

New records of false scorpions in the Caucasus (Arachnida: Pseudoscorpiones)

Новые находки ложноскорпионов с Кавказа (Arachnida: Pseudoscorpiones)

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КЛЮЧЕВЫЕ СЛОВА: ложноскорпионы, систематика, фаунистика, экология, Кавказ.

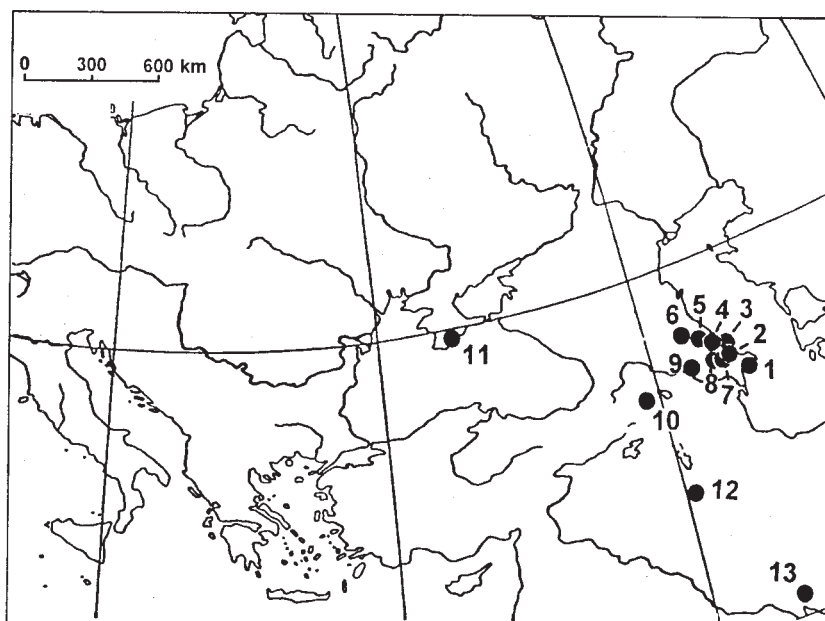
ABSTRACT: Nineteen species of false scorpions are recognized from the Northeast Caucasus: *Chthonius shelkovnikovi* Redikorzev, 1930; *C. tetrachelatus* (Preyssler, 1790); *Roncus microphthalmus* (Daday, 1889); *Amblyolpium anaticum* Beier, 1967; *Calocheiridius centralis nataliae* Dashdamirov, 1991; *C. libanoticus* Beier, 1955; *Minniza babylonica* Beier, 1929; *Apocheiridium ferum* (Simon, 1879); *Atemnus politus* (Simon, 1878); *Diplothemnus insolitus* J.C. Chamberlin, 1933; *Allochernes* aff. *peregrinus* Lohmander, 1939; *Allochernes* sp., *Chernes hahnii* (C.L. Koch, 1839); *Dendrochernes cyrneus* (L. Koch, 1873); *Pselaphochernes scorioides* (Hermann, 1804); *Dactylochelifer kusariensis* (Daday, 1889); *D.* aff. *popovi* Redikorzev, 1949; *Rhacochelifer schawalleri* sp.n.; *Withius hispanus* (L. Koch, 1879); and Cheliferidae gen.sp. Their geography and ecology are discussed, with a number of taxonomic notes given.

РЕЗЮМЕ: С Северо-Западного Кавказа ныне известны 19 видов ложноскорпионов: *Chthonius shelkovnikovi* Redikorzev, 1930; *C. tetrachelatus* (Preyssler, 1790); *Roncus microphthalmus* (Daday, 1889); *Amblyolpium anaticum* Beier, 1967; *Calocheiridius centralis nataliae* Dashdamirov, 1991; *C. libanoticus* Beier, 1955; *Minniza babylonica* Beier, 1929; *Apocheiridium ferum* (Simon, 1879); *Atemnus politus* (Simon, 1878); *Diplothemnus insolitus* J.C. Chamberlin, 1933; *Allochernes* aff. *peregrinus* Lohmander, 1939; *Allochernes* sp., *Chernes hahnii* (C.L. Koch, 1839); *Dendrochernes cyrneus* (L. Koch, 1873); *Pselaphochernes scorioides* (Hermann, 1804); *Dactylochelifer kusariensis* (Daday, 1889); *D.* aff. *popovi* Redikorzev, 1949; *Rhacochelifer schawalleri* sp.n.; *Withius hispanus* (L. Koch, 1879); и Cheliferidae gen.sp. Обсуждаются их географическое распространение и экология, дан ряд систематических замечаний.

Introduction

Since the last review of the fauna of Pseudoscorpiones of the Caucasus [Dashdamirov & Schawaller, 1993b], vast material from various regions of the Caucasus has been accumulated for study. The collection covers much of the territory of this mountainous land. As the material is highly diverse, its study will inevitably take a long time. That is why this article only presents the results concerning the pseudoscorpions collected mainly by the author during field-work in the Northeast Caucasus, i.e. in the spurs of the Caucasus Major within Azerbaijan and Daghestan, between 1988 and 1998. Among the species encountered there, four seem of particular interest, as one is new to science (*Rhacochelifer schawalleri* sp.n.) and further three are new to the regional list (*Amblyolpium anaticum* Beier, 1967; *Allochernes* aff. *peregrinus* Lohmander, 1939; and *Dactylochelifer* aff. *popovi* Redikorzev, 1949). Most of the species recorded are illustrated, with brief descriptions given. Localities are shown on Map.

Identifications of *Allochernes peregrinus* Lohmander, 1939 and *Dactylochelifer popovi* Redikorzev, 1949 remain insecure, hence the necessary qualifications. To clarify their identities, revision of the respective genera is necessary coupled with new material of adults to be available for study. The bulk of the material treated here, including the paratypes, has been deposited in the collection of the Institute of Zoology, Azerbaijan Academy of Sciences, Baku (IZB+number), with a few samples housed in the Zoological Museum of the Moscow State University, Moscow (ZMMU). In addition, some material from the Caucasus and adjacent parts of Iran and the Crimea, all belonging to the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (ZISP), has been revised, this allowing to correct several misidentifications made by V. Redikorzev. Both measurements and terminology here accepted are those after Chamberlin [1931] and Harvey [1992].



Map. Collecting localities: 1 — Baku; 2 — Kiliazi + Khyzy; 3 — Enikend + Galaalty (= Kalaalty); 4 — Samur Forest + Nabran; 5 — Derbent; 6 — Agach-Aul; 7 — Alty-Agach; 8 — Yarimja; 9 — Mingechaury; 10 — Echmiadzin; 11 — Kikineiz; 12 — Adjemi; 13 — Kirman.

Карта. Точки сборов: 1 — Баку; 2 — Килиази + Хызы; 3 — Еникенд + Галаалты; 4 — Самурский лес + Набран; 5 — Дербент; 6 — Агач-Аул; 7 — Алты-Агач; 8 — Ярымджа; 9 — Мингечаур; 10 — Эчмиадзин; 11 — Кикинеиз; 12 — Аджери; 13 — Кирман.

Taxonomy

Family Chthoniidae Daday, 1888

Chthonius shelkovnikovi Redikorzev, 1930

MATERIAL. 1 ♂ (IZB 355), Azerbaijan, Divichi Distr., Galaalty [3], under stones, 28.V.1988; 2 ♂♂, 1 ♀ (IZB 366), Azerbaijan, Alty-Agach [7], 1,200 m a.s.l., forest, under stones, 23.VI.1996; 1 ♂, 1 ♀ (IZB 366), Azerbaijan, Alty-Agach, Yarimja [8], 1,300 m a.s.l., under stones, 12.X.1997, all leg. S. Dashdamirov.

REMARKS. This is a widespread species ranging from Turkey to Central Asia. In the Caucasus, it is distributed very widely as well, being encountered mainly under large boulders sunk deeply in the ground. Sometimes, a few specimens can be found under a single stone or boulder.

A comparative analysis of Caucasian material with that from Central Asia [Dashdamirov & Schawaller, 1992] has revealed no sharp variation.

Chthonius tetrachelatus (Preysler, 1790)

MATERIAL. 1 ♀ (IZB 352), Azerbaijan, Divichi Distr., Enikend [3], under stone, 29.V.1988; 1 ♀ (IZB 364), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], under bark of stumps, 8.VII.1991; 14 ♂♂, 7 ♀♀ (IZB 366), Azerbaijan, Alty-Agach [7], 1,200 m a.s.l., forest, under stones, 23.VI.1996, all leg. S. Dashdamirov.

Family Neobisiidae J.C. Chamberlin, 1930

Roncus microphthalmus (Daday, 1889)

MATERIAL. 1 ♂, 2 ♀♀ (IZB 370), Azerbaijan, Alty-Agach, Yarimja [8], 1,300 m a.s.l., under stones, 12.X.1997, leg. S. Dashdamirov.

Family Olpiidae Banks, 1895

Amblyolpium anatolicum Beier, 1967

Figs 1 & 2.

MATERIAL. 1 ♂ (IZB 338), Azerbaijan, Khyzy Distr., Varafta

Mt. Ridge, 10 km W Kiliazi [2], *Populus euphratica* stand, under stone, 24–25.VI.1996, leg. S. Dashdamirov.

DESCRIPTION. Carapace with four setae both at anterior and posterior margins (total number of setae: 24). Tergal chaetotaxy: 7:6:7:6:8:8:8:8:11:6(4+2 long tactile setae):2. Palm of chelicera with five setae, movable finger with one seta (Fig. 5). Flagellum with four blades, anterior blade elongated, with four spinules terminally. Serrula exterior with 16 lamellae. Galea simple, with three spinules.

Pedipalps: femur 3.81 times; tibia 2.65 times; chela with pedicel 3.81 times; chela without pedicel 3.55 times as long as broad. Fixed finger of chela with 38 marginal teeth. Movable finger with 27 marginal teeth, of which 13 well-visible, while other teeth flat. Chelal fixed finger with six short, heavy setae on distolateral side. Trichobothrial pattern as in Fig. 1, characteristic of the genus. Venom apparatus present in both fingers, nodus ramosus in fixed finger near est, in movable finger near t.

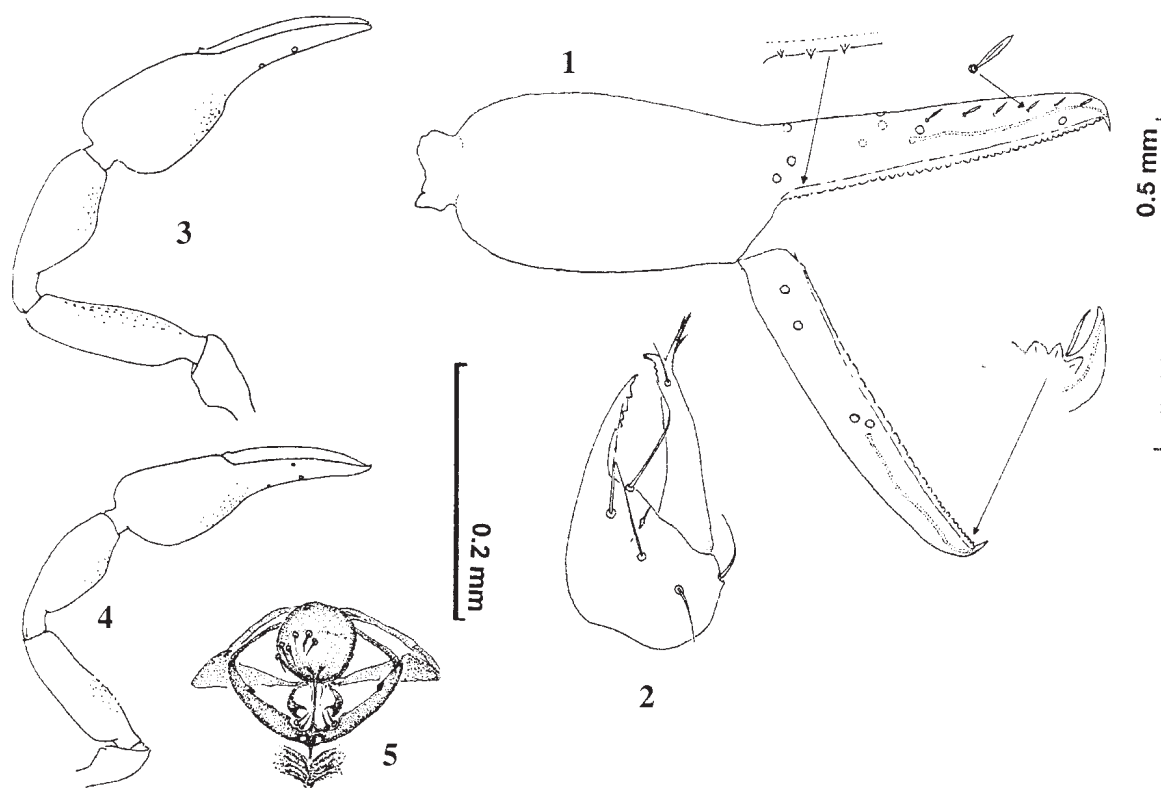
Measurements (in mm). Pedipalps: femur 0.61/0.16; tibia 0.52/0.2; chela (with pedicel) 1.03/0.27; chela (without pedicel) 0.96.

REMARKS. Although a single male, the specimen at hand corresponds readily to the original description [Beier, 1967]. Until now, this species has only been known from Asia Minor (locus typicus: Egridim, Turkey), so the above is the first formal record of this species in the entire Caucasus. However, upon its comparison with *A. dollfusi* Simon, 1898, as reported by Schawaller [1981] and with the original description of *A. anatolicum*, the Caucasian specimen seems to occupy a position intermediate between these two species. So actually a new synonym can prove to be the case, yet this can only be verified, and formalized, or rejected after examination of a lot of new material.

This specimen has been taken from under a stone in a rather dry place.

Calocheiridius centralis nataliae Dashdamirov, 1991

MATERIAL. 3 ♂♂, 1 T (IZB 344), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], *Populus euphratica* stand, under stones, 24–25.VI.1996, leg. S. Dashdamirov; 14 ♂♂, 12 ♀♀ (IZB 348), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W



Figs 1–5: 1 & 2 — *Amblyolpium anatolicum* Beier, 1967, ♂: 1 — chela, lateral view; 2 — chelicer, dorsal view; 3–5 — *Minniza babylonica* Beier, 1929, ♂ (3, 5), ♀ (4): 3 & 4 — pedipalp, dorsal view; 5 — genital area, ventral view. Scale bar: 0.5 mm (1 & 2), 0.2 mm (3–5).

Рис. 1–5: 1–2 — *Amblyolpium anatolicum* Beier, 1967, ♂: 1 — хела, латерально; 2 — хелицера, дорсально; 3–5 — *Minniza babylonica* Beier, 1929, ♂ (3, 5), ♀ (4): 3 & 4 — педипальпа, дорсально; 5 — генитальная область. Масштаб: 0.5 мм (1–2), 0.2 мм (3–5).

Kiliazi [2], near Tugchay, 500 m a.s.l., under stones, 21.V.1992, leg. S. Dashdamirov & H. Aliev; 1♂, 1♀ (IZB 351), Azerbaijan, Divichi, 27.V.1988; 1♂ (IZB 352), Azerbaijan, Divichi, Enikend [3], 29.V.1988; 3♂♂, 2♀♀ (IZB 355), Azerbaijan, Divichi, Galaalty [3], 28.V.1988, all leg. S. Dashdamirov; 1♀ (IZB 358), Russia, Daghestan, Derbent [5], 20.V.1989, leg. I. Drapolyuk & P. Dunin.

Calocheiridius libanoticus Beier, 1955

MATERIAL. 1♀ (ZISP 1248), Caucasus, Azerbaijan, Mingechaur Railway Station [9], zone of salt-marsh desert, 23.VI.1933, leg. ?; 2♂♂, 1♀ (ZISP 853), Azerbaijan, Baku [1], cemetery, 100 m a.s.l., under stones, 30–31.III.1922, leg. E. Bobrova; 65♂♂, 6♀♀ (ZISP 852), Azerbaijan, Baku [1], cemetery, 100 m, under stones, 8, 16, 17 & 23.VI.1922, leg. E. Bobrova.

REMARKS. This material was erroneously determined by V.V. Redikorzev as *Olpium pallipes* Lucas, 1845 (not published).

Minniza babylonica Beier, 1929

Figs 3–5.

MATERIAL. 1♂ (IZB 343), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], *Populus euphratica* stand, under stones, 24–25.VI.1996, leg. S. Dashdamirov; 2♀♀ (IZB 347), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], near Tugchay, 500 m a.s.l., under stones, 21.V.1992, leg. S. Dashdamirov & H. Aliev.

Other material examined: 1♂ (ZISP 81), Persia, Bienert, Kirman [13], 19.IV.1869, leg. Keyserling; 1♂ (ZISP 97(31)), W

Persia, Irak-Adzhemi (Adjemi) [12], Shakhbag (Shahbag?), 30.IV.1904, leg. N. Zarudny; 1♀ (ZISP 1261), Armenia, Echmiadzin [10], stony desert, under stone, 20.IX.1934, leg. A. Kiritschenko (all this material was misidentified by Redikorzev as *Olpium pallipes* Lucas, 1845, not published).

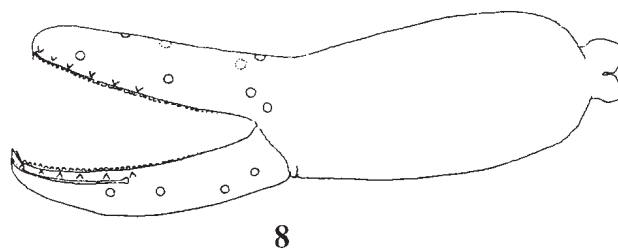
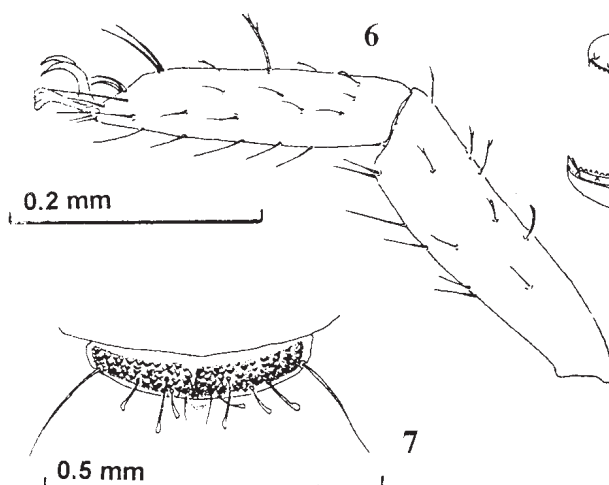
A brief description of the male ZISP 81 from Iran. Pedipalp: femur 3.42; tibia 2.36; chela with pedicel 3.29; chela without pedicel 3.12 times as long as broad.

Measurements (in mm). Pedipalp: femur 0.65/0.19; tibia 0.59/0.25; chela (with pedicel) 1.12/0.34; chela (without pedicel) 1.06; hand (with pedicel) 0.56; hand (without pedicel) 0.47; movable finger 0.61.

A brief description of the female ZISP 1261 from Armenia. Pedipalp: femur 3.06; tibia 2.5; chela with pedicel 3.44; chela without pedicel 3.15 times as long as broad.

Measurements (in mm). Pedipalp: femur 0.52/0.17; tibia 0.50/0.20; chela (with pedicel) 0.93/0.27; chela (without pedicel) 0.85; hand (with pedicel) 0.48; hand (without pedicel) 0.38; movable finger 0.48.

REMARKS. The above material from Iran and Armenia must be considered in the context of recent research in *Minniza* [Dashdamirov, 1991; Dashdamirov & Schawaller, 1993a]. All these measurements of the sizes and the proportions of the pedipalps appear to lie in between the extremes known for this species. With each new sample analyzed, the opinion is further reconfirmed that the entire *babylonica-persica-persica deminuta-syriaca* species complex actually represents but a single polymorphic species. However, a final



Figs 6–8. *Allochernes* aff. *peregrinus* Lohmander, 1939, ♀: 6 — tarsus IV, lateral view; 7 — last tergite; 8 — chela, lateral view. Scale bar: 0.2 (6), 0.5 mm (7, 8).

Рис. 6–8. *Allochernes* aff. *peregrinus* Lohmander, 1939, ♀: 6 — лапка IV, латерально; 7 — последний тергит; 8 — хела, латерально. Масштаб: 0.2 (6), 0.5 мм (7, 8).

solution seems possible only after a study of all type material of *M. babylonica* Beier, 1929, *M. persica* Beier, 1951, *M. persica diminuta* Beier, 1951, and *M. syriaca* Beier, 1951.

Family Cheiridiidae Hansen, 1893

Apocheiridium ferum (Simon, 1879)

MATERIAL. 1 ♀, 1 T (IZB 365), Azerbaijan, Alty-Agach [7], 1,200 m a.s.l., forest, under bark, 23.VI.1996, leg. S. Dashdamirov; 14 ♂♂, ♀♀ (IZB 369), Azerbaijan, Alty-Agach, Yarimja [8], 1,300 m a.s.l., under stones, 12.X.1997, all leg. S. Dashdamirov.

Family Atemnidae Chamberlin, 1931

Atemnus politus (Simon, 1878)

MATERIAL. 1 ♂, 2 ♀♀, 1 T (IZB 342), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], *Populus euphratica* stand, under stones, 24–25.VI.1996, leg. S. Dashdamirov; 3 ♂♂, 1 ♀, 1 T (IZB 345), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], near Tugchay, 500 m a.s.l., under stones, 21.V.1992, leg. S. Dashdamirov & H. Aliev; 1 ♀ (IZB 354), Azerbaijan, Khachmas Distr., Nabran [4], forest (*Quercus*), in litter and soil, 28.V.1991, leg. O. Aslanov; 1 ♀ (IZB 357), Russia, Daghestan, Agach-Aul [6], 30.V.1991, leg. V. Kovtunovich; 1 ♀ (IZB 361), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], under bark of stumps, 8.VII.1991, leg. S. Dashdamirov.

Diplothemnus insolitus J.C. Chamberlin, 1933

MATERIAL. 3 ♀♀ (IZB 349), Azerbaijan, Khyzy [2], in litter (*Quercus*, *Carpinus*), 20.V.1989, leg. A. Piriev.

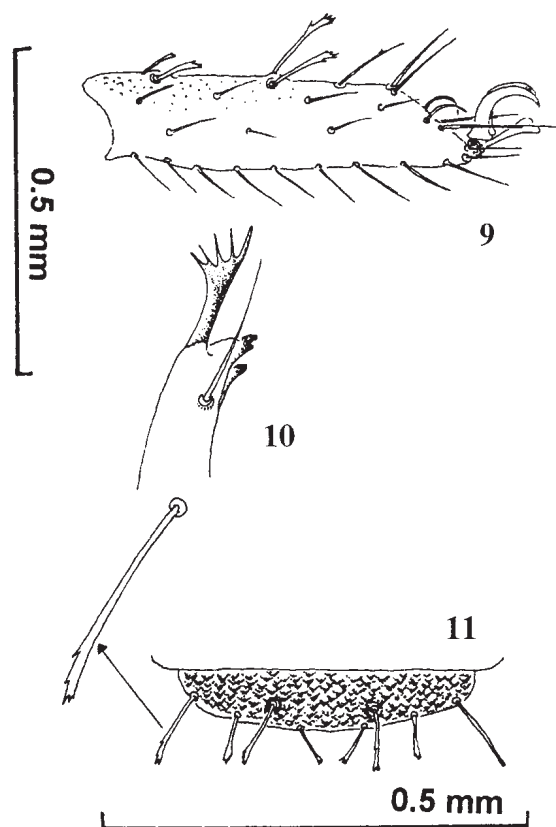
Family Cherneridae Menge, 1855

Allochernes aff. *peregrinus* Lohmander, 1939 Figs 6–8.

MATERIAL. 2 ♀♀ (IZB 371), Azerbaijan, Alty-Agach [7], 1,200 m a.s.l., forest, under bark, 23.VI.1996, leg. S. Dashdamirov.

DESCRIPTION. Carapace regularly granulate, with ten setae at posterior margin; two furrows present.

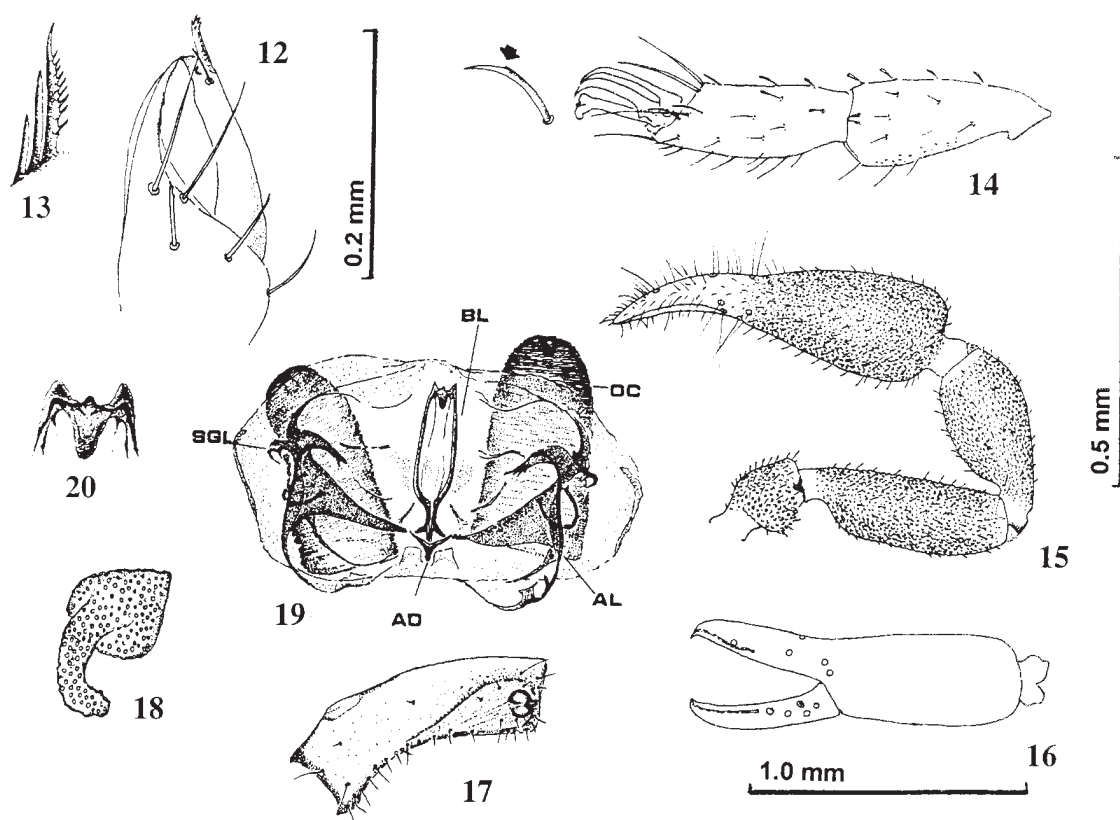
Chelicera with five setae in basal part dorsally, **b** and **sb** denticulate; movable finger with one seta. Flagellum with three blades. Serrula exterior with 19 lamellae. Last tergite



Figs 9–11. *Allochernes* sp., ♀: 9 — tarsus IV, lateral view; 10 — galea; 11 — last tergite. Scale bar: 0.5 mm.

Рис. 9–11. *Allochernes* sp., ♀: 9 — лапка IV, латерально; 10 — галеа; 11 — последний тергит. Масштаб: 0.5 мм.

and sternite with two long, tactile seta. Pedipalps regularly granulate: femur 3.26; tibia 2.65; chela with pedicel 3.95; chela without pedicel 3.73 times as long as broad. Trichobothriotaxy as in Fig. 8. Fixed finger of palp with 41 marginal teeth, plus six external and one internal accessory tooth; movable finger with 45 marginal teeth plus six external but without internal accessory teeth. Venom apparatus present only in moveable finger; nodus ramosus near t. Leg IV (Fig. 6): tibia 6.0; tarsus with one distal pseudotactile seta (TS = 0.47), 5.14 times as long as broad. Subterminal seta simple.



Figs 12–20. *Rhacochelifer schawalleri* sp.n., ♂: 12 — chelicera, dorsal view; 13 — flagellum; 14 — tarsus I; 15 — pedipalp, dorsal view; 16 — chela, lateral view; 17 — coxa IV; 18 — median cribriform plate of genitalia; 19, 20 — structure of male genitalia (bl — lateral rod, ad — dorsal apodeme, al — lateral apodeme, oc — eversible sacs, sgl — apodeme of eversible sac). Scale bars: 0.2 (12), 0.5 (14, 17) and 1.0 mm (15, 16).

Рис. 12–20. *Rhacochelifer schawalleri* sp.n., ♂ (14–17, 19, 20) голотип (ZMUM), ♀ (12, 13, 18) паратип (IZB 339): 12 — хелицера, дорсально; 13 — флагеллум; 14 — лапка I; 15 — педипальпа, дорсально; 16 — хела, латерально; 17 — тазик ноги IV; 18 — срединная ситовидная пластинка; 19 — гениталии (bl — lateral rod, ad — dorsal apodeme, al — lateral apodeme, oc — eversible sacs, sgl — apodeme of eversible sac). Масштаб: 0.2 (12), 0.5 (14, 17) и 1.0 мм (15, 16).

Measurements (in mm). Pedipalp: femur 0.49/0.15; tibia 0.45/0.17; chela (with pedicel) 0.87/0.22; chela (without pedicel) 0.82.

RELATIONS. This form is quite similar to *A. peregrinus* in size of the pedipalps as well as in chaetotaxy of the tergites and sternites, but it can be distinguished from the original description by the presence of a pseudotactile seta on tarsus IV, by the more slender chela, by the position of the internal accessory teeth on the fixed finger and by the chaetotaxy of the genital opercula. Superficially, in view of the above distinctions, a new species could be established, as the presence or absence of pseudotactile setae has always been considered sufficient as a species-specific character. Also geographically, the new record is very remote. The unquestioned *A. peregrinus* has hitherto been known from Austria, Germany, Hungary, Poland, Sweden, U.S.A.

However, material being very small and solely restricted to females, coupled with lack of knowledge on the true variability of certain features in this and related species, all this precludes me from hastily describing a new taxon.

Allochernes sp.

Figs 9–11.

MATERIAL. 1 ♀ (IZB 375), Azerbaijan, Alty-Agach, Yarimja

[8], forest, under stone, 28–31.V.1998, leg. S. Dashdamirov, N. Snegovaya & H. Aliev.

REMARKS. As compared to the hitherto geographically and structurally closest congeners, this specimen displays both a highly peculiar pattern of chaetotaxy of the last tergite (Fig. 11) and lack of (pseudo)tactile setae. Again, only additional material can shed new light on the identity of this species.

Chernes hahnii (C.L. Koch, 1839)

MATERIAL. 2 ♂♂, 1 ♀, 5 juv. (IZB 359), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], under bark of stumps, 8.VII.1991, leg. S. Dashdamirov.

Dendrochernes cyrneus (L. Koch, 1873)

MATERIAL. 2 ♂♂, 2 ♀♀ (IZB 360), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], under bark of stumps, 8.VII.1991, leg. S. Dashdamirov.

Pselaphochernes scorpioides (Hermann, 1804)

MATERIAL. 1 ♀ (IZB 363), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], in litter, 8.VII.1991, leg. S. Dashdamirov.

Table 1.
Proportions of pedipalps and tarsus I in species of the genus *Rhacochelifer*: L — length; B — breadth. Information on some species inaccessible to the author is marked as an asterisk (*).

Таблица 1.
Пропорции педипальпы и тарзуса I у видов рода *Rhacochelifer*: L — длина, B — ширина. Информация по некоторым видам, не доступная для автора, отмечена звездочкой (*).

Species	PEDIPALPS			TARSUS I (L/B)
	FEMUR (L/B)	TIBIA (L/B)	CHELA (L/B)	
<i>Rh. schawalleri</i> sp.n.	3.33	2.28	3.49	2.58
<i>Rh. afghanicus</i> Beier, 1959	3.3	2.8	3.5	2.7
<i>Rh. melanopygus</i> (Redikorzev, 1949)	3.68	2.73	3.55	4.85
<i>Rh. iranicus</i> Beier, 1971	2.8	2.3	3	*
<i>Rh. mongolicus</i> Beier, 1969	3.8	2.8	2.65	3.1
<i>Rh. pinicola</i> (Nonidez, 1917)	3	2.1	3.1	*
<i>Rh. massylicus</i> Callaini, 1983	3.13	2.42	3.21	2.85
<i>Rh. maculatus</i> (L.Koch, 1873)	3.2	2.3	2.8	*
<i>Rh. spiniger</i> Mahnert, 1978	3.91	2.82	2.55	4.29
<i>Rh. disjunctus</i> (L.Koch, 1873)	3	2.45	2.95	*
<i>Rh. peculiaris latissimus</i> Beier, 1963	2.95	2.4	3.75	2.5
<i>Rh. tauricus</i> Beier, 1969	3.55	2.65	3.6	2.4
<i>Rh. nubicus</i> Beier, 1962	3	2.4	3.2	2.5
<i>Rh. longeunguiculatus</i> Beier, 1963	2.8	2.25	3.05	2.9
<i>Rh. balcanicus</i> (Redikorzev, 1928)	3	2.5	2.8	*
<i>Rh. andreinii</i> Beier, 1954	3.6	2.5	3	2.7
<i>Rh. corcyrensis procerus</i> Mahnert, 1978	4	2.75	3.47	2.49
<i>Rh. gracilimanus</i> Mahnert, 1993	3.6	2.8	4.1	3.2
<i>Rh. euboicus</i> Mahnert, 1977	3.58	2.66	3.27	2.46
<i>Rh. sp.</i> from Krim	3.24	2.38	3.41	2.33

Family Cheliferidae Risso, 1826

Rhacochelifer schawalleri sp.n. Figs 12–20.

Holotype: ♂ (ZMUM), Caucasus, Azerbaijan, Khyzy Distr., Varafra Mt. Ridge, 5 km W Kiliazi [2], riverine *Populus euphratica* stand, forest, under bark, 24–25.VI.1996, leg. S. Dashdamirov. Paratypes: 1 ♂, 1 ♀ (IZB 339), same data as holotype.

DESCRIPTION. Carapace with six setae at anterior margin and seven setae at posterior one, 1.08 times as long as broad. Chelicera with five setae in basal part; serrula exterior with 21 lamellae; flagellum of three blades; galea elongated, with terminal spinules. Tergal chaetotaxy: 10:10:11:10:15:16:15:15:14:14:12(10+2 tactile setae):2. Sternal chaetotaxy: x:30:16:8:10:10:10:10:10:10:12(10+2 tactile setae):2. Genitalia as in Figs 19 & 20: lateral rods fused anteriorly; dorsal apodeme small; eversible sacs large. Coxal sac occupying almost half of coxal length. Genitalia of female with a median cribriform plate as in Fig. 18.

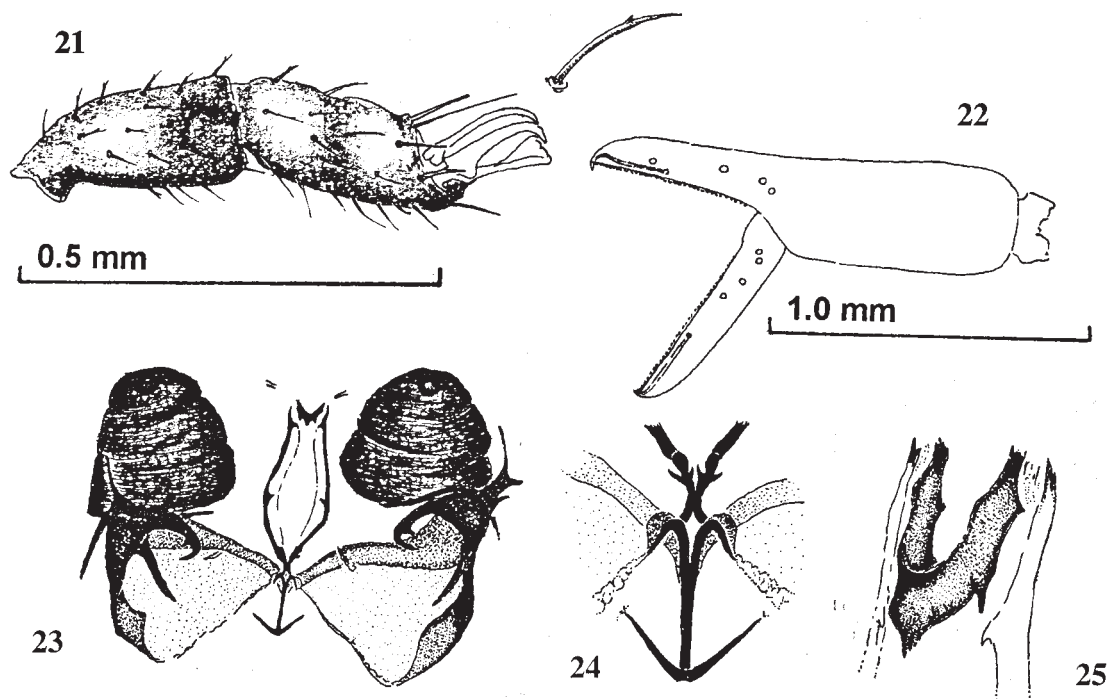
Pedipalp: trochanter 1.75; femur 3.38; tibia 2.28; chela with pedicel 3.49; chela without pedicel 3.27; hand (with pedicel) 1.95; hand (without pedicel) 1.70 times as long as broad. Leg I: femur 1.86; patella 2.96; tibia 2.7; tarsus 2.58

times as long as broad; subterminal seta dentate. Claws asymmetrical, external one without accessory tooth.

Measurements (in mm): Pedipalp: trochanter 0.42/0.24; femur 0.81/0.24; tibia 0.67/0.29; chela (with pedicel) 1.29/0.37; chela (without pedicel) 1.21; hand (with pedicel) 0.72; hand (without pedicel) 0.63; movable finger 0.59. Leg I: tibia 0.43/0.08; tarsus 0.34/0.07. Leg IV: tibia 0.26/0.09; tarsus 0.32/0.09.

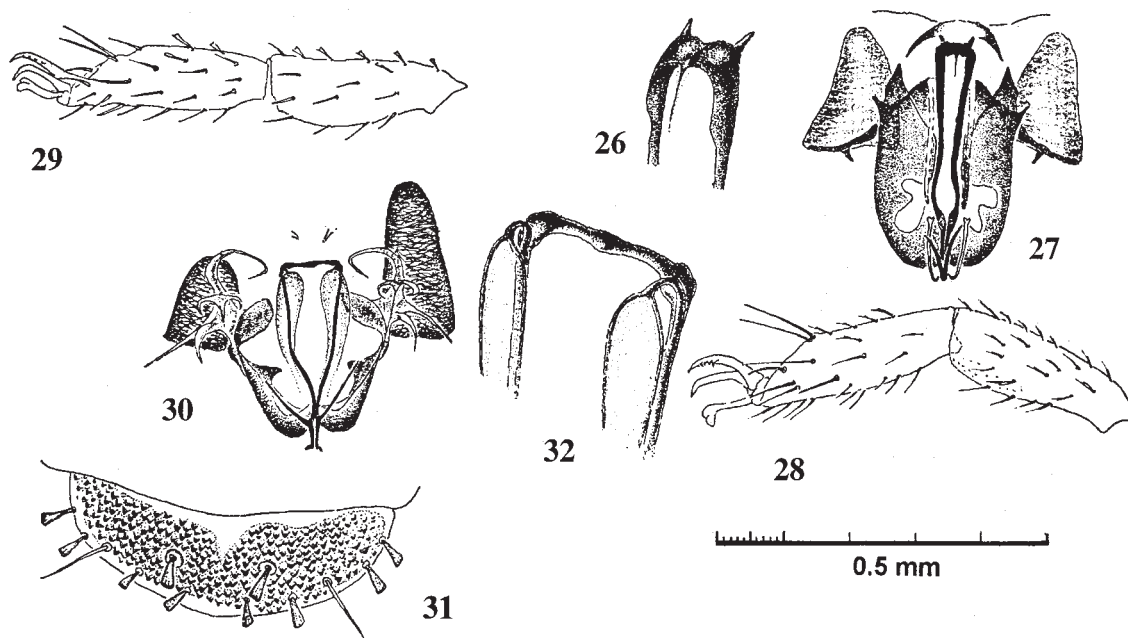
RELATIONS. Of course, it is rather difficult to make a clear-cut diagnosis of another of the numerous species in such a genus as *Rhacochelifer* Beier, 1932. Below in Table showing the main morphometric parameters for almost all species of *Rhacochelifer*, with data only deriving from literature sources marked with an asterisk (*). The particularly close relations of the new species with the Near East congeners are evident.

The new species seems to belong in the species group that encompasses *R. afghanicus* Beier, 1959, *R. melanopygus* (Redikorzev, 1949), *R. iranicus* Beier, 1971 and *R. tauricus* Beier, 1969. Yet *R. schawalleri* sp.n. differs from *R. afghanicus* in shape and proportions of tarsus I and in the plumper palpal tibia (in *afghanicus*, the tibia is 2.80 times, in *schawalleri* sp.n. 2.28 times, longer than broad). *R. schawalleri* sp.n. is very similar to *R. tauricus*, the latter species described from Turkey, in proportions of the pedipalps and tarsi I of the male, but is



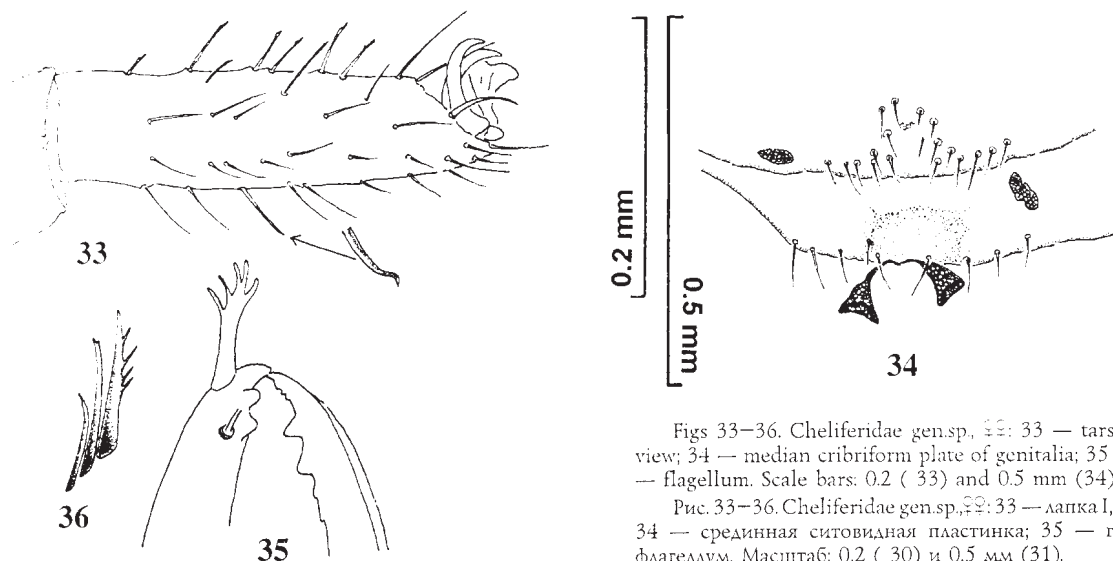
Figs 21-25. *Rhacocbelier* aff. *schawalleri* sp.n., ♂ from Kikineiz: 21 — tarsus I, lateral view; 22 — chela, lateral view; 23 — genitalia, dorsal view; 24 — dorsal apodeme and lateral rods, dorsal view; 25 — tip of lateral rods. Scale bars: 1.0 (22) and 0.5 mm (21, 23).

Рис. 21-25. *Rhacocbelier* aff. *schawalleri* sp.n., ♂ из Кикинеиза: 21 — лапка I, латерально; 22 — хела, латерально; 23 — гениталии, дорсально; 24 — дорсальный вырост и латеральные стержни, дорсально; 25 — вершина латеральных стержней. Масштаб: 1.0 (22); 0.5 мм (21, 23).



Figs 26-32: 26-28 — *Dactylochelifier kussariensis* (Daday, 1889), ♂ (13, 14), ♀ (15): 26 — tip of lateral rods; 27 — genitalia; 28 — tarsus I, lateral view; 29-32 — *D. aff. popovi* Redikorzev, 1949, ♂: 29 — tarsus I, lateral view; 30 — genitalia, dorsal view; 31 — last tergite; 32 — tip of lateral rods. Scale bar: 0.5 mm.

Рис. 26-32: 26-28 — *Dactylochelifier kussariensis* (Daday, 1889), ♂: 26 — вершина латеральных стержней; 27 — гениталии; 28 — лапка I, латерально; 29-32 — *D. aff. popovi* Redikorzev, 1949, ♂: 29 — лапка I, латерально; 30 — гениталии, дорсально; 31 — последний тергит; 32 — вершина латеральных стержней. Масштаб: 0.5 мм.



Figs 33–36. Cheliferidae gen.sp., ♀♀: 33 — tarsus I, lateral view; 34 — median cribriform plate of genitalia; 35 — galea; 36 — flagellum. Scale bars: 0.2 (33) and 0.5 mm (34).

Рис. 33–36. Cheliferidae gen.sp., ♀♀: 33 — лапка I, латерально; 34 — срединная ситовидная пластинка; 35 — галеа; 36 — флагеллум. Масштаб: 0.2 (30) и 0.5 мм (31).

larger in size (e.g., the femur is 0.81 mm long in *R. shawalleri* sp.n. vs. only 0.49 mm in *R. tauricus*). The new species comes very close to *R. melanopygus*, from Tajikistan, concerning the shape and proportions of the pedipalps but it has a more robust tarsus I and also differs in structure of the male genitalia, in particular the shape of the lateral rods in the terminal part. *R. schawalleri* sp.n. differs from *R. iranicus* by the size and proportions of the pedipalps: femur 2.80 times, chela 3.0 times, longer than broad in *R. iranicus* vs. 3.33 times and 3.49 times in *R. schawalleri* sp.n., respectively. However, information is only available concerning the female of *R. iranicus*.

Other material examined: 1 ♂ (ZISP 825), Ukraine, Crimea, Kikineiz, pines, 30.VIII.1927, leg. E.M. Kiritschenko (Figs. 21–25).

REMARKS. This material was determined by Redikorzev as *Olpium pallipes* Lucas, 1845. The identity is still unclear, as the single male at hand is in poor condition. By the size and proportions of the pedipalps and the structure of the male genitalia, the Crimean sample is particularly close to if not identical with *R. schawalleri* sp.n.

BRIEF DESCRIPTION OF THE CRIMEAN SAMPLE (FIGS 21–25).

Pedipalp: trochanter 1.68; femur 3.24; tibia 2.38; chela with pedicel 3.41; chela without pedicel 3.22; hand with pedicel 2.05; hand without pedicel 1.86 times as long as broad. Hand with pedicel 1.25 times longer than finger. Leg I: tibia 2.15 times as long as broad; tarsus curved in lateral view, 2.33 times as long as broad; subterminal seta dentate. Claws asymmetrical, external one without accessory tooth. Genitalia as in Figs 23–25: lateral rods not fused anteriorly, but with thin membranes; dorsal apodeme small; eversible sacs not so large.

Measurements (in mm): Pedipalp: trochanter 0.42/0.25; femur 0.81/0.25; tibia 0.69/0.29; chela (with pedicel) 1.26/0.37; chela (without pedicel) 1.19; hand (with pedicel) 0.76; hand (without pedicel) 0.69; movable finger 0.69. Leg I: tibia 0.28/0.13; tarsus 0.28/0.12.

Dactylochelifer kussariensis (Daday, 1889)

Figs 26–28.

MATERIAL. 1 ♂, 2 ♀♀ (IZB 346), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], near Tugchay, 500 m a.s.l., under stones, 21.V.1992, leg. S. Dashdamirov & H. Aliev.

REMARKS. The structure of the male genitalia is as in Figs 26 & 27: lateral rods fused anteriorly and each only provided with one subterminal branch; dorsal apodeme small; eversible sacs large.

Dactylochelifer aff. *popovi* Redikorzev, 1949

Figs 29–32.

MATERIAL. 1 ♂, 1 ♀ (IZB 340), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], riverine *Populus euphratica* stand, under bark, 24–25.VI.1996, leg. S. Dashdamirov.

REMARKS. The identity of this form still requires confirmation. *R. popovi* has hitherto been known from Central Asia only. The Caucasian samples agree with Central Asian ones in pedipalp size and proportions as well as in shape of ♂ tarsus I. Still there are differences in ♂ genital structure, in dorsal apodemes in particular: short with absolutely straight lateral rods in Central Asian examples [cf. Dashdamirov & Schawaller, 1995: figs 61 & 62] vs. long with the lateral rods curved at midway in the single Caucasian ♂ (Fig. 10). Interestingly, based on these distinctions, the Caucasian sample approaches yet one more Central Asian congener, *D. mrciaki* Krumpal, 1984, but differs by the presence of pseudotactile setae on the last abdominal tergite. In addition, chaetotaxy of the last tergite in the Caucasian specimens (Fig. 31) is distinguished from that of Central Asian *popovi* in the number of setae at the caudal margin: eight short, distally dilated setae vs. six.

Only after much more material has become analyzed does it seem possible to more securely speculate about the identity of the above Caucasian sample. Hence the necessary qualifications.

Withius hispanus (L. Koch, 1873)

MATERIAL. 1 ♂ (IZB 341), Azerbaijan, Khyzy Distr., Varafta Mt. Ridge, 10 km W Kiliazi [2], riverine *Populus euphratica* stand, under stones, 24–25.VI.1996; 2 ♂♂, 6 ♀♀ (IZB 362), Azerbaijan, Samur Forest (*Quercus*, *Carpinus*, *Populus*, etc.) [4], under bark of stumps, 8.VII.1991, all leg. S. Dashdamirov.

Cheliferidae gen.sp.

Figs 33–36.

MATERIAL. 5 ♀♀, 1 ♂ (IZB 372), Azerbaijan, Alty-Agach [7], forest, under bark, 23.VI.1996, leg. S. Dashdamirov.

REMARKS. Considering all these adults are females, it appears impossible to make a closer identification. The specimens probably belong to the genus *Hysterochelifer* J.C. Chamberlin, 1932: subterminal seta of leg IV simple (Fig. 33); venom apparatus present in both chelal fingers; fixed chelal finger with eight tactile setae, moveable chelal finger with four tactile setae, trichobothrial pattern generally typical of *Hysterochelifer*; chelicera with five acuminate setae in basal part; serrula exterior of 18 lamellae; flagellum of three blades, first blade with spinules on anterior side (Fig. 36); galea with five branches (Fig. 35); pedipalps, carapace and tergites granulate.

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