

A new subgenus and a new species of *Walckenaeria* Blackwall, 1833, from the Urals with remarks on the distribution of some *unicornis*-group species in the Palearctic (Aranei Linyphiidae)

Новый подрод и новый вид *Walckenaeria* Blackwall, 1833 с Урала с замечаниями о распространении группы *unicornis* в Палеарктике (Aranei Linyphiidae)

V.E. Efimik, S.L. Esyunin
В.Е. Ефимик, С.Л. Есюнин

Department of Zoology, Perm State University, Bukireva Street, 15, Perm GSP 614000 Russia.
Биологический факультет Пермского государственного университета, ул. Букирева, 15, Пермь ГСП 614000 Россия.

KEY WORDS: *Walckenaeria*, taxonomy, Urals, Palearctic, distribution.

КЛЮЧЕВЫЕ СЛОВА: *Walckenaeria*, таксономия, Урал, Палеарктика, распространение.

ABSTRACT: A new subgenus, *Feruralia* subgen.n. (the type-species: *W. kazakhstanica* Eskov in Eskov et Marusik, 1995), of the erigonine genus *Walckenaeria* Blackwall, 1833, and a new species, *W. korobeinikovi* sp.n., from the Urals, are described and illustrated. The new subgenus occupies a position intermediate between the subgenera *Walckenaeria* s.str. and *Prosopotheca* Simon, 1884. *W. korobeinikovi* sp.n. belongs to the subgenus *Cornicularia* Menge, 1869, corresponding to the *unicornis*-group, and seems especially close to *W. clavicornis* (Emerton, 1882), but it differs by the long, narrow, distal end of the mesal apophysis of the palpal tibia and shape of the medial plate of the vulva. In the Palearctic, there seem to exist two very closely related species, *W. clavicornis* (Emerton), distributed in Chukot Peninsula, Wrangel Island, and ?East Siberia, and *W. korobeinikovi* Esyunin et Efimik, sp.n., occurring in the Urals, West, Middle and East Siberia, and ?Europe. Diagnostic features of all three Palearctic members of the *unicornis*-group, i.e. *W. clavicornis* (Emerton), *W. karpinskii* (O. Pickard-Cambridge), and *W. korobeinikovi* Esyunin et Efimik, sp.n., are given, and their distribution is discussed.

РЕЗЮМЕ: Даны и иллюстрированные описания нового подрода, *Feruralia* subgen.n. (типовой вид *W. kazakhstanica* Eskov in Eskov et Marusik, 1995), в роде пауков-эригонин *Walckenaeria* Blackwall, 1833, и нового вида *W. korobeinikovi* Esyunin et Efimik, sp.n. с Урала. Новый подрод занимает промежуточное положение между подродами *Walckenaeria* s.str. и *Prosopotheca* Simon, 1884. *W. korobeinikovi* sp.n. принадлежит к подроду *Cornicularia* Menge, 1869, соответствующему группе *unicornis*. Этот вид особенно близок к *W. clavicornis* (Emerton, 1882), отличаясь длинным,

узким дистальным концом среднего выроста голени пальпы и формой медиальной пластинки вульвы. По-видимому, в Палеарктике есть два близко родственных вида, *W. clavicornis* (Emerton), распространенный на п-ове Чукотка, о. Врангеля и возможно в Восточной Сибири, и *W. korobeinikovi* Esyunin et Efimik, sp.n., встречающаяся на Урале, в Западной, Центральной и Восточной Сибири и возможно в Европе. Приведены диагнозы всех трех палеарктических представителей группы *unicornis*: *W. clavicornis* (Emerton), *W. karpinskii* (O. Pickard-Cambridge) и *W. korobeinikovi* sp.n., обсуждается распространение этих видов.

It is material collected in Bashkiria by Dr. V.E. Efimik in 1989-1990, and in the Polar Urals by Mr. A. Malozemov in 1990, that prompted the present paper. Examination of this material has resulted in the description of a new species of the erigonine genus *Walckenaeria* Blackwall, 1833. According to the description below, *W. korobeinikovi* sp.n. belongs to the subgenus *Cornicularia* Menge, 1869 [s. Wunderlich, 1972], the latter corresponding to the *unicornis*-group of Millidge [1983]. The new species seems extremely close to *W. clavicornis* (Emerton, 1882), this being the reason for numerous errors by our predecessors. Therefore we shall also cope with the problem of the distribution of all three Palearctic members of the *unicornis*-group: *W. clavicornis* (Emerton), *W. karpinskii* (O. Pickard-Cambridge), and *W. korobeinikovi* sp.n. Besides, *W. kazakhstanica* Eskov in Eskov et Marusik, 1995, redescribed here, appears to warrant a new subgenus solely for its accommodation: *Feruralia* subgen.n.

We wish to thank both Mr. A. Malozemov (Perm) for providing us with part of the material treated, and Dr. K.Y. Eskov (Moscow) for the help in sharing information, and encouragement. Our special grati-

Table 1. Leg measurements of *Walckenaeria korobeinikovi* Esyunin et Efimik, sp.n. paratypes. Промеры ног паратипов *Walckenaeria korobeinikovi* Esyunin et Efimik, sp.n.

		I	II	III	IV
F	♂	0.68(0.63-0.77)	0.81(0.78-0.90)	0.44(0.40-0.50)	0.36(0.33-0.38)
	♀	0.68(0.60-0.78)	0.78(0.73-0.88)	0.42(0.38-0.50)	0.36(0.33-0.39)
Pt+Ti	♂	0.63(0.60-0.65)	0.76(0.73-0.85)	0.42(0.40-0.48)	0.36(0.33-0.38)
	♀	0.64(0.60-0.75)	0.74(0.70-0.80)	0.40(0.33-0.45)	0.34(0.30-0.39)
Mt	♂	0.53(0.45-0.58)	0.64(0.55-0.73)	0.38(0.35-0.43)	0.32(0.28-0.35)
	♀	0.54(0.50-0.62)	0.63(0.59-0.70)	0.38(0.35-0.40)	0.31(0.28-0.35)
T	♂	0.72(0.63-0.78)	0.91(0.88-0.98)	0.56(0.53-0.60)	0.38(0.35-0.40)
	♀	0.73(0.63-0.83)	0.87(0.75-1.00)	0.55(0.50-0.63)	0.38(0.35-0.43)

tude concerns Dr. K.G. Mikhailov, of the Zoological Museum of the Moscow State University (ZMMU), for the opportunity to (re)study materials under his care. We are also obliged to Dr. S.I. Golovatch (Moscow), who kindly checked the English of the final draft. The work is supported through the INTAS grant 94-3708.

Type specimens have been deposited in the collections of the ZMMU and Department of Zoology of the Perm State University (PSU), as indicated below.

All measurements in the descriptions are given in mm. The collecting localities have been mapped, with the respective numbers put in square brackets ([]) referred to in the material section.

Walckenaeria Blackwall, 1833.

Feruralia Efimik **subgen.n.**

Type-species: *Walckenaeria kazakhstanica* Eskov in Eskov et Marusik, 1995.

Diagnosis. Cephalic part of carapace produced forward and somewhat upward, making a well-expressed "neck", ending apically into a protuberance with a brush of closely-packed spines (Figs 1a, b, 2d). All eyes situated on top of cephalic part. A characteristic "file" on dorsal side of carapace (Fig. 1b).

Palpal tibia with a digitiform process at base. Distal end of tibia with a fang (Fig. 2c). A few strong spines between both digitiform process and fang.

Triangular plate of epigyne with a narrow base. Vulva with large, rounded receptacles set well apart (Figs 1c-e).

REMARKS. This subgenus is related to *Walckenaeria* s. str. by the shape of the carapace and rounded receptacles. At the same time, the new subgenus is closed to the subgenus *Prosopotheca* Simon, 1884, by the shape of the process of the palpal tibia and the group of spines on the apical protuberance [s. Wunderlich, 1972]. *Feruralia* subgen.n. is distinguishable from other subgenera by the set of features characterising different subgenera, whereas the "file" on the dorsal side of the carapace seems to be unique.

Walckenaeria (Feruralia) kazakhstanica Eskov in Eskov et Marusik, 1995

Figs 1a-e, 2a-d, Map 1.

Walckenaeria kazakhstanica Eskov in Eskov & Marusik, 1995: 62, figs 25-26.

Walckenaeria kazakhstanica: Eskov, 1994: 114.

MATERIAL. Russia, South Urals, Bashkiria: 1 ♂ (PSU), Shulgan-Tash Reserve nr. Staro-Subkhangulovo [2], Caragana steppe, litter, 10.IX.1989; 1 ♀ (PSU), nr. Syrtlanovo [1], stony steppe, litter, 22.VIII.1990; all leg. V. Efimik.

DESCRIPTION. Male. Total length 2.25. Carapace: 1.08 long, 0.58 wide, dark brown, with obscure markings. Chelicerae: 0.28 long. Legs: dirty yellow; leg I 2.09 long (Fe 0.63, Pt+Ti 0.68, Me 0.45, Ta 0.33), leg IV 2.21 long (Fe 0.60, Pt+Ti 0.75, Me 0.53, Ta 0.33). Tibiae I-IV without dorsal spines. Metatarsi I-IV each with a trichobothrium. Tm I — 0.50. Palp as in Fig. 2a-c. Abdomen: 1.05 long, 0.73 wide, grey.

Female. Total length 2.50. Carapace: 0.90 long, 0.68 wide. Chelicerae: 0.30 long. Legs: leg I 2.05 (Fe 0.60, Pt+Ti 0.70, Me 0.45, Ta 0.30), leg IV 2.07 long (Fe 0.55, Pt+Ti 0.64, Me 0.53, Ta 0.33). Chaetotaxy, colour etc. as in male except Tm I being 0.20. Epigyne and vulva as in Fig. 1c-e.

REMARKS. Previously referred to as a nomen nudum [Eskov, 1992b, 1994], this species is described from the female sex only [Eskov & Marusik, 1995]. Thus, the above is the first description of the male. This species seems to be especially closely related to *W. crocata* (Simon, 1898) by the shape of the palpal tibia. However, it is distinguishable by the shape of both the cephalic part of the carapace and the epigyne.

DISTRIBUTION. Russia: South Urals, Tuva; Kazakhstan: East-Kazakhstan Area [Eskov, 1992b, 1994, Eskov & Marusik, 1995] (Maps 1, 2).

Subgenus *Cornicularia* Menge, 1869.

Walckenaeria (Cornicularia) korobeinikovi Esyunin et Efimik **sp.n.**

Figs 3a-d, 4d-f, 5c-d, h. Maps 1, 2.

MATERIAL. Holotype, ♂ (ZMMU); Russia, Polar Urals,

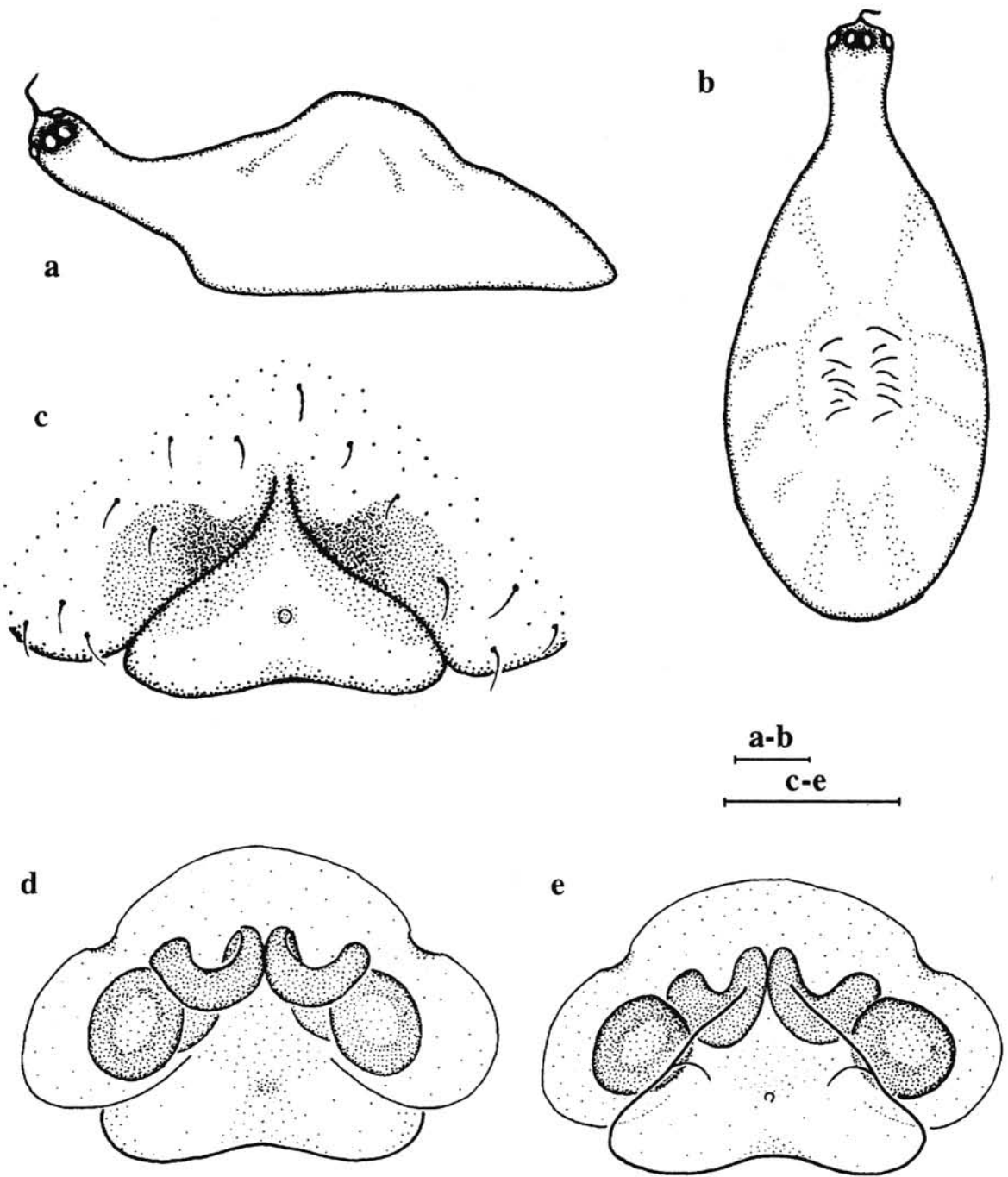


Fig. 1. *Walckenaeria (Feruralia) kazakhstanica* Eskov in Eskov et Marusik, 1995, male carapace and female genitalia: a-b) carapace; c) epigyne; d-e) vulva. Scale = 0.10.

Рис. 1. *Walckenaeria (Feruralia) kazakhstanica* Eskov in Eskov et Marusik, 1995, головогрудь самца и гениталии самки: a-b) головогрудь; c) эпигина; d-e) вульва. Шкала 0,10.

Neroika Mt. [7], 700 m, dwarf *Betula* stand, pitfall trap, 18.VI.1990, leg. A. Malozemov. Paratypes: 3 ♂♂ (PSU), same locality and habitat, 24.VII.1990, leg. A. Malozemov; 6 ♂♂, 1 ♀ (ZMMU: *Cornicularia clavicornis*), Yugorski Peninsula [11], Belyi Nos Cape, 18-27.VI.1983, leg. V. Bulavintsev; 3 ♀♀ (PSU), South Yamal, Khadita-Yakha River [8], dwarf *Betula* stand, pitfall trap, 11.VII.1981, leg. Y.I. Korobeinikov & S. Esjunin; 1 ♂, 3 ♀♀ (ZMMU: *C.clavicornis*), South Yamal, Shchutchya River [10], mouth of the Tashlova-Yakha River, 25.VI-

13.VII.1979, leg. T. Andreeva; 4 ♀♀ (PSU), West Siberia, Tyumen Area, Yuganski Reserve [12], mixed (*Betula*, *Picea*, *Abies*) forest, 1988, leg. M. Belyaeva & V. Novokshonov; 2 ♂♂, 1 ♀ (ZMMU: *C. clavicornis*), Middle Siberia, nr. Norilsk [13], Kharaelakh Mts., alpine belt, boggy depression, 27.VIII.1983; 7 ♂♂ (ZMMU: *C.clavicornis*), Middle Siberia, Putorana Plateau [14], Ayan Lake, mouth of Amnundakta River, boggy *Larix* forest with moss, 13.VIII.1983; 2 ♀♀ (ZMMU: *C. clavicornis*), same locality, source of Ayan River, alpine belt,

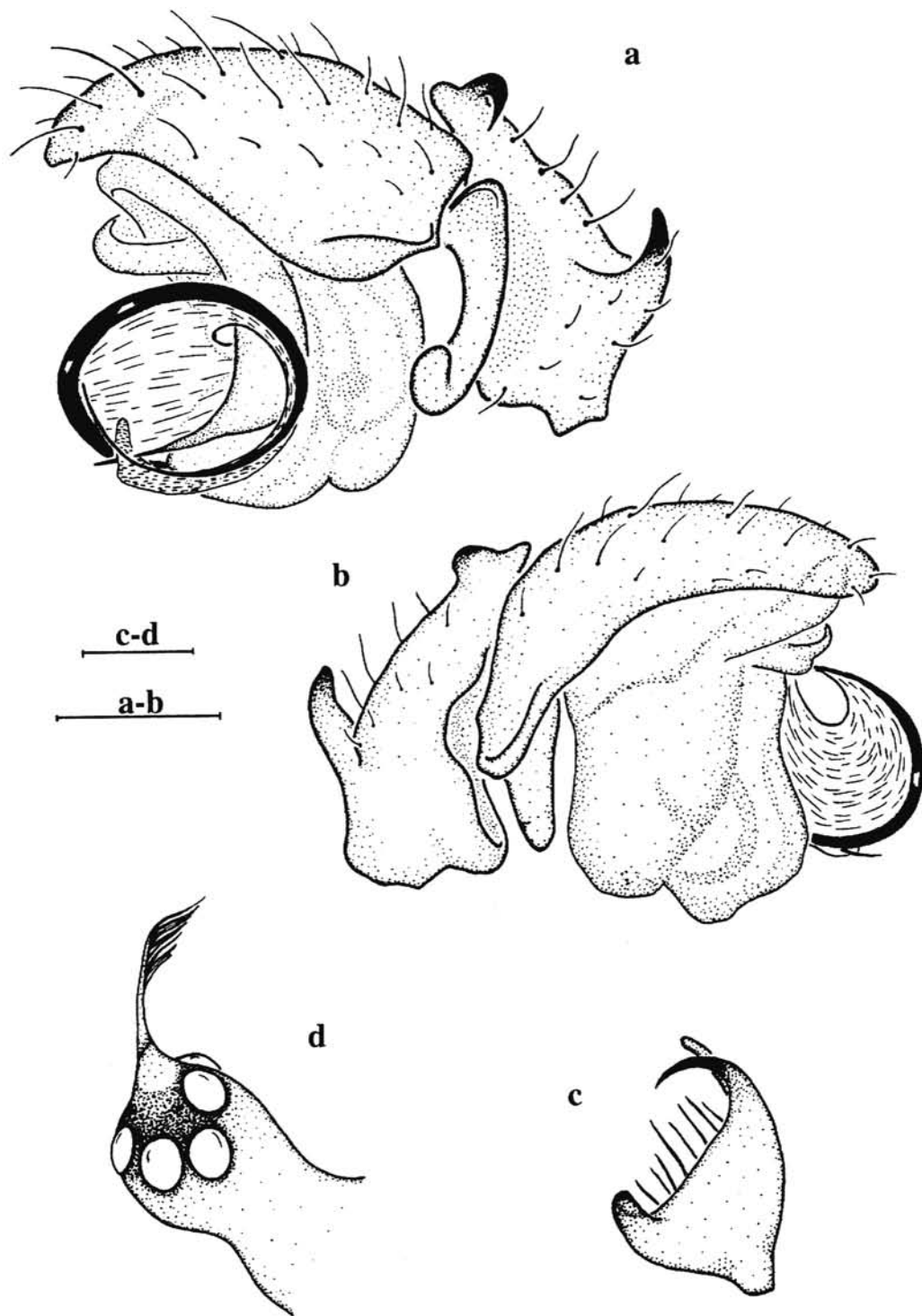


Fig. 2. *Walckenaeria (Feruralia) kazakhstanica* Eskov in Eskov et Marusik, 1995, ♂: a-b) palp; c) palpal tibia; d) cephalic part of carapace. Scale = 0.10.

Рис. 2. *Walckenaeria (Feruralia) kazakhstanica* Eskov in Eskov et Marusik, 1995, ♂: a-b) пальпа; c) голень пальпы; d) головная часть карапакса. Шкала 0,10.

Eriophorum-Carex bog, 16.VIII.1983; 1 ♀ (ZMMU: *C. clavicornis*), same locality, slope, 16.VIII.1983; 1 ♂ (ZMMU: *C. clavicornis*), same locality, subalpine belt, moss-*Vaccinium uliginosum-Carex* bog, 19.VIII.1983; 2 ♂♂, 2 ♀♀ (ZMMU: *C. clavicornis*), same locality, shrub tessellated tundra, 19.VIII.1983, all leg. K.Y. Eskov; 1 ♂ (ZMMU: *C. clavicornis*), Middle Siberia,

Nizhnyaya Tunguska River [15], 40 km off mouth of the Kochechum River, litter, 30.VII.1978, leg. A. Vakhrushev; 1 ♀ (PSU), East Siberia, Magadan Area, Magadan State Reserve [21], *Larix* flood-forest, 21.VII.1987, leg. O.Y. Mosina.

DESCRIPTION. Male. Total length 2.23 (holotype), ranging from 2.15 to 2.38, mean 2.31. Carapace: length

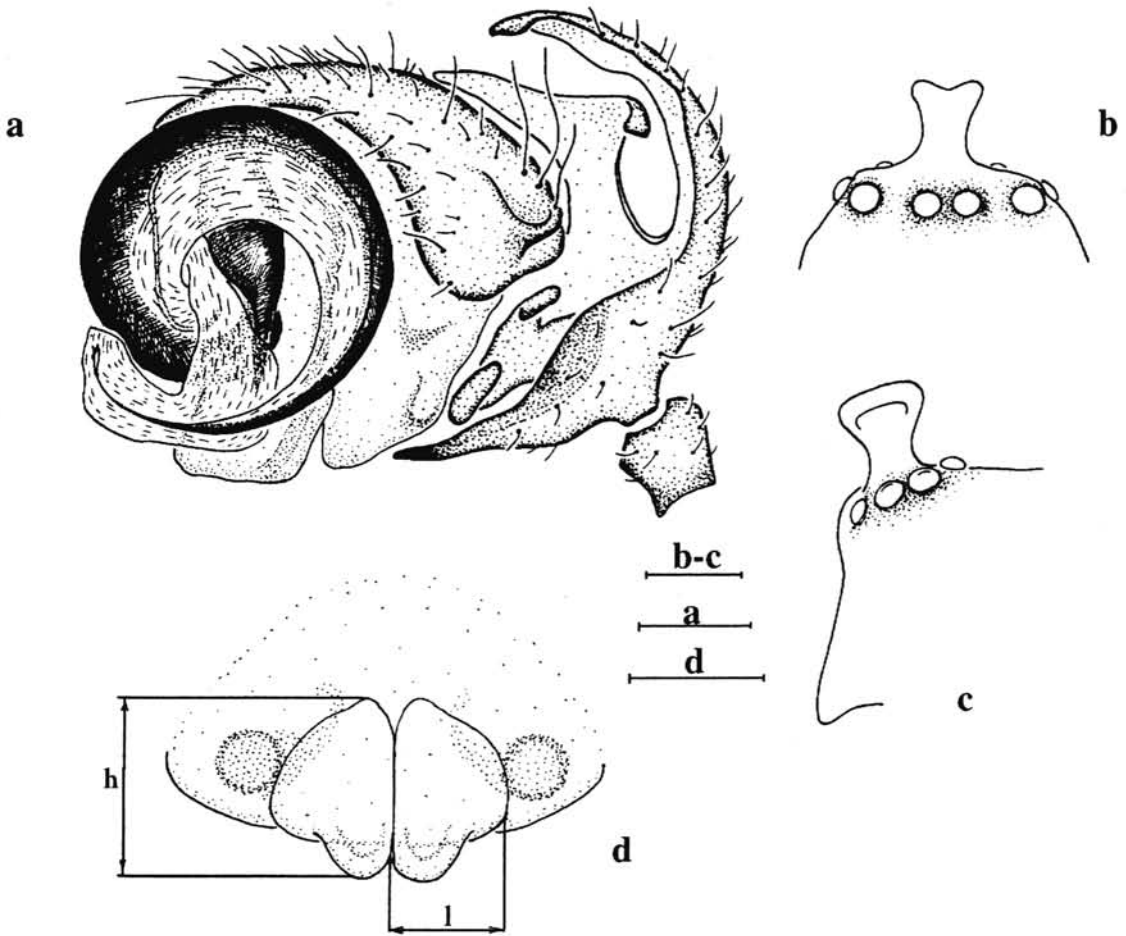


Fig. 3. *Walckenaeria (Cornicularia) korobeinikovi* Esyunin et Efimik, sp.n., ♂ and ♀: a) palp; b-c) ocular area of male carapace; d) epigyne. h — height of epigyne plate; l — width of epigynal plate. Scale = 0.10.

Рис. 3. *Walckenaeria (Cornicularia) korobeinikovi* Esyunin et Efimik, sp.n., ♂ и ♀: а) палец; б-с) глазная область карапакса самца; д) эпигина. h — высота пластинки эпигины; l — ширина пластинки эпигины. Шкала 0,10.

0.93 (holotype), ranging from 0.85-0.95, mean 0.92, width 0.68, 0.63-0.75, and 0.68, resp.; orange-brown, with obscure markings. A stout horn in ocular area (Fig. 3b-c). Sternum: orange-brown, with dark margins. Chelicerae: 0.35 long. Legs: red-yellow; leg I 2.28 long (Fe 0.70, Pt+Ti 0.78, Me 0.45, Ta 0.35), leg IV 2.62 long (Fe 0.75, Pt+Ti 0.91, Me 0.58, Ta 0.38). Leg sizes of paratypes see Table 1.

Tibiae I-II with two dorsal spines, and tibiae III-IV with one each. Metatarsi I, IV each with a trichobothrium. Tm I — 0.5. Palp as in Figs 3a, 4d-f. Abdomen: 1.30 (1.39:1.30-1.43) long, 0.78(0.85:0.80-0.93) wide, grey to black.

Female. Total length 2.50. Carapace: length 0.96, ranging from 0.85 to 1.05, width 0.69, ranging from 0.65 to 0.75. Abdomen: length 1.54, ranging from 1.33 to 1.70, width 0.88, ranging from 0.75 to 1.00. Size of legs given above. Chaetotaxy, colour as in male. Epigyne and vulva as in Figs 3d, 5c-d, h.

VARIABILITY. Size variation of carapace and epigynal plate as in Figs 6, 7. Epigynal plate shapes vary as in Fig. 5c,h.

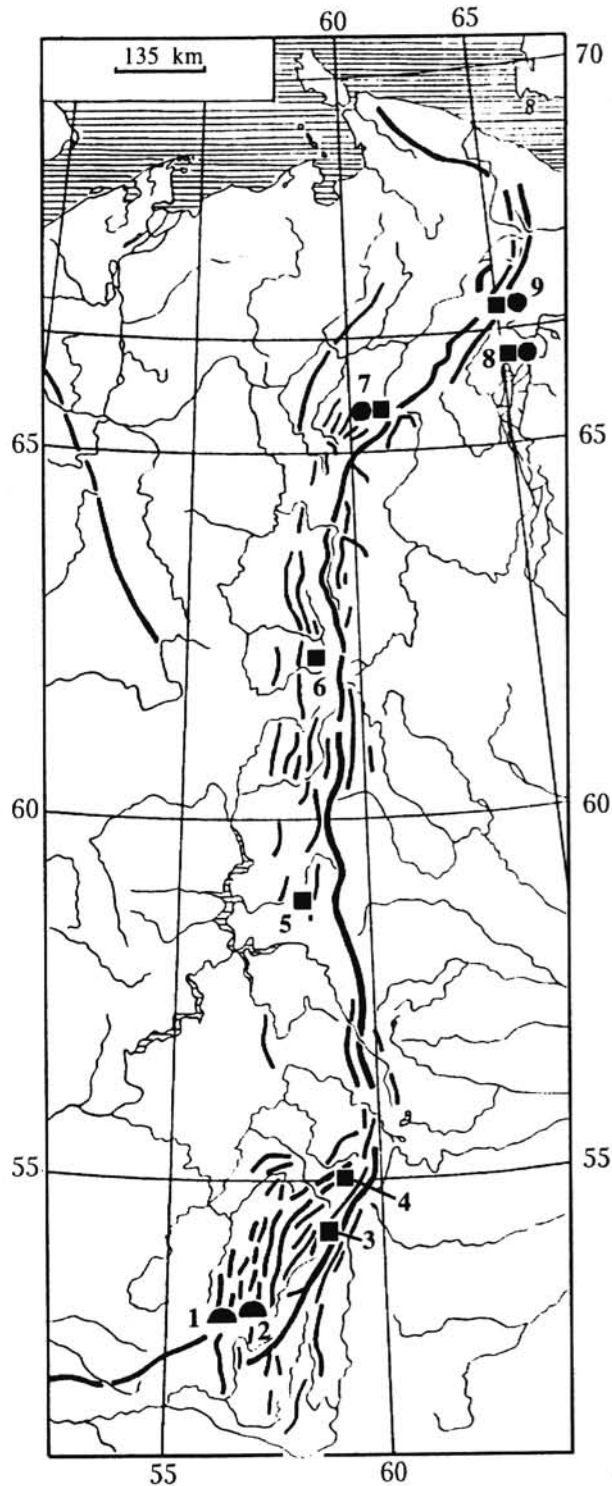
DIAGNOSIS. This species belongs to the *unicornis*-group [s. Millidge, 1983], being closer to *W. clavicornis*

(Emerton, 1882). Both species are similar in the size of the carapace (Fig. 6), but there is a distinction in the shape of the epigynal plate (Fig. 7). The new species differs from *W. clavicornis* in the form of the palpal tibia (cp. Figs 4d-f & 4a-c), with the distal end of the mesal apophysis being much longer. The females of these species are distinguished by the shape of the medial plate of the vulva (cp. Figs 5c-d & 5a-b).

NAME. The species is dedicated to the late Dr. Yu.I. Korobeinikov, a famous Ural entomologist.

REMARKS. The records of *W. clavicornis* from the Polar Urals [Tanasevitch, 1985], northeastern Taimyr Peninsula, Vaigach Island, Krasnoyarsk Province, Putorana Plateau, and the environs of Norilsk [Eskov, 1985] are referred in fact to the new species (see above under Material). Although not proved by pertinent material, the majority of *W. clavicornis* records from other localities in West, Middle and perhaps even East Siberia also seem to actually belong to *W. korobeinikovi* sp.n. (also see remarks under *W. clavicornis*).

Holm [1967] compared specimens from Helvellyn, West Moreland (about 1000 m a.s.l.), Sweden, with a *W. clavicornis* sample from Greenland and concluded that "this specimen has parallel tibial apophyses but the

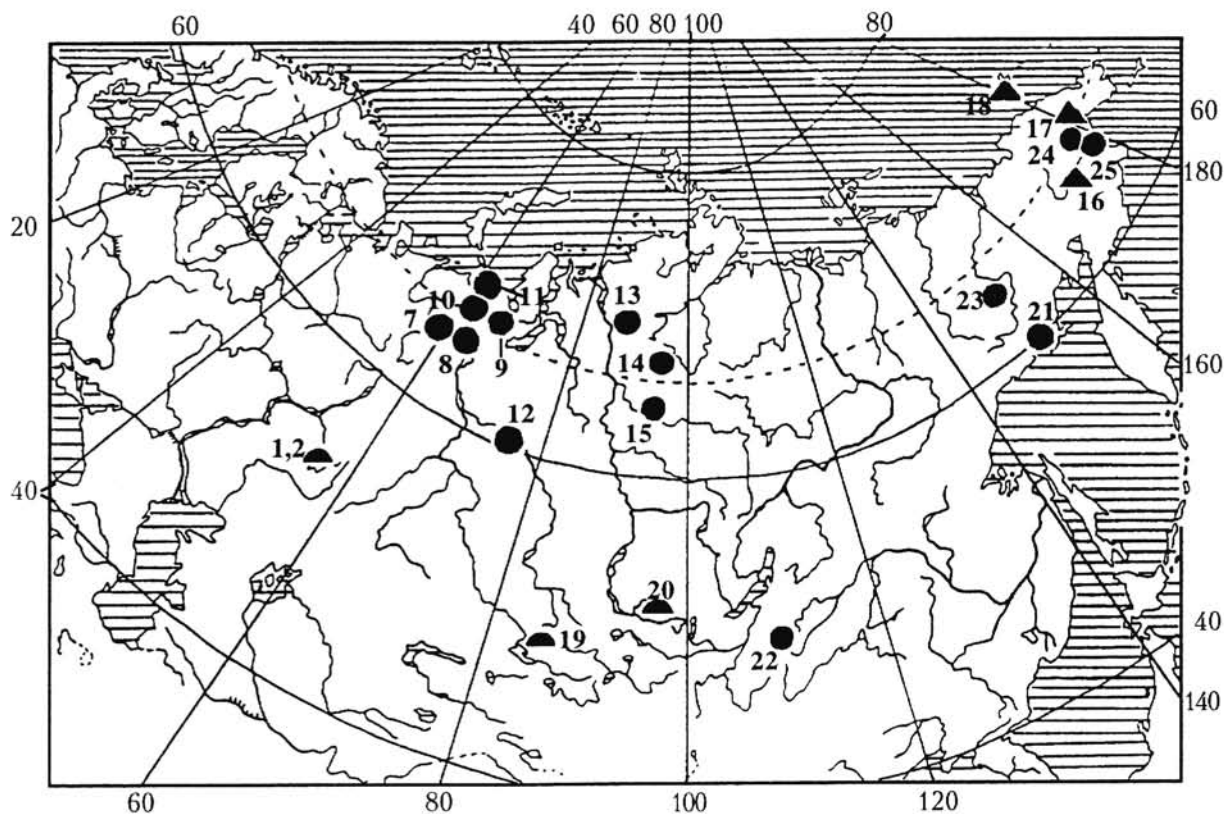


Map 1. Distribution of *Walckenaeria kazakhstanica* Eskov in Eskov et Marusik, 1995 (semicircle), *W. karpinskii* (O.Pickard-Cambridge, 1873) (square) and *W. korobeinikovi* Esyunin et Eskov, sp.n. (circle) in the Urals.

Symbols. The South Urals, Bashkiria: 1 — Shulgan-Tash Reserve, 2 — nr. Syrtlanovo; Chelyabinsk Area: 3 — nr. Sibirka, 4 — Iremel Mt., 5 — Middle Urals, Basegi Mt. Range. 6 — North Urals, Pechoro-Ilychskii Reserve. 7 — Polar Urals, Neroika Mt; South Yamal: 8 — Khadyta-Yakha River, 9 — Shchutchya River.

Карта 1. Распространение на Урале *Walckenaeria kazakhstanica* Eskov in Eskov et Marusik, 1995 (полукруг), *W. karpinskii* (O.Pickard-Cambridge, 1873) (прямоугольник) и *W. korobeinikovi* Esyunin et Efimik, sp.n. (круг).

Символы. Южный Урал, Башкирия: 1 — заповедник Шульган-Таш, 2 — окрестности Сыртланово; Челябинская обл.: 3 — окрестности Сибирки, 4 — гора Иремель; 5 — Средний Урал, хребет Басеги; 6 — Северный Урал, Печоро-Ильчский заповедник; 7 — Приполярный Урал, гора Неройка; Южный Ямал: 8 — река Хадьта-Яха, 9 — река Щучья.



Map 2. Distribution of *Walckenaeria kazakhstanica* Eskov et Marusik, 1995 (semicircle), *W. clavicornis* (Emerton, 1882) (triangle) and *W. korobeinikovi* Eshyulin et Eskov, sp.n. (circle).

Symbols 1, 2, 7-9 as in Map 1. 10 — Polar Urals, Sob River. 11 — Yugorski Peninsula, Belyi Nos Cape. 12 — West Siberia, Yuganski Reserve. Middle Siberia: 13 — nr. Norilsk, 14 — Putorana Plateau, 15 — Nizhnyaya Tunguska River. 16 — Chukotka, Upper Bolshaya Osinovaya River. 17 — East Chukotka, btw. Egvekinot & Iultin. 18 — Wrangel Island. 19 — East Kazakhstan Area, Saur Mts. 20 — Tuva, Torgalyg Village. 21 — Magadan Area, Magadan Reserve.

Карта 2. Распространение *Walckenaeria kazakhstanica* Eskov et Marusik, 1995 (полукруг), *W. clavicornis* (Emerton, 1882) (треугольник) и *W. korobeinikovi* Eshyulin et Efmik, sp.n. (круг).

Символы 1, 2, 7-9 как на Карте 1. 10 — Полярный Урал, река Собь. 11 — Югорский полуостров, мыс Белый нос. 12 — Западная Сибирь, Юганский заповедник. Средняя Сибирь: 13 — окрестности Норильска, 14 — плато Путорана, 15 — река Нижняя Тунгуска. 16 — Чукотка, верховья реки Большая Осиновая. 17 — Западная Чукотка, между Эгвекинот и Иулатин. 18 — остров Врангеля. 19 — Восточно-Казахстанская область, горы Саур. 20 — Тува, Торгалыг. 21 — Магаданская область, Магаданский заповедник.

distal part of the inner apophysis is bent slightly inwards, a trait which it has in common with Swedish specimens of the species. Quite probably there is a tendency for separate geographical forms to appear in this species" (p. 26). We agree with Holm that European specimens are distinct from *W. clavicornis*, being a new species. Although we have not seen any material from the West Palearctic, we are inclined to believe that the new species described just above occurs in Europe as well. Hence, *W. korobeinikovi* sp.n. seems to be a boreo-montane Euro-Siberian species.

HABITAT. Habitat data indicate that *W. korobeinikovi* sp.n. dwells in dwarf *Betula* stands within the Urals, and it has been found in various moist biotopes, e.g. paludal forests, boggy depressions and bogs, in Siberia. Both males and females have been encountered throughout the summer, from June till August.

DISTRIBUTION. Polar Urals and regions immediately adjacent to the Urals: Yugorski Peninsula, South Yamal. West Siberia: Yuganski Reserve; Middle Siberia: nr. Norilsk, Putorana Plateau and Nizhnyaya Tunguska River; East Siberia: Magadan Reserve (Maps 1, 2).

Walckenaeria (Cornicularia) clavicornis (Emerton, 1882).

Figs 4a-c, 5a-b, g, Map 2.

MATERIAL. 5 ♀♀ (ZMMU), Chukotka, Upper Bolshaya Osinovaya River (tributary of Belaya River [16]), grove, litter, 13.VII.1989; 1 ♀ (ZMMU), East Chukotka, btw. Egvekinot & Iultin [17], canyon, 22.VI.1989, all leg. & det. Y.M. Marusik; 1 ♂, 1 ♀ (PSU), Wrangel Island [18], Rogers Bay, pitfall trap, 5-19.VI.1990; 4 ♂♂, 13 ♀♀ (ZMMU: det. K.Y. Eskov & Y.M. Marusik), same locality, Somnitelnaya Bay, 1984-1986, all leg. O. Khruleva.

DESCRIPTION. Genitalia of both male and female as in Figs 4a-c, 5a-b, g; non-genital characters see in Millidge [1983].

REMARKS. So far it has been believed that *W. clavicornis* is a widely distributed, trans-Holarctic species [Holm, 1967; Wunderlich, 1972; Millidge 1983]. Eskov [1988] pointed out that it is widespread in Siberia. Based on a study of pertinent material, we can confirm that *W. clavicornis* does occur in Chukotka (original data) and Wrangel Island [Eskov, 1985; Khruleva,

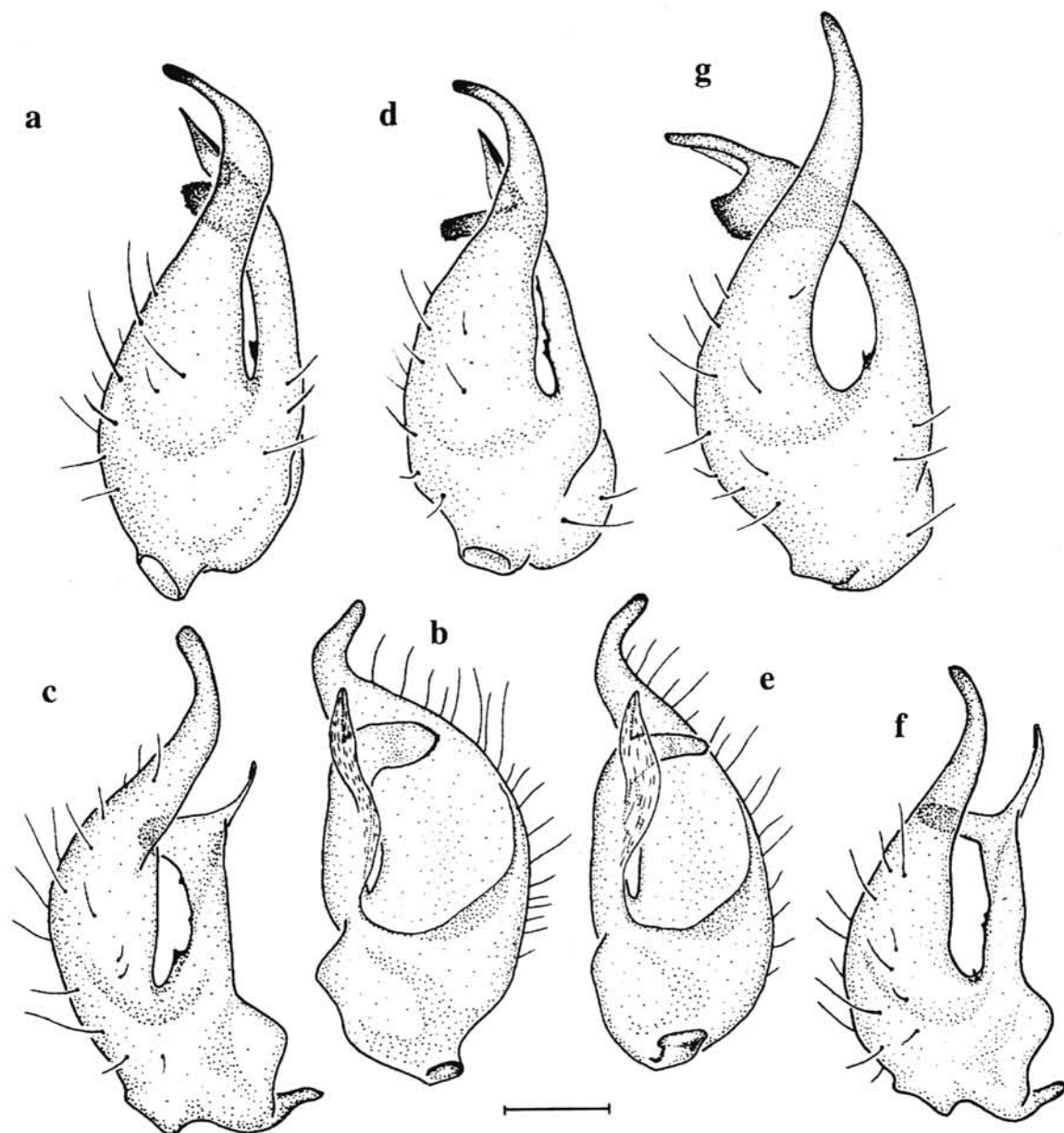


Fig. 4. *Walckenaeria (Cornicularia)* spp., ♂ palpal tibia: a-c) *W. clavicornis* (Emerton, 1882); d-f) *W. korobeinikovi* Esyunin et Effimik, sp.n.; g) *W. karpinskii* (O.Pickard-Cambridge, 1873). Scale = 0.10.

Рис. 4. *Walckenaeria (Cornicularia)* spp., ♂, голень пальпы: а-с) *W. clavicornis* (Emerton, 1882); d-f) *W. korobeinikovi* Esyunin et Efimik, sp.n.; g) *W. karpinskii* (O.Pickard-Cambridge, 1873). Шкала 0,10.

1987]. In addition, specimens deriving from Dzhugdzhur Mt. Range (Khabarovsk Prov.) [Eskov, 1988, 1992a], the coast of the East-Siberian Sea [Eskov, 1985], Upper Kolyma River [Eskov, 1988] and Central Yakutia [Koponen & Marusik, 1992] are also likely to refer to this species. Other records of *W. clavicornis* from Siberia and Mongolia deserve verification, same as those from the West Palearctic [Holm, 1967; Wunderlich, 1972; Byzova et al., 1986].

DISTRIBUTION. Russia: Chukotka, Wrangel Island and ?East Siberia. North America [Millidge, 1983], Greenland and ?Spitzbergen [Holm, 1967].

Walckenaeria (Cornicularia) karpinskii
(O.Pickard-Cambridge, 1873)

Figs 4g, 5e-f. Map 1.

MATERIAL. 3 ♀♀ (PSU), South Yamal, Khadyta-Yakha River [8], dwarf *Betula* stand, pitfall trap, 6.VII.1991, leg. Yu.I. Korobeinikov; 7 ♂♂, 2 ♀♀ (PSU), Polar Urals, Neroika Mt. [7], 950 m, grassy-moss tundra, pitfall-trap, 24.VI-12.VII.1990, leg. Yu.I. Korobeinikov & A. Malozemov; 10 ♂♂, 12 ♀♀ (PSU), Middle Urals, Perm Area, Basegi Mt. Range [5], mountainous lichen and bush (*Vaccinium myrtillus*) tundra, litter, VI-IX.1985, leg. S. Esyunin; 2 ♂♂, 4 ♀♀ (PSU), South Urals, Iremel Mt. [4], mountain tundra, litter, 4.VI.1988, leg. A.B. Polyinin; 1 ♀ (PSU),

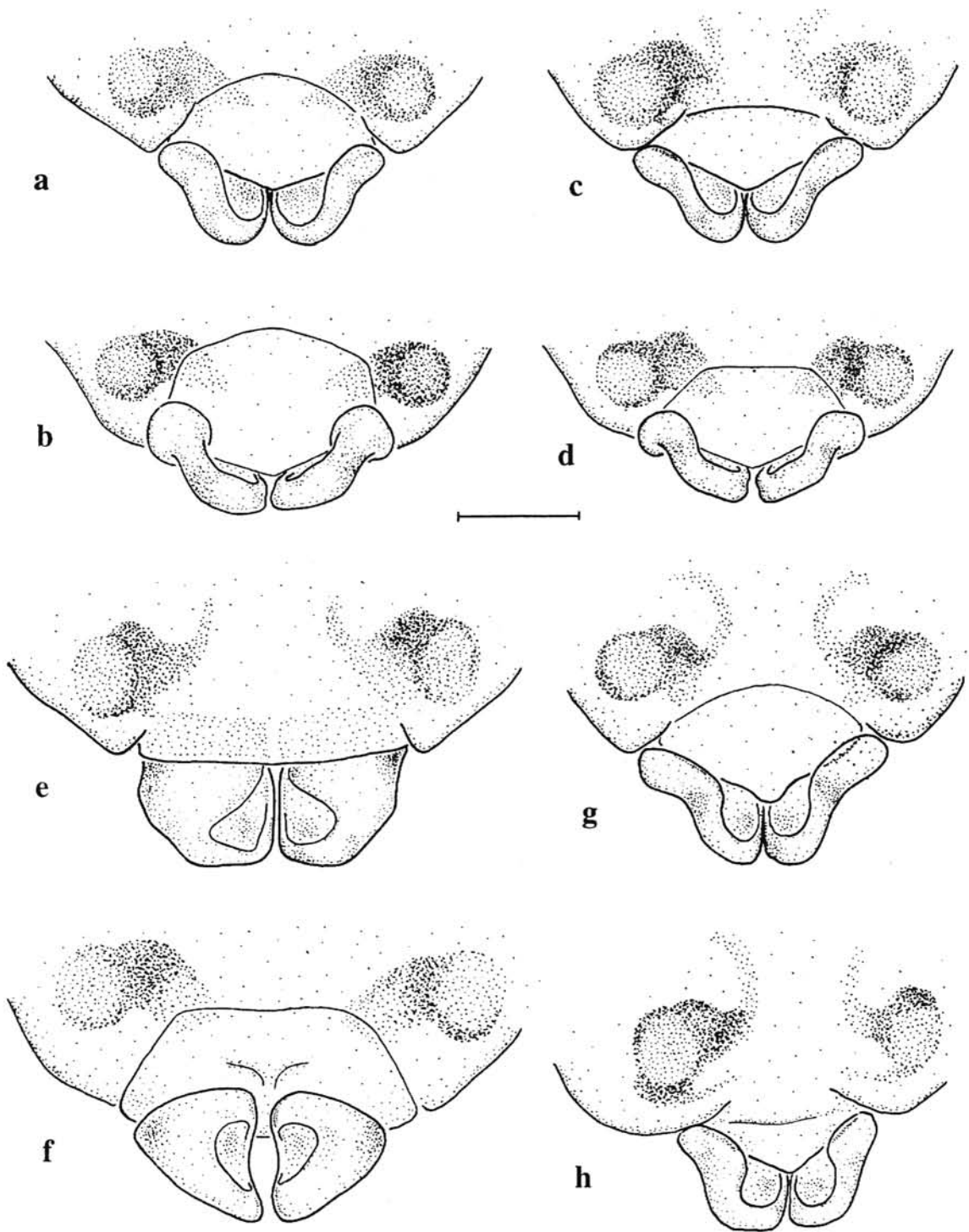


Fig. 5. *Walckenaeria* (*Cornicularia*) spp., ♀, vulva: a-b,g) *W. clavicornis* (Emerton, 1882); c-d, h) *W. korobeinikovi* Eshyunin et Efimik, sp.n.; e-f) *W. karpinskii* (O.Pickard-Cambridge, 1873). Scale = 0.10.

Рис. 5. *Walckenaeria* (*Cornicularia*) spp., ♀, вульва: а-б,г) *W. clavicornis* (Emerton, 1882); с-д, h) *W. korobeinikovi* Eshyunin et Efimik, sp.n.; е-ф) *W. karpinskii* (O.Pickard-Cambridge, 1873). Шкала 0,10.

South Urals, Chelyabinsk Area, Sibirka Village [3], mossy fir-grove, litter, 8.VII.1984; 1 ♂ (PSU), same locality, mixed *Betula-Pinus* forest, litter, 7.VII.1975, all leg. N.M. Pakhorukov; 1 ♀ (ZMMU; det. K.G.Mikhailov), Murmansk Area, Khibiny Mts., nr. Kirovsk, moss-lichen tundra, 13-23.IX.1986, leg. T.E. Rossolimo; 1 ♂, 4 ♀♀ (PSU), West Siberia, Tyumen Area, Yuganski Reserve,

mixed forest, litter, 1987, leg. M. Belyaeva & V. Novokshonov; 2 ♀♀ (ZMMU; det. Y.M. Marusik), Chukotka, Iultin, 25.VI.1989, leg. Y.M. Marusik; 2 ♀♀ (ZMMU; det. Y.M. Marusik), East Chukotka, Upper Bolshaya Osinovaya River (tributary of Belaya River), alder forest, 11-15.VII.1989, leg. Y.M. Marusik.

DESCRIPTION. Genitalia of both male and female as

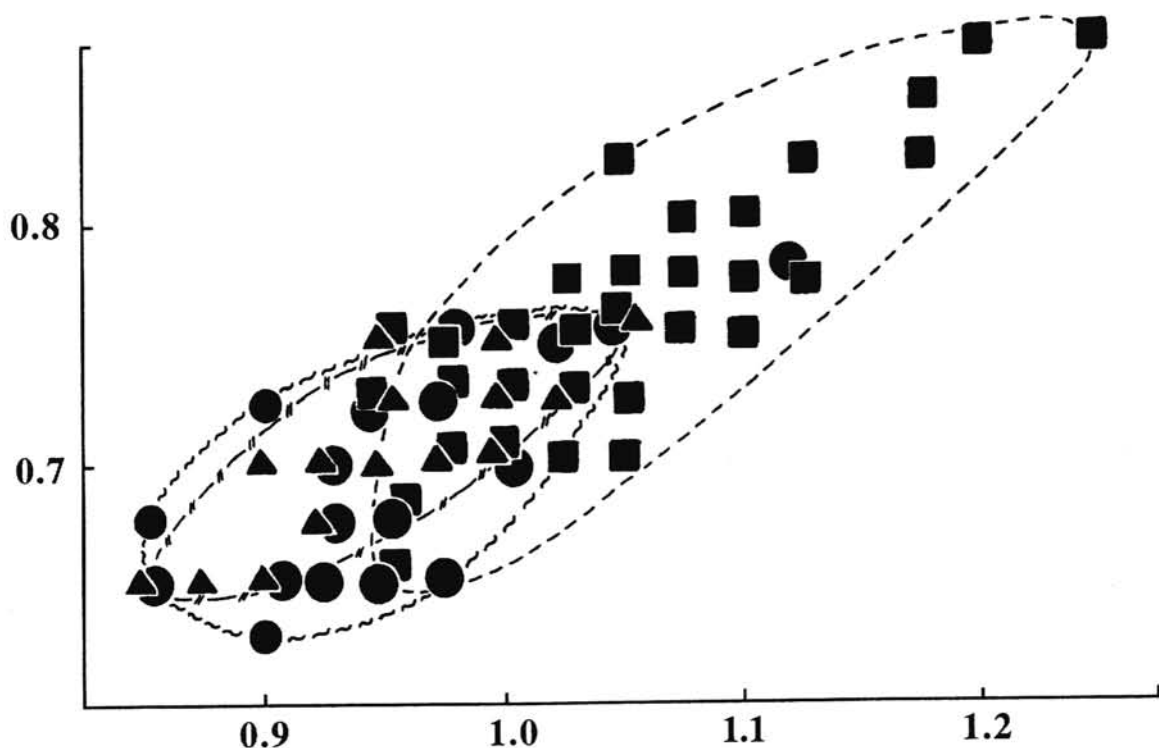


Fig. 6. Width/length ratio of carapace in *Walckenaeria clavicornis* (Emerton, 1882) (triangle), *W. korobeinikovi* Esyunin et Efimik, sp.n. (circle), *W. karpinskii* (O.Pickard-Cambridge, 1873) (square).

Рис. 6. Соотношение ширины и длины головогруди у *Walckenaeria clavicornis* (Emerton, 1882) (треугольник), *W. korobeinikovi* Esyunin et Efimik, sp.n. (круг), *W. karpinskii* (O.Pickard-Cambridge, 1873) (прямоугольник).

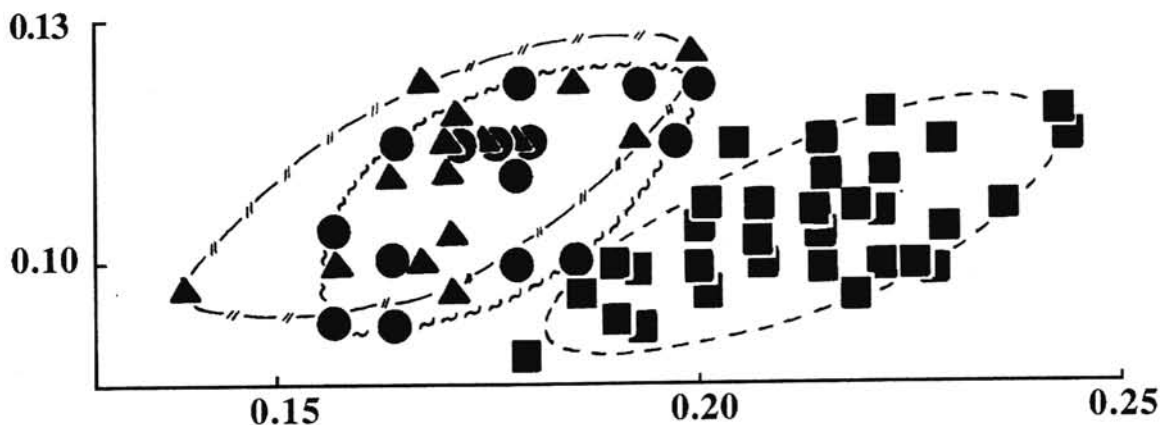


Fig. 7. Width (l) to height (h) ratio of epigynal plate (Fig. 3d) in *Walckenaeria clavicornis* (Emerton, 1882) (triangle), *W. korobeinikovi* Esyunin et Efimik, sp.n. (circle), *W. karpinskii* (O.Pickard-Cambridge, 1873) (square).

Рис. 7. Соотношение ширины (l) и высоты (h) (рис. 3d) пластинок эпигины *Walckenaeria clavicornis* (Emerton, 1882) (треугольник), *W. korobeinikovi* Esyunin et Efimik, sp.n. (круг), *W. karpinskii* (O.Pickard-Cambridge, 1873) (прямоугольник).

in Figs 4g, 5c-f; non-genital characters see in Millidge [1983]. Females of *W. karpinskii* are distinct from both *W. clavicornis* and *W. korobeinikovi* in the proportions of the epigynal plate (Fig. 7) as well as in size: individuals of *W. holmi* are larger (Fig. 6).

DISTRIBUTION. Urals: mountains of the Polar, North, Middle and South Ural [Map 1: original data; Pakhorukov, 1984; Tanasevitch, 1985; Esyunin, Polanin, 1990; Esyunin, 1991]. Russia: ranging from Murmansk

Area [original data; Byzova et al., 1986], Karelia [Tsellarius & Shorokhov, 1985; Uzenbaev, 1986, 1992; Uzenbaev & Predtechenskaya, 1991] and Moscow Area [Beer, 1968] in the west up to Chukotka (original data), Khabarovsk Prov., Sakhalin Island and Maritime Prov. [Eskov, 1992a] in the east, and from the tundra zone in the north up to the South Urals, Tuva, Chita Area [Eskov, 1992b] and Maritime Prov. in the south. A trans-Holarctic boreo-montane pattern.

Table 2. Distinctive characters of *unicornis*-group species.
Таблица 2. Отличительные признаки видов группы *unicornis*.

	<i>W. clavicornis</i>	<i>W. korobeinikovi</i>	<i>W. karpinskii</i>
Mean carapace length	♂	0.98(0.95–1.03)	1.03(0.95–1.10)
	♀	0.95(0.85–1.05)	1.06(0.95–1.25)
Mean carapace width	♂	0.72(0.70–0.75)	0.74(0.65–0.83)
	♀	0.70(0.65–0.75)	0.77(0.70–0.88)
Mesal and lateral tibial apophyses	parallel (Figs 4a,c,d,f)		crossing (Fig. 4g)
Distal end of the mesal apophysis	wide and short (Fig. 4b)	long and narrow (Fig. 4c)	—
Epigynal plate ratio (width/height)	0.65(0.56–0.72) (Fig.7)	0.62(0.54–0.69) (Fig.7)	0.49(0.44–0.54) (Fig.7)
Shape of the epigynal plate	plates with a distinct lateral bulge (Fig. 3d and figs 279, 281, 283 in Millidge, 1983)		plates with parallel borders, without distinct lateral bulge (Figs 278, 280, 282 in Millidge, 1983)
Shape of the medial plate of the vulva	not broader than long (Fig.5 a,g)	broader than long (Fig. 5 c,h)	—

HABITAT. This species is common in zonal and mountain tundras within the Urals. It can also be found in forest ecosystems within the mountain-forest belt of the South Urals. Both males and females have been collected throughout the vegetative period, from June till September.

Distinctive characters of *unicornis*-group species discussed above are summarized in Table 2.

References

- Beer S.A. 1968. [On the terrestrial spider fauna of Moscow Area] // Zool. Zhurn. Vol.47. No.1. P.131-134 [in Russian].
- Byzova Y.B., Uvarov A.V., Gubina V.G., Zalesskaya N.T., Zakharov A.A., Petrova A.D., Suvorov A.A. & Vorobiova E.G. 1986. [Soil invertebrates of White Sea islands of the Kandalaksha Reserve]. Moscow, "Nauka" Publ. 312 pp. [in Russian].
- Eskov K.Y. 1985. [Spiders of the tundra zone of the USSR] // Fauna i ekologiya paukov SSSR. Trudy Zool. Inst. AN SSSR. Leningrad. T.139. P.121-128 [in Russian].
- Eskov K.Y. 1988. [Spiders (Aranei) of Middle Siberia] // Materialy po faune Tsentralnoy Sibiri i prilozhashchikh rayonov Mongolii. Moscow, Inst. Evol. Morphol. Ecol. Zhiv. P.101-155 [in Russian].
- Eskov K.Y. 1992a. [New data on the fauna of the spider family Linyphiidae (Aranei) of the Soviet Far East] // Fauna i ekologiya paukov, skorpionov i lozhnoskorpionov SSSR. Trudy Zool. Inst. AN SSSR (1990). T.226. P.51-59 [in Russian].
- Eskov K.Y. 1992b. New data on the linyphiid spider fauna of South Siberia (Aranei Linyphiidae) // Arthropoda Selecta. Vol.1. No.2. P.73-82.
- Eskov K.Y. 1994. Catalogue of the linyphiid spiders of northern Asia (Arachnida, Araneae, Linyphiidae). Sofia-Moscow, Pensoft Publ. 144 pp.
- Eskov K.Y., Marusik Y.M. 1995. On the spiders (Arachnida: Araneae) from the Saur Mountain Range, eastern Kazakhstan // Beiträge zur Araneologie. Bd.4. P.55-94.
- Esyunin S.L. 1991. [Arachnids of the "Basegi" Reserve (Pseudoscorpiones, Opiliones, Aranei, Parasitiformes: Ixodidae — annotated list of species)] // Fauna i flora zapovednikov SSSR. Moscow. 38 pp. [in Russian].
- Esyunin S.L. & Polyaniin A.B. 1990. [To the spider fauna of the mountain-forest belt of the South Urals] // Zhivotnyi mir Yuzhnogo Urala. Sverdlovsk. P.15-16 [in Russian].
- Holm A. 1967. Spiders (Araneae) from West Greenland // Meddel. Gronland. Vol.184. No.1. P.1-99.
- Khruleva O.A. 1987. [Order Aranei] // Fauna zapovednika "Ostrov Vrangelya". Fauna i flora zapovednikov SSSR. Moscow. P.8-11 [in Russian].
- Koponen S. & Marusik Y.M. 1992. Spiders (Araneae) from Central Yakutia, Siberia // Entomol. Fennica. No.3. P.163-166.
- Millidge A.F. 1983. The erigonine spiders of North America. Part 6. The genus *Walckenaeria* Blackwall (Araneae, Linyphiidae) // J. Arachnol. Vol.11. P.105-200.
- Pakhorukov N.M. 1984. [Spiders of the lower strata in taiga biocenoses of northern Transuralia] // Fauna i ekologiya paukooobraznykh. Perm, Perm Univ. P.92-101 [in Russian].
- Tanasevitch A.V. 1985. [A study of spiders (Aranei) of the Polar Urals] // Fauna i ekologiya paukov SSSR. Trudy Zool. Inst. AN SSSR. T.139. P.52-62 [in Russian].
- Tsellarius A.Yu. & Shorokhov V.V. 1985. [The species composition and habitat distribution of herpetobiontic spiders of the Kivach State Reserve (Karelian ASSR)] // Fauna i ekologiya paukov SSSR. Trudy Zool. Inst. AN SSSR. Vol.139. P.84-91 [in Russian].
- Uzenbaev S.D. 1986. [To the spider fauna (Aranei) of Karelia] // Fauna i ekologiya chlenistonogikh Karelii. Petrozavodsk. P.7-28 [in Russian].
- Uzenbaev S.D., 1992. [The population structure and seasonal density dynamics of epigeal spiders inhabiting a moss-spruce forest] // Fauna i ekologiya paukov, skorpionov i lozhnoskorpionov SSSR. Trudy Zool. Inst. AN SSSR (1990). T.226. P.4-11 [in Russian].
- Uzenbaev S.D., Predtechenskaya O.O. 1991. [Structure of epigeal invertebrate associations inhabiting forest biocenoses of the "Kivach" Reserve] // Entomologicheskie issledovaniya v zapovednike "Kivach". Petrozavodsk. P. 130-137 [in Russian].
- Wunderlich J. 1972. Zur Kenntnis der Gattung *Walckenaeria* Blackwall, 1833 unter besonderer Berücksichtigung der europäischen Subgenera und Arten (Arachnida: Araneae: Linyphiidae) // Zool. Beitr. Bd.18. H.3. S.371-427.