging from Kroneberg's figure of the male palp, showing the tegular apophysis placed medially as in Pardosini, it seems that this species was erroneously assigned to *Evippa* by Simon [1895].

*Evippa eltonica* Dunin, 1994  
Figs. 7–9, 13–15.

*Evippa eltonica* Dunin, 1994: 243, fig. 1–4 (♂♀).  
*Evippa* sp.: Eskov & Marusik, 1995: 65, fig. 63 (♀).

COMMENTS. Besides the type locality, Elton Lake, at the eastern border of Volgograd Area, it was found in adjacent northwestern Kazakhstan, in environs of Dzhanlybek [Eskov & Marusik, 1995].

*Evippa onager* Simon, 1895

*Evippa onager* Simon, 1895c: 341 (♀).  
*E. o.*: Šternbergs, 1979: 67, fig. 1 (♂♀).

COMMENTS. This species was described from China ("Nan-Shan-Kou", Xinjiang (43°17'N, 93.786°E), while listed by Platnick [2002] as distributed in Turkmenistan. Šternbergs [1979] had not studied the types of this species and his identification was clearly mistaken. Judging from the distribution of *E. sjostedti* Schenkel, 1936, *E. onager* could be a senior synonym of it. In Figs. 19–22, 28–29 we show what species was treated as *E. onager* by Šternbergs.

*Evippa potanini* Schenkel, 1963 — see *E. sjostedti*.*Evippa praelongipes* (O. Pickard-Cambridge, 1870)

*Evippa p.* Alderweireldt, 1991: 369, fig. 5.1–5 (♂♀).

COMMENTS. Study of numerous specimens identified from Central Asia by Šternbergs as *E. praelongipes* (O. Pickard-Cambridge, 1870) reveals that one specimen labeled as *E. praelongipes* was, in fact, a syntype of *E. turkmenica* Šternbergs, 1979. It seems that *E. praelongipes* was reported from Central Asia (environs of Krasnovodsk) by Schmidt [1895]. Schmidt even described a female of "this species" for the first time. Judging from his description and Zyuzin (personal communication), Schmidt dealt with *E. turkmenica*. This species was also reported from the territory of the former USSR by Spassky [1952] and by Ponomarev [1988]. Both these publications are lacking figures, exact localities and material examined. Most probably this species does not occur in the former USSR.

*Evippa schenkeli* Šternbergs, 1979  
Figs. 25–27.

*Evippa schenkeli* Šternbergs, 1979: 65, fig. 1 (♀).

COMMENTS. Known so far only from the type locality, southwestern Turkmenistan.

*Evippa sibirica* Marusik, 1995  
Figs. 10–12.

*Evippa sibirica* Marusik, in Eskov & Marusik, 1995: 64, fig. 58–62 (♂♀).

COMMENTS. This species is distributed from north-eastern Kazakhstan to Tuva and Gobi-Altai Aimak in Mongolia [Marusik et al., 2000].

*Evippa sjostedti* Schenkel, 1936  
Figs. 30–34.

*Evippa sjostedti* Schenkel, 1936: 304, fig. 106 (♀).  
*E. potanini* Schenkel, 1963: 387, fig. 224 (♀). **Syn.n.**  
*Xerolycosa brunneopicta* Loksa, 1965: 16, fig. 24 (♀).

Material examined: Holotype ♀ of *Evippa sjostedti* Schenkel, 1936 "S.Mong. C.26, 9.V.1927; Sven Hedins Exp. Ctr. Asien; S.Mongolie 1927" in Stockholm; holotype ♀ *Evippa potanini* Schenkel, 1963, from "Bergkette Bann-Tsagan", Sichuan in NMNH with label "Potanin 68, #68", carapace with right legs dissected, no epigyne, vial contains small glass balls, somebody examined the holotype. MONGOLIA: 19♂♂ 19♀♀ 1 juv. (YMT), Omnogov (=South Gobi) Aimak, Bayandalai Somon, Zoolen uul (Mt. Range), 43°21'N, 103°11'E, 1700 m, 27–30.05.1997 (YM); 6♂♂ 3♀♀ (YMT), Omnogov Aimak, Gurvantes Somon, NW part of Sevren Mt. Range, 43°38'N, 101°08'E, 1900 m, 01.06.1997; 4♂♂ 15♀♀ (YMT), Omnogov Aimak, Noyon Somon, Noyon uul (Mt. Range), 1900 m, 30–31.05.1997 (YM); 2♀♀ (YMT), Bayanhkongor Aimak, Bayanlig Somon, Ikh-Bogd Mt. Range, south foothills, 1600 m, 04.06.1997 (YM); 24♂♂♀♀ 1 juv., Bayanhkongor Aimak, Bayanlig Somon, Bor-Tolgoi, 44°06'N 100°56'E, 1400 m, 02–04.06.1997 (YM); 7♂♂♀♀ 1 juv. (ZMUT) [09] Bayanhkongor Aimak, Bogd Somon, Ikh-Bogd Mt. Range, Ikh-Bogd Pass, 44°43'N, 100°52'E, 2000–2100 m, 04.06.1997 (YM); 1♀ (YMT), Bayanhkongor Aimak, Bogd Somon, Ikh-Bogd Mt. Range, north foothills, 1600 m, 04.06.1997 (YM).

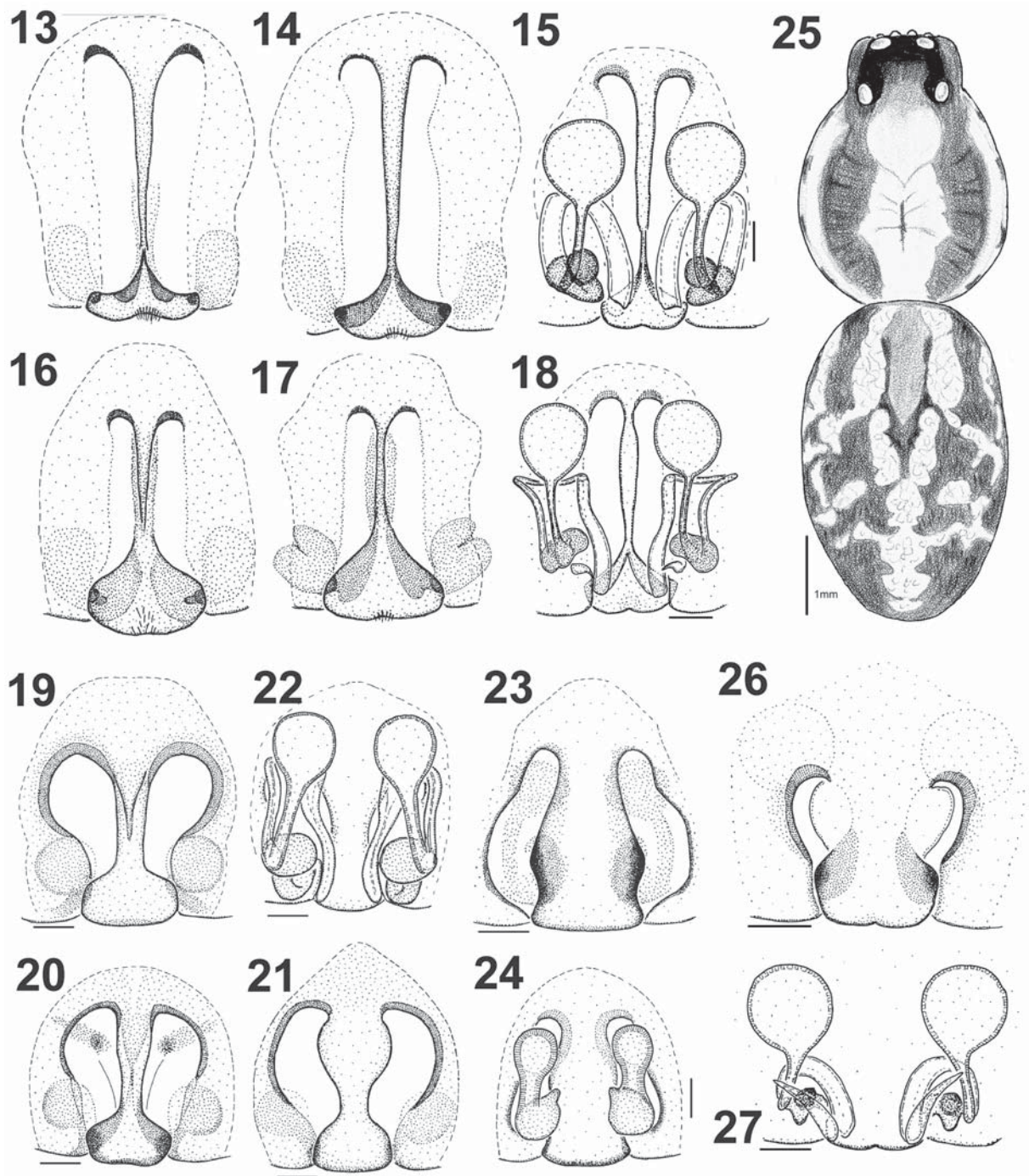
COMMENTS. Study of the types of *E. sjostedti* and *E. potanini* as well as numerous Mongolian specimens leaves no doubt that the two names are synonyms. Figures of *E. sjostedti* in Loksa [1965, fig. 29] and Izmailova [1980, fig. 1] correspond to *Pardosa adustella* Roewer, 1951. There were no specimens of this species among material from Central Asia studied so this species has to be excluded from the fauna of the former USSR.

*Evippa turkmenica* Šternbergs, 1979  
Fig. 35.

*Evippa schenkeli* Šternbergs, 1979: 67, fig. 1 (♀).

COMMENTS. The species description was based on two adult females and two juveniles. Šternbergs did not designate a holotype. Study of the type specimens of *Evippa* described by Šternbergs, reveals no types of *E. turkmenica*, but instead of them we found one vial with a species label "*E. praelongipes* (O. Pickard-Cambridge, 1870)" and a geographical label the same as one syntype of *E. turkmenica* (Sandy-Kachi). It seems that type series of this species was not labeled as a whole.

Of these 12 species reported from the former Soviet Union three were misidentified, *E. onager*, *E. praelongipes* and *E. sjostedti* (= *E. potanini*), and one species name is invalid (*nomen nudum*) and therefore the known fauna of the former USSR comprises only 7 correctly identified species. East Palearctic *Evippa* can be attributed to two clear species groups: the *sjostedti*-group (*sjostedti*, *turkmenica*, *helanshangensis* Peng, Yin & Kim, 1996, a few undescribed species and possibly *onager* and *benevola* (O. Pickard-Cambridge, 1885), and the *eltonica*-group (*eltonica*, *sibirica*, *fujianensis* Peng, Yin & Kim, 1996, *onager sensu* Šternbergs and some undescribed species). The position of other east Palearctic species including *E. badchysica* and *E. schenkeli* remains



Figs. 13–27. Epigynes and body of Central Asian *Evippa*: *E. eltonica* Dunin (13–15), *E. sibirica* Marusik (16–18), *E. onager* Simon *sensu* Šternbergs (1979) (19–22), *E. badchysica* Šternbergs (23–24, holotype) and *E. schenkeli* Šternbergs (25–27, holotype). 13–14, 16–17, 19–21, 23, 27 — epigyne, ventral view; 15, 18, 22, 24, 27 — epigyne, dorsal view; 25 — body. 13–15 — specimens from Dzanybek, NW Kazakhstan; 16–18 — paratypes from NE Kazakhstan, 19 — from Repetek; 20–22 — from Morgunovka. 13–14, 16–17 and 19–21 showing epigynal variations. Scale for all figures except for 25 = 0.1.

Рис. 13–27. Эпигина и внешний вид среднеазиатских видов *Evippa*: *E. eltonica* Dunin (13–15), *E. sibirica* Marusik (16–18), *E. onager* Simon *sensu* Šternbergs (1979) (19–22), *E. badchysica* Šternbergs (23–24, голотип) и *E. schenkeli* Šternbergs (25–27, голотип). 13–14, 16–17, 19–21, 23, 27 — эпигина, вид снизу; 15, 18, 22, 24, 27 — эпигина, вид сверху; 25 — внешний вид. 13–15 — экземпляры из Джаныбека, СЗ Казахстан; 16–18 — паратипы из СВ Казахстана, 19 — из Репетека; 20–22 — из Моргуновки. 13–14, 16–17 и 19–21 вариации эпигины. Масштаб для всех рисунков кроме 25 — 0,1мм.

unclear. The two above mentioned groups can be easily separated by the shape of tegular apophysis, embolic complex and epigyne from the type species of the genus (*Lycosa arenaria* Audouin, 1827) and possibly represent a separate taxon.

## Species descriptions

### *Evippa apsheronica* sp.n.

Figs. 1–3.

Material: Holotype ♀ (ZMMU), central-eastern Azerbaijan, Apsheron Peninsula, Baku, near Ganly-Gyol Lake, 40°21.46'N, 49°48.36'E, 11.05.1999 (EG). Paratypes: 3♀ & 1 juv. (ZMMU and YMT), same locality, 06.06.2003 (EG & YM).

ETYMOLOGY. The species is named after its type locality.

DESCRIPTION. Female. Body 10.0 long. Carapace: 4.0 long, 3.1 wide, light brownish, with light median band, eye field darkened. Sternum light-grey with yellow median band. Labium dark-grey. Gnathocoxae and chelicerae yellow. Legs yellow with light-grey rings, tibia with two light and two dark rings. Abdomen dorsally light brownish with pattern of yellow spots of different sizes, heart mark dark, posterior half with large transverse spot, venter light-yellow.

#### Leg joint length

Leg	femur	patella	tibia	metatarsus	tarsus	total
I	3.25	1.60	2.45	2.63	1.70	11.63
II	3.13	1.63	2.25	2.50	1.70	11.21
III	3.13	1.50	2.15	3.13	1.75	11.66
IV	4.25	1.75	3.00	4.25	2.13	15.38

Spination of legs: I: femur 3d+1p+2r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2v+2p; II: femur 3d+2p+2r, patella 2d+1p+1r, tibia 1+1v+2p+2r, metatarsus 2v+2p; III: femur 3d+2p+2r, patella 2d+1p+1r, tibia 1+1v+2d+2p+2r, metatarsus 2v+2d+2p+2r; IV: femur 3d+2p+1r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2+1v+2d+2p+2r.

Epigyne as in Figs. 1–3, with almost rectangular septum and round fovea with indistinct upper margin, endogyne with accessory glands.

Male unknown.

DIAGNOSIS. In the shape of its epigyne the new species resembles the Central Asian *E. schenkeli* Šternbergs, 1979 (cf. Fig. 26) and the Algerian *E. jocquei* Alderweireldt, 1991 (cf. Fig. 8.3 in Alderweireldt [1991]), but can be easily separated from them by its more rectangular septum and round fovea. From all *Evippa* species *E. apsheronica* sp.n. can be easily distinguished by having accessory glands.

### *Evippa caucasica* sp.n.

Figs. 4–6.

Material: Holotype ♂ (ZMMU), central-eastern Azerbaijan, Gobustan, Beyuk-dash hill, 40°05'N, 49°25'E, 15.04.2001 (EG). Paratype ♂, central-eastern Azerbaijan, ca 75 km N of Baku, W of Kilyazi Vill., 40°51.5'N, 49°11.5'E, 260 m, semi-desert, river bank, 07.06.2003 (YM).

ETYMOLOGY. The species epithet refers to the type locality.

DESCRIPTION. Male. Body 6.3 long. Carapace: 3.25 long, 2.4 wide, dark gray-brown, eye field covered with dense light hairs. Sternum and labium dark brown. Gnathocoxae grey, apical portion colored as labium. Chelicerae dark brown. Legs grey-brown with yellow rings, tarsi yellow. Abdomen grey, without pattern, sides and venter covered with dense and

long light hairs. Palp as in Figs. 4–6. Cymbium dark brown, other joints light brown, upper part of cymbium with 6 macrosetae, embolus round and, as in other congeners, most of it hidden by tegulum, tegular apophysis with bill-shaped outgrowth closely attached to conductor.

#### Leg joint length

	femur	patella	tibia	metatarsus	tarsus	total
I	2.30	1.00	1.83	2.00	0.88	8.01
II	2.38	0.95	1.85	1.90	1.03	8.11
III	2.25	1.03	1.70	2.00	1.10	8.08
IV	2.75	1.10	2.25	3.13	1.25	10.48

Spination of legs: I: femur 3d+2p+2r, patella 2d+1p+1r, tibia 5v+2d+2p, metatarsus 3v+1p; II: femur 3d+2p+2r, patella 2d+1p+1r, tibia 5v+2d+2p, metatarsus 3v+1p; III: femur 3d+2p+2r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2v+3p+2r; IV: femur 3d+2p+2r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2+1v+3p+2r.

Female unknown.

DIAGNOSIS. This species belongs to the *eltonica* species group. It can be easily separated from all known species of this group by the shape of tegular apophysis, in which the bill shaped outgrowth has a straight horizontal lower margin (rounded in *E. eltonica* and *E. sibirica*).

COMMENTS. The two species found in Azerbaijan each known from one sex and can not be conspecific because they belong to different species groups.

### *Pardosa gusarensis* sp.n.

Figs. 36–38.

Material: Holotype ♀ (ZMMU), Azerbaijan, Gusar Distr., foothill of Bazar-Dyuzu Mt., 3000 m, 09.08.2001 (EG).

ETYMOLOGY. The specific epithet derived from the type locality.

DESCRIPTION. Body 7.15 long. Carapace: 3.38 long, 2.50 wide, dark brown with sparse light hairs, eye-field and margins black. Sternum dark brown, labium and gnathocoxae yellow. Chelicerae dark brown with yellow spots. Legs dark grey-brown with yellow spots, tarsi yellow. Abdomen dark grey with lighter venter.

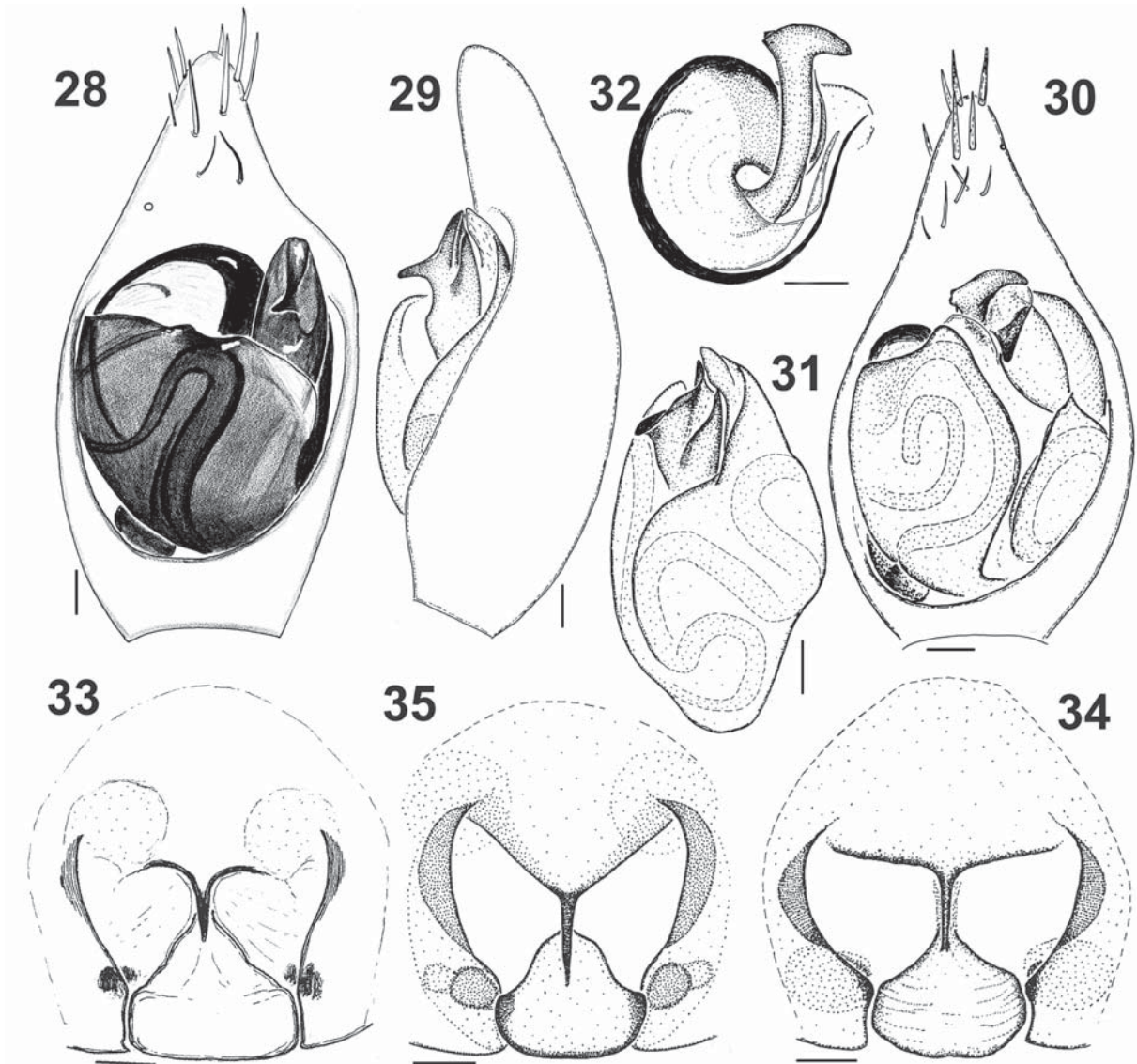
Epigyne as in Figs. 36–38, with two separate large apical pockets, long and thin septal stem, fovea absent. Septum looks as if fused with epigynal plate, its margins unclear.

#### Leg joint length

	femur	patella	tibia	metatarsus	tarsus	total
I	2.50	1.30	2.38	2.13	1.13	9.44
II	2.50	1.25	2.20	2.15	1.00	9.1
III	2.45	1.15	2.00	2.65	1.13	9.38
IV	3.15	1.25	3.00	2.80	1.75	11.95

Spination of legs: I: femur 3d+3p+2r, patella 2d+1p+1r, tibia 3v+2d+2p+2r, metatarsus 2v+1p+1r; II: femur 3d+2p+2r, patella 2d+1p+1r, tibia 3v+2d+2p+2r, metatarsus 2v+1p+1r; III: femur 3d+2p+2r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2v+2p+2r; IV: femur 3d+2p+1r, patella 2d+1p+1r, tibia 2v+2d+2p+2r, metatarsus 2v+2p+2r.

DIAGNOSIS. This species is closely related to another high-alpine Caucasian species, *P. ibex* Buchar & Thaler, 1998. *P. gusarensis* sp.n. has larger and more widely spaced apical pockets, their width exceeds width of septal stem (width of stem and pockets equal in *P. ibex*). Upper margin of apical pockets in *P. gusarensis* sp.n. are almost horizontal, while in sibling species are directed upward. By the shape of septum which appears to be fused with epigynal plate these species can be easily separated from all other *Pardosa* species known to us.



Figs. 28–35. Copulatory organs of *Evippa onager* Simon *sensu* Šternbergs (1979) (28–29), *E. sjostedti* Schenkel (30–34) and *E. turkmenica* Šternbergs (35, ?syntype). 28, 30 — male palp, ventral view; 29 — male palp, retrolateral view; 31 — part of tegulum with tegular apophysis and conductor; 32 — embolic complex; 33–34 — epigyne ventral view. 28–29 — specimen from Turkmenia; 33 — holotype of *E. sjostedti*; 30–32 & 34 — specimens from Mongolia. Scale = 0.1 mm.

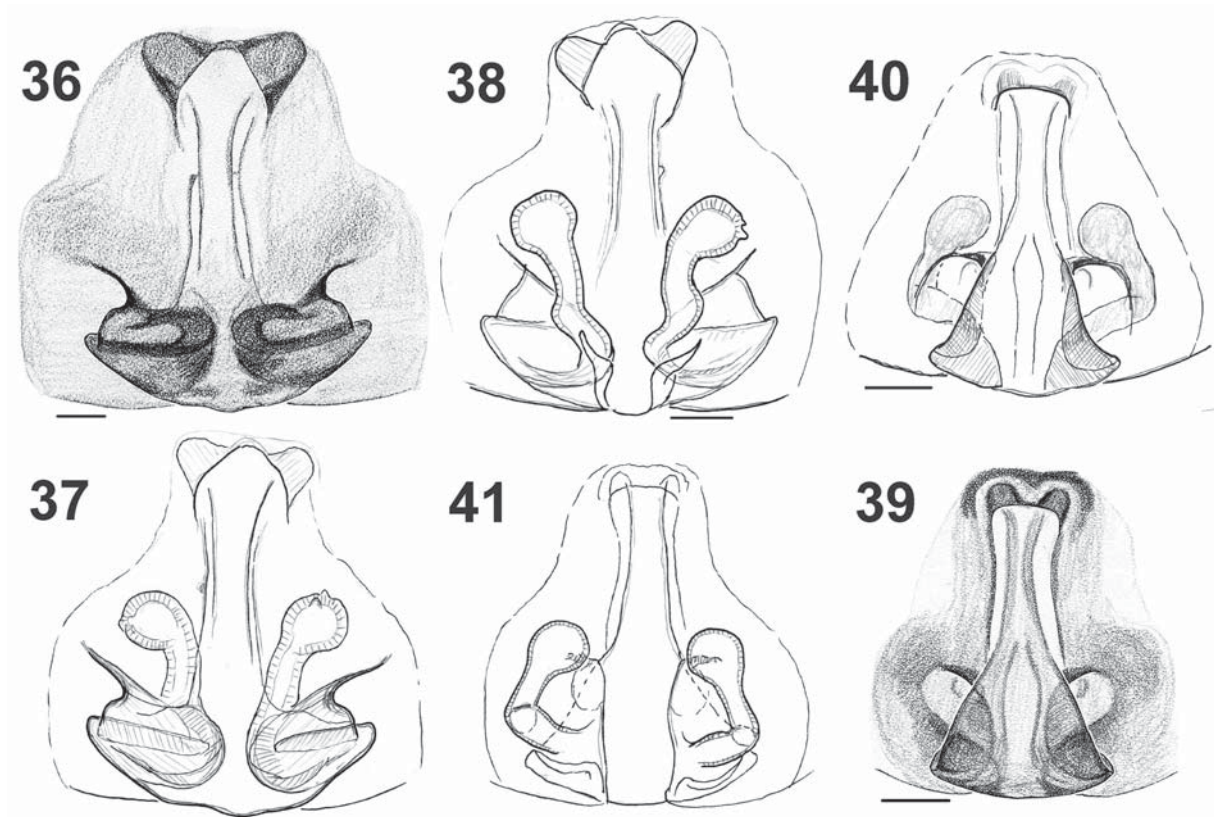
Рис. 28–35. Копулятивные органы *Evippa onager* Simon *sensu* Šternbergs (1979) (28–29), *E. sjostedti* Schenkel (30–34) и *E. turkmenica* Šternbergs (35, синтип). 28, 30 — пальпа самца, вид снизу; 29 — пальпа самца, вид сбоку-сзади; 31 — часть тегулюма с тегулярным отростком и кондуктором; 32 — эмболюсный отдел; 33–34 — эпигина, вид снизу. 28–29 — экземпляры из Туркмении; 33 — голотип *E. sjostedti*; 30–32 & 34 — экземпляры из Монголии. Масштаб 0,1 мм.

COMMENTS. Endogynes of two related species are unique in having closely separated receptacula converging basally. Buchar & Thaler [1998] placed this species among *proxima*- and *wagleri*-groups of *Pardosa*. Judging from the rather peculiar shape of its epigyne this species may form a separate species group.

*Pardosa* sp.

Figs. 39–41, 51.

Material examined: 3 ♀♀ (ZMUT), Azerbaijan, Gusar Distr., foothill of Bazar-Dyuzuzy Mt., 3000 m, 41.20°N, 47.89°E, 09.08.2001 (EG).



Figs. 36–41. Epigyne of *Pardosa gusarensis* sp.n. (36–38) and *Pardosa* sp. (39–41). 36–37, 39–40 — ventral view; 38, 41 — dorsal view. 37 & 40 view after maceration. Scale = 0.1 mm.

Рис. 36–41. Эпигина *Pardosa gusarensis* sp.n. (36–38) и *Pardosa* sp. (39–41). 36–37, 39–40 — вид снизу; 38, 41 — вид сверху. 37 & 40 после мацерации. Масштаб 0,1 мм.

COMMENTS. Specific placement of our specimens is unclear. Shape of epigyne and receptacula indicate close relationships with *P. aquila* Buchar & Thaler, 1998 and *P. italica* Tongiorgi, 1966. Lack of males and comparative material of the two sibling species does not allow us to attribute our specimens to a known species.

### Survey of lycosid species reported from Azerbaijan

#### *Allohogna* Roewer, 1955

#### *Allohogna singoriensis* (Laxmann, 1770)

Figs. 42–46.

*Lycosa* s.: Fuhn & Niculescu-Burlacu, 1971: 198, fig. 96a–e (♂♀).

RECORDS: Apsheron Pen. [sub *Lycosa* s. L. Koch, 1878; Dunin, 1984], Muganskaya steppe [Dunin & Mamedov, 1992].

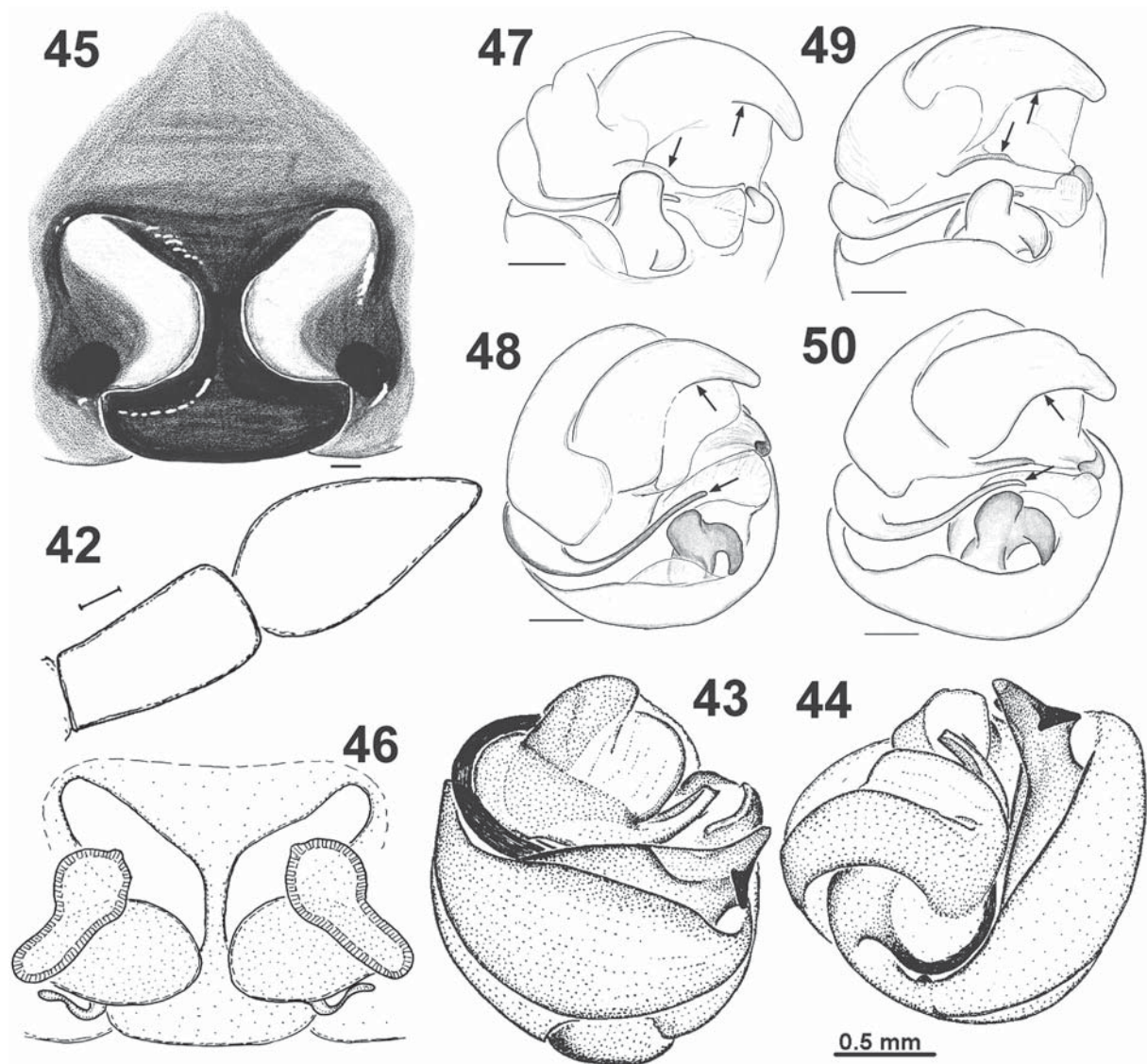
COMMENTS. In this paper we decided to provide figures of *A. singoriensis*, the type species of the genus for two reasons. First, there are few diagnostic drawings of it. The other reason is to show that *Allohogna* is distantly related to *Lycosa* Latreille, 1804 and can not be treated as its junior synonym [cf. Platnick, 2002]. *Lycosa* is rather obscure genus,

because its type species *Aranea tarantula* Rossi, 1790 is known only by figures made in the 19th century. Our judgment about *Lycosa* is based on the recent definition of the genus given by Zyuzin & Logunov [2000]. Zyuzin (personal communication) studied all available types of *Lycosa* and provided [Zyuzin & Logunov, 2000] figures of two species *L. praegrans* C.L. Koch, 1836 and *L. narbonensis* Walckenaer, 1806. However, the generotype of this genus remains unredescribed and only the eyes of *L. tarantula* were illustrated [fig. 1 in Zyuzin, 1985]. Unlike in *Allohogna*, the cymbium in *Lycosa* is asymmetrical, its tegular apophysis is very massive, subtegulum turned to prolateral side. Females of *Lycosa* have no apical pockets in epigyne and its septum longer than wide, apical part of epigynal plate with “anterior elevation” (in *Allohogna*: 2 widely spaced pockets, septum anchor shaped, its length subequal to width, anterior elevation absent). *L. tarantula* and *A. singoriensis* can be easily separated by eye “formula” [cf. figs. 1 & 3 in Zyuzin, 1985]: anterior row of eyes straight in *A. singoriensis* (recurved in *L. tarantula*), lateral margins of ALE spaced equally with PME (ALE-ALE < PME-PME); AME-PME <  $\phi$  of AME (AME-PME =  $\phi$  of AME).

To us, *Allohogna* is clearly different from *Lycosa* and has to be removed from synonymy.

COMMENTS. According to Platnick [2002] this species has a Palaearctic distribution but its actual range is possibly much smaller [cf. Marusik et al., 2000].





Figs. 42–50. Copulatory organs of *Allobogna singoriensis* (Laxmann) (42–46) and *Pardosa tatarica* (Thorell) (47–50). 42 — palp, dorsal view; 43–44 — bulbus, ventral view and view from above respectively; 45–46 — epigyne, ventral and dorsal view respectively; 47, 49 — apical portion of the bulbus, ventro-apical view; 48, 50 — terminal portion of the bulbus, view from above. 42–46 — specimens from Tuva, 47–48 — from Azerbaijan, 49–50 — from Greece. Scale = 0.1 mm if not otherwise indicated.

Рис. 42–50. Копулятивные органы *Allobogna singoriensis* (Laxmann) (42–46) и *Pardosa tatarica* (Thorell) (47–50). 42 — палпа, вид сверху; 43–44 — бульбус, вид снизу и сверху; 45–46 — эпигина, вид снизу и сверху; 47, 49 — верхняя часть бульбуса; 48, 50 — верхняя часть бульбуса, вид сверху. 42–46 — экземпляры из Тувы, 47–48 — из Азербайджана, 49–50 — из Греции. Масштаб 0,1 мм, если не указан другой.

### *Alopecosa* Simon, 1885

#### *Alopecosa accentuata* (Latreille, 1817)

*Tarentula a.*: Holm, 1947: 18, pl. 3, fig. 23–24, pl. 9, fig. 14 (♂♀).

*Alopecosa a.*: Lugetti & Tongiorgi, 1969: 13, fig. 4a–f (♂♀).

*A. a.*: Fuhn & Niculescu-Burlacu, 1971: 142, fig. 65a–e (♂♀).

*A. a.*: Heimer & Nentwig, 1991: 314, fig. 845 (♂♀).

*A. a.*: Roberts, 1998: 241, fig. (♂♀).

Material examined: 1 ♂, Lenkoran Distr., Avrora, 23.04.2001 (EG).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [sub *Tarentula a.*, Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992].

COMMENTS. This species is treated by Platnick [2002] as a Palearctic form, and listed by Mikhailov [1997] as a species distributed through the whole former Soviet Union. Study of numerous specimens from Siberia and Far East has not revealed any individuals of this species.

#### *Alopecosa aculeata* (Clerck, 1757)

*Tarentula a.*: Holm, 1947: 19, pl. 3, fig. 32, pl. 9, fig. 17–18 (♂♀).

*Alopecosa a.*: Lugetti & Tongiorgi, 1969: 25, fig. 7a–f (♂♀).  
*A. a.*: Fuhn & Niculescu-Burlacu, 1971: 144, fig. 66a–e (♂♀).  
*A. a.*: Kronstedt, 1990: 204, fig. 1A–B, 3A, 4A–B, 5A, a, 6A, C, E, 7A, 8A–D, 10A, 11A, 12A, 13A–E (♂♀).  
*A. a.*: Heimer & Nentwig, 1991: 312, fig. 843 (♂♀).  
*A. a.*: Roberts, 1998: 239, fig. (♂♀).

RECORDS: Sheki-Zagatala area [sub *Tarentula a.*, Dunin, 1989]

COMMENTS. This species has circum-Holarctic range [Marusik et al., 2000].

#### *Alopecosa albofasciata* (Brullé, 1832)

*Alopecosa a.*: Lugetti & Tongiorgi, 1969: 43, fig. 12a–f (♂♀).  
*A. a.*: Fuhn & Niculescu-Burlacu, 1971: 145, fig. 67a–f (♂♀).  
 Material examined: 14 ♂♂ 17 ♀♀ 5 juv., SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM & EG).

RECORDS: (sub *Tarentula a.*): Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999]

COMMENTS. *A. albofasciata* known from Spain to Central Asia [Thaler et al., 2000; Platnick, 2002].

#### *Alopecosa alpicola* (Simon, 1876)

*Alopecosa a.*: Lugetti & Tongiorgi, 1969: 70, fig. 20a–f (♂♀).  
 RECORDS: (sub *Tarentula a.*): Lenkoran area [Guseinov, 1999].

COMMENTS. Listed by Platnick [2002] as a Palaearctic species. We think all records in Asia refer to similar species. Without doubt records from Azerbaijan refer to another species.

#### *Alopecosa cronebergi* (Thorell, 1875)

RECORDS: (sub *Tarentula c.*): Lenkoran area [Guseinov, 1999].

COMMENTS. This species is known from two females described from Derbent (Daghestan, Russia) and was never illustrated, and therefore the record from Azerbaijan may refer to another species.

#### *Alopecosa cuneata* (Clerck, 1757)

*Alopecosa c.*: Lugetti & Tongiorgi, 1969: 33, fig. 9a–g (♂♀).  
*A. c.*: Fuhn & Niculescu-Burlacu, 1971: 148, fig. 69a–f (♂♀).  
*A. c.*: Roberts, 1985: 140, fig. 61d (♂♀).  
*A. c.*: Kronstedt, 1990: 217, fig. 4E, 5C, 8G, 10C, 11C, 12C, 13H–I (♂♀).

*A. c.*: Heimer & Nentwig, 1991: 312, fig. 841 (♂♀).  
*A. c.*: Roberts, 1995: 224, fig. (♂♀).  
*A. c.*: Roberts, 1998: 238, fig. (♂♀).  
 Material examined: 1 ♂ (YMT), SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM)

RECORDS: (sub *Tarentula c.*): Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a trans-Palaearctic range [Marusik et al., 2000].

#### *Alopecosa cursor* (Hahn, 1831)

*Alopecosa c.*: Lugetti & Tongiorgi, 1969: 52, fig. 14a–g (♂♀).  
*A. c.*: Fuhn & Niculescu-Burlacu, 1971: 150, fig. 70a–e (♂♀).  
*A. c.*: Heimer & Nentwig, 1991: 314, fig. 847 (♂♀).  
*A. c.*: Roberts, 1998: 243, fig. (♂♀).

Material examined: 1 ♀ (YMT), Apsheron Pen., env. of Gyurgyan Vill., 40°24'N, 50°16'E, semidesert, 17.04.2001 (YM).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [sub *Tarentula c.*, Dunin, 1989].

COMMENTS. Known through the whole Europe and Central Asia eastward to Tibet [cf. Song et al., 1999; Platnick, 2002].

#### *Alopecosa etrusca* Lugetti et Tongiorgi, 1969

*Alopecosa e.* Lugetti & Tongiorgi, 1969: 58, fig. 16a–f (♂♀).

RECORDS: (sub *Tarentula e.*): Lenkoran area [Guseinov, 1999].

COMMENTS. This species so far is known only from Italy [Platnick, 2002], and most probably records from Azerbaijan refer to other species (eg. *A. cursor*).

#### *Alopecosa pantheri* (Nosek, 1905)

*Alopecosa cursor p.*: Lugetti & Tongiorgi, 1969: 55, fig. 15a–c (♂).  
*A. insignis*: Lugetti & Tongiorgi, 1969: 57, fig. 15d–e (♀, elevated from subspecies of *A. cursor*).

*A. p.*: Thaler et al., 2000: 1073, fig. 3–4, 42, 46–47 (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [sub *Tarentula p.*, Guseinov, 1999].

COMMENTS. Known from Greece and Yugoslavia (Thaler et al., 2000) and from Bulgaria to Azerbaijan [Platnick, 2002].

#### *Alopecosa pulverulenta* (Clerck, 1757)

*Alopecosa p.*: Kronstedt, 1990: 217, fig. 4F, 5D, 8H–I, 10D, 11D, 12D, 13K–M (♂♀).

*A. p.*: Roberts, 1995: 224, fig. (♂♀).

*A. p.*: Roberts, 1998: 238, fig. (♂♀).

RECORDS: (sub *Arctosa strandi*): Sheki-Zagatala area [Dunin, 1989].

COMMENTS. This species has a trans-Palaearctic range [Marusik et al., 2000].

#### *Alopecosa schmidtii* (Hahn, 1835)

*Alopecosa s.*: Lugetti & Tongiorgi, 1969: 86, fig. 25a–g (♂♀).  
*A. s.*: Fuhn & Niculescu-Burlacu, 1971: 160, fig. 77a–g (♂♀).  
*A. s.*: Heimer & Nentwig, 1991: 312, fig. 840 (♂♀).

RECORDS: (sub *Tarentula s.*): Sheki-Zagatala area [Dunin, 1989].

COMMENTS. Exact range is unclear, all records at least from Siberia are based on missidentified specimens.

#### *Alopecosa striatipes* (C. L. Koch, 1839)

*Alopecosa s.*: Lugetti & Tongiorgi, 1969: 79, fig. 22a–f (♂♀).  
*A. s.*: Fuhn & Niculescu-Burlacu, 1971: 164, fig. 80a–f (♂♀).  
*A. s.*: Heimer & Nentwig, 1991: 312, fig. 838 (♂♀).  
*A. s.*: Roberts, 1998: 243, fig. (♂♀).

Material examined: 1 ♀ (YMT), Apsheron Pen., Kerkez Hill, 28.04.2000 (EG).

RECORDS: Apsheron Pen. [Dunin, 1984], Lenkoran area [sub *Tarentula s.*, Guseinov, 1999].

COMMENTS. Exact range of this species is unclear, it seems that it is distributed from Europe to Central Asia.

#### *Alopecosa sulzeri* (Pavesi, 1873)

*Alopecosa s.*: Lugetti & Tongiorgi, 1969: 67, fig. 19a–e (♂♀).  
*A. s.*: Fuhn & Niculescu-Burlacu, 1971: 167, fig. 81a–e (♂♀).

*A. s.*: Heimer & Nentwig, 1991: 312, fig. 835 (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984].

COMMENTS. This species is treated as Palaearctic species by Platnick [2002]. We think records from Azerbaijan and whole former Soviet Union and China may refer to other species.

#### *Alopecosa taeniopus* (Kulczyński, 1895)

*Alopecosa t.*: Lugetti & Tongiorgi, 1969: 84, fig. 24a–d (♂♀).

*A. t.*: Fuhn & Niculescu-Burlacu, 1971: 168, fig. 82a–e (♂♀).

RECORDS: (sub *Tarentula*): Lenkoran area [Guseinov, 1999].

COMMENTS. Treated by Platnick [2002] as distributed from Bulgaria to China, while we think that records from Central Asia and China may refer to other species.

#### *Arctosa* C.L. Koch, 1847

##### *Arctosa cinerea* (Fabricius, 1777)

*Arctosa c.*: Lugetti & Tongiorgi, 1965: 171, fig. I.1–4 (♂♀).

*A. c.*: Fuhn & Niculescu-Burlacu, 1971: 176, fig. 86a–e (♂♀).

*A. c.*: Roberts, 1985: 148, fig. 64d (♂♀).

*A. c.*: Heimer & Nentwig, 1991: 320, fig. 852 (♂♀).

*A. c.*: Roberts, 1995: 229, fig. (♂♀).

*A. c.*: Roberts, 1998: 247, fig. (♂♀).

RECORDS: Gusar Distr. (Gusar) [sub *Trochosa c.* Verzhbitsky, 1902], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999].

COMMENTS. According to Platnick [2002] it has Palaearctic range, while we think it may have an Euro-Caucasian range.

##### *Arctosa leopardus* (Sundevall, 1833)

*Arctosa l.*: Fuhn & Niculescu-Burlacu, 1971: 181, fig. 89a–e (♂♀).

*A. l.*: Roberts, 1985: 148, fig. 64c (♂♀).

*A. l.*: Heimer & Nentwig, 1991: 320, fig. 854 (♂♀).

*A. l.*: Roberts, 1995: 229, fig. (♂♀).

*A. l.*: Roberts, 1998: 246, fig. (♂♀).

Material examined: 35 ♂♂♀♀ 5 juv. (YMT & CAS), SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM); 2 ♂♂♀♀ (YMT), SE Azerbaijan, ca 10 km W of Astara Town, Isti-Su, 38°27'N, 48°47'E, on the border with Iran, 25.04.2001 (YM).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. According to Platnick [2002] it has Palaearctic range, while we think it may have an Euro-Central Asian range.

##### *Arctosa perita* (Latreille, 1799)

*Arctosa p.*: Holm, 1947: 20, fig. 6a, pl. 4, fig. 40–41, pl. 9, fig. 25 (♂♀).

*A. p.*: Lugetti & Tongiorgi, 1965: 175, fig. II.1–4, III, IV.1 (♂♀).

*A. p.*: Fuhn & Niculescu-Burlacu, 1971: 185, fig. 91a–d (♂♀).

*A. p.*: Roberts, 1985: 148, fig. 64b (♂♀).

*A. p.*: Heimer & Nentwig, 1991: 320, fig. 853 (♂♀).

*A. p.*: Roberts, 1995: 228, fig. (♂♀).

*A. p.*: Roberts, 1998: 246, fig. (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984].

COMMENTS. According to Platnick [2002] it has a Holarctic range. In Eurasia it is known from western Europe to Caucasus [cf. Mikhailov, 1997].

#### *“Arctosa” tbilisiensis* Mcheidze, 1946

*Arctosa t.*: Thaler et al., 2000: 1076, fig. 15–16, 49–51.

*A. t.*: Alderweireldt, 2002: 183, fig. 1–5 (♂♀).

Material examined: 1 juv. (YMT), SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999], Geokchai Distr. (Geokchai River) [Alderweireldt, 2002].

COMMENTS. Known from Macedonia to Caucasus (Thaler et al., 2000). Brief comparison of specimens from Lenkoran with these from more northern populations gave some evidence that they may belong to different species.

It is worth mentioning that this species, judging from its general appearance (bright coloration in contrast to cryptic pattern of *Arctosa*, shiny carapace) and copulatory organs are clearly not congeneric with the genotype *A. cinerea* (Fabricius, 1777) (cf. above mentioned figures with fig. I.1–4 in Lugetti & Tongiorgi [1965] and fig. 48 in Thaler et al. [2000]). Zyuzin [1985] was probably the first to point out that *A. tbilisiensis* was not a true *Arctosa* (not congeneric with *A. cinerea*). His conclusion was made on the basis of study of eye formula.

#### *Aulonia* C.L. Koch, 1847

##### *Aulonia albimana* (Walckenaer, 1805)

*Aulonia a.*: Fuhn & Niculescu-Burlacu, 1971: 240, fig. 117a–e, 118 (♂♀).

*A. a.*: Roberts, 1985: 153, fig. 67a (♂♀).

*A. a.*: Heimer & Nentwig, 1991: 324, fig. 857 (♂♀).

*A. a.*: Roberts, 1995: 235, fig. (♂♀).

*A. a.*: Roberts, 1998: 253, fig. (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989].

COMMENTS. This species seems to have an Euro-Caucasian (?) range, while according to Platnick [2002] it has a Palaearctic distribution.

##### *“Aulonia” kratochvili* Dunin, Buchar et Absolon, 1986

*Aulonia k.* Dunin et al., 1986: 28, fig. 1–7 (♂♀).

*A. k.*: Kronstedt, 1997: 77, fig. 1–2 (♂).

Material examined: 24 ♂♂♀♀ juv. (YMT), SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM).

RECORDS: Gobustan, Mingechaur, Yevlakh, Kyurdamir, Sheki, Saatly, Lenkoran [Dunin et al., 1986], Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. Known from Macedonia to Azerbaijan [Thaler et al., 2000]. While somatically this species is very similar to *A. albimana* (the genotype), the male palp and female epigyne of this species differ considerably and clearly *A. kratochvili* belongs to another genus.

#### *Evippa* Simon, 1882

##### *Evippa apsheronica* sp.n.

See above.

##### *Evippa caucasica* sp.n.

See above.

***Geolycosa* Montgomery, 1904***Geolycosa dunini* Zyuzin et Logunov, 2000

*Geolycosa d.* Zyuzin & Logunov, 2000: 309, fig. 7–9 (♂♀).

RECORDS: Khanlar Distr. (Gyanja) [sub *Lycosa vultuosa*, Schmidt, 1895], Sheki-Zagatala area [sub *Lycosa vultuosa*, Dunin, 1989], Lenkoran area [sub *Lycosa vultuosa* Guseinov, 1999], Shemakha Distr. (Pirkuli Reserve), Guba Distr. (Guba), Khanlar Distr. (Khanlar), Agdash (Agdash), Sheki Distr. (Sheki) [Zyuzin & Logunov 2000].

COMMENTS. This species has a Transcaucasian range [Zyuzin & Logunov, 2000].

***Hogna* Simon, 1885***Hogna alticeps* (Kroneberg, 1875)

*Tarentula a.* Kroneberg, 1875: 40, pl. 4, fig. 28 (♂♀).

RECORDS: (sub *Lycosa alticeps*): Apsheron Pen. [Dunin, 1984].

COMMENTS. It is known from Central Asia [Platnick, 2002]. As this species is known only from the female and has never been properly illustrated and it is probable that the records from Azerbaijan were based on misidentifications [cf. Mikhailov, 1997].

*Hogna bergsoei* (Thorell, 1875)

RECORDS: Apsheron Pen. [sub *Lycosa b.* L. Koch, 1878; sub *Alopecosa b.*, Dunin, 1984].

COMMENTS. This species was transferred to *Hogna* by Roewer [1955]. Like most of the other wolf spiders described by Thorell it was never illustrated and redescribed and therefore its generic placement is uncertain. Because types of this species were never studied by L. Koch or Dunin, it is probable that records from Azerbaijan refer to other species.

*Hogna ocellata* (L. Koch, 1878)

*Lycosa o.* L. Koch, 1878: 52, pl. 2, fig. 1–2 (♂♀).

*Hogna o.*: Roewer, 1955: 249.

RECORDS: Apsheron Pen. [sub *Lycosa o.*, L. Koch, 1878; *Arctosa o.*, Dunin, 1984].

COMMENTS. This species was transferred to *Hogna* by Roewer [1955]. It was never redescribed and properly illustrated and known so far only from the type locality, the Apsheron Pen. Location of its types remains uncertain.

*Hogna radiata* (Latreille, 1817)

*Lycosa r.*: Fuhn & Niculescu-Burlacu, 1971: 195, fig. 95a–e (♂♀).

RECORDS: Khanlar Distr. (Gyanja) [sub *Lycosa r.*, Schmidt, 1895], Sheki-Zagatala area [sub *Lycosa r.*, Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999].

COMMENTS. Known from Mediterranean to Central Asia [Platnick, 2002]. The record from Central Africa [cf. Platnick, 2002] may refer to another species.

***Lycosa* Latreille, 1804***Lycosa praegrans* C.L. Koch, 1836

*Lycosa p.*: Zyuzin & Logunov, 2000: 306, fig. 1–2 (♂♀).

*L. p.*: Thaler et al., 2000: 1077, fig. 22, 24–26, 29–30, 40, 45 (♀).

RECORDS: Nakhichevan Distr. (Nakhichevan) [sub *Lycosa piochardi*, Schmidt, 1895], Apsheron Pen. [sub *L. narbonensis*, Dunin, 1984], Sheki-Zagatala area [sub *L. narbonensis*, Dunin, 1989], Lenkoran area [sub *L. nordmanni*, Guseinov, 1999], Lerik Distr. (Gosmalyan), Yardymly Distr. (Avash), Salyan Distr. (Shirvan Reserve) [Zyuzin & Logunov, 2000].

COMMENTS. Distributed from Greece to Kyrgyzstan [Zyuzin & Logunov, 2000].

***Mustelicos* Roewer, 1960***Mustelicos dimidiata* (Thorell, 1875)

RECORDS: Gusar Distr. (Gusar) [sub *Trochosa d.*, Verzhbitsky, 1902].

COMMENTS. This species was never redescribed and illustrated, and therefore its record from Azerbaijan may refer to another species. *M. dimidiata* was described from environs of Volgograd and seems to be distributed from Volga to eastern China [cf. Marusik et al., 2000; Marusik & Logunov, 2002].

***Pardosa* C.L. Koch, 1847***Pardosa aenigmatica* Tongiorgi, 1966

*Pardosa a.*: Tongiorgi, 1966a: 304, fig. 127 (♀).

*P. a.*: Tongiorgi, 1968: 108, pl. II, fig. 1–3 (♂).

RECORDS: Sheki-Zagatala area [Dunin, 1989].

COMMENTS. Known in Italy and Azerbaijan [Platnick, 2002], it is probable that the record from Azerbaijan refers to another species (e.g. *Wadicosa* sp.). We were unable to find specimens of this species in Dunin's collection stored in ZMMU.

*Pardosa agrestis* (Westring, 1861)

*Pardosa a.*: Roberts, 1985: 134, fig. 55c, 57a–b (♂♀).

*P. a.*: Roberts, 1995: 214, fig. (♂♀).

*P. a.*: Roberts, 1998: 228, fig. (♂♀).

*P. a.*: Zyuzin & Logunov, 2000: 316, fig. 43–44 (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999].

COMMENTS. Palaearctic range [Platnick, 2002], while most probably it has an Euro-Altai range. The record from Azerbaijan may refer to *P. pontica* [cf. Zyuzin & Logunov, 2000].

*Pardosa agricola* (Thorell, 1856)

*Pardosa a.*: Roberts, 1985: 133, fig. 55b, 56 (♂♀).

*P. a.*: Roberts, 1995: 213, fig. (♂♀).

*P. a.*: Roberts, 1998: 227, fig. (♂♀).

RECORDS: Lenkoran area [Guseinov, 1999].

COMMENTS. Known from Europe to Kazakhstan.

*Pardosa azerifalcata* Marusik, Guseinov & Koponen, 2003

*Pardosa f.* Marusik et al., 2003: in press.

RECORDS: Ismailly Distr. [Marusik et al., 2003].

COMMENTS. This species is closely related and very similar to *P. jerginiensis* Ponomarev, 1979 and possibly was earlier misidentified.

*Pardosa bifasciata* (C. L. Koch, 1834)

*Pardosa b.*: Tongiorgi, 1966a: 292, fig. 8–11 (♂♀).  
*P. b.*: Fuhn & Niculescu-Burlacu, 1971: 81, fig. 33a–d (♂♀).  
*P. b.*: Heimer & Nentwig, 1991: 328, fig. 878 (♂♀).  
*P. b.*: Roberts, 1995: 216, fig. (♂♀).  
*P. b.*: Roberts, 1998: 229, fig. (♂♀).

RECORDS: Shemakha Distr. (Pirkuli Reserve) [Guseinov, 2002].

COMMENTS. It seems that this species has an Euro-Mongolian range [cf. Marusik et al., 2000], and we think the record of this species from eastern China refers to *P. han-rasanensis* Jo & Paik, 1984 which was wrongly synonymised with *P. bifasciata*.

*Pardosa buchari* Ovtsharenko, 1979

*Pardosa b.* Ovtsharenko, 1979: 47, fig. 14–15, 28–31 (♂♀).  
*P. b.*: Buchar & Thaler, 1998: 709, fig. 14–15 (♂).  
*P. b.*: Zyuzin & Logunov, 2000: 315, fig. 31–33, 37–39 (♂♀).  
 Material examined: 1 ♂ (YMT), Ismailly Distr., Ismailly Reserve, 1000–1200 m, 14.07.2001 (EG)

RECORDS: Shemakha Distr. (Pirkuli Reserve), Dashkesan Distr. (Dashkesan) [Zyuzin & Logunov 2000].

COMMENTS. Until recently this species was not known in Azerbaijan [Mikhailov, 1997, 1998, 1999, 2000]. It was reported for the first time within Azerbaijan from the Pirkuli Reserve by Zyuzin & Logunov [2002]. *P. buchari* is so far known from northern Caucasus, Georgia and Azerbaijan.

*Pardosa caucasica* Ovtsharenko, 1979

*Pardosa c.* Ovtsharenko, 1979: 48, fig. 10–11, 24–25 (♂♀).  
*P. c.*: Töpfer-Hofmann, Cordes & von Helversen, 2000: 271, fig. 32–33 (♂).

Material examined: 1 ♂ (YMT), ca 70 km N of Baku, Galalty Vill., 40°48'N, 49°12'E, 19.04.2001 (YM).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a Caucasian range [Platnick, 2002].

*Pardosa colchica* Mcheidze, 1947

*Pardosa c.*: Zyuzin & Logunov, 2000: 310, fig. 17–23 (♀, D♂).  
 RECORDS: Khanlar Distr. (Gyoy-Gyol Reserve) [Zyuzin & Logunov 2000].

COMMENTS. Until recently this species was not known in Azerbaijan [Mikhailov, 1997, 1998, 1999, 2000]. It was reported for the first time within Azerbaijan from Khanlar Distr. by Zyuzin & Logunov [2002]. So far it is known from northern Caucasus, Georgia and Azerbaijan and has a trans-Caucasian range.

*Pradosa gusarensis* sp.n.

See above.

*Pardosa hortensis* (Thorell, 1872)

*Pardosa h.*: Tongiorgi, 1966a: 307, fig. 150–151, 154–155 (♂♀).  
*P. h.*: Roberts, 1985: 134, fig. 59c (♂♀).  
*P. h.*: Heimer & Nentwig, 1991: 332, fig. 1402 (♂♀).  
*P. h.*: Roberts, 1995: 220, fig. (♂♀).  
*P. h.*: Roberts, 1998: 234, fig. (♂♀).

Material examined: 2 ♀♀ (YMT), SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001

(YM); 1 ♂ 3 ♀♀ (YMT), Azerbaijan, Ismailly Distr., Khanaya, 700 m, 08–09.07.2001 (EG); 1 ♂ (YMT), Astara Distr., Istisu, 25.04.2001 (EG)

RECORDS: Gusar Distr. (Gusar) [sub *Lycosa annulata* Verzhbitsky, 1902], Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. In Platnick's catalogue [2002] it is listed as a species with Palaearctic range. However judging from the figures (Fig. 26b in Saito, 1959) the record from Japan refers to another species. We think records of *P. hortensis* from south Siberia [cf. Mikhailov, 1997] are based on misidentifications. Study of numerous specimens of lycosids from Siberia and the Far East has not revealed this species and nor any other members of the *proxima* species group, so it seems that *P. hortensis* has an Euro-Caucasian range.

*Pardosa incerta* Nosek, 1905

*Pardosa i.*: Tongiorgi, 1966b: 339, fig. 1–2, 26 (♀, D♂).  
*P. i.*: Zyuzin & Ovtsharenko, 1979: 60, fig. 1–3, 6–7, 9, 11, 13 (♂♀).

RECORDS: Sheki-Zagatala area [Dunin, 1989].

COMMENTS. Known so far from Turkey, Azerbaijan and northern Caucasus (Kabardino-Balkaria, Krasnodar Prov.) only [Zyuzin & Ovtsharenko, 1979; Mikhailov, 1997].

*Pardosa italica* Tongiorgi, 1966

*Pardosa i.*: Tongiorgi, 1966a: 301, fig. 135–138 (♂♀).  
*P. i.*: Fuhn & Niculescu-Burlacu, 1971: 95, fig. 40a–e (♂♀).  
 Material examined: 1 ♀ (YMT), Salyan Distr., Shirvan Reserve, 28.05.2000 (EG).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992].

COMMENTS. It seems that this species has an European-Central Asian range (cf. Mikhailov, 1997 & Platnick, 2002).

*Pardosa jergeniensis* Ponomarev, 1979

*Pardosa j.* Ponomarev, 1979: 1589, fig. 1 (♂♀).  
 RECORDS: Apsheron Pen. (Shagan), Shemakha Distr. (Pirkuli Reserve) [Guseinov & Rubtsova, 2001].

COMMENTS. Until recently this species was known only from Kalmykia and northwestern Kazakhstan [cf. Mikhailov, 1997]. This species is very similar to *P. azerifalcata* Marusik et al., 2003 and possibly some or even all records of *P. jergeniensis* may refer to *P. azerifalcata*.

*Pardosa luctinosa* Simon, 1876

*Pardosa l.*: Tongiorgi, 1964: 244, fig. 1–5 (♂♀).  
*P. l.*: Tongiorgi, 1966a: 300, fig. 139–142 (♂♀).  
*P. l.*: Fuhn & Niculescu-Burlacu, 1971: 97, fig. 41a–e (♂♀).  
 RECORDS: Apsheron Pen. [Dunin, 1984], Muganskaya steppe [Dunin & Mamedov, 1992].

COMMENTS. Systematics of this species is obscure and it is unclear if it has a trans-Palaearctic range or is a complex species represented by series of subspecies or sibling species throughout Eurasia. Through the whole range this taxon is associated with salted lands.

*Pardosa lugubris* (Walckenaer, 1802)

*Pardosa l.*: Töpfer-Hofmann & von Helversen, 1990: 349, fig. 1a (♂).

*P. l.*: Roberts, 1998: 233, fig. (♂♀).

*P. l.*: Kronstedt, 1999: 3, fig. 1c, 3f–k, 5b–c, 6b, 8b (♂♀).

*P. l.*: Töpfer-Hofmann, Cordes & von Helversen, 2000: 265, fig. 20–23 (♂).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Atakishiev, 1969; Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. Study of material from Azerbaijan (by YM) reveals no true *P. lugubris sensu* Töpfer-Hofmann et al. [2000] but *P. caucasica* and one possibly undescribed species. It is possible that records of *P. lugubris* are based on misidentifications and this species may not occur in Azerbaijan.

### *Pardosa morosa* (L. Koch, 1870)

*Pardosa m.*: Tongiorgi, 1966a: 311, fig. 64–66 (♂♀).

*P. m.*: Fuhn & Niculescu-Burlacu, 1971: 104, fig. 45a–e (♂♀).

*P. m.*: Buchar & Polenec, 1974: 83, fig. F–I (♀).

*P. m.*: Heimer & Nentwig, 1991: 332, fig. 1403 (♂♀).

Material examined: 1 ♀ (ZMUT) Gabala Distr., Bum Vill., 05.06.2001 (EG).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. Known from Europe to Central Asia [Platnick, 2002]. The single specimen that we have on hand fits well the illustration provided by Buchar & Polenec [1974] while differing from other illustrations. The color pattern of female from Bum Village corresponds well to those given by Buchar & Polenec [1974].

### *Pardosa nebulosa* (Thorell, 1872)

*Pardosa n.*: Tongiorgi, 1966a: 303, fig. 119–122 (♂♀).

*P. n.*: Fuhn & Niculescu-Burlacu, 1971: 106, fig. 46a–e (♂♀).

*P. n.*: Heimer & Nentwig, 1991: 332, fig. 891 (♂♀).

RECORDS: Gusar Distr. (Gusar) [sub *Lycosa n.*, Verzhbitsky, 1902], Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999].

COMMENTS. It has a Palearctic range [Platnick, 2002]. Systematics and range of this species require investigation.

### *Pardosa paludicola* (Clerck, 1757)

*Pardosa p.*: Tongiorgi, 1966a: 295, fig. 23–25 (♂♀).

*P. p.*: Fuhn & Niculescu-Burlacu, 1971: 114, fig. 51a–e (♂♀).

*P. p.*: Roberts, 1985: 134, fig. 60b (♂♀).

*P. p.*: Heimer & Nentwig, 1991: 332, fig. 890 (♂♀).

*P. p.*: Roberts, 1995: 221, fig. (♂♀).

*P. p.*: Roberts, 1998: 235, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Dunin, 1989].

COMMENTS. Palearctic range [Platnick, 2002].

### *Pardosa palustris* (Linnaeus, 1758)

*Pardosa p.*: Tongiorgi, 1966a: 283, fig. 84–85, 91, 102–103 (♂♀).

*P. p.*: Fuhn & Niculescu-Burlacu, 1971: 116, fig. 52a–e (♂♀).

*P. p.*: Roberts, 1985: 134, fig. 57d, 58a (♂♀).

*P. p.*: Heimer & Nentwig, 1991: 324, fig. 861 (♂♀).

*P. p.*: Roberts, 1995: 215, fig. (♂♀).

*P. p.*: Roberts, 1998: 229, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Atakishiev, 1969].

COMMENTS. Trans-Palearctic-Alaskan range [Marusik et al., 2000]. It is clear that the single record of *P. lugubris* for the whole Caucasus was based on a misidentification.

### *Pardosa paracolchica* Zyuzin et Logunov, 2000

*Pardosa p.* Zyuzin & Logunov, 2000: 311, fig. 13–16, 24–27 (♂♀).

Material examined: 1 ♂, Azerbaijan, Ismailly Distr., Khanaya, 700 m, 08.07.2001 (EG).

RECORDS: Guba Distr. (Nyugyadi) [Zyuzin & Logunov, 2000].

COMMENTS. Known only from Caucasus [Zyuzin & Logunov, 2000].

### *Pardosa pirculiensis* Zyuzin et Logunov, 2000

*Pardosa p.* Zyuzin & Logunov, 2000: 314, fig. 28–30, 34–36 (♂♀).

Material: Ismailly Distr., Ismailly Reserve, 1500 m, 12.07.2001 (EG).

RECORDS: Shemakha Distr. (Pirkuli Reserve) [Zyuzin & Logunov, 2000].

COMMENTS. Known only from Azerbaijan [Zyuzin & Logunov, 2000].

### *Pardosa pontica* (Thorell, 1875)

*Pardosa p.*: Tongiorgi, 1966: 351, fig. 10–11, 24 (♂♀).

*P. p.*: Fuhn & Niculescu-Burlacu, 1971: 118, fig. 53a–c (♂♀).

*P. p.*: Zyuzin & Logunov, 2000: 316, fig. 40–42 (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999], Guba Distr. (Nyugyadi), Khanlar Distr. (Gey-Gyol Reserve), Apsheron Pen. (Baku), Lenkoran Distr. (Lenkoran), Shemakha Distr. (Pirkuli Reserve) [Zyuzin & Logunov, 2000].

COMMENTS. Known from Romania to Turkmenistan [cf. Mikhailov, 1997; Platnick, 2002].

### *Pardosa proxima* (C. L. Koch, 1847)

*Pardosa p.*: Tongiorgi, 1966a: 306, fig. 146–147, 156–157 (♂♀).

*P. p.*: Fuhn & Niculescu-Burlacu, 1971: 122, fig. 55a–e (♂♀).

*P. p.*: Roberts, 1985: 134, fig. 59d (♂♀).

*P. p.*: Heimer & Nentwig, 1991: 332, fig. 1405 (♂♀).

*P. p.*: Roberts, 1995: 220, fig. (♂♀).

*P. p.*: Roberts, 1998: 235, fig. (♂♀).

Material examined: 1 ♂ 1 ♀, Gabala Distr., Laza, 12.08.2001 (EG) 1 ♂, Azerbaijan, Ismailly Distr., Khanaya, 700 m, 09.07.2001 (EG).

RECORDS: Lenkoran area [Guseinov, 1999].

COMMENTS. *P. proxima* is listed as a Palearctic species [Platnick, 2002] but there are no proven records of this species in Siberia.

### *Pardosa pullata* (Clerck, 1757)

*Pardosa p.*: Holm & Kronstedt, 1970: 410, fig. 1, 4, 9, pl. I, fig. 1–2, pl. II, fig. 1–2; pl. III, fig. 1, pl. IV, fig. 1–2 (♂♀).

*P. p.*: Roberts, 1985: 134, fig. 58b (♂♀).

*P. p.*: Heimer & Nentwig, 1991: 330, fig. 885 (♂♀).

*P. p.*: Roberts, 1995: 216, fig. (♂♀).

*P. p.*: Roberts, 1998: 230, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Atakishiev, 1969; Dunin, 1989].

COMMENTS. This species has an Euro-Baikalian range [cf. Mikhailov, 1997].

### *Pardosa saltuaria* (L. Koch, 1870)

*Pardosa s.*: Tongiorgi, 1966a: 288, fig. 67–71 (♂♀).

*P. s.*: Fuhn & Niculescu-Burlacu, 1971: 127, fig. 58a–e (♂♀).  
*P. s.*: Wunderlich, 1984b: 430, fig. 22–28 (♂♀).  
*P. s.*: Heimer & Nentwig, 1991: 328, fig. 873 (♂♀).  
 RECORDS: Lenkoran area [Guseinov, 1999].  
 COMMENTS. This species is known from western Europe to Kazakhstan [Platnick, 2002]. Records from Kazakhstan require confirmation.

*Pardosa schenkeli* Lessert, 1904

*Pardosa s.*: Tongiorgi, 1966a: 291, fig. 12–14 (T♂♀ from *Passiena*).  
*P. s.*: Fuhn & Niculescu-Burlacu, 1971: 129, fig. 59a–c (♂♀).  
*P. s.*: Heimer & Nentwig, 1991: 328, fig. 877 (♂♀).  
*P. s.*: Logunov & Marusik, 1995: 113, fig. 20–24 (♂♀).  
 RECORDS: Sheki-Zagatala area [Dunin, 1989].  
 COMMENTS. Trans-Palaearctic range [Marusik et al., 2000].

*Pardosa sphagnicola* (F. Dahl, 1908)

*Pardosa s.*: Holm & Kronstedt, 1970: 417, fig. 6, 11, pl. II, fig. 5–6, 13, pl IV, fig. 5–7 (♂♀).  
*P. s.*: Roberts, 1995: 218, fig. (♂♀).  
*P. s.*: Roberts, 1998: 231, fig. (♂♀).  
 RECORDS: Gusar [Guseinov, 2002].  
 COMMENTS. This species has an Euro-Yenisei range [Marusik et al., 2002]. It seems that this species was misidentified with sibling *P. pullata*.

*Pardosa tasevi* Buchar, 1968

*Pardosa t.* Buchar, 1968: 122, fig. 4A–B (♂).  
*P. t.*: Ovtsharenko, 1979: 49, fig. 1 (♀).  
*P. t.*: Weiss & Varvara, 1983: 273, fig. 1 (♂).  
 RECORDS: Sheki-Zagatala area [Dunin, 1989].  
 COMMENTS. This species so far is known only from Caucasus [Mikhailov, 1997].

*Pardosa tatarica* (Thorell, 1875)

Figs. 47–50.

*Pardosa strigillata*: Tongiorgi, 1966: 308, fig. 143–144, 158–159 (♂♀).  
*P. strigillata*: Zyuzin, 1979: 435, fig. 12, 49 (♂♀).  
*P. strigillata*: Heimer & Nentwig, 1991: 332, fig. 1401 (♂♀).  
 Material examined: 1 ♀, Gabala Distr., Bum Vill., 05.06.2001 (EG); 9♂♂ 4♀♀, SE Azerbaijan, ca 10 km W of Astara Town, Isti-Su, 38°27'N, 48°47'E, on the border with Iran, 25.04.2001 (YM).  
 Comparative material: 2♂♂ 2♀♀ (YMT), GREECE, Trace, Samothrace Isl., Therma, stream bank, 13.04.1996 (leg. P. Lindskog, det. T. Kronstedt).  
 RECORDS: (sub *P. strigillata*): Azerbaijan [no precise locality, Zyuzin, 1979], Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].  
 COMMENTS. Known from Europe to Caucasus [cf. Mikhailov, 1997 & Platnick, 2002]. Comparison of populations from Greece and Azerbaijan (cf. Figs. 47–50) suggests that specimens from Azerbaijan belong to another species. Specific placement of the Azerbaijanian population will be solved when we study types or topotypes of *P. tatarica* that might be not conspecific with *P. strigillata*.

*Pardosa vittata* (Keyserling, 1863)

*Pardosa v.*: Tongiorgi, 1966a: 292, fig. 1–7 (♂♀).  
*P. v.*: Fuhn & Niculescu-Burlacu, 1971: 134, fig. 62a–e (♂♀).

*P. v.*: Thaler, 1987: 194, fig. 1–5 (♂♀).  
 Material examined: 1♂, Gabala Distr., Amirvan, 04.06.2001 (EG).  
 RECORDS: Gusar Distr. (Gusar) [sub *Lycosa v.*, Verzhbitsky, 1902], Sheki-Zagatala area [Dunin, 1989].  
 COMMENTS. Known from Europe to Caucasus [cf. Mikhailov, 1997 & Platnick, 2002].

*Pirata* Sundevall, 1832

*Pirata insularis* Emerton, 1885

*Pirata piccolo*: Kronstedt, 1980b: 65, fig. 9I, K (♂).  
*P. i.* Dondale & Redner, 1990: 255, fig. 380–386 (♂♀).  
*P. piccolo*: Heimer & Nentwig, 1991: 346, fig. 896 (♂♀).  
*P. i.*: Roberts, 1995: 234, fig. (♂♀).  
*P. i.*: Roberts, 1998: 251, fig. (♂♀).  
 RECORDS: Lenkoran area [Guseinov, 1999].  
 COMMENTS. Platnick [2002], treats *P. insularis* as having a Holarctic range while in fact in Eurasia it occurs only west of Yenisei, and has never been reported from Central, Eastern Siberia or Far East [cf. Mikhailov, 1997].

*Pirata latitans* (Blackwall, 1841)

*Pirata l.*: Roberts, 1985: 150, fig. 65e (♂♀).  
*P. l.*: Roberts, 1995: 234, fig. (♂♀).  
*P. l.*: Roberts, 1998: 252, fig. (♂♀).  
 Material examined: 32♂♂♀♀, SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM).  
 RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].  
 COMMENTS. Known from Europe to Caucasus [Platnick, 2002].

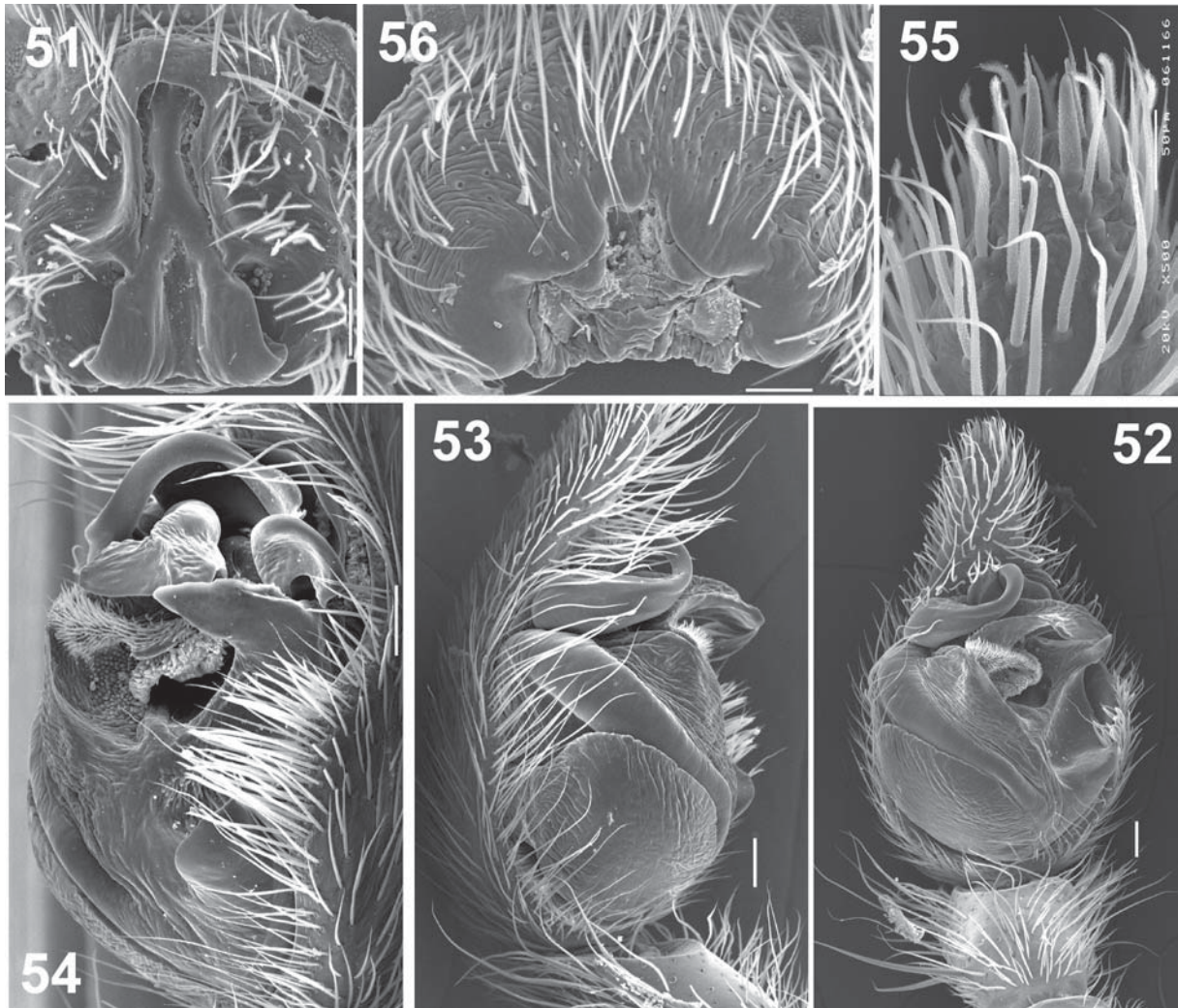
*Pirata piraticus* (Clerck, 1757)

*Pirata p.*: Kronstedt, 1980b: 65, fig. 2A, 3B, D, 4A, 6A–C, 7D–F, 8E–F, 9C–D (♂♀).  
*P. p.*: Roberts, 1985: 150, fig. 65b, 66b (♂♀).  
*P. p.*: Dondale & Redner, 1990: 270, fig. 421–424, 426–427 (♂♀).  
*P. p.*: Heimer & Nentwig, 1991: 346, fig. 892 (♂♀).  
*P. p.*: Roberts, 1995: 232, fig. (♂♀).  
*P. p.*: Roberts, 1998: 250, fig. (♂♀).  
 Material examined: 1♂ 1 juv., SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM).  
 RECORDS: Sheki-Zagatala area [Dunin, 1989], Apsheron Pen. (Bina) [Guseinov & Rubtsova, 2001].  
 COMMENTS. Holarctic range [Platnick, 2002].

*Trochosa* C.L. Koch, 1847

*Trochosa hispanica* Simon, 1870\*

*Trochosa h.*: Hänggi, 1989: 168, fig. 1a–b (♂♀).  
*T. h.*: Thaler et al., 2000: 1079, fig. 37–39, 41.  
 Material examined: 4♂♂ 3♀♀ 2 juv., SE Azerbaijan, Lenkoran Distr., env. of Aurora Vill., 38°40'N, 48°52'E, 23–28.04.2001 (YM); 2♂♂ 1 juv., SE Azerbaijan, ca 10 km W of Astara Town, Isti-Su, 38°27'N, 48°47'E, on the border with Iran, 25.04.2001 (YM).  
 COMMENTS. This species can be easily recognized in the field by the stripe of white hairs on the dorsal side of the male's tibia I [Thaler et al., 2000], in alcohol these hairs sometimes can be poorly visible.



Figs. 51–56. Copulatory organs of *Pardosa* sp. (51) and *Wadicosa fidelis* (O. Pickard-Cambridge, 1872)? (52–56). 51, 56 — epigyne, ventral view; 52–54 — palp, dorsal, pro- and retrolateral view respectively; 55 — tip of cymbium with two claws. Scale = 0.1 mm except for Fig. 55 (=0.05 mm).

Figs. 51–56. Копулятивные органы *Pardosa* sp. (51) и *Wadicosa fidelis* (O. Pickard-Cambridge, 1872)? (52–56). 51, 56 — эпигина, вид снизу; 52–54 — пальпа самца, разные аспекты; 55 — вершина цимбиума с двумя коготками. Масштаб 0,1 мм за исключением рис. 55 (0,05 мм).

Previously this species was reported from Spain to “Russia” [Platnick, 2002], while in fact its correct range is Spain to Ukraine, or Spain to Tajikistan. *T. ruricola rustica* Thorell, 1875 a junior synonym of *T. hispanica* was described from Italy: Gennazano (♂♀) and Russia (=Russian Empire): Yekaterinoslav (=Dnipropetrovsk, Ukraine now) (♂) and since then was reported only from Tajikistan by Charitonov [1951]. This species is new for Azerbaijan and Caucasus as a whole.

#### *Trochosa ruricola* (De Geer, 1778)

*Trochosa r.*: Fuhn & Niculescu-Burlacu, 1971: 226, fig. 111a–f (♂♀).

*T. r.*: Roberts, 1985: 144, fig. 62c, 63a (♂♀).

*T. r.*: Roberts, 1995: 226, fig. (♂♀).

*T. r.*: Roberts, 1998: 244, fig. (♂♀).

RECORDS: Khanlar Distr. (Gyanja) [sub *Lycosa r.*, Schmidt, 1895], Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a trans-Palaearctic range [Platnick, 2002]. Records of this species, at least those from Lenkoran, may refer to *T. hispanica*.

#### *Trochosa spinipalpis* (F.O. Pickard-Cambridge, 1895)

*Trochosa s.*: Fuhn & Niculescu-Burlacu, 1971: 229, fig. 112a–e (♂♀).

*T. s.*: Roberts, 1985: 144, fig. 62f, 63d (♂♀).

*T. s.*: Roberts, 1995: 228, fig. (♂♀).

*T. s.*: Roberts, 1998: 245, fig. (♂♀).

RECORDS: Apsheron Pen. [Dunin, 1984], Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992], Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a trans-Palaearctic range [Platnick, 2002]. Records of this species, at least those from Lenkoran, may refer to *T. hispanica*.



*Trochosa terricola* Thorell, 1856

*Trochosa t.*: Fuhn & Niculescu-Burlacu, 1971: 231, fig. 113a–e (♂♀).

*T. t.*: Roberts, 1985: 144, fig. 62e, 63c (♂♀).

*T. t.*: Roberts, 1995: 227, fig. (♂♀).

*T. t.*: Roberts, 1998: 245, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a circum-Holarctic range [Platnick, 2002]. Records of this species, at least those from Lenkoran, may refer to *T. hispanica*.

*Wadicosa* Zyuzin, 1985

This genus was only recently reported from Azerbaijan and Caucasus as a whole [Marusik & Guseinov, 2003].

*Wadicosa fidelis* (O. Pickard-Cambridge, 1872) ?  
Figs. 52–56.

*Wadicosa f.*: Song et al., 1999: 202C, G (♂♀).

Material examined: 3 ♂♂ 2 ♀♀ 2 juv. (YMT), south-eastern Azerbaijan, ca 10 km W of Astara Town, Istisu, 38°27'N, 48°47'E, on the border with Iran, 25.04.2001 (YM).

COMMENTS. This species has the widest distribution among the genus and is known from western Europe to Japan. Our identification was confirmed with some uncertainty by T. Kronstedt. Figures provided to this species by different authors [e.g. Wunderlich, 1992: fig. 727–728 and Song et al., 1999] seem to belong to two different species, so *W. fidelis* may have a smaller range and be restricted to the western Palaearctic. Our specimens fit well the figures provided by Song et al. [1999].

*Xerolycosa* F. Dahl, 1908*Xerolycosa miniata* (C.L. Koch, 1834)

*Xerolycosa m.*: Fuhn & Niculescu-Burlacu, 1971: 235, fig. 115a–e (♂♀).

*X. m.*: Roberts, 1985: 142, fig. 61b (♂♀).

*X. m.*: Roberts, 1995: 223, fig. (♂♀).

*X. m.*: Roberts, 1998: 237, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Muganskaya steppe [Dunin & Mamedov, 1992].

COMMENTS. This species has an Euro-Yenisei range [Marusik et al., 2000].

*Xerolycosa nemoralis* (Westring, 1861)

*Xerolycosa n.*: Fuhn & Niculescu-Burlacu, 1971: 237, fig. 116a–e (♂♀).

*X. n.*: Zyuzin, 1985a: 48, fig. 15–16, 20–22 (♂♀).

*X. n.*: Roberts, 1985: 140, fig. 61a (♂♀).

*X. n.*: Roberts, 1995: 222, fig. (♂♀).

*X. n.*: Roberts, 1998: 236, fig. (♂♀).

RECORDS: Sheki-Zagatala area [Dunin, 1989], Lenkoran area [Guseinov, 1999].

COMMENTS. This species has a trans-Palaearctic range [Marusik et al., 2000].

## Conclusions

Taking into account the new data given above, the lycosid fauna of Azerbaijan encompass 68 species be-

longing to 14 genera: *Allohogna* (1 species), *Alopecosa* (14, of which 4 species doubtful), *Arctosa* (4), *Aulonia* (2), *Evippa* (2), *Geolycosa* (1), *Hogna* (4, 2 species doubtful), *Lycosa* (1), *Mustelicosa* (1 species doubtful), *Pardosa* (28, 4 species doubtful), *Pirata* (3), *Trochosa* (4), *Wadicosa* (1), *Xerolycosa* (2). Of them, one genus and 11 species records are doubtful and require confirmation. Taking into consideration that many areas of Azerbaijan such as highlands in Gusar and Zagatala Districts, mountains of Talysh area, Nakhitchevan are very poorly studied, and pitfall trapping was rarely used, it is reasonable to expect many new species and even few generic discoveries.

ACKNOWLEDGEMENTS. We wish to thank Galina Azarkina (Novosibirsk), Torbjörn Kronstedt (Stockholm), Dmitry Logunov (Manchester) who gave us comparative material or types deposited in their museums. We are highly indebted to T. Kronstedt, Vladimir I. Ovtsharenko (New York) and Pekka T. Lehtinen (Turku), who supplied us with important literature. Special thanks are extended to Izyaslav M. Kerzhner (St. Petersburg) for his consultation on nomenclatorial problems. We are also grateful to D.J. Buckle (Saskatoon) for checking English. This work was supported in part by the Russian Foundation for Basic Research (grant# 01-04-48989) and the Academy of Finland (grant # 79224).

## References

- Alderweireldt M. 1991. A revision of the African representatives of the wolf spider genus *Evippa* Simon, 1882 (Araneae, Lycosidae) with notes on allied species and genera // J. Nat. Hist. Vol.25. P.359–381.
- Alderweireldt M. 2002. Redescription of *Arctosa tbilisiensis* McHeidze, 1947, a poorly known Pontocaspian wolf spider (Araneae, Lycosidae) // Bull. Br. arachnol. Soc. Vol.12. No.4. P.183–184.
- Atakishiev T.A. 1969. [Spiders — symbionts of the honey bee] // Uchenyye zapiski Kazanskogo veterinarnogo instituta. Vol.105. P.317–323 [in Russian]
- Bonnet P. 1955. Bibliographia Araneorum. Vol.2. Part 1. Toulouse. P.1–918.
- Buchar J. 1968. Zur Lycosidenfauna Bulgariens (Arachn., Araneae) // Vestn. Čs. společ. zool. Bd.32. S.116–130.
- Buchar J., Polenc A. 1974. Zur Lycosidenfauna Jugoslawiens (Araneae: Lycosidae) // Vestn. Čs. společ. zool. Bd.38. S.81–85.
- Buchar J., Thaler K. 1998. Lycosidae from the high alpine zone of the Caucasus range, with comparative remarks on the fauna of the Alps (Arachnida: Araneae) // Linzer biol. Beitr. Bd.30. P.705–717.
- Charitonov D.E. 1932. Katalog der russischen Spinnen. Leningrad: AN SSSR Publ. 206 S.
- Charitonov D.E. 1951. [Spiders and harvestmen of the Kondara Gorge] // Ushchelye Kondara. Moscow-Leningrad. P.209–216 [in Russian].
- Dondale C.D., Redner, J.H. 1990. The wolf spiders, nurseryweb spiders, and lynx spiders of Canada and Alaska (Araneae: Lycosidae, Pisauridae, and Oxyopidae) // The Insects and Arachnids of Canada. No.17. 383 pp.
- Dunin P.M. 1984. [Fauna and ecology of the spiders of the Apsheon Peninsula, Azerbaijan SSR] // Fauna i ekologiya paukoobraznykh. Perm. P.45–60 [in Russian].
- Dunin P.M. 1989. [Fauna and altitudinal distribution of spiders (Arachnida, Aranei) of the Azerbaijan part of the southern macroslope of the Caucasus Major] // Fauna i ecol. paukov i skorpionov. Moscow: Nauka. P.31–39 [in Russian].

- Dunin P.M. 1994. [*Evippa eltonica* Dunin sp.n., a new species of wolf spiders (Aranei, Lycosidae) from the Lower Volga region] // Zool. Zhurn. Vol.73. No.7–8. P.243–245 [in Russian, with English summary].
- Dunin P.M., Mamedov A.A. 1992. [Spiders in cotton fields of the southeastern part of Azerbaijan] // Bull. Moskovskogo obshch. ispyt. prirody. Otdel Biol. Vol.97. No.2. P.53–61 [in Russian, with English summary].
- Dunin P.M., Buchar J., Absolon K. 1986. Die Dritte Paläarktische *Aulonia*-Art: *Aulonia kratochvili* sp. n. (Araneida, Lycosidae) // Vestn. Cs. spolec. zool. Bd.50. S.28–32.
- Eskov K.Yu., Marusik Yu.M. 1995. On the spiders from Saur Mt. range, eastern Kazakhstan (Arachnida: Araneae) // Beitr. Araneol. Bd.4 (für 1994). S.55–94.
- Fuhn I.E., Niculescu-Burlacu F. 1971. Fam. Lycosidae // Fauna Republicii Socialiste România (Arachnida) Vol.5. No.3. 253 pp.
- Guseinov E.F. 1999. [Landscape-zonal distribution of spiders (Arachnida, Araneae) of Lenkoran Natural Region of Azerbaijan] // Dokl. AN Azerb. Vol.54 (for 1998). No.3–4. P.109–113 [in Russian].
- Guseinov E.F., Rubtsova L.E. 2001. [Spider species (Arachnida: Araneae) new to the fauna of Azerbaijan] // Study and protection of the animal world on the end of the century. Proceedings of the scientific conference dedicated to the 80th anniversary of Academician M.A. Musaev. Baku: Elm. P.236–239 [in Russian].
- Hänggi A. 1989. Beiträge zur Kenntnis der Spinnenfauna des Kantons Tessin II-Bemerkenswerte Spinnenfunde aus Magerwiesen der Montanstufe // Mitt. schweiz. ent. Ges. Bd.62. S.167–174.
- Heimer S., Nentwig W. 1991. Spinnen Mitteleuropas. Berlin-Hamburg: Parey. 543 S.
- Holm Å. 1947. Svensk spindelfauna. 3. Araneae. Fam. 8–10 Oxyopidae, Lycosidae och Pisauridae. Stockholm. 48 pp. + 10 pl.
- Holm Å., Kronstedt T. 1970. A taxonomic study of the wolf spiders of the *Pardosa pullata*-group (Araneae, Lycosidae) // Acta ent. bohemoslov. Vol.67. P.408–428.
- Izmailova M.V. 1980. [Some data about spider *Evippa sjostedti* Schenkel, 1937 (Araneae, Lycosidae)] // Fauna i ekologiya nasekomykh Zabaikalya. Ulan-Ude. P.127–128 [in Russian].
- Koch L. 1878. Kaukasische Arachnoideen // O. Schneider (ed.). Naturwissenschaftliche Beiträge zur Kenntniss der Kaukasusländer. Dresden. Vol.3. S.36–71.
- Kroneberg A. 1875. [A.P. Fedchenko. Voyage in Turkestan. Spiders. Araneae] // Izvestiya Obshchestva Lyubitelei Estestvoznaniya, Antropologii i Etnografii. Vol.19. No.3. P.I–IV, 1–55, 5 plates [in Russian].
- Kronstedt T. 1980. Comparison between *Pirata tenuitarsis* Simon, new to Sweden and England, and *P. piraticus* (Clerck), with notes on taxonomic characters in male *Pirata* (Araneae: Lycosidae) // Entomologica scand. Vol.11. P. 65–77.
- Kronstedt T. 1990. Separation of two species standing as *Alopecosa aculeata* (Clerck) by morphological, behavioral and ecological characters, with remarks on related species in the *pulverulenta* group (Araneae, Lycosidae) // Zoologica Scr. Vol.19. No.2. P.203–225.
- Kronstedt T. 1997. First record of *Aulonia kratochvili* (Araneae, Lycosidae) from Europe // Arachnol. Mitt. H.14. S.77–80.
- Kronstedt T. 1999. A new species in the *Pardosa lugubris* group from central Europe (Arachnida, Araneae, Lycosidae) // Spixiana. Bd.22. S.1–11.
- Logunov D.V., Guseinov E.F. 2002. Faunistic review of the jumping spiders of Azerbaijan (Aranei: Salticidae), with additional faunistic records from neighboring Caucasian countries // Arthropoda Selecta Vol.10 (for 2001). No.3. P.243–260.
- Loksa I. 1965. Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. Araneae // Reichenbachia. Bd.7. H.1. S.1–32.
- Lugetti G., Tongiorgi P. 1965. Revisione delle specie italiane dei generi *Arctosa* C.L. Koch e *Tricca* Simon con note su una *Acantholycosa* delle Alpi Giulie (Araneae — Lycosidae) // Redia Vol.49. P.165–229.
- Lugetti G., Tongiorgi P. 1969. Ricerche sul genere *Alopecosa* Simon (Araneae-Lycosidae) // Atti Soc. tosc. Sci. nat. Ser.B. Vol.76. P.1–100.
- Marusik Yu.M., Guseinov E.F. 2003. Spiders (Arachnida, Aranei) of Azerbaijan. I. New family and genus records // Arthropoda Selecta. Vol.12. No.1. P.29–46.
- Marusik Yu.M., Logunov D.V. 2002. New faunistic records for the spiders of Buryatia (Araneae), with a description of a new species from the genus *Enoplognatha* (Theridiidae) // Arthropoda Selecta Vol.10 (for 2001). No.3. P.265–272.
- Marusik Yu.M., Logunov D.V., Koponen S. 2000. Spiders of Tuva, South Siberia. Magadan: IBPN FEB RAS. 252 pp.
- Marusik Yu.M., Rybalov L.B., Koponen S., Tanasevitch A.V. 2002. Spiders (Aranei) of Middle Siberia, an updated check-list with a special reference to the Mirnoye Field Station // Arthropoda Selecta Vol.10 (for 2001). No.4. P.323–350.
- Marusik Yu.M., Guseinov E.F., Koponen S. 2003. A survey of east Palearctic Lycosidae (Araneae). I. On three closely related species of the *Pardosa falcata*-group // Acta Arachnol. Vol.52., in press.
- Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). Moscow: Zool. Mus. Moscow State Univ. 416 pp.
- Mikhailov K.G. 1998. Catalogue of the spiders (Arachnida, Aranei) of the territories of the former Soviet Union. Addendum 1. Moscow: KMK Scientific Press. 50 pp.
- Mikhailov K.G. 1999. Catalogue of the spiders (Arachnida, Aranei) of the territories of the former Soviet Union. Addendum 2. Moscow: Zool. Mus. Moscow State Univ. 39 pp.
- Mikhailov K.G. 2000. Catalogue of the spiders (Arachnida, Aranei) of the territories of the former Soviet Union. Addendum 3. Moscow: Zool. Mus. Moscow State Univ. 33 pp.
- Mikhailov K.G. 2002. The spider fauna of Russia and other post-Soviet republics: a 2000 update // European Arachnology 2000, Aarhus University Press. P.255–259.
- Ovtsharenko V.I. 1979. [Spiders of the families Gnaphosidae, Thomisidae, Lycosidae (Aranei) in the Great Caucasus] // Trudy Zool. Inst. AN SSSR, Leningrad. T.85. P.39–53 [in Russian].
- Platnick N.I. 2002. The world spider catalog, version 3.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog81-87/index.html>
- Ponomarev A.V. 1979. [A new species of the genus *Pardosa* (Aranei, Lycosidae)] // Zool. Zhur. T.58. No.6. P.1589–1590 [in Russian].
- Ponomarev A.V. 1988. [Characteristics of the spider fauna of the semi-desert zone of the USSR European part] // Fauna i ekologii paukoobraznykh. Perm. P.51–61 [in Russian].
- Reimoser E. 1935. Araneida // Wissenschaftliche Ergebnisse der niederländischen Expeditionen in den Karakorum. Zoologie (Leipzig). S.169–176.
- Roberts M.J. 1985. The spiders of Great Britain and Ireland. Vol.1. Colchester: Harley Books. 229 pp.
- Roberts M.J. 1995. Collins Field Guide: Spiders of Britain & Northern Europe. London: HarperCollins. 383 pp.
- Roberts M.J. 1998. Spinnengids. Baarn: Tirion Natuur. 397 pp.
- Roewer C. F. 1955. Katalog der Araneen von 1758 bis 1940, bzw. 1954. Bruxelles. Bd.2. S.1–1751.
- Saito S. 1959. The Spider Book Illustrated in Colours. Tokyo: Hokuryukan. 194 pp.
- Schenkel E. 1936. Schwedisch-chinesische wissenschaftliche Expedition nach den nordwestlichen Provinzen Chinas, unter Leitung von Dr Sven Hedin und Prof. Sü Ping-chang. Araneae // Ark. Zool. Bd.29. Nr.A1. S.1–314.
- Schenkel E. 1963. Ostasiatische Spinnen aus dem Muséum d'Histoire naturelle de Paris // Mém. Mus. Natn. Hist. Naturelle. Sér.A. Zoologie. Vol.25. No.2. P.289–481.
- Schmidt P. 1895. Beitrag zur Kenntnis der Laufspinnen (Araneae Citigradae Thor.) Russlands // Zool. Jahrb. Syst. Bd.8. Nr.4. S.439–484.
- Simon E. 1895. Arachnides recueillis par M. G. Potanine en

- Chinie et en Mongolie (1876–1879) // Bull. Acad. imp. sci. St.-Petersb. Vol.5. No.2. P.331–345.
- Song D.X., Zhu M.S., Chen J. 1999. The Spiders of China. Shijiazhuang: Hebei Sci. Technol. Publ. House. 640 pp.
- Spassky S. 1952. [Spiders of the Turanian Zoogeographical Province] // Entomol. Obozr. T.32. P.192–205 [in Russian].
- Šternbergs M. 1979. [New and little known spider species of genera *Evipa* (Aranei, Lycosidae) in Turkmenistan] // Izv. Akad. Nauk turkmen. SSR. Biol. Nauki. No.5. P.65–67 [in Russian].
- Sundevall J.C. 1833. Svenska spindlarnes beskrifning. Fortsättning och slut // Kongl. Svenska Vet. Ak. Handl. 1832. P.171–272.
- Thaler K. 1987. *Pardosa vittata* (Keyserling) — neu für Österreich-und weitere Wolfspinnen aus dem Kulturland des Grazer Beckens (Araneae, Lycosidae) // Sitz.-ber. österr. Akad. Wiss. Kl.1. Bd.195. S.191–199.
- Thaler K., Buchar J., Knoflach B. 2000. Notes on wolf spiders from Greece (Araneae, Lycosidae) // Linzer biol. Beitr. Bd.32. S.1071–1091.
- Töpfer-Hofmann G., Helversen O. 1990. Four species of the *Pardosa lugubris*-group in central Europe (Araneae, Lycosidae) — A preliminary report // Bull. Soc. europ. Arachnol. Vol.12. P.349–352.
- Töpfer-Hofmann G., Cordes D., Helversen O. 2000. Cryptic species and behavioural isolation in the *Pardosa lugubris* group (Araneae, Lycosidae), with description of two new species // Bull. Br. arachnol. Soc. Vol.11. No.7. P.257–274.
- Tongiorgi P. 1964. Un ragno caratteristico dei terreni salmastrici: *Pardosa luctinosa* Simon [= *Pardosa entzi* (Chyzer)] (Araneae-Lycosidae) // Monitore zool. ital. Vol.72. P.243–253.
- Tongiorgi P. 1966a. Italian wolf spiders of the genus *Pardosa* (Araneae: Lycosidae) // Bull. Mus. comp. Zool., Harv. Univ. Vol.134. No.8. P.275–334.
- Tongiorgi P. 1966b. Wolf spiders of the *Pardosa monticola* group (Araneae: Lycosidae) // Bull. Mus. comp. Zool., Harv. Univ. Vol.134. No.9. P.335–359.
- Verzhbitsky E. 1902. [On the spiders of Caucasian Region] // Zap. Kievsk. obshch. estestvoispyt. T.17. No.2. P.461–504 [in Russian].
- Weiss I., Varvara M. 1983. *Pardosa tasevi* Buchar 1968, eine für die Fauna Rumäniens neue Wolfspinne (Arachnida, Araneae, Lycosidae) // Studii Comun. St. nat. Muz. Brukenthal. Vol.25. S.273–276.
- Wunderlich J. 1984. Seltene und bisher unbekannte Wolfspinnen aus Mitteleuropa und Revision der *Pardosa saltuaria*-Gruppe (Arachnida: Araneae: Lycosidae) // Verh. naturw. Ver. Hamb. Bd.27. S.417–442.
- Wunderlich J. 1992. Die Spinnen-Fauna der Makaronesischen Inseln: Taxonomie, Ökologie, Biogeographie und Evolution // Beitr. Araneol. Bd.1. 619 S.
- Zyuzin A.A. 1979. [A taxonomic study of Palearctic spiders of the genus *Pardosa* (Aranei, Lycosidae). Part 1. The taxonomic structure of the genus] // Entomol. Obozr. T.58. No.2. P.431–447 [in Russian, with English summary].
- Zyuzin A.A. 1985. [Generic and subfamilial criteria in the systematics of the spider family Lycosidae (Aranei), with the description of a new genus and two new subfamilies] // Fauna i ekologiya paukov SSSR. Trudy Zool. Inst. AN SSSR, Leningrad. T.139. P.40–51 [in Russian, with English summary].
- Zyuzin A.A., Logunov D.V. 2000. New and little-known species of the Lycosidae from Azerbaijan, the Caucasus (Araneae, Lycosidae) // Bull. Br. arachnol. Soc. Vol.11. No.8. P.305–319.
- Zyuzin A.A., Ovtsharenko V.I. 1979. [Taxonomic notes about the *Pardosa incerta* Nosek (Aranei, Lycosidae), a new species of spider of the USSR fauna] // Fauna i ekologiya paukoo-braznykh. Trudy Zool. Inst. AN SSSR, Leningrad. T.85. P.60–64 [in Russian].