

Taxonomic remarks on the genus *Caspicosa* Ponomarev, 2007 (Aranei: Lycosidae)

Таксономические заметки о роде *Caspicosa* Ponomarev, 2007 (Aranei: Lycosidae)

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KEY WORDS: Araneae, diagnosis, review, new combination, wolf spiders.

КЛЮЧЕВЫЕ СЛОВА: Araneae, диагноз, обзор, новая комбинация, пауки-волки.

ABSTRACT. A refined diagnosis and redescription of the genus *Caspicosa* Ponomarev, 2007 is given, with new taxonomic and faunistic data for three species. *Caspicosa manytchensis* Ponomarev, 2007 (the type species) and *C. kulsaryensis* Ponomarev, 2007 are redescribed and illustrated on the basis of the type and newly collected materials. A new combination is proposed: *Caspicosa chahraka* (Roewer, 1960) comb.n. (ex *Pardosa*). Distribution of all species is mapped.

How to cite this article: Esyunin S.L., Vlasov S.V., Ponomarev A.V. 2020. Taxonomic remarks on the genus *Caspicosa* Ponomarev, 2007 (Aranei: Lycosidae) // Arthropoda Selecta. Vol.29. No.2. P.273–282. doi: 10.15298/arthscl. 29.2.14

РЕЗЮМЕ. Даётся уточненный диагноз и пере- описание рода *Caspicosa* Ponomarev, 2007, с новыми таксономическими и фаунистическими данными для трех видов. *Caspicosa manytchensis* Ponomarev, 2007 (типовой вид) и *C. kulsaryensis* Ponomarev, 2007 переписаны и проиллюстрированы на основе типовых и вновь собранных материалов. Предлагается новая комбинация: *Caspicosa chahraka* (Roewer, 1960) comb.n. (бывшая *Pardosa*). Распространение всех видов картировано.

Introduction

The genus *Caspicosa* Ponomarev, 2007 was established for two wolf spider species described from the Ciscaucasia (*C. manytchensis* Ponomarev, 2007) and the northeast Caspian region (*C. kulsaryensis* Ponomarev, 2007) [Ponomarev, 2007]. In the original description, the author noted that *Caspicosa* species differ from those of *Acantholycosa* Dahl, 1908 in having a fewer number of the bristles on tibia I and II, and

from species of *Pardosa* C. L. Koch, 1847 in having a very large process of palea in the male palp [Ponomarev, 2007].

To date, *C. kulsaryensis* has not been recorded from outside the type locality, whereas *C. manytchensis* is widespread across semiarid landscapes of the Russian Plain [Alekseenko, Kuz'min, 2010; Ponomarev, Khnykin, 2013; Ponomarev, Prishutova, 2017; Ponomarev *et al.*, 2017a, b, 2018; Ponomarev, Alekseev, 2018]. As a result of studying the wolf spider fauna of Orenburg Region, we have found out that the latter species is also common in the steppe Cis-Urals. Another species with the characteristics of the genus *Caspicosa* — *Pardosa chahraka* Roewer, 1960 — was discovered by assessing the wolf spider fauna of Central Asia. The latter species remains known from the female only [Roewer, 1960].

The aims of the present study are (1) provide an updated diagnosis, definition and description of *Caspicosa*, and (2) to propose a new combination.

Material and methods

The studied material is deposited in the Zoological Museum of the Moscow State University (ZMMU, curator: K.G. Mikhailov), the Manchester Museum, University of Manchester, UK (MMUE, curator: D.V. Logunov), the Department of Invertebrate Zoology and Aquatic Ecology of the Perm State University (PSU, curator: S.L. Esyunin) and A.V. Ponomarev's personal collection (PC). Photographs were produced by using a camera SONY NEX-C3 attached to a MIKMED-6 optical microscope at the Southern Scientific Centre of the Russian Academy of Sciences (Rostov-on-Don, Russia). SEM micrographs were made by means of a Hitachi TM3000 SEM microscope with BSE (back-scattered electrons) at the Perm State University (Perm, Russia) and a Carl Zeiss EVO 40 XVP SEM microscope at the Center for Collective Usage

Joint Centre of scientific and technological equipment of SSC RAS (Rostov-on-Don, Russia).

The terminology of the *Caspicosa* male palp morphology follows Kronstedt & Marusik, [2011], with minor changes; that of the epigyne morphology — Marusik *et al.* [2004].

The following abbreviations are used in the present article: EYES: *ALE* — anterior lateral eye, *AME* — anterior median eye, *PLE* — posterior lateral eye, *PME* — posterior median eye. PALP: *E* — embolus, *MA* — median apophysis (=tegular apophysis), *P* — palea, *C* — conductor, *TA* — terminal apophysis (= paleal apophysis or paleal outgrowth, *sensu* Marusik *et al.*, 2004), *Se* — synembolus. LEG CHAETOTAXY: *a* — apical, *d* — dorsal, *pl* — prolateral, *rl* — retrolateral, *v* — ventral, spine form as proximal–middle–distal.

The distribution map was produced by means of the online mapping software SimpleMapper [Shorthouse, 2010], with slight modifications.

Genus *Caspicosa* Ponomarev, 2007

TYPE SPECIES. *Caspicosa manytchensis* Ponomarev, 2007, by the original description.

ETYMOLOGY. The generic name consists of two parts: ‘Caspi’, referring to the name of the Caspian region, and the second half of the generic name ‘Lycosa’, which is often used to form generic names in the wolf spiders. Gender: feminine.

DIAGNOSIS AND AFFINITIES. *Caspicosa* species are similar to some species of the genus *Acantholycosa*, which are characterized by the none-reduced apical arm of the median apophysis in males. *Acantholycosa* species were classified by Marusik *et al.* [2004] in three groups: (1) the *khakassica* species group (*A. khakassica* Marusik, Azarkina et Koponen, 2004 and *A. petrophila* Marusik, Azarkina et Koponen, 2004 from Khakassia, South Siberia; both species are known from males only), (2) the *oligerae* species group (*A. oligerae* Marusik, Azarkina et Koponen, 2004 (♂♀) and *A. sundukovi* Marusik, Azarkina et Koponen, 2004 (♂) from Maritime Territory), and (3) the *plumalis* species group (*A. plumalis* Marusik, Azarkina et Koponen, 2004 (♂♀) and *A. paraplumalis* Marusik, Azarkina et Koponen, 2004 (♂♀) from the Altai, South Siberia). Two species remain ungrouped: the Euro-Siberian *A. norvegica* (Thorell, 1872) (♂♀) and the Altaian *A. logunovi* Marusik, Azarkina et Koponen, 2004 (♂). Besides the similarity of the median apophysis, all *Caspicosa* and the aforementioned *Acantholycosa* species share at least five common characters: (1) the modified palea with a terminal apophysis in *Caspicosa*, or a paleal outgrowth in *Acantholycosa*, (2) the more or less flat lamellar embolus, (3) the longitudinal epigyne consisting of the upper part and fovea, (4) the flat upper part of epigyne, (5) the absence of septum traces in the apical part of the epigyne. Nonetheless, all *Caspicosa* species can be readily distinguished from those of *Acantholycosa* by a combination of the following characters (Table 1): (1) two pairs of spines on tibia I (excluding apical spines), (2) the terminal apophysis as a large sharply separated plate, (3) the rounded apical arm of median apophysis, (4) the synembolus present, (5) the apical pocket of epigyne with two distinct hoods, (6) the well-marked, recurved anterior rim of the fovea. Additionally, it is worth noticing that all *Caspicosa* species are smaller, with shorter legs (see Table 1 for further details).

The *Caspicosa* species are also similar to members of some *Pardosa* species groups, viz. the *falcata*, *tesquorum* and *wagleri* species groups as defined by Zyuzin [1979], in

particular, by the presence of a large apical shoulder of median apophysis and other characters of the male palp. At the same time, these *Pardosa* groups significantly differ from *Caspicosa* in the conformation of the epigyne. Diagnostic characters of the three most similar species-groups of the genus *Pardosa* are shown in Table 2.

The only *Pardosa* species — *Pardosa vittata* (Keyserling, 1863) — has the epigyne being similar to that of the *Caspicosa* species. *P. vittata* was assigned to the *vittata* species group by Zyuzin [1979]. Males of this group differs from those of *Caspicosa* in the structure of the male palp: (1) the palea with a strongly sclerotized lamellar ridge (‘terminal process of shield’ in Tongiorgi [1966: fig. 1], ‘Grat g der Apex’ in Thaler [1987: figs 2–4]), (2) the *Pardosa* ‘terminal apophysis’ membranous, with two arms (‘conductor’ and ‘terminal apophysis of conductor’ in Tongiorgi [1966: fig. 1], ‘Konduktor’ and ‘Terminalapophyse’ in Thaler [1987: figs 3, 4]), (3) the embolus simple, round in cross-section [Thaler, 1987: fig. 4]. On the other hand, the female of *P. vittata* has the fovea with lateral lips and anterior rim, as well as the anchor-shaped septum as in the *Caspicosa* females. However, *P. vittata* reliably differs from them by the structure of the upper part of the epigyne: the anterior part of septum, anterior lateral lips and the presence of an undivided pocket in the upper part of the epigyne [Tongiorgi, 1966: fig. 2; Thaler, 1987: fig. 1].

DESCRIPTION. Medium size: ♂♂ — 5.7 to 6.0 mm and ♀♀ — 6.0 to 8.0 mm in length. Sexes are alike, with a poorly marked colour sexual dimorphism (♂♂ darker, marginal light bands on carapace absent in *C. manytchensis* or weakly expressed in *C. kulsaryensis*). Carapace brown, with a light median stripe and narrow marginal bands, that more distinct in females (Figs 4, 10). A median band transversely widens behind eyes of the posterior row (Figs 4, 10). The anterior eye row straight, shorter than the median one (Figs 3, 6, 12). AME larger than ALE. Chelicerae dark brown in males (Figs 3, 9), light brown to yellow in females (Figs 6, 12), with two promarginal and three retromarginal teeth. Sternum dark (brown or grey) (Figs 2, 8); rarely with a yellowish median spot in females (Fig. 5). Legs yellow; femora with dark spots, basally blackened in males (Figs 1, 3). Tibia I with two pairs of ventral setae (apart from the pair of apical setae). Male abdomen black or dark brown (Figs 1, 2, 7, 8), that one of female grey, with dark spots and with a lighter lanceolate stripe dorsally (Figs 4, 10), grey-yellow ventrally (Figs 5, 11).

Male palp: cymbium with a distal claw, densely covered with bristles (Figs 22, 25, 26); subtegulum in retrolateral-proximal position (Fig. 31); the embolic base situated apical-medially on bulbus (Figs 22, 25, 31, 35); the embolus laterally-transverse, narrow and undulant in the dorso-ventral direction (Figs 23, 27, 32, 35); synembolus laminar pinnate in *C. manytchensis* (Fig. 30, 33) and grooved in *C. kulsaryensis* (Fig. 35), being a functional conductor; conductor as a small membrane (Fig. 32); large, chitinized, more or less rectangular terminal apophysis (Figs 23, 28, 36, 34); median apophysis with two arms: large broad apical and small hooked basal ones (Figs 22–24, 25–28, 31).

Female epigyne: epigyne longitudinal, consists of the flat upper part (*FAP*) and fovea (Fig. 19); *FAP* width with the anterior stem separating a paired pocket (Figs 19); fovea with distinct lateral lips and anterior rim; septum with a transversal posterior plate and narrow stem (Figs 13–15, 19–20); receptacles oval or elongate, their ducts subequal with the receptaculum length (Fig. 16–18, 21).

Table 1. Diagnostic characters of *Caspicosa* species (given in bold) as compared to some species group and species of the genus *Acantholycosa*.Таблица 1. Диагностические признаки видов *Caspicosa* (даны полужирным) в сравнении с некоторыми группами видов и видами рода *Acantholycosa*.

Characteristics	<i>Caspicosa</i>		<i>Acantholycosa</i>				
	<i>manytchensis</i>	<i>kulsaryensis</i>	<i>khakastica</i> -group	<i>oligerae</i> -group	<i>plumalis</i> -group	<i>norvegica</i>	<i>logunovi</i>
Carapace length (male/female)	2.6–2.9 2.5–2.9	3.0 3.4–3.8	3.7–4.2 –	3.3–4.0 4.3–4.4	4.0–4.8 4.3–4.8	3.4–4.2 3.6–4.6	3.6–3.8 –
Carapace width (male/female)	2.0–2.2 2.0–2.3	2.2 2.6–2.7	2.9–3.3 –	2.4–3.1 3.2–3.3	3.2–4.0 3.5–4.1	?	2.9–3.0 –
Carapace/Femur I length (male/female)	1.43–1.49 1.32–1.36	1.46 1.23	0.86–0.87 –	1.02–1.04 1.18	1.02–1.06 1.06–1.13	?	1.00 –
Number of paired ventral spines on tibia I (male)	2	2	5	5–6	5	5	5
Subtegulum position	retrolateral-proximal	retrolateral-proximal	proximal	proximal	proximal	proximal	retrolateral-proximal
Embolus shape	lamellar, sinuated	lamellar, sinuated	thin, straight	lamellar, turned	lamellar	lamellar	thin, straight
Embolus tooth	absent	absent	bifurcate spine-like	absent	large triangle	large spine-like	small spine-like
Embolus tip	rounded	with lateral projection	thin spine-like	wide, turned	obliquely cut	wide	rounded
Terminal apophysis	large sharply separated plate	large sharply separated plate	claw-like	plate-like	claw-like	small plate-like	claw-like
Apical arm of MA	big broad	big broad	small triangle or big claw-like	big or very big claw-like	small triangle	small triangle	small spine shaped
<i>Pardosa</i> 'terminal apophysis'	absent	absent	with small spine-like tip	with massive claw-like tip	small with spine-like tip	with excision tip and spine-like lateral apophysis	with spine-like tip
Apical pocket of epigyne	paired	paired	–	one broad hood	one hood	one hood	–
Apical half of septal stem	absent	absent	–	invisible	absent	invisible	–
Apical lips	absent	absent	–	absent	present/absent	invisible	–
Septum shape	anchor	anchor	–	rectangular	T-shaped	in form of vase	–
Anterior rim of fovea	recurved	recurved	–	procurved, V-shaped	procurved, V-shaped	procurved	–
Receptacula head	oval	elongate	–	elongate	elongate	elongate	–

COMPOSITION. *Caspicosa chahraka* (Roewer, 1960) comb.n., *C. kulsaryensis* Ponomarev, 2007 and *C. manytchensis* Ponomarev, 2007.

DISTRIBUTION. The Eastern Ancient Mediterranean (Fig. 38): from the Cis-Caucasia to the Cis-Urals, southward to central highlands of Afghanistan.

Caspicosa chahraka (Roewer, 1960) **comb.n.**

Pardosa chahraka Roewer, 1960, 10, fig. 7a–b (♀).

DIAGNOSIS. By the structure of the epigyne, body size and coloration, the female of *C. chahraka* is very close to

that of *C. manytchensis*. Both species are characterized by the epigyne with the anchor-shaped septum and lateral lips in the posterior position, total length 6.5 in *C. chahraka* and 6.6 (on average) in *C. manytchensis*, brown carapace with a light median band and lateral margins, and dorsally blackish and ventrally yellowish abdomen. However, Roewer [1960] notes that the chelicerae of *C. chahraka* with three retromarginal teeth only, whereas those of *C. manytchensis* with two promarginal and three retromarginal teeth. Finally, tibiae III and IV with one dorsal seta in *C. chahraka*, and 1+1 dorsal setae in *C. manytchensis*.

Table 2. Diagnostic characters of three species groups of the genus *Pardosa* by which they differ from the genus *Caspicosa*.
Таблица 2. Диагностические признаки трех групп видов рода *Pardosa*, по которым они отличаются от рода *Caspicosa*.

<i>Pardosa</i> species group	Male palp	References
<i>falcata</i>	chitinised palea in its terminal part; embolic base subdivided by a furrow in two parts; <i>Pardosa</i> 'terminal apophysis' subdivided in two parts	Marusik <i>et al.</i> , 2003
<i>tesquorum</i>	palea with a more or less heavily built basal process; complex conductor present	Kronstedt, Marusik, 2011
<i>wagleri</i>	palea with triangular outgrowth or two fine ridges, <i>Pardosa</i> 'terminal apophysis' with two arms, embolus straight, conductor with spines on its tip	Marusik <i>et al.</i> , 2013

DESCRIPTION. See Roewer [1960: 10].

REMARKS. *C. chahraka* was described from the holotype female collected from the steppe in "Qual"eh Chahrak of Afghanistan [Roewer, 1960: sub *Pardosa* c.]. We have found the same geographical name in Theowald's paper, where the locality was described as "Hézeradjat, Qal"eh Chahrak (110 km östl. Kabul)" [Theowald, 1978: 73]. Thus, the type locality of *C. chahraka* is situated in Hazaristan (or Hazarajat), a mountainous region in the central highlands of Afghanistan (Fig. 38).

Zyuzin [1979] placed *P. chahraka* into the *turkestanica* species group with a question mark. In our opinion, based on the conformation of the epigyne, this species is better placed in the genus *Caspicosa*.

Caspicosa kulsaryensis Ponomarev, 2007
Figs 1–6, 20–24, 35–37.

Caspicosa kulsaryensis Ponomarev, 2007: 93, figs 28–31 (♂♀).

MATERIAL. **Kazakhstan:** 2 ♂♂, 1 ♀ (Paratypes; PC: 25.10.33/1), Atyrau Area, Zhylyoi Distr., c. 80 km NNE Kulsary Vil. (47.5024°N, 54.2780°E), 5.VII.1987, V. Romanov.

DIAGNOSIS. *C. kulsaryensis* differs from its congeners by the larger size (e.g., total ♀ length: 7.4–8.0 in *C. kulsaryensis*, vs. 6.5 in *C. chahraka* and 6.0–7.0 in *C. manytchensis*), the T-shaped septum of the epigyne (anchor-shaped in *C. chahraka* and *C. manytchensis*; cf. Figs 20 and 13–15), the grooved synembolus (pinnate in *C. manytchensis*; cf. Figs 35, 37 and 32, 33), and the rounded terminal apophysis (pelecoid in *C. manytchensis*; cf. Figs 36 and 34).

DESCRIPTION. See Ponomarev [2007: 93].

Male palp: palea reduced, visible in the retrolateral half of bulbus only (Figs 22, 23, 35); embolus narrow, slightly undulant in the antero-posterior direction (Figs 23, 24, 35); embolic tip with a lateral projection (Fig. 37); grooved synembolus curved and rounded on its tip (Figs 35, 37); median apophysis with two arms: large broad apical and small hooked basal ones (Figs 22–24); terminal apophysis with a rounded rim (Fig. 36).

Epigyne: fovea slightly transverse, with lateral lips in the median position (Fig 20); septum transverse, T-shaped; posterior plate with rounded lateral edges (Fig. 20); fovea bottom wrinkled; receptacles elongate; receptacle stem extends along fovea edge (Fig. 21).

DISTRIBUTION. Only the type locality (Fig. 38) [Ponomarev, 2007].

Caspicosa manytchensis Ponomarev, 2007
Figs 7–19, 25–34.

Caspicosa manytchensis Ponomarev, 2007: 93, figs 24–27 (♂♀).

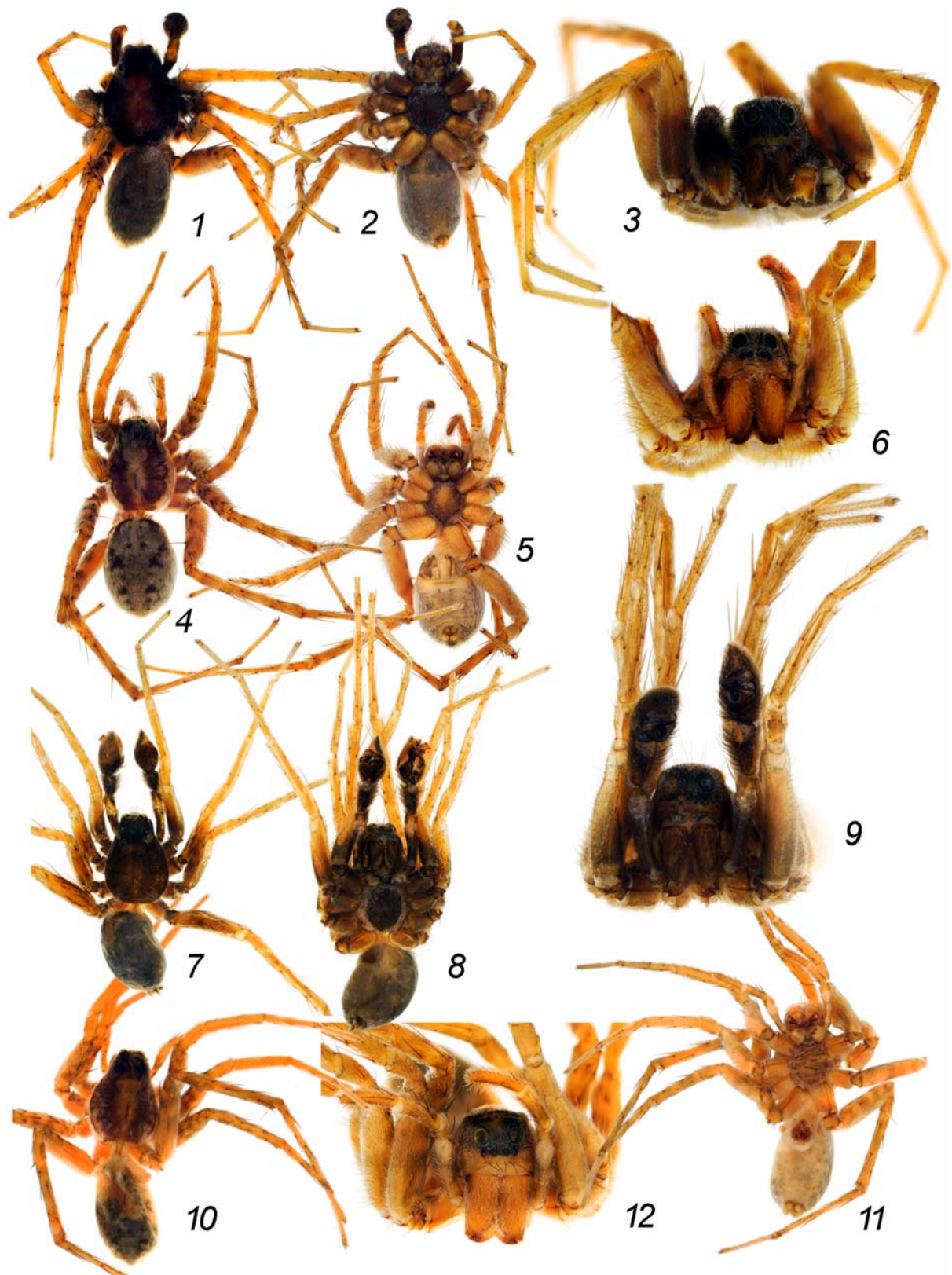
MATERIAL. **Russia:** 14 ♂♂, 2 ♀♀ (Paratypes; PC: 25.10.34/8), Rostov Area, Orlovskiy District, Rostovskiy Nature Reserve, flood land of Manyh River (46.4116°N, 42.7077°E), *Artemisia* steppe, 6–7.V.2004, A.V. Shimko; 1 ♂ (PC: 25.10.34/10), same area and distr., Manyh Vil., shore of Lake Manyh-Gudilo, saline land, 18.V.2008, A.V. Ponomarev; 1 ♂ (PC: 25.10.34/11), same area and distr., Manyh Vil., Manyh-Gudilo Lake, Vodniy Island, saline land, 30.IV.2016, E.A. Eremenko; 71 ♂♂, 53 ♀♀ (PC: 25.10.34/12), same locality and biotope, 24.VI–6.VIII.2016, E.A. Eremenko; 11 ♀♀ (PC: 25.10.34/13), same locality and biotope, 19.VIII–16.IX.2016, E.A. Eremenko; 1 ♀ (PSU-5500), Orenburg Area, c. 2 km SE of Sol'-Ilets Town, sandy banks of Elshanka River, pitfall-traps, 10–17.V.2008, V.O. Koz'minykh; 1 ♀ (PSU-6489), same area, Svetliy Distr., c. 12 km S of Yasniy Vil., steppe, 7.V.2015, S.L. Esyunin; 47 ♂♂, 10 ♀♀ (PSU-8701), 5 ♂♂, 2 ♀♀ (MMUE), 15 ♂♂, 5 ♀♀ (ZMMU), Talovskaya Steppe division of the Orenburg Reserve (51°47'N, 50°52'E), *Artemisia* and *Festuca-Artemisia* steppes, saline land, pitfall-traps, 30.IV–7.V.2019, S.L. Esyunin.

DIAGNOSIS. See above under 'Diagnosis' of *C. kulsaryensis*.

DESCRIPTION. MALE. *Measurements*. Total length 5.45 (5.00–5.75). Carapace 2.75 (2.60–2.85) long, 2.04 (2.00–2.15) wide; width/length ratio 0.74 (0.70–0.77). Clypeal height 0.17 (0.15–0.20), one and a half times AME diameter. Anterior eye row 0.56 (0.55–0.60) wide; median eye row 0.78 (0.75–0.80) wide, posterior eye row 1.11 (1.08–1.13) wide; ocular area (formed by median and posterior yeas) 0.73 (0.71–0.76) long. Eye sizes: AME 0.10, ALE 0.08, PME 0.26, PLE 0.24. AME-AME distance 0.10; AME-ALE distance 0.05. Chelicera 1.03 (1.00–1.05) long. Abdomen 2.70 (2.4–2.9) long. Leg formula: IV, I, II, III. Leg measurements are given in Table 3.

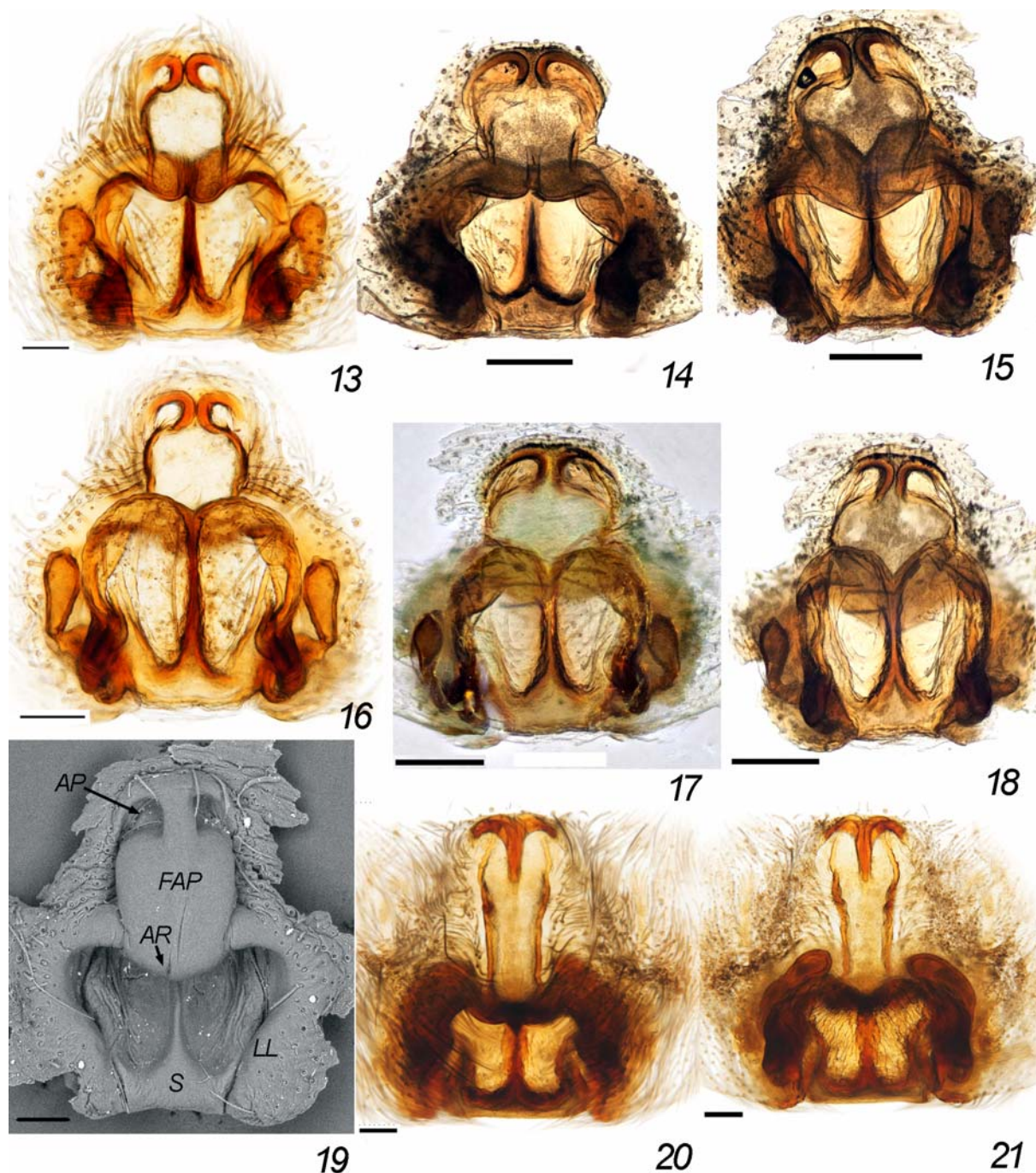
Leg spination: Femur I d 1-1-1, pl 0-0-1(2), rl 0-1-1; II and III d 1-1-1, pl 0-1-1, rl 0-1-1; IV d 1-1-1, pl 0-1-1, rl 0-0-1; Tibia I and II pl 1-1-0, rl 0-1-1, v 2-2-2a; III d 1-1-0, pl 1-1-0, rl 1-0-1, v 2-2-2a; IV d 1-1-1, pl 1-0-1, rl 1-0-1, v 2-2-2a; Metatarsi I-IV pl 1-1-1, rl 1-1-1, v 2-2-3a.

Coloration: Carapace dark brown, darker around its margins; thoracic part with gray curved radial lines; ocular area black, covered with white setae; clypeus dark brown (Fig. 9). Chelicerae brown with two promarginal and three retro-marginal teeth. Endites yellow; labium grey-brown with grey-yellow apices. Sternum dark brown, covered with white hairs. Palps brown, cymbium black. Legs yellow; apical part of femur dark brown. Tarsi and metatarsi without scopulae.



Figs 1–12. General appearance of *Caspicosa kulsaryensis* Ponomarev, 2007 (1–6, paratypes) and *C. manytchensis* Ponomarev, 2007 (7–12, paratypes): 1–3, 7–9 — male, 4–6, 10–12 — female.

Рис. 1–12. Общий вид *Caspicosa kulsaryensis* Ponomarev, 2007 (1–6, паратипы) и *C. manytchensis* Ponomarev, 2007 (7–12, паратипы), общий вид: 1–3, 7–9 — самец, 4–6, 10–12 — самка.



Figs 13–21. Epigyne (13–15, 19, 20) and endogyne (16–18, 21) of *Caspicosa kulsaryensis* Ponomarev, 2007 (20, 21, paratypes) and *C. manytchensis* Ponomarev, 2007 (13, 16 — paratypes; 14, 15, 17–19 — Orenburg Area). Scale bars: 0.1 mm. Abbreviations: AP — anterior pocket, AR — anterior rim of fovea, FAP — flat upper part of epigyne, LL — lateral lips, S — septum.

Рис. 13–21. Эпигина (13–15, 19, 20) и эндогина (16–18, 21) *Caspicosa kulsaryensis* Ponomarev, 2007 (20, 21, паратипы) и *C. manytchensis* Ponomarev, 2007 (13, 16 — паратипы; 14, 15, 17–19 — Оренбургская обл.). Масштаб: 0,1 мм. Сокращения: AP — передние карманы, AR — передний край ямки, FAP — плоская передняя часть эпигины, LL — боковые губы, S — септум.

Abdomen (Figs 1, 2): black with a lanceolate light brown spot and with numerous grey dots forming more or less pronounced rows; venter grey, covered with white hairs.

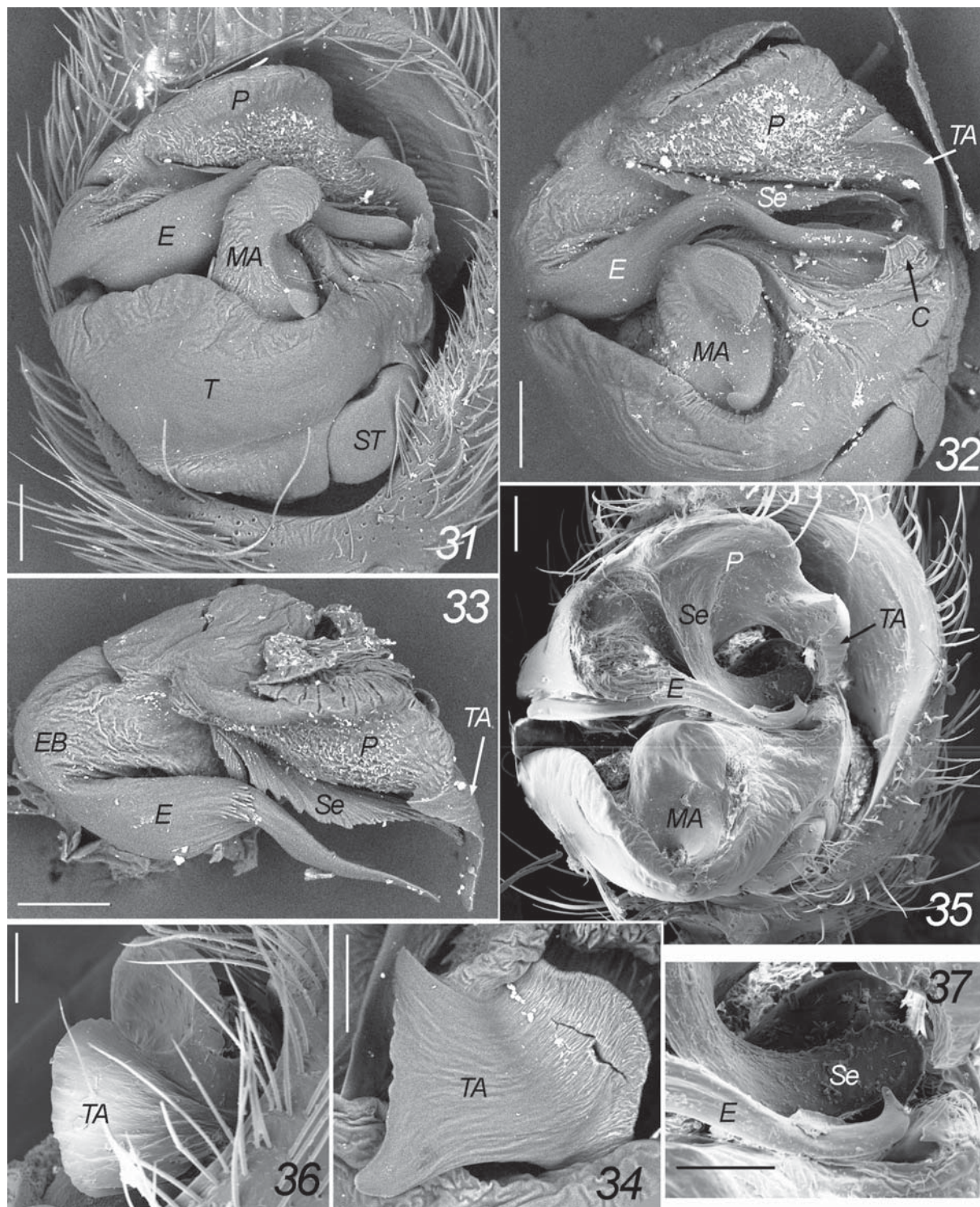
Male palp: cymbium densely covered with bristles and with a distal apical claw (Figs 25, 26); palea not modified (Figs 25, 27, 31); embolus wide, angularly curved in the dorso-ventral direction, with bristles at its bend (Figs 29,

33), and narrow undulant in the antero-posterior direction (Figs 27, 32); embolic tip rounded (Fig. 29); synembolus laminar-pinnate (Figs 30, 32, 33); median apophysis plate-shape, with two bent arms: large broad apical and small hooked basal (Figs 24, 26, 28, 31); pelecoid terminal apophysis with a straight rim (Fig. 34); conductor small, membranous (Fig. 32).



Figs 22–30. Male palp of *Caspicosa kulsaryensis* Ponomarev, 2007 (22–24, paratypes) and *C. manytchensis* Ponomarev, 2007 (25–28 — paratypes; 29, 30 — Orenburg Area): 22, 25 — palp, ventral view, 26 — same, lateral view; 23, 24, 27, 28, 30 — bulbous, ventro-apical (23, 27), apical (24, 30) and retrolateral (28) view; 29 — embolus, apical view. Scale: 0.1 mm.

Рис. 22–30. Пальпа самца *Caspicosa kulsaryensis* Ponomarev, 2007 (22–24, парати́пы) и *C. manytchensis* Ponomarev, 2007 (25–28 — парати́пы; 29, 30 — Оренбургская обл.): 22, 25 — пальпа, вентральнo, 26 — то же, сбоку; 23, 24, 27, 28, 30 — бульбус, снизу-спереди (23, 27), спереди (24, 30) и сбоку (28); 29 — эмболюс, спереди. Масштаб: 0,1 мм.



Figs 31–37. SEM micrographs of the male palp of *Caspicosa kulsaryensis* Ponomarev, 2007 (35–37, paratypes) and *C. manytchensis* Ponomarev, 2007 (31–34, Orenburg Area): 31 — bulbus, ventral view; 32, 35 — same, ventro-apical view; 33 — palea and embolus, apical view; 34, 36 — terminal apophysis, lateral view; 37 — embolus and synembolus tips, ventro-apical view. Scale: 0.1 mm. Abbreviations: C — conductor, E — embolus; EB — base of embolus; MA — median apophysis; P — palea; S — synembolus, ST — subtegulum, TA — terminal apophysis.

Рис. 31–37. Сканирующие микрофотографии пальпы самца *Caspicosa kulsaryensis* Ponomarev, 2007 (35–37, паратипы) и *C. manytchensis* Ponomarev, 2007 (31–34, Оренбургская обл.): 31 — бульбус, снизу; 32, 35 — тоже, снизу-спереди; 33 — палеа и эмболюс, спереди; 34, 36 — терминальная апофиза, сбоку; 37 — вершины эмболюса и синэмболюса, снизу-спереди. Масштаб: 0,1 мм. Аббревиатура: C — кондуктор, E — эмболюс; EB — основание эмболюса; MA — срединный отросток; P — палеа; S — синэмболюс, ST — субтегулум, TA — терминальный отросток.

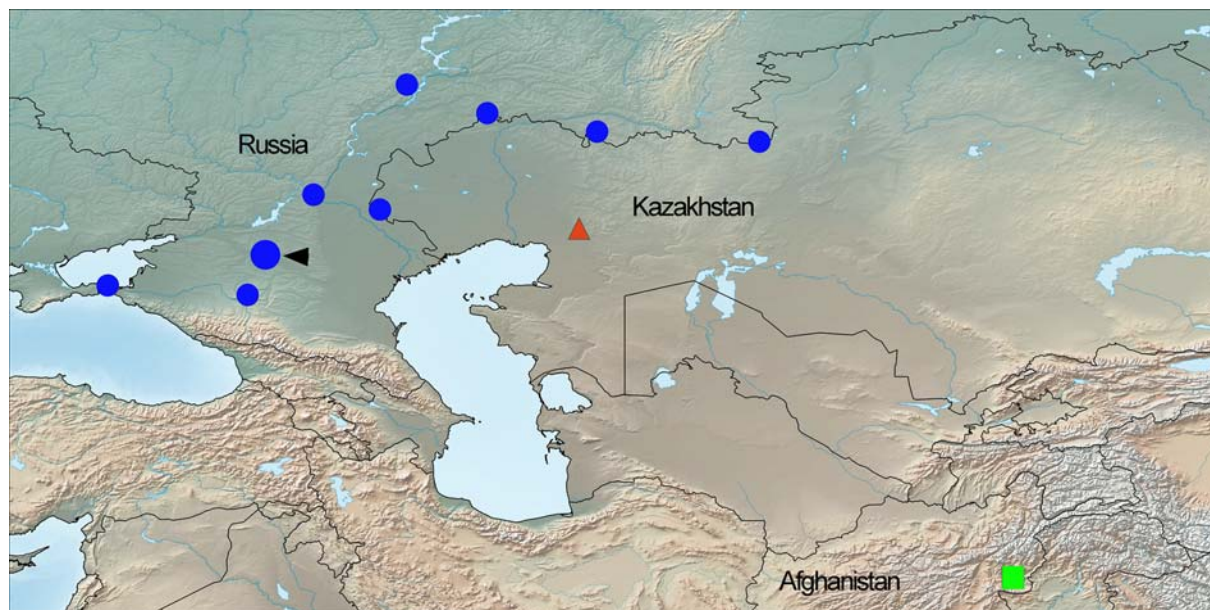


Fig. 38. Distribution of the *Caspicosa* species: *C. chahraka* (Roewer, 1960) (square), *C. kulsaryensis* Ponomarev, 2007 (triangle) and *C. manytchensis* Ponomarev, 2007 (circle; the type locality is arrowed).

Рис. 38. Распространение видов *Caspicosa*: *C. chahraka* (Roewer, 1960) (квадрат), *C. kulsaryensis* Ponomarev, 2007 (треугольник) и *C. manytchensis* Ponomarev, 2007 (круг; типовой локалитет показан стрелкой).

Table 3. Length of leg segments in *Caspicosa manytchensis* Ponomarev, 2007 (average/min–max).
Таблица 3. Длина сегментов ног *Caspicosa manytchensis* Ponomarev, 2007 (среднее/ min–max).

Leg	Femur	Patella+Tibia	Metatarsus	Tarsus	Total length
Male					
I	1.84 1.75–2.00	2.32 2.25–2.50	1.51 1.35–1.75	1.19 1.10–1.30	6.86 6.55–7.55
II	1.78 1.75–1.85	2.17 2.00–2.35	1.51 1.45–1.65	1.13 1.05–1.20	6.56 6.30–7.00
III	1.76 1.75–1.80	2.07 1.90–2.25	1.55 1.45–1.65	1.13 1.05–1.20	6.53 6.15–7.00
IV	2.31 2.25–2.45	2.74 2.55–2.95	2.59 2.25–2.90	1.40 1.25–1.55	9.04 8.35–9.85
Female					
I	2.00 1.90–2.10	2.50 2.25–2.75	1.48 1.35–1.60	1.10 1.05–1.15	7.08 6.55–7.60
II	1.97 1.90–2.00	2.33 2.25–2.50	1.53 1.50–1.60	1.10 1.05–1.15	6.93 6.70–7.25
III	1.95 1.90–2.00	2.25 2.10–2.40	1.53 1.45–1.60	1.10 1.05–1.15	6.88 6.55–7.25
IV	2.53 2.35–2.75	3.20 3.10–3.25	3.00 2.75–3.25	1.35 1.30–1.40	10.08 9.55–10.55

FEMALE. *Measurements*. Total length 6.58 (6.00–7.00). Carapace 2.70 (2.50–2.85) long, 2.12 (2.00–2.25) wide; width/length ratio 0.78 (0.76–0.80). Clypeal height 0.18 (0.15–0.20), one and a half times AME diameter. Anterior eye row 0.58 (0.58–0.60) wide; median eye row 0.86 (0.83–0.88) wide, posterior eye row 1.11 (1.08–1.13) wide; ocular area (formed by median and posterior yeas) 0.74 (0.71–0.76) long. Eye sizes: AME 0.10, ALE 0.08, PME 0.27, PLE 0.24. AME-AME distance 0.10; AME-ALE distance 0.06. Chelicera 1.12 (1.10–1.15) long. Abdomen 3.88 (3.50–

4.15) long. Leg formula: IV, I, II, III. Leg measurements are given in Table 3.

Leg spination: Femur I d 1-1-1, pl 0-0-2, rl 0-1-1; II and III d 1-1-1, pl 0-1-1, rl 0-1-1; IV d 1-1-1, pl 0(1)-1(0)-1, rl 0-0-1; Tibia I pl 1-1-0, rl 0(1)-1(0)-1, v 2(4)-2-2a; II pl 1-1-0, rl 1(0)-0(1)-1, v 2-2-2a; III d 1-1-0, pl 1-1-0, rl 1(0)-0(1)-1, v 2-2-2a; IV d 1-1(0)-0(1), pl 1-0-1, rl 1-0-1, v 2-2-2a; Metatarsi I-IV pl 1-1-1, rl 1-1-1, v 2-2-3a.

Coloration. Carapace yellow-brown; thoracic part with gray curved radial lines; ocular area black covered with

white setae; clypeus yellow (Fig. 12). Chelicerae yellow, with two promarginal and three retromarginal teeth. Endites yellow; labium grey-yellow, with yellow apices. Sternum grey-yellow, covered with white hairs. Palps and legs yellow; femur of legs with dorsal indistinct gray transverse stripes. Tarsi and metatarsi without scopulae. Abdomen (Figs 10, 11): dorsum black, with a lanceolate grey-brown spot and with numerous yellow dots forming more or less pronounced rows, covered with light hairs; venter yellowish white, covered with white hairs.

Epigyne: fovea more or less cordate, slightly transverse, with lateral lips in the posterior position (Fig 20); septum anchor-shaped; posterior plate with strait lateral edges (Figs 13–15, 19); endogyne with relatively short receptacles, receptacle stem transverse; receptacle head small, oval (Figs 16–18).

DISTRIBUTION. **Russia** (Fig. 38): Krasnodar Territory [Ponomarev *et al.*, 2017b, 2018], Rostov Area, Stavropol Territory [Ponomarev, Tsvetkov, 2004: sub *Pardosa* sp.; Ponomarev, 2007, 2010; Lebedeva *et al.*, 2010; Ponomarev *et al.*, 2017a; Ponomarev, Prishutova, 2017], Astrakhan Area [Ponomarev, Alekseev, 2018], Volgograd Area [Ponomarev, Khnykin, 2013], Ulyanovsk Area [Alekseenko, Kuz'min, 2010], Orenburg Area (present data).

Acknowledgments. We wish to express our gratitude to the following persons for giving access to the material studied in the paper: T.K. Tuneva (Ekaterinburg, Russia) and E.A. Eremenko (Rostov-on-Don, Russia). We are also obliged to V.Yu. Shmatko (Rostov-on-Don, Russia), A.V. Grisichenko (Perm, Russia) and N.B. Ovchankova (Perm, Russia) for producing digital photographs and SEM micrographs, respectively. Special thanks go to D.V. Logunov (Manchester, UK) for commenting on the manuscript and for editing the English of the final draft.

This work was partly prepared as the implementation of the state task of the Southern Scientific Centre of the Russian Academy of Sciences (No. AAAA-A19-119011190176-7; Ponomarev A.V.).

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Responsible editor D.V. Logunov