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A new species of *Bolyphantes* C.L. Koch, 1837 from the North Tian Shan Mountains, Kazakhstan (Aranei: Linyphiidae)

Новый вид *Bolyphantes* C.L. Koch, 1837 с северного Тянь Шаня, Казахстан (Aranei: Linyphiidae)

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КЛЮЧЕВЫЕ СЛОВА: таксономия, Micronetinae, Палеарктика, Центральная Азия, горная фауна.

ABSTRACT. A new species, *Bolyphantes gromovi* sp.n. (♂, ♀), is described from the North Tian Shan Mountains, the Republic of Kazakhstan. The species is most similar to the Central Asian *B. bipartitus* (Tanasevitch, 1989), from which it differs in details of the male palp and the epigyne.

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РЕЗЮМЕ Новый вид *Bolyphantes gromovi* sp.n. (♂, ♀) описан с Северного Тянь-Шаня, Республика Казахстан. Вид наиболее близок к центральноазиатскому *B. bipartitus* (Tanasevitch, 1989), от которого отличается деталями строения гениталий самца и самки.

Introduction

Bolyphantes C.L. Koch, 1837 is a small micronetine genus currently containing 21 valid species [World Spider Catalog, 2025]. Five species, *B. sacer* (Tanasevitch, 1986), *B. supremus* (Tanasevitch, 1986), *B. alticeps* (Sundevall, 1832), *B. bipartitus* (Tanasevitch, 1989) and *B. severtzovi* Tanasevitch, 1989 are known from the Tian Shan Mountains, of which the last three occur in Kazakhstan.

Thus, *Bolyphantes gromovi* sp.n. is the sixth congener occurring in the mountains of Central Asia and originating from the Transili Alatau Mt. Range, the North Tien Shan Mountains, Kazakhstan. Its description is the main topic of this paper.

Material and methods

This paper is based on the material deposited in the Zoological Museum of Moscow State University, Russia (ZMMU), and the Zoological Institute, Russian Academy of Science, St Petersburg, Russia (ZIN). Specimens were preserved in 70% ethanol and studied using an MBC-9 stereomicroscope. Line drawings were prepared with a drawing apparatus; a Levenhuk C-800 PLUS digital camera was used for taking digital photographs. Leg chaetotaxy is presented in a formula, e.g., TiI: 2-1-1-0, which means that tibia I has two dorsal spines, one prolateral, one retrolateral and no ventral spines, the apical spines are disregarded. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm.

The following abbreviations are used in the text and figures: a.s.l. — above sea level; BC — bursa copulatrix; D — duct; DS — distal part of scape, *sensu* Saaristo, Tanasevitch [1996]; DSA — distal suprategular apophysis *sensu* Hormiga [2000]; E — embolus; ED — entrance duct (= copulatory duct, *auct*.); EP — embolus proper, *sensu* Saaristo [1971]; FG — Fickert's gland; LC — lamella characteristic, *sensu* Kulczyński [1898]; LW — lateral wall of epigyne, *sensu* Saaristo, Tanasevitch [1996]; MM — median membrane, *sensu* van Helsdingen [1965] = embolic membrane *sensu* van Helsdingen [1986], Hormiga [2000]; PH — pit-hook, *sensu* Saaristo [1973]; P — pit; MP — posterior median plate *sensu* van Helsdingen *et al*. [1977]; Mt — metatarsus; PR — proximal part of radix; TmI — relative position of trichobothrium on the metatarsus of leg I; PsS — pseudoscape, *sensu* Saaristo [1972], Saaristo, Tanasevitch [1996]; R — radix; Re — receptacle; SMF — Senckenberg Museum, Frankfurt am Main, Germany; St — stretcher; TA — terminal apophysis, *sensu* Merrett [1963], van Helsdingen [1965], Millidge [1977]; Th — thumb, lateral extension of embolus, *sensu* Saaristo, Tanasevitch [1996]; Ti — tibia.

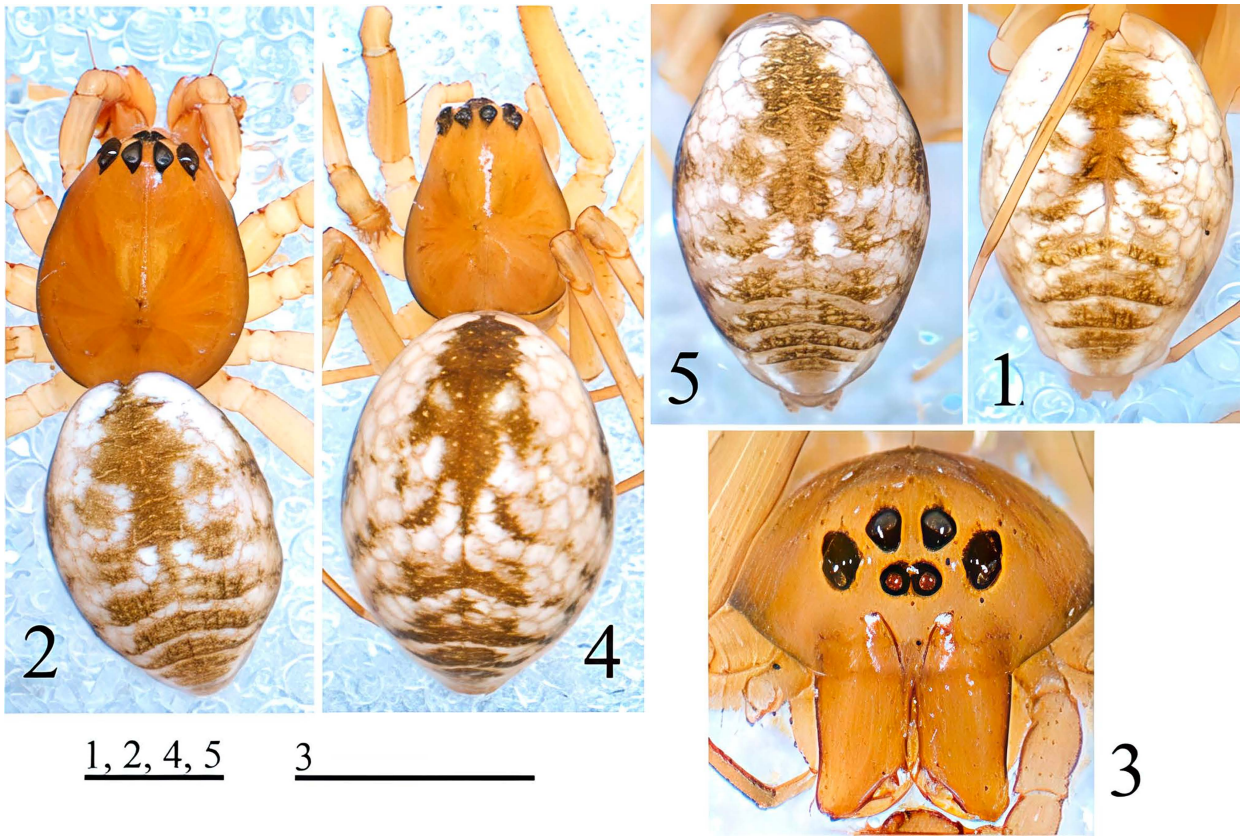
Taxonomy

Class Arachnida Cuvier, 1812
Order Aranei Clerck, 1758
Family Linyphiidae Blackwall, 1859
Subfamily Micronetinae Hull, 1920

Bolyphantes C.L. Koch, 1837

Type species: *Bolyphantes luteolus* (Blackwall, 1833).

N.B. It is well known to me that the subfamily Micronetinae is paraphyletic as shown by molecular studies [Arnedo *et al*., 2009; Arnedo, Hormiga, 2021; Wang *et al*. 2015, etc]. However,



Figs 1–5. *Bolyphantes bipartitus* (Tanasevitch, 1989) (1), holotype (ZMMU), and *B. gromovi* sp.n. (2–5); ♂ (1–3), ♀ (4, 5), paratypes from Talgar Pass. 1, 5 — abdomen, dorsal view; 3 — prosoma, frontal view; 2, 4 — habitus. Scale bars: 0.5 mm.

Рис. 1–5. *Bolyphantes bipartitus* (Tanasevitch, 1989) (1), голотип (ZMMU), и *B. gromovi* sp.n. (2–5); ♂ (1–3), ♀ (4, 5), паратипы с пер. Талгар. 1, 5 — брюшко, вид сверху; 3 — просома, вид спереди; 2, 4 — внешний вид. Масштабные линейки: 0,5 мм.

since these works do not offer any alternatives within the existing International Code of Zoological Nomenclature, this taxon is adopted in the present paper *sensu* Saaristo & Tanasevitch [1996].

Bolyphantes bipartitus (Tanasevitch, 1989)
Fig. 1.

REMARKS. *Lepthyphantes bipartitus* Tanasevitch, 1989 and *L. palaeformis* Tanasevitch, 1989 were described from the opposite sexes and from different but close localities in Kyrgyzstan [Tanasevitch, 1989]. Later, the latter species names was synonymized with *L. bipartitus* and transferred to *Bolyphantes* [Tanasevitch, 2010]. Yet, *B. bipartitus* is similar to the new species (see below) and is currently known from the following two localities in Kazakhstan (modified from Tanasevitch [1989, 2010]): North Tian Shan Mts, Zailiysky Transili Alatau Mt. Ridge, Almaty State Reserve, Middle Talgar River, 1800 m a.s.l.; North Tian Shan Mts, Kyungey-Alatau Mt. Ridge, Chon-Uryukty River Canyon, 2100 m a.s.l., Terskei-Alatau Mt. Ridge, 20 km S of Pokrovka, 2000 m a.s.l.; Dzhelandy River Canyon, 2000–2200 m a.s.l., Chon-Kyzylsu River Canyon, 2600 m a.s.l.

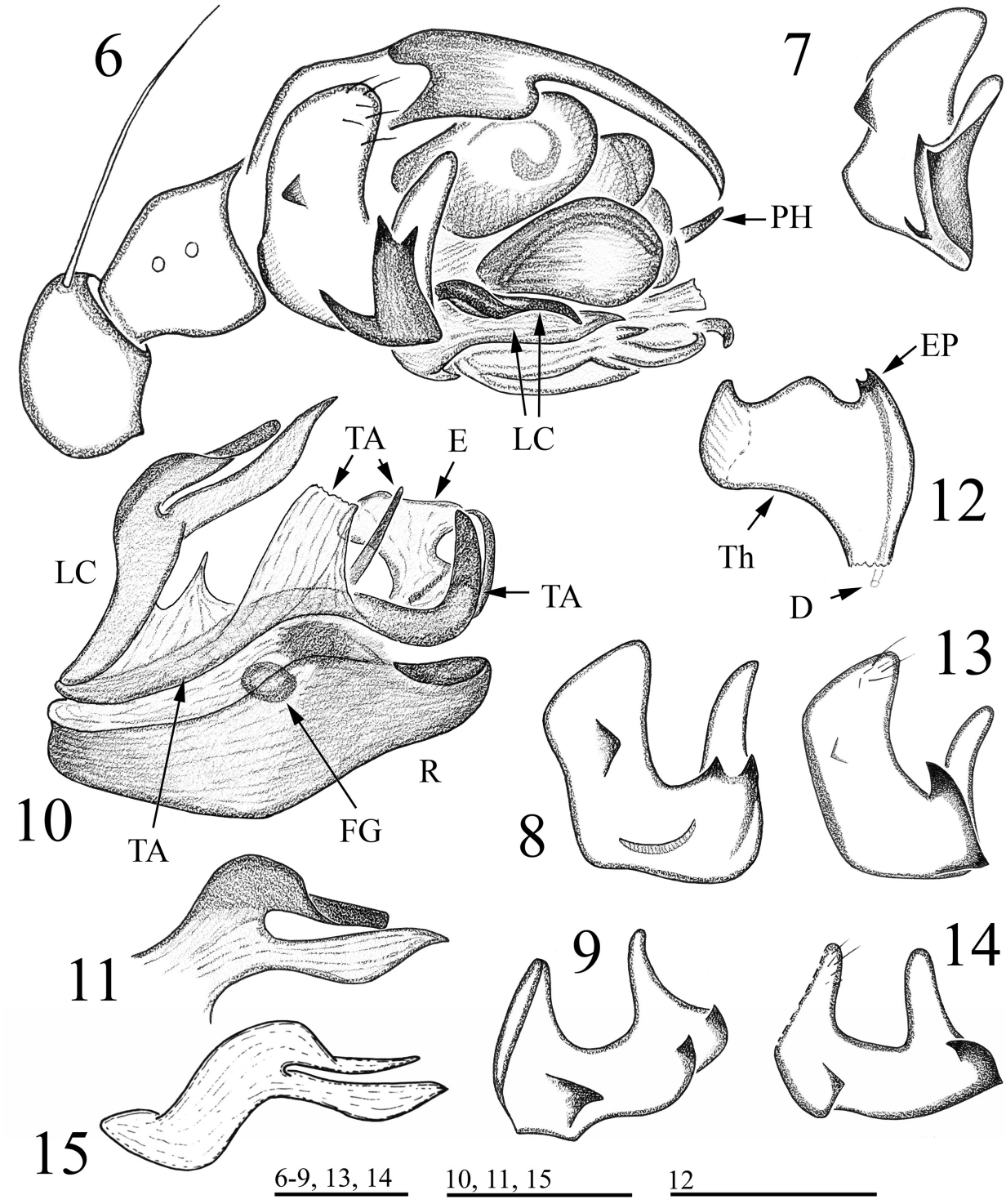
Bolyphantes gromovi, **sp.n.**
Figs 2–5; 6–12.

HOLOTYPE ♂ (ZMMU), KAZAKHSTAN, Almaty [= Alma-Ata] Area, Almaty [= Alma-Ata], Medeu [= Medeo] District, North Tian Shan Mts, N slope of Transili Alatau Mt. Ridge, Talgar Pass, ca. 5,7 km SE of Medeu [= Medeo] sport complex, ca. 3208 m a.s.l., 43.112889°N, 77.110194°E, in grass, 19.07.1997, A.V. Gromov leg.

PARATYPES: 6 ♂♂, 3 ♀♀ (ZMMU), together with the holotype, A.V. Gromov leg.; 2 ♂♂, 7 ♀♀ (ZIN), Kazakhstan, Almaty [= Alma-Ata] Area, Almaty [= Alma-Ata], Medeu [= Medeo] District, North Tian Shan Mts, N slope of Transili Alatau Mt. Ridge, Kishi Almaty [= Small Alma-Ata] River Canyon, right riverside, near Medeu [= Medeo] sport complex, ca. 1690 m a.s.l., ca. 43.158835°N, 77.059559°E, sweeping, 28.07.1997, A.V. Gromov leg.

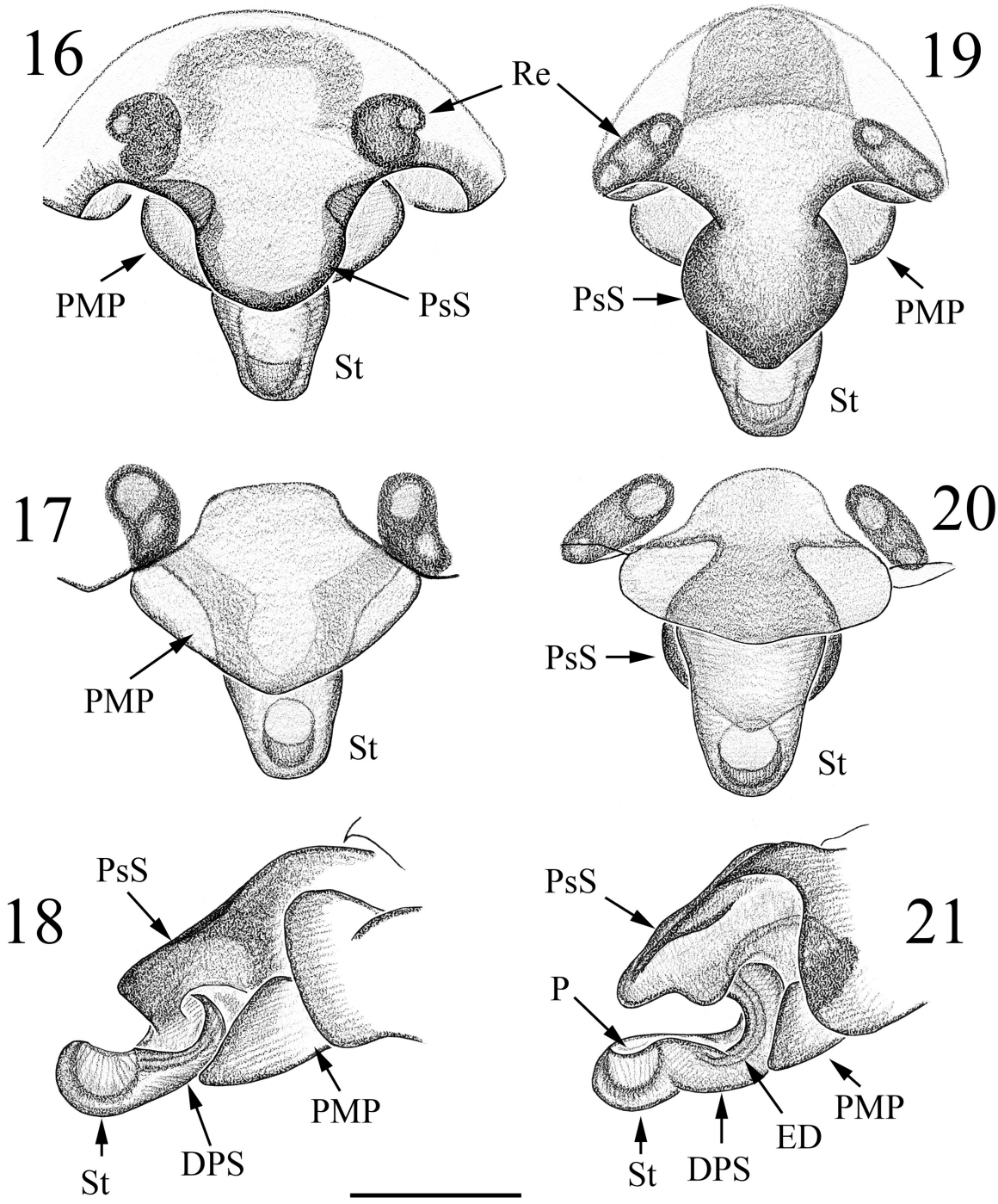
NAME. The species is dedicated to Alexander V. Gromov, an arachnologist from SMF who collected this new species.

DESCRIPTION. Male (paratype from Talgar Pass). Habitus as in Fig. 1. Total length 2.30. Carapace unmodified, 1.00 long, 0.83 wide, yellow to pale brown, with a narrow dark margin. Eyes normal, not enlarged. Chelicerae unmodified, 0.45 long, a mastidion absent (Fig. 2). Legs yellow. Leg I, 5.22 long (1.28 + 0.33 + 1.25 + 1.48 + 0.88); leg IV, 4.34 long (1.18 + 0.28 + 1.00 + 1.18 + 0.70). Chaetotaxy: TiI: 2-1-1-0, TiII: 2-0-1-0; TiIII-IV: 2-0-0-0; MtI-IV: 1-0-0-0. Metatarsi I–III each with a trichobothrium. Spines 1.5–2.5 times as long as diameter of corresponding leg segment. Metatarsi I–III each with a trichobothrium. TmI, 0.25. Palp (Figs 6–12): Patella rounded, with a strong spine dorsally. Tibia unmodified. Cymbium without pronounced posterodorsal projection. Paracymbium relatively large, possess a tooth at its proximal part, and two sharp nearby teeth at its distal part. Embolic division massif. Radix large, board-shaped, Fickert's gland presence, oval. Lamella characteristica bipartite, its upper branch dark, notably sclerotized, shorter than lower one; lower branch pale, broadened at middle, pointed apically.



Figs 6–15. Details of ♂ palpal structure of *Bolyphantes gromovi* sp.n. (6–12), paratype from Talgar Pass; *B. bipartitus* (Tanasevitch, 1989) (13–15), ♂ holotype (ZMMU) (13, 14), and ♂ paratype (15) after Tanasevitch (1989). 6 — right palp, retrolateral view; 7–9, 13, 14 — paracymbium, 7 — frontal view, 8, 13 — lateral view, 9, 14 — dorsal view; 10 — embolic division; 11, 15 — lamella characteristica, lateral view; 12 — embolus, lateral view. Scale bars: 0.1 mm.

Рис. 6–15. Детали строения пальпы ♂ of *Bolyphantes gromovi* sp.n. (6–12), паратип с пер. Талгар; *B. bipartitus* (Tanasevitch, 1989) (13–15), ♂ голотип (ZMMU) (13, 14), и ♂ паратип (15) из Tanasevitch (1989). 6 — правая пальпа, вид сзади и сбоку; 7–9, 13, 14 — парацимбиум, 7 — вид спереди, 8, 13 — вид сбоку, 9, 14 — вид сверху; 10 — эмболюсный отдел; 11, 15 — lamella characteristica, вид сбоку; 12 — эмболюс, вид сбоку. Масштабные линейки: 0,1 мм.



Figs. 16–21. Epigynes of *Bolyphantes gromovi* sp.n. (16–18), paratype from Talgar Pass, and *B. bipartitus* (Tanasevitch, 1989) (19–21), from Dzhelandy River Canyon, Kyrgyzstan (ZMMU, paratype of *B. palaeformis* (Tanasevitch, 1989)). 16, 19 — ventral view; 17, 20 — dorsal view; 18, 21 — lateral view. Scale bar: 0.1 mm.

Рис. 16–21. Эпигины *Bolyphantes gromovi* sp.n. (16–18), паратип с пер. Талгар, и *B. bipartitus* (Tanasevitch, 1989) (19–21) из ущ. Джеланды Каньон, Киргизия (ZMMU, паратип *B. palaeformis* (Tanasevitch, 1989)). 16, 19 — вид снизу; 17, 20 — вид сверху; 18, 21 — вид сбоку. Масштабная линейка: 0,1 мм.

Terminal apophysis a long, narrow bolster, bent distally, with several membraneous outgrowths along its entire length. Embolus relatively small, with a well-developed, curved thumb, embolus proper bifid. Abdomen 1.30 long, 0.85 wide, dorsal pattern as in Fig. 1.

Female (paratype from Talgar Pass). Habitus as in Fig. 3. Total length 2.55. Carapace unmodified, 1.08 long, 0.90 wide. Chelicerae 0.48 long. Legs yellow. Leg I, 4.58 long (1.20 + 0.35 + 1.10 + 1.18 + 0.75); leg IV, 3.94 long (1.13 + 0.30 + 0.88 + 1.00 + 0.63). Chaetotaxy as in the male. TmI, 0.28.

Abdomen 1.55 long, 1.10 wide, dorsal pattern as in Figs 3, 4. Epigyne (Figs 16–18). Pseudoscape notably sclerotized, distal part of scape short, stretcher wide, with a big pit. Posterior median plate as a large ellipse.

TAXONOMIC REMARKS. The new species is closely related to the Central Asian *B. bipartitus* also known from the North Tian Shan Mts (see above), but is readily distinguishable from it by the structure of the paracymbium, viz. the number and shape of teeth (Figs 8, 9 cf. Figs 13, 14), as well as by the shape of the pseudoscape (Figs 16, 18 cf. Figs 19, 21) and the posterior median plate (Fig. 17 cf. Fig. 20).

DISTRIBUTION. The species is known from a few localities in the Transili Alatau Mt. Ridge of the North Tian Shan Mountains.

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