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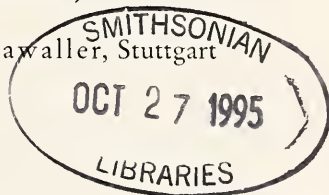
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### Pseudoscorpions from Middle Asia, Part 4 (Arachnida: Pseudoscorpiones)

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With 91 figures



#### Summary

This fourth contribution to the pseudoscorpion fauna of Middle Asia treats the families Chernetidae and Cheliferidae (17 species). **New species:** *Allochernes(?) bactrinus* n. sp. (Tadjikistan) and *Dactylochelifer minor* n. sp. (Kazakhstan). **New synonymies and combinations:** *Centrochelifer afghanicus* Beier 1959 = *Centrochelifer allocancroides* (Redikorzev 1949) n. comb.; *Dactylochelifer changaiensis* Krumpal & Kiefer 1982 = *Dactylochelifer brachialis* Beier 1952; *Dactylochelifer afghanicus* Beier 1959 and *Dactylochelifer cendsureni* Krumpal & Kiefer = *Dactylochelifer popovi* Redikorzev 1949; *Rhacochelifer mongolicus* Beier 1969 = *Rhacochelifer melanopygus* (Redikorzev 1949) n. comb.

#### Zusammenfassung

Dieser vierte Beitrag zur Pseudoskorpion-Fauna Mittelasien behandelt die Familien Chernetidae und Cheliferidae (17 Arten). Hinsichtlich neuer Arten, Synonyme und neuer Kombinationen siehe „Summary“.

#### Р е з ю м е

Четвертое сообщение по ложноскорпионам фауны Средней Азии включает 19 видов из двух семейств (*Chernetidae* и *Cheliferidae*). Большая часть материала была собрана из горных районов исследуемого региона, в том числе, в наших сборах впервые представлены находки из трудно доступных районов Памира. Фаунистические данные сопровождаются систематическими, морфологическими, экологическими и зоогеографическими замечаниями. Ряд определений вызывают сомнения и для их уточнения необходимы родовые ревизии. Данные по новым видам, новым синонимам и комбинациям приведены в английском резюме.

#### 1. Introduction

In our series on the pseudoscorpion fauna of Middle Asia we treat in the present paper the remaining families Chernetidae and Cheliferidae. Nearly all species are figured in detail. However, the identifications of some species are insecure or impos-

sible, because some genera urgently need revision, or further adult specimens are necessary. Including this contribution, 67 species of pseudoscorpions are now known from Middle Asia. In a later publication we intend to give a general discussion on the zoogeographical aspects, on vertical distribution and on other subjects.

The „*Allochernes*“ complex in Middle Asia and the adjacent regions is heterogeneous and probably needs to be split up in some natural groups. The genus *Dactylochelifera* is represented in the area by several species. The taxonomic status of some *Dactylochelifera* species remains doubtful and a revision of the genus is necessary. We herein propose new taxonomic criteria for the *Dactylochelifera* species, based on the morphology of the genitalia of both males and females.

### Material

The material for this study was collected in various parts of Middle Asia (see map fig. 91) in 1967–1992 by ALIEV, ANDREEVA, ANUFRIEV, BLAGOVESHCHENSKAYA, CHIKATUMOV, DASHDAMIROV, DOLZHANSKY, EVDONIN, FEDEROV, IBRAEV, KALABIN, KOMAROVA, KONONENKO, LOPATIN, LYAKHOV, ODINASHOEV, OVTCHINNIKOV, RAYKHANOV, TARABAEV, ZARKO, ZOLOTUKHIN, ZONSTEIN, ZORKIN and ZYUZIN. The treated material is deposited in the collections of the Biological Institute Novosibirsk (BIN), the Institute of Zoology in Baku (IZB), the Muséum d'Histoire Naturelle in Genève (MHNG), the Staatliches Museum für Naturkunde in Stuttgart (SMNS) and the Zoological Museum of the Moscow State University (ZMMU). Besides, some material from the Zoological Institute of the Russian Academy of Sciences in St. Petersburg (ZIP) has been revised. In the text each locality is followed by the respective number put in square brackets and referring to the numbers in the map (fig. 91).

### Acknowledgments

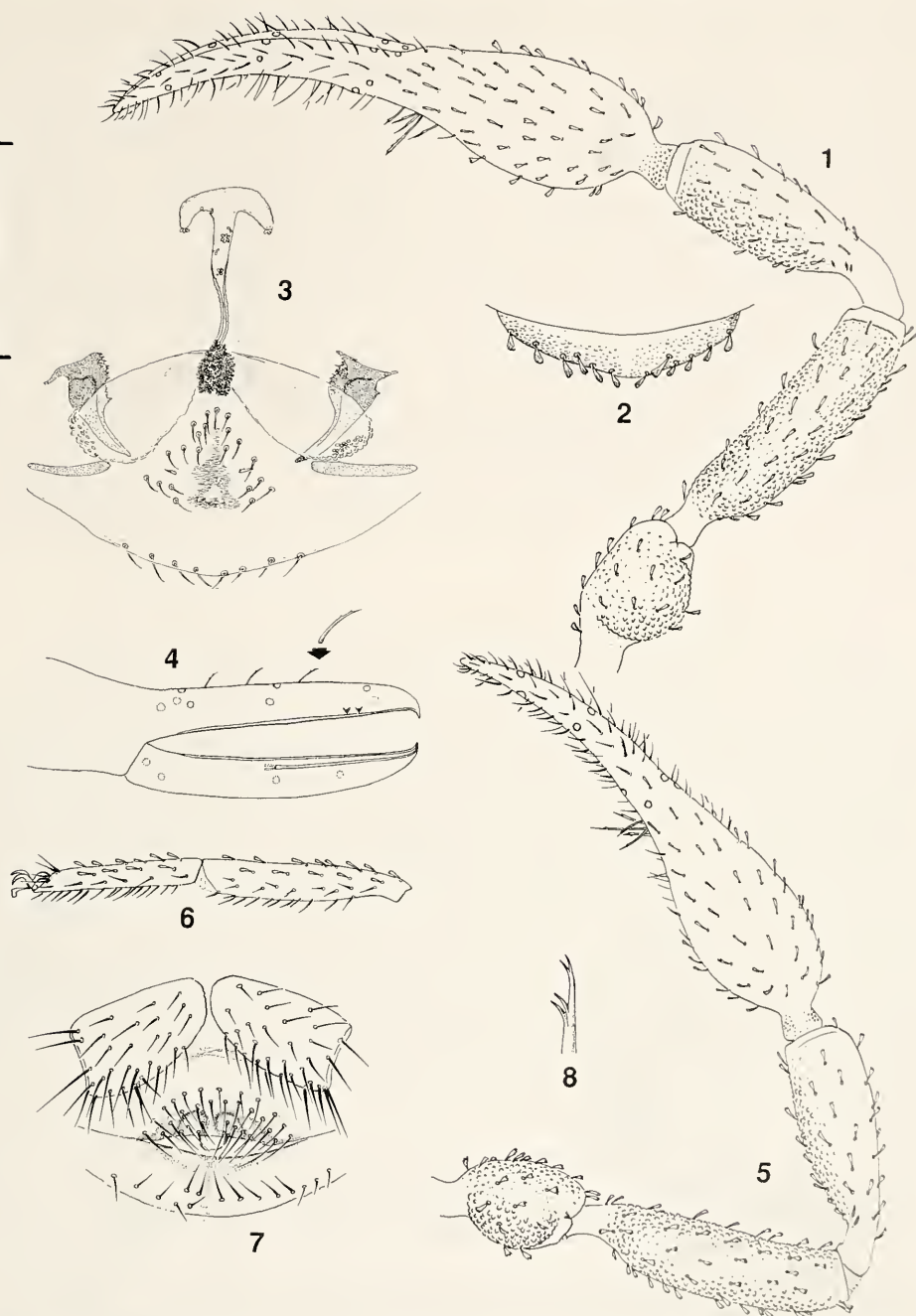
We thank all friends and colleagues who made their collections available, particularly Dr. K. ESKOV (Moscow), Dr. D. LOGUNOV (Novosibirsk), Dr. K. MIKHAILOV (Moscow), Dr. V. OVTCHARENKO (St. Petersburg) and Dr. A. ZYUZIN (Alma-Ata). We are also indebted to Dr. Y. TARBINSKY and Dr. S. ZONSTEIN (Bishkek) for the organization of an expedition to Middle Asia for one of us (S.D.) in spring 1990. Dr. S. GOLOVATCH (Moscow) provided linguistic help.

## 2. The species

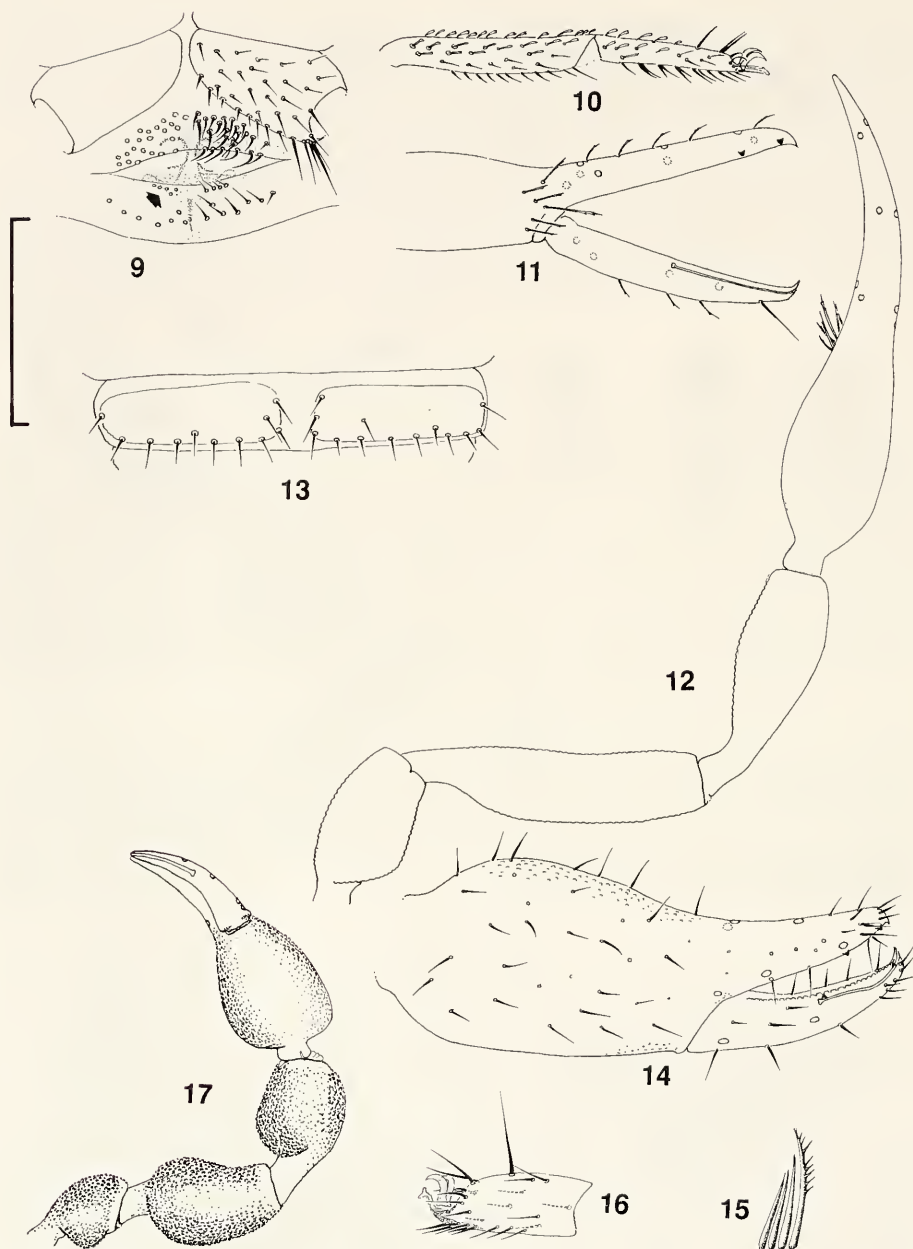
### 2.1. *Allochernes*(?) *turanicus* (Redikorzev 1934) (figs. 1–8)

Material: Kazakhstan, Mangistau Area, Ustyurt, Kenderli [1], 27. V. 1989 leg. RAYKHANOV, IBRAEV & ZYUZIN, 1 ♀ (IZB 277). – Uzbekistan, Djizak Distr., Khayatsay, Nuratinsky State Reserve [6], 1400 m, under stones, 9. IV. 1990 leg. DASHDAMIROV & ALIEV, 1 ♂ (IZB 278), 1 ♂ (SMNS 3250).

Description: Carapace with 6 setae on the anterior margin, 0.99 (♀), 1.06–1.12 (♂♂) times longer than broad. Tergal chaetotaxy: ♀, 13–15–15–15–17–18–18–16–17–16–12; ♂♂, (12–13)–(14–15)–13–(15–17)–(16–17)–(15–17)–(17–18)–16–(14–17)–(13–14)–(10–11). Palm of chelicera with 5 setae, *sb* and *b* denticulate. Pedipalps: trochanter 1.83–1.92 (♂♂), 1.95 (♀); femur 4.00–4.19 (♂♂), 4.24 (♀); tibia 3.28–3.41 (♂♂), 3.13 (♀); chela with pedicel 4.40–4.67 (♂♂), 5.59 (♀); chela without pedicel 4.08–4.33 (♂♂), 5.23 (♀); hand with pedicel 2.32–2.38 (♂♂), 2.73 (♀); hand without pedicel 1.96–2.04 (♂♂), 2.36 (♀) times as long as broad. Fixed finger of chela with 42 marginal teeth, plus 6 external and 2 internal accessory teeth. Movable finger with 53 marginal teeth, accessory teeth absent. Chelal hand on medial side near base of the fingers with 5 strong, terminally dentate setae. Venom apparatus present in movable finger; nodus ramosus near *st*. Coxa and trochanter of



Figs. 1–8. *Allochneres(?) turanicus*. – 1. Pedipalp, dorsal view, IZB 277, ♀, from Kenderli; – 2. Posterior tergite, IZB 277, ♀, from Kenderli; – 3. Spermatheca, IZB 277, ♀, from Kenderli; – 4. Chela, lateral view, IZB 277, ♀, from Kenderli; – 5. Pedipalp, dorsal view, IZB 278, ♂, from Nuratau; – 6. Tarsus IV and tibia IV, IZB 278, ♂, from Nuratau; – 7. Genital opercula, IZB 278, ♂, from Nuratau; – 8. Galea, IZB 277, ♀, from Kenderli. – Scale line: 0.5 mm (1–2, 4–6), 0.35 mm (7), 0.2 mm (3).



Figs. 9–13. *Allochernes(?) bactrinus* n. sp., holotype, IZB 279, ♂, from Sibeston. – 9. Genital opercula; – 10. Tarsus IV and tibia IV; – 11. Chela, lateral view; – 12. Pedipalp, dorsal view; – 13. Sternite VIII. – Scale line: 0.5 mm (10–12), 0.35 mm (9, 13).

Figs. 14–16. *Dendrochernes cyrneus*, IZB 280, Deutonymph, from Chon-Uryukty. – 14. Chela, lateral view; – 15. Flagellum; – 16. Tarsus IV. – Scale line: 0.35 mm (14, 16).

Fig. 17. *Dinocheirus bulbipalpis*, IZB 197, ♂, from Kamchik-Say; pedipalp, ventral view. – Scale line: 0.8 mm.

leg IV with rows of long and acuminate setae on the posterior margin. Leg IV without tactile seta on tarsus. Male genital opercula as in fig. 7. Female spermatheca as in fig. 3.

Measurements ♂♂ (♀) (in mm): Carapace 0.67–0.697/0.62–0.63 (0.71/0.72). Pedipalps: trochanter 0.36–0.39/0.197–0.203 (0.43/0.22); femur 0.64–0.67/0.16 (0.72/0.17); tibia 0.58–0.59/0.17–0.18 (0.61/0.195); chela with pedicel 1.10–1.12/0.24–0.25 (1.23/0.28); chela without pedicel 1.02–1.04 (1.15); hand with pedicel 0.57–0.58 (0.60); hand without pedicel 0.49 (0.52); finger 0.59–0.598 (0.68).

Remarks: The proportions of the pedipalps and the chaetotaxy of the abdomen in the above listed specimens are the same as in other *Allochernes* species. Other characters, however, do not fit in the scope of this genus. This holds true for the presence of strong, dentate setae on the medial side of the palpal chela, the presence of 2 accessory teeth on the internal side of the fixed palpal finger, the chaetotaxy of the genital opercula in males, the shape of the female spermatheca and the presence of a long seta on the posterior margin of the coxa IV. Very probably, the „*Allochernes*“ species complex has to be split up into some natural groups. In this case, *turanicus* seems to be the representative of a new, yet undescribed genus.

## 2.2. *Allochernes*(?) *bactrinus* n. sp. (figs. 9–13)

Holotype ♂: Tadjikistan, Dangara Distr., Sibeston [15], Kolkot, near Nurek reservoir, 1450 m, under stones, 2. V. 1990 leg. DASHDAMIROV (IZB 279).

Description: Carapace regularly granulate, with 7 setae on the anterior margin and 17 setae on the posterior margin (totally about 120 clavate and dentate setae), 1.03 times as long as broad; two furrows present, the posterior furrow of the carapace is closer to the posterior margin than to the anterior furrow. Chelicera dorsally with 5 setae on the basal part, *b* and *sb* denticulate; movable finger with 1 seta. Flagellum with 3 blades. Serrula exterior with 17 lamellae. Tergal chaetotaxy: 14–16–16–21–21–18–17–22–17–16–13. Sternal chaetotaxy: x–x–14–27–28–28–21–24–17–14. Last tergite and sternite without tactile seta. Genital opercula as shown in fig. 9. Pedipalps regularly granulate. Pedipalps: trochanter 1.86; femur 4.0; tibia 3.31; chela with pedicel 5.04; chela without pedicel 4.74; hand with pedicel 2.52; hand without pedicel 2.17 times as long as broad. Chelal hand medially with 5 strong, terminally dentate setae near the base of the fingers. Trichobothriotaxy see fig. 11. Fixed finger of the palp with 50 marginal teeth, plus 5 external and 2 internal accessory teeth; movable finger with 56 marginal teeth and without accessory teeth. Venom apparatus present in the moveable finger; nodus ramosus near *st*. Leg IV (fig. 10): tibia 6.0; tarsus with 1 distal pseudotactile seta (TS = 0.47), 5.14 times as long as broad. Subterminal seta simple. Setae on the posterior margin of coxa IV and trochanter IV shorter than in *turanicus*.

Measurements (in mm): Carapace 0.69/0.67. Pedipalps: trochanter 0.39/0.21; femur 0.68/0.17; tibia 0.595/0.18; chela with pedicel 1.16/0.23; chela without pedicel 1.09; hand with pedicel 0.58; hand without pedicel 0.50; finger 0.58. Leg IV: tibia 0.48/0.08; tarsus 0.36/0.07.

Relationship: *Allochernes*(?) *bactrinus* n. sp. is quite similar to *turanicus* in the size of the pedipalps and in the chaetotaxy of the tergites and sternites, but can be distinguished from that species by the presence of a pseudotactile seta on the tarsus IV, by a more slender palpal chela, by the position of the internal accessory teeth on the

fixed palpal finger and by the chaetotaxy of the genital opercula (figs. 7, 9). The generic problem is the same as in *turanicus*.

### 2.3. *Dendrochernes cyrneus* (L. Koch 1873) (figs. 14–16)

Material: Kirghizia, Kungey-Alatau Mt. Ridge, Chon-Uryukty [39], near Issyk-Kul Lake, 1800 m, under bark of *Picea schrenkiana*, 27. V. 1990 leg. DASHDAMIROV, 1 D (IZB 280 slide).

Remarks: Although only a deutonymph is in our hands, the identification seems to be sure.

Distribution: The species has a transpalearctic distribution and reaches the Himalayas in the south. It was already published from Middle Asia (Kazakhstan) by REDIKORZEV (1949).

### 2.4. *Dinocheirus bulbipalpis* (Redikorzev 1949) (figs. 17, 20–21)

Material: Uzbekistan, 10 km SSW Tashkent [27], under bark of *Salix*, 7. IV. 1990 leg. DASHDAMIROV, 1 ♂ (IZB 274). – Kuraminsky Mt. Ridge, Kamchik-Say [30], 12. IV. 1985 leg. OVTCHINNIKOV, 1 ♂ (IZB 197). – Kirghizia, Fergansky Mt. Ridge, Yarodar near Arslanbob [34], under bark of *Juglans regia*, 1400–1500 m, 8. V. 1990 leg. DASHDAMIROV, 3 ♂♂, 1 ♀, 1 T (IZB 275), 1 ♂ (SMNS 3251). – Tadjikistan, Pyotr Pervyi Mt. Ridge, Sabzikharv River [17], 3. VI. 1968 leg. CHIKATUNOV, 1 ♀ (ZMMU).

Description: Carapace 1.21 times as long as broad; tergal chaetotaxy: 18–19–18–23–24–25–24–25–25–22–15 (including 2 tactile setae). Pedipalps: trochanter 1.52; femur 2.00; tibia 1.73; chela with pedicel 2.85; chela without pedicel 2.68; hand with pedicel 1.50; hand without pedicel 1.24 times as long as broad; fixed finger of chela externally with 3–4, moveable finger with 3 accessory teeth; nodus ramosus exactly between *st* and *t*; trichobotrial pattern as shown in figs. 17, 20. Leg IV: tibia 3.82; tarsus 4 times as long as broad, with 1 pseudotactile seta (TS = 0.43).

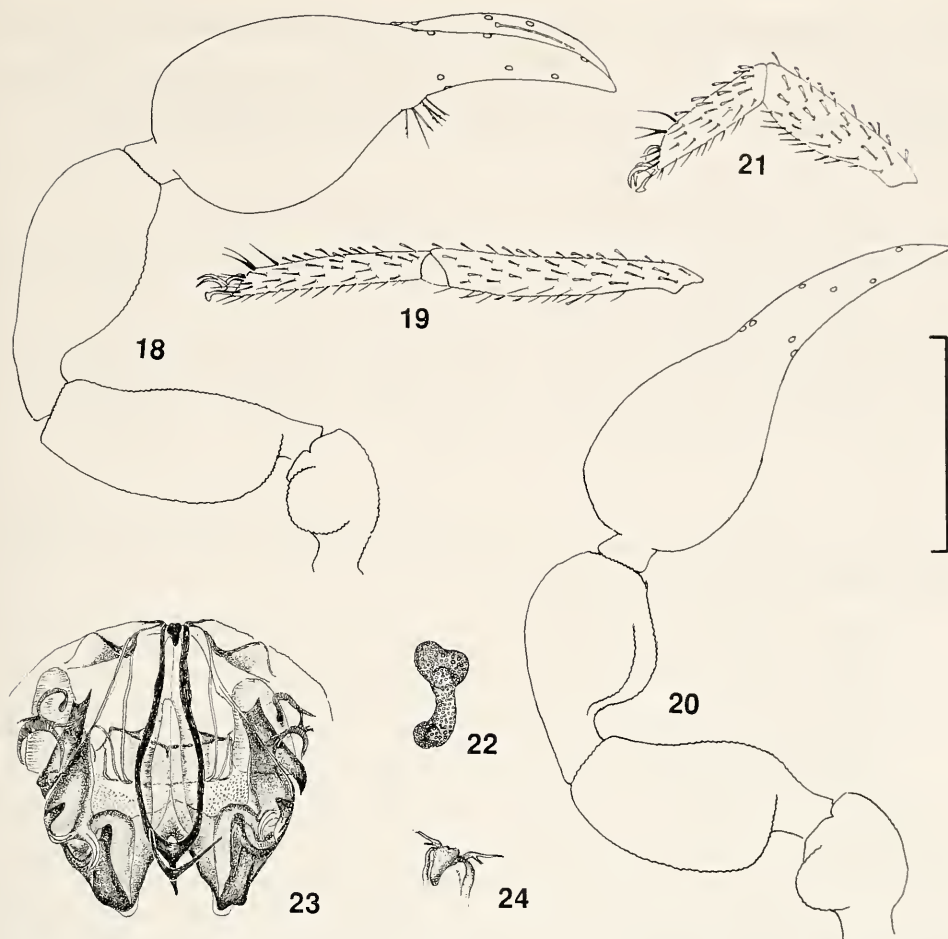
Measurements (in mm): Carapace 0.75/0.62. Pedipalps: trochanter 0.35/0.23; femur 0.58/0.29; tibia 0.52/0.30; chela with pedicel 0.97/0.34; chela without pedicel 0.91; hand with pedicel 0.51; hand without pedicel 0.42; finger 0.51. Leg IV: tibia 0.42/0.11; tarsus 0.32/0.08.

Remarks: In the redescription of the genus *Dinocheirus*, MAHNERT (1978) noticed, that the nodus ramosus of the moveable palpal finger is closer to *st* than to *t*. However, in the new material listed above, the nodus ramosus is either closer to *t* or exactly between *st* and *t*. Probably this character is more variable and not diagnostic for the genus. All other characters of the Middle Asian material fit to *Dinocheirus*.

### 2.5. *Dinocheirus transcaspicus* (Redikorzev 1922) (figs. 18–19)

Material: Kazakhstan, Alma-Ata Area, Chiliksky Distr., Syugatin Valley [41], 5 km near Charyn Canyon, semidesert, 2. X. 1989 leg. TARABAEV, FEDOROV, IBRAEV & ZYUZIN, 1 ♀ (IZB 273).

Description: Carapace 1.21 times as long as broad, with short and denticulate setae. Flagellum of 3 blades. Serrula with 17 lamellae. Seta *sb* on the cheliceral hand denticulate. Tergal chaetotaxy: 13–12–12–15–16–18–15–15–15–14–13. Pedipalps: trochanter 1.82; femur 2.58; tibia 2.46; chela with pedicel 2.97; chela without pedicel 2.72; hand with pedicel 1.64; hand without pedicel 1.36 times as long as broad. Venom apparatus present in the moveable finger and nodus ramosus near *st*. Fixed finger with 5 external and 3 internal accessory teeth; moveable finger with 3 external



- Figs. 18–19. *Dinocheirus transcaspicus*, IZB 273, ♀, from Syugatin Valley. – 18. Pedipalp, dorsal view; – 19. Tarsus IV and tibia IV. – Scale line: 0.5 mm.
- Figs. 20–21. *Dinocheirus bulbipalpis*, IZB 274, ♂, from Tashkent. – 20. Pedipalp, dorsal view; – 21. Tarsus IV and tibia IV. – Scale line: 0.5 mm.
- Figs. 22–24. *Gobichelifer chelanops*, IZB 289, from Mullo-Kuni. – 22. Cribriform plate, ♀; – 23. Genitalia, dorsal view, ♂; – 24. Tip of lateral rods, ♂. – Scale line: 0.5 mm (23), 0.2 mm (22).

and 3 internal accessory teeth. Leg IV: tibia 7.13; tarsus 6.57 times as long as broad. Tarsus IV with 1 pseudotactile seta ( $TS = 0.38$ ); subterminal tarsal seta simple.

Measurements (in mm): Carapace 0.69/0.57. Pedipalps: trochanter 0.40/0.22; femur 0.67/0.26; tibia 0.64/0.26; chela with pedicel 1.07/0.36; chela without pedicel 0.98; hand with pedicel 0.59; hand without pedicel 0.49; finger 0.57. Leg IV: tibia 0.57/0.08; tarsus 0.46/0.07.

Remarks: The female from the Syugatin Valley morphologically corresponds to the original description, only the palpal size (especially of the femur) and the structure of the lamella exterior differ somewhat, which might be caused by a larger varia-

bility of these characters. Besides, REDIKORZEV (1922) figured the seta *sb* of the chelera simple, in the new record this seta is denticulate.

Distribution: The species was described from Turkmenia and was later recorded also from Afghanistan, Kazakhstan, Kirghizia, Uzbekistan and Tadjikistan.

## 2.6. *Megachernes pavlovskiyi* Redikorzev 1949

Material: Turkmenia, Kugitang-Tau Mt. Ridge, Tash-Yurak Cave [5], in guano, 25. II. 1981 leg. DOLZHANSKY, 1 ♀ (IZB 187). – Same locality, 1983 leg. DOLZHANSKY, 1 ♂, 2 ♀♀, 1 T (IZB 276), 2 ♀♀ (SMNS 3252).

Distribution: The species has been described from Turkmenia (Gaudan) and was later recorded also from the Caucasus (SCHAWALLER & DASHDAMIROV 1988), Afghanistan (BEIER 1959) and from Kirghizia and Tadjikistan (SCHAWALLER 1986), thus it might have a larger distribution in Central Asia.

## 2.7. *Centrochelifer allocancroides* (Redikorzev 1949) n. comb. (figs. 44–51)

*Centrochelifer afghanicus* Beier 1959 n. syn.

Material: Uzbekistan, Surkhandarya Distr., Babatag Mt. Ridge [8], Kokbel Pass, 1430 m, under bark of *Pistacia vera*, 5. V. 1990 leg. DASHDAMIROV, 4 ♂♂, 1 ♀, 1 T (IZB 253), 2 ♂♂ (SMNS 3253). – Tadjikistan, Dangara Distr., Sibeston [15], Kolkot, near Nurek Reservoir, 1400 m, under bark of *Morus alba*, 2. V. 1990 leg. DASHDAMIROV, 1 ♂, 3 ♀♀ (IZB 252), 1 ♀ (SMNS 3254). – Karatau Mt. Ridge [14], 30 km NE Kuibyshevsky, 850–1300 m, under bark of *Pistacia vera*, 25. IV. 1990 leg. DASHDAMIROV, 6 ♂♂, 3 ♀♀ (IZB 254), 2 ♂♂, 1 ♀ (SMNS 3255).

Remarks: The study of the new material has revealed the identity with the species previously known as *Hysterochelifer allocancroides* Redikorzev 1949, described from Uzbekistan. However, the presence of an anteriolateral process on the coxa IV in males, the characteristic chaetotaxy of the tarsus I, the trichobothriotaxy as well as the presence of keels on carapace and tergites indicate the membership within *Centrochelifer*. The original description of *Centrochelifer afghanicus* Beier 1959 (type species of *Centrochelifer*) shows no significant differences, only a certain variability occurs in size (in *afghanicus* carapace 0.80/0.69, femur 0.87/0.19, tibia 0.80/0.22, hand 0.76/0.30 and finger 0.62 mm; in *allocancroides* carapace 0.72/0.53, femur 0.76–0.84/0.18–0.20, tibia 0.69–0.77/0.20–0.21, hand 0.65–0.80/0.31–0.32 and finger 0.57 mm). We therefore consider *afghanicus* Beier 1959 a junior synonym of *allocancroides* Redikorzev 1949.

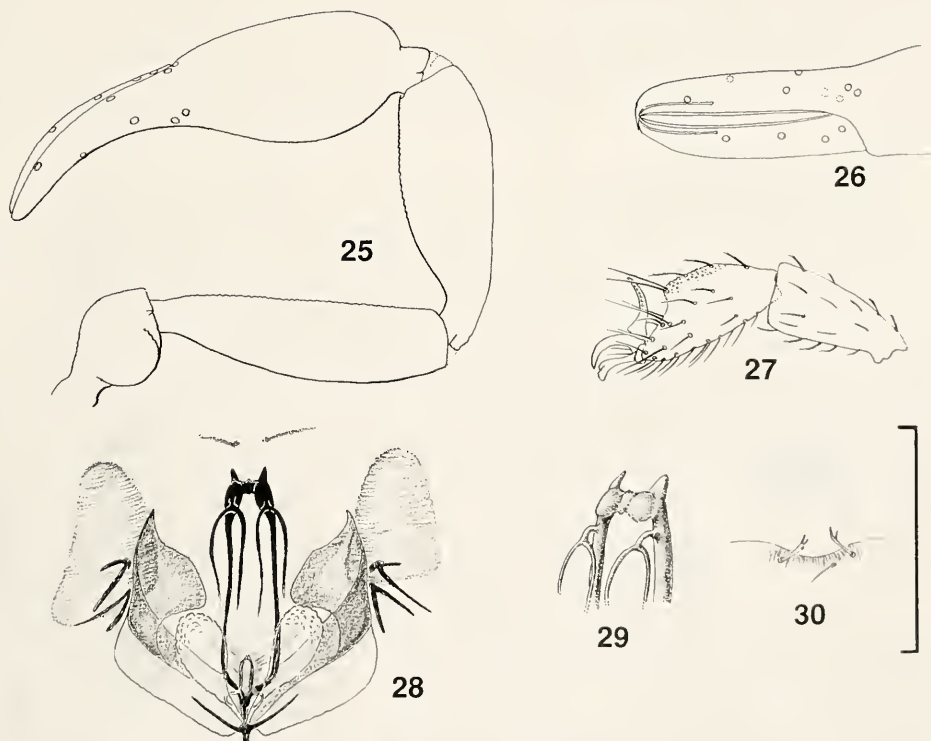
Description of ♂: Carapace and tergites with thorn-like posteriolateral keels. Pedipalps: femur 4.22; tibia 3.29; chela with pedicel 3.90; hand with pedicel 2.10 times as long as broad. Structures of the male genitalia as in figs. 45–46: lateral rods fused anteriorly only in one dorsal point, dorsal apodeme large. Female genitalia as in fig. 44, median cribriform plate paired. Leg I: tibia 2.76; tarsus 3.54 times as long as broad; tarsus curved in dorsal view and with two groups of setae on ventral surface (each group consist of 6–7 setae); subterminal seta dentate; claws simple. Leg IV: coxa (fig. 48) with anteriolateral thorn, coxal sac occupying one third of coxal length.

Measurements (in mm): Pedipalps: femur 0.76/0.18; tibia 0.69/0.21; chela with pedicel 1.21/0.31; hand with pedicel 0.65; finger 0.57.

2.8. *Dactylochelifer brachialis* Beier 1952 (figs. 52–55)*Dactylochelifer changaiensis* Krumpal & Kiefer 1982 n. syn.

Material: Turkmenia, Kopet-Dagh Mts., Dushak [3], *Juniperus* forest, 10. V. 1987 leg. KALABIN, 1 ♀ (BIN). – Uzbekistan, Djizak Distr., Nuratau Mt. Ridge [6], Nuratinsky Reserve, canyon Khayatsay, 1200 m, forest with *Juglans regia*, *Amygdalus*, *Persica*, *Salix*, *Malus*, in litter 9. IV. 1990 leg. DASHDAMIROV, 3 ♂♂, 3 ♀♀ (IZB 257), 1 ♂, 2 ♀♀ (SMNS 3256). – Tadjikistan, Yazgulem [20], near Motravy, 1800–2000 m, 5. VI. 1970 leg. ANDREEVA, 1 ♂ (IZB 304), 1 ♂, 1 ♀ (ZMMU). – Pamir Mts., Kudara Pass [21], *Betula*, 22. VII. 1976 leg. KONONENKO, 1 ♂ (ZMMU). – Pamir Mts., Shungansky Mt. Ridge, near Khorog Botanical Garden [22], 3800–4100 m, 12. VII. 1970 leg. ANDREEVA, 1 ♀ (ZMMU). – Pamir Mts., near Khorog Botanical Garden [22], 18. VII. 1971 leg. EVDONIN, 1 ♂, 1 ♀ (ZMMU). – Pamir Mts., Durum Dara [not located], 2500–3000 m, 10. VIII. 1970 leg. BLAGOVESCHENSKAYA, 1 ♀, 1 T (ZMMU). – Pamir Mts., Khuf Valley near Khuf [47], 3000 m, 28. VI. 1971 leg. ANDREEVA, 2 ♀♀ (ZMMU). – Pamir Mts., Vanch River near Chikhoh [19], 3100 m, 3. VI. 1970 leg. ANDREEVA, 1 ♂ (ZMMU).

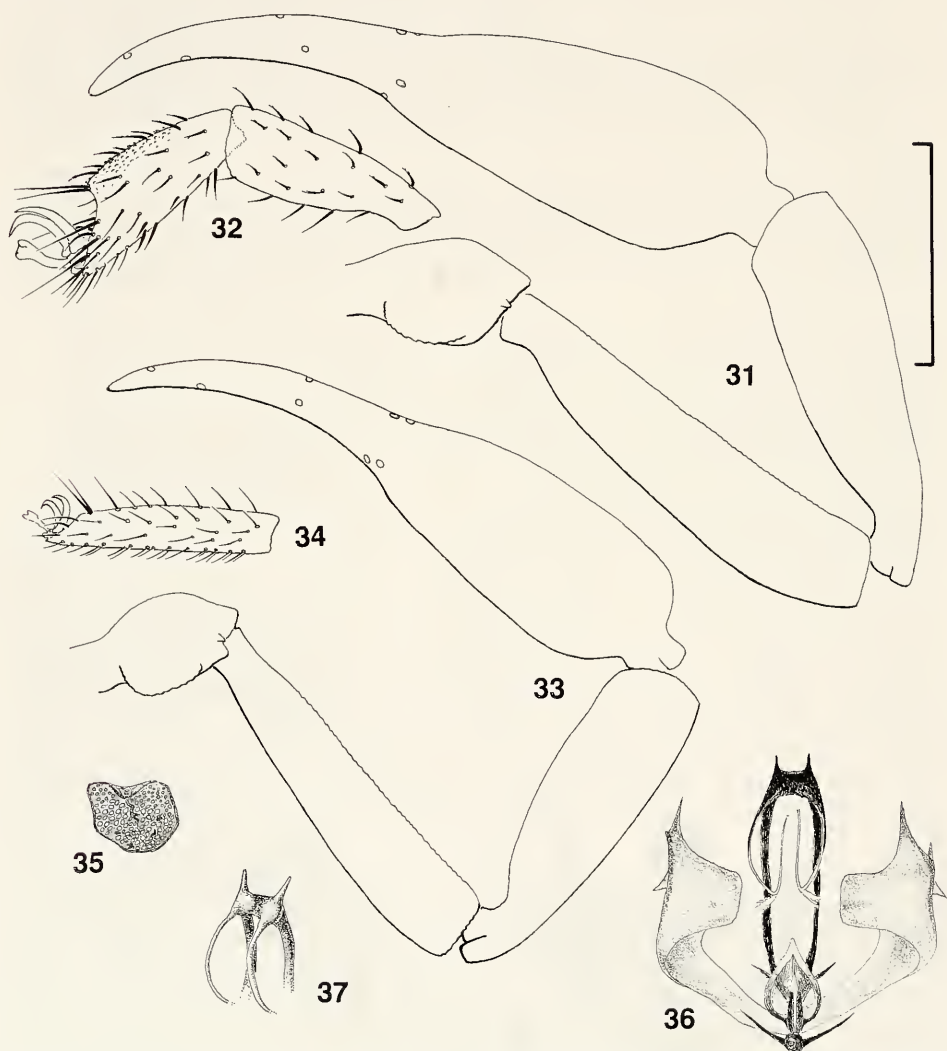
Remarks: *Dactylochelifer changaiensis* was described by KRUMPAL & KIEFER (1982) from northwestern Mongolia, and separated from *brachialis* by the shape of the male tarsus I, the tergal chaetotaxy and the size of the palpal fingers. In our view, these differences are not specific and fit fully in the variation range of *brachialis*. Fur-



Figs. 25–30. *Dactylochelifer minor* n. sp., holotype, ZMMU, ♂, from Sulysor. – 25. Pedipalp, dorsal view; – 26. Chela, lateral view; – 27. Tarsus I and tibia I; – 28. Genitalia, dorsal view; – 29. Tip of lateral rods; – 30. Median part of posterior genital sternite. – Scale line: 0.5 mm (25–26), 0.35 mm (27), 0.2 mm (28).

thermore, the structures of the genitalia of both males and females of *changaiensis*, figured in KRUMPAL & KIEFER (1982: tab. 5, figs. 7–9) show no differences to the structure in *brachialis* (figs. 54–55). Therefore we consider *changaiensis* a junior synonym of *brachialis*.

Distribution: The species is distributed from Iran in the west to Mongolia in the east, the vertical distribution ranges from 200 m to 4300 m.



Figs. 31–37. *Dactylochelifer spasskyi*, IZB 295, from Mal-Kalkaman Lake. – 31. Pedipalp, dorsal view, ♀; – 32. Tarsus I and tibia I, ♂; – 33. Pedipalp, dorsal view, ♂; – 34. Tarsus IV, ♀; – 35. Cribriform plate, ♀; – 36. Genitalia, dorsal view, ♂; – 37. Tip of lateral rods, ♂. – Scale line: 0.5 mm (31, 33–34), 0.35 mm (32), 0.2 mm (35–36).

### 2.9. *Dactylochelifer gobiensis* Beier 1969 (figs. 79–86)

Material: Kirghizia, Kaindy Mt. Ridge, Sary-Djaz [40], Dzhilybulag Pass, 19. VII. 1986 leg. OVTCHINNIKOV, 1 ♀ (IZB 206). – Issyk-Kul Lake, Chon-Uryukty [39], 1600 m, under bark, 19. V. 1990 leg. DASHDAMIROV, 1 ♂, 6 ♀♀ (IZB 272), 1 ♂, 2 ♀♀ (SMNS 3257). – Tadjikistan, E Pamir Mts., Chechekty [23], VIII.–IX. 1971 leg. ODINASHOEV, 1 ♂, 1 ♀ (ZMMU).

Description ♂♂ (♀♀): Carapace 1.13 (1.11) times as long as broad. Pedipalps: trochanter 1.65 (1.71); femur 3.94 (4.05); tibia 2.90 (2.17); chela with pedicel 3.73 (4.07); chela without pedicel 3.47 (3.79); hand with pedicel 2.03 (2.28); hand without pedicel 1.83 (2.00) times as long as broad. Male and female genitalia as illustrated (figs. 81, 85–86). Galea of male slender and weakly branched subterminally, that of female with 6 short branches (figs. 83–84). Leg I: tibia 2.55; tarsus 2.80 times as long as broad.

Measurements ♂♂ (♀♀) (in mm): Carapace 0.69/0.61 (0.68/0.61). Pedipalps: trochanter 0.33/0.20 (0.36/0.21); femur 0.71/0.18 (0.73/0.18); tibia 0.61/0.21 (0.63/0.29); chela with pedicel 1.12/0.30 (1.18/0.29); chela without pedicel 1.04 (1.10); hand with pedicel 0.61 (0.66); hand without pedicel 0.55 (0.58); finger 0.52 (0.54). Leg I: tibia 0.28/0.11; tarsus 0.28/0.10.

Remarks: *Dactylochelifer gobiensis* is very similar to *redikorzevi* (Beier 1929), described from Turkestan, in the trichobothriotaxy on the palpal fingers (in particular the position of *it*), in the shape and size of the pedipalps and in the slender tarsus I of the males. The new specimens from Chechekty come very close to *redikorzevi* concerning the structures of the genitalia (especially of the females), but have a more slender tarsus I in males. The type material of *redikorzevi* should be restudied, probably *gobiensis* is a synonym of *redikorzevi*.

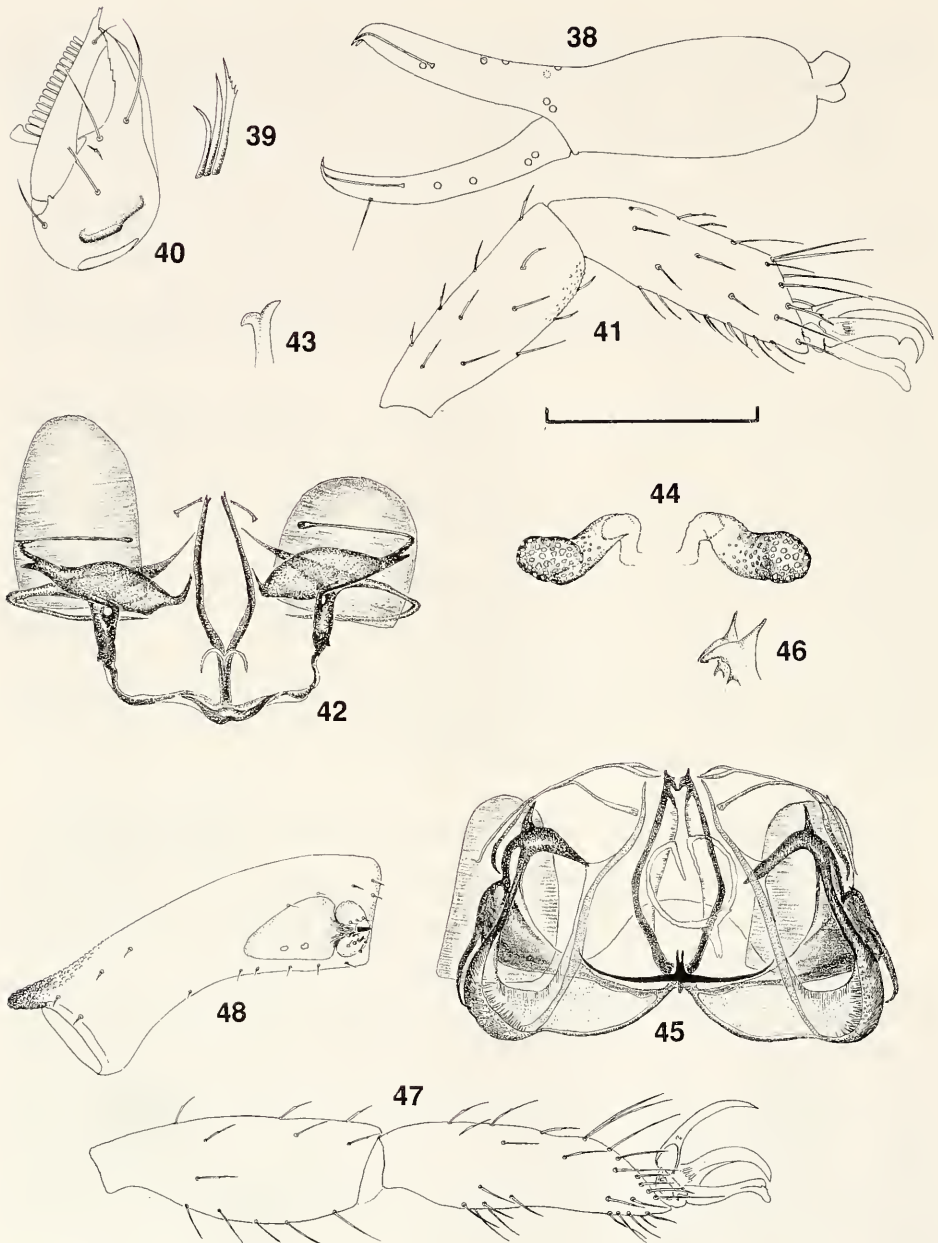
### 2.10. *Dactylochelifer intermedius* Redikorzev 1949 (figs. 56–60)

Material: Tadjikistan, Dushanbe [12], near the city under bark, 21. IV. 1990 leg. DASHDAMIROV, 5 ♂♂, 5 ♀♀ (IZB 269), 3 ♂♂, 1 ♀ (SMNS 3258), 1 ♂, 1 ♀ (MHNG). – Dushanbe [12], under plaster in a crack of an old building, 23. IV. 1990 leg. DASHDAMIROV, 2 ♂♂, 3 ♀♀ (IZB 270), 1 ♂, 1 ♀ (SMNS 3259).

Description ♂♂ (♀♀): Carapace 1.32 (1.27) times as long as broad. Chelicera with 5 setae on basal part; serrula exterior of 18 lamellae; one female (IZB 269) with tergal abnormalities as shown in fig. 58 (with fusion between tergites VIII–X). Genitalia as in figs. 57–60, dorsal apodeme of male small, reversible sacs large; female with an oblong median cribriform plate and 2 indented lateral cribriform plates (each with about 90 pores). Pedipalps: trochanter 1.63 (1.68); femur 3.73 (3.74); tibia 2.96 (3.24); chela with pedicel 3.76 (3.81); chela without pedicel 3.53 (3.56); hand with pedicel 1.94 (1.89) as long as broad. Leg I (fig. 56): tibia 3.18; tarsus 3.10 times as long as broad, internal claw with about 5 teeth.

Measurements ♂♂ (♀♀) (in mm): Carapace 0.87/0.66 (0.95/0.75). Pedipalps: trochanter 0.39/0.24 (0.42/0.25); femur 0.82/0.22 (0.86/0.23); tibia 0.74/0.25 (0.81/0.25); chela with pedicel 1.28/0.34 (1.37/0.36); chela without pedicel 1.20 (1.28); hand with pedicel 0.66 (0.68); finger 0.62 (0.69). Leg I: tibia 0.35/0.11; tarsus 0.31/0.10.

Remarks: *Dactylochelifer intermedius* belongs to the species group around *beieri* Redikorzev 1932 (described from Uzbekistan), *kaszabi* Beier 1970 (from Mongolia) and *monticola* Beier 1960 (from Afghanistan). *D. intermedius* seems very similar to



Figs. 38-43. *Rhacochelifer melanopygus*, IZB 251, ♂, from Gandzhino. - 38. Chela, lateral view; - 39. Flagellum; - 40. Chelicera, dorsal view; - 41. Tarsus I and tibia I; - 42. Genitalia, dorsal view; - 43. Tip of lateral rod. - Scale line: 0.55 mm (38), 0.2 mm (40-42).

Figs. 44-48. *Centrochelifer allocancroides*. - 44. Cribriform plates, ♀, IZB 252, from Kolkot; - 45. Genitalia, dorsal view, ♂, IZB 253, from Babatag; - 46. Tip of lateral rods, ♂, IZB 253, from Babatag; - 47. Tarsus I and tibia I, ♂, IZB 253, from Babatag; - 48. Coxa IV, ♂, IZB 252, from Kolkot. - Scale line: 0.2 mm (45, 47-48), 0.1 mm (44).

*beieri*, but differs in the proportions of the palpal hand (*beieri* hand 2.16–2.34, *intermedius* hand 1.88–1.94 times as long as broad), and in having longer palpal fingers. From *monticola* and *kaszabi*, *intermedius* differs mainly by a bigger size. Probably we face only the extremes in the variation range of a single biospecies, which has to be named *beieri* by priority.

Distribution: The species was described from Kirghizia and later recorded also from Turkmenia (SCHAWALLER 1989), herein we represent the first record from Tadzhikistan.

### 2.11. *Dactylochelifer kussariensis* (Daday 1889) (figs. 71–72)

Material: Kazakhstan, Mangistaun Area, Ustyurt, Kenderli [1], 21. V. 1989 leg. RAYKHANOV, IBRAEV & ZYUZIN, 1 ♀ (IZB 285 and slide).

Description: Carapace with 4 setae on the anterior margin; setae of the carapace and tergites short and acuminate. Pedipalps: femur 3.63; tibia 3.00; chela with pedicel 3.79; chela without pedicel 3.71; hand with pedicel 2.06 times as long as broad; hand without pedicel 1.08 times as long as finger. Genital operculum of female with 18 setae, genitalia (fig. 71) with lentils-like median cribriform plate, oval lateral cribriform plates and two large membraneous sacs.

Measurements (in mm): Pedipalps: femur 0.69/0.19; tibia 0.66/0.22; chela with pedicel 1.23/0.31; chela without pedicel 1.15; hand with pedicel 0.64; finger 0.59.

Remarks: The single female fits relatively well to the description and redescription (BEIER 1951).

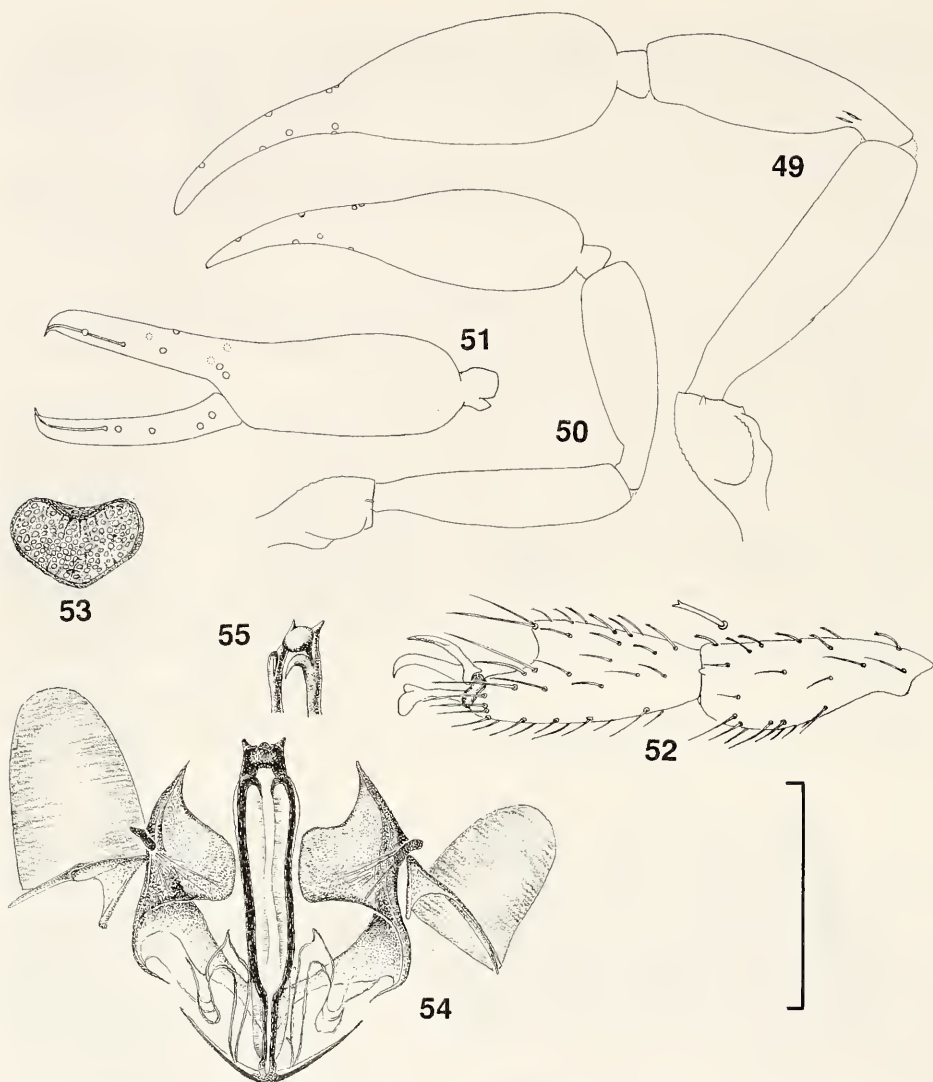
Distribution: The species is known from Asia Minor, Caucasus (locus typicus Kussary/Azerbaijan) and Afghanistan, this being the first record from Kazakhstan.

### 2.12. *Dactylochelifer minor* n. sp. (figs. 25–30)

Holotype ♂: Kazakhstan, Pavlodar Area, Bayanaul Distr., near Sulysor Lake [43], Ulkenaul, 9. V. 1990 leg. LYAKHOV (ZMMU).

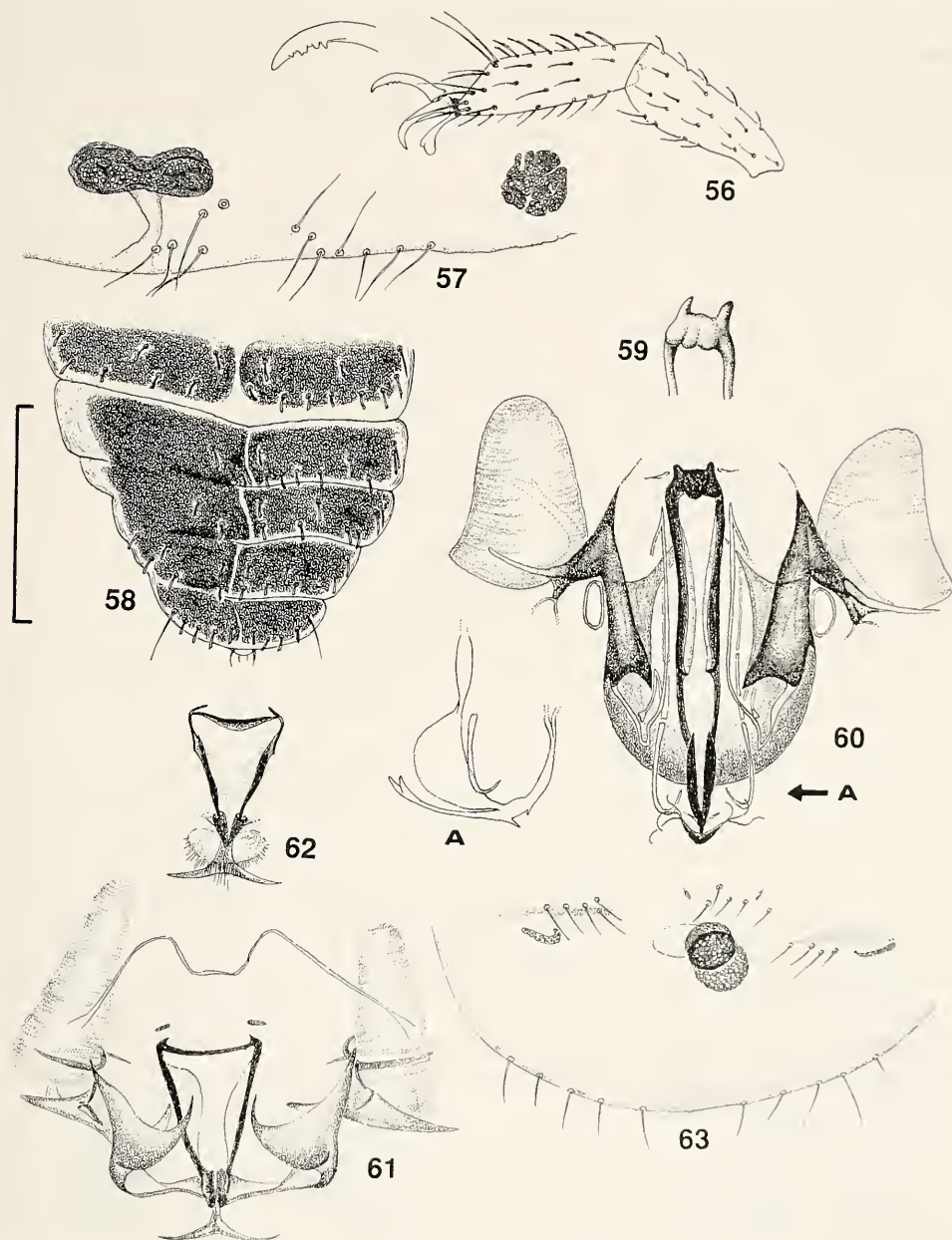
Description: Carapace 1.17 times as long as broad, with 4 setae on the anterior margin and 6 setae on the posterior margin. Chelicera dosally with 5 setae, moveable finger with 1 seta. Tergal chaetotaxy: 9–12–12–13–16–17–16–15–14–14–8 (6+2 tactile setae); tergal setae short with terminal denticles and slightly clavate. Sternal chaetotaxy: x–x–(7+2)–8–10–11–10–11–12–12–10 (8+2 tactile setae). Genitalia as in figs. 28–29, lateral rod of male fused anteriorly and subterminally with equal deeply bifurcate branches, dorsal apodeme rather small, reversible sacs small. Pedipalps evenly granulate, with small and slightly denticulate setae; trochanter 1.63; femur 3.88; tibia 3.00; chela with pedicel 3.77; chela without pedicel 3.50; hand with pedicel 2.12; hand without pedicel 1.77 times as long as broad. Fixed finger with 42, moveable finger with 43 marginal teeth. Nodus ramosus of both fingers almost reaching level of *t*. Trichobotriotaxy as in fig. 26. Leg I (fig. 27): tibia 2.27; tarsus with fine granulation on dorsal side, 2 times as long as broad. Claws asymmetrical, external one with 6 tiny teeth on internal margin. Tarsus of leg IV without tactile seta; subterminal seta simple.

Measurements (in mm): Carapace 0.69/0.59. Pedipalps: trochanter 0.31/0.19; femur 0.62/0.16; tibia 0.60/0.20; chela with pedicel 0.98/0.26; chela without pedicel 0.91; hand with pedicel 0.55; hand without pedicel 0.46; finger 0.46. Leg I: tibia 0.25/0.11; tarsus 0.24/0.12.



- Figs. 49–51. *Centrochelifer allocancroides*. – 49. Pedipalp, dorsal view, ♂, IZB 252, from Kolkot; – 50. Pedipalp, dorsal view, ♂, IZB 254, from Karatau; – 51. Chela, lateral view, ♀, IZB 254, from Karatau. – Scale line: 0.55 mm.
- Figs. 52–55. *Dactylochelifer brachialis*, IZB 257, from Nuratau. – 52. Tarsus I and tibia I, ♂; – 53. Cribriform plate, ♀; – 54. Genitalia, dorsal view, ♂; – 55. Tip of lateral rods, ♂. – Scale line: 0.35 mm (52), 0.2 mm (53–54).

Relationship: The new species apparently belongs to the species group around *brachialis* Beier 1952, *gracilis* Beier 1951, *mongolica* Beier 1970 and *spasskyi* Redikorzev 1949. *Dactylochelifer minor* n. sp. differs from *brachialis* by smaller size, shape and proportions of the anterior tarsus in the male and structure in male genitalia, from *gracilis* by the plumper palpal femur and anterior male tarsus (in *gracilis* the femur is 4.10 times, the anterior tarsus 2.60 times longer than broad, in *minor*



Figs. 56–60. *Dactylochelififer intermedius*, IZB 269, from Dushanbe. – 56. Tarsus I and tibia I, ♂; – 57. Genitalia, ventral view, ♀ (median and lateral cribriform plates); – 58. Abnormal posterior tergites, ♀; – 59. Tip of lateral rods, ♂; – 60. Genitalia, dorsal view (A: lateral view of dorsal apodeme and lateral rods). – Scale line: 0.8 mm (58), 0.35 mm (56), 0.2 mm (57, 60).

Figs. 61–63. *Dactylochelififer popovi*. – 61. Genitalia, dorsal view, IZB 281, ♂, from Sibeston; – 62. Dorsal apodeme and lateral rods of genitalia, IZB 282, ♂, from Nuratau; – 63. Genitalia, ventral view (median and lateral cribriform plates), IZB 281, ♀, from Sibeston. – Scale line: 0.2 mm.

n. sp. 3.88 times and 2.00 times respectively) and by less numerous setae on the tergites, from *mongolica* by smaller size of the pedipalps and the plumper anterior male tarsus, from *spasskyi* by the shape of the anterior male tarsus and structures of the male genitalia. Females of the new species may give further informations about the specific differences.

### 2.13. *Dactylochelifer mrciaki* Krumpal 1984 (figs. 64–66, 78)

Material: Kazakhstan, Mangistaun Area, Eraliev Distr., sands of Karynzharyk [2], 11 km S Saksorkuyu, 14. V. 1989 leg. RAYKHANOV, IBRAEV & ZYUZIN, 1 ♂ (IZB 283 and slide). – Turkmenia, Repetek [4], under stones, 25. III. 1990 leg. LYAKHOV, 1 ♂ (IZB 299), 1 ♂, 1 ♀ (ZMMU). – Tadzhikistan, Vakhsh River, Kzyl-Kala [11], on bushes, 26. IX. 1974 leg. KONONENKO, 1 ♂ (ZMMU).

Revalidation: KRUMPAL (1984) described this species, based on 2 males from Bukhara/Kyzyl-Kum in Uzbekistan; SCHAWALLER (1989) synonymized it with *popovi* Redikorzev 1949. We have not been able to re-examine the type material (Slovakian National Museum Bratislava), but the new material shows that the synonymization by one of us was wrong. *Dactylochelifer mrciaki* is distinguishable from *popovi* by the chaetotaxy of the last tergite (in *mrciaki* with 14 setae and without longer tactile setae, in *popovi* with about 10 setae including 2 discal and 2 tactile setae), by the chaetotaxy of the last sternite (in *mrciaki* without tactile setae, in *popovi* with tactile setae), by the shape of the lateral rods in the male genitalia (in *mrciaki* lateral rods curved in the median part, in *popovi* more or less straight as in figs. 61–62) and by the form of the apodeme of the reversible sacs and the lateral apodeme in the genitalia of the male.

Description: Chelicera with 5 setae, *sb* terminally dentate. Tergal chaetotaxy: 9–8–9–12–15–15–16–15–15–15–14, last tergite without tactile setae. Sternal chaetotaxy: x–x–(4/3–2/4)–7–8–12–14–14–13–14–8, last sternite without tactile setae. Genital structures of males as in fig. 64; lateral rods curved in the median part; dorsal apodeme small; reversible sacs long and thin; apodeme of reversible sac and lateral apodeme well developed. Pedipalps: trochanter 1.80; femur 3.80; tibia 2.91; chela with pedicel 3.53; chela without pedicel 3.23; hand with pedicel 2.13; hand without pedicel 1.80 times as long as broad. Leg I: tibia 2.29; tarsus 3.56 times as long as broad; claws simple. Tarsus of leg IV without tactile seta, subterminal seta simple.

Measurements (in mm): Pedipalps: trochanter 0.36/0.20; femur 0.76/0.20; tibia 0.67/0.23; chela with pedicel 1.06/0.30; chela without pedicel 0.97; hand with pedicel 0.64; hand without pedicel 0.54; finger 0.43. Leg I: tibia 0.32/0.14; tarsus 0.32/0.09.

### 2.14. *Dactylochelifer popovi* Redikorzev 1949 (figs. 61–63, 67–70, 73–77)

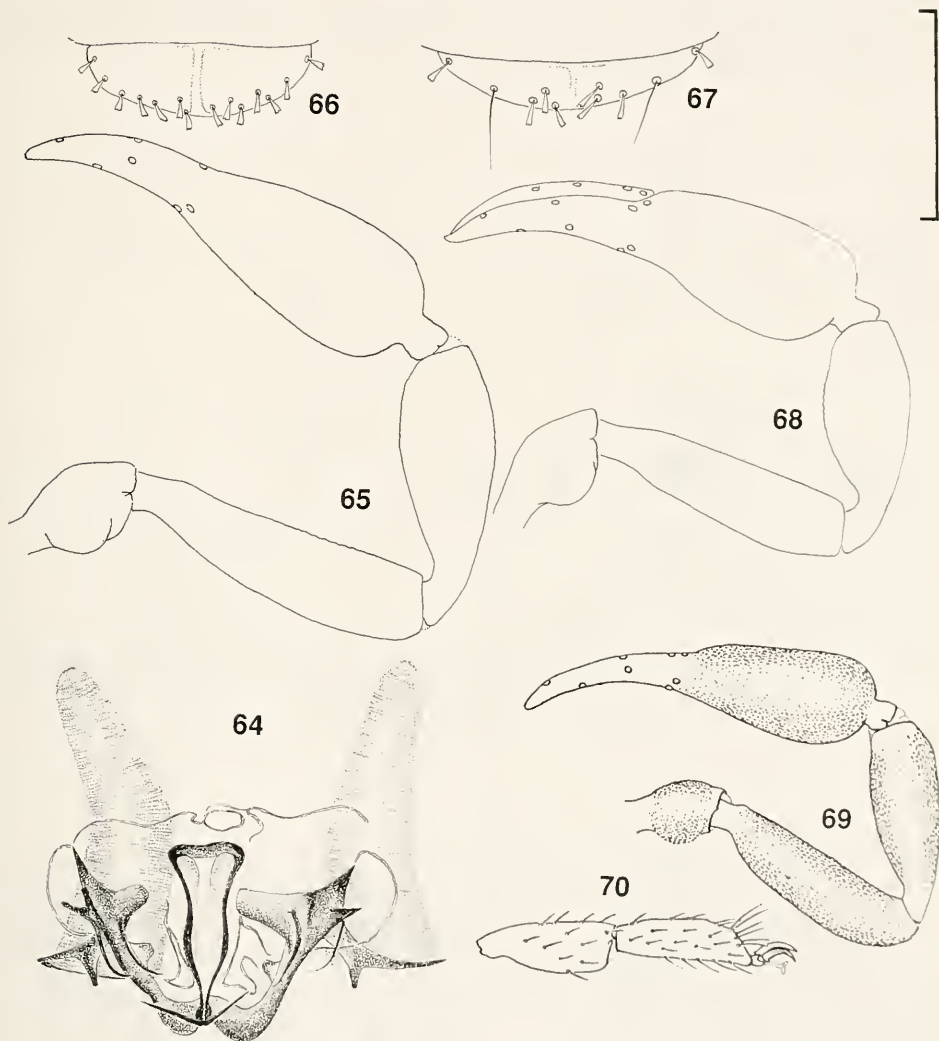
*Dactylochelifer afghanicus* Beier 1959 n. syn.

*Dactylochelifer cendsureni* Krumpal & Kiefer 1982 n. syn.

Material: Kazakhstan, Chimkent Area, Suzaksky Distr., Zhunys [25], 23. IV. 1988 leg. TARABAEV, 2 ♂♂, 1 ♀ (IZB 179), 1 ♂ (SMNS 3260). – Djambul Area, Djambulsky Distr., Kulan [32], 23 km SWW Djambul, 11. IV. 1988 leg. TARABAEV, 1 ♂ (IZB 190). – Djambul Area, Talassky Distr., km 21 of the road Akkol-Ulanbel [33], 15. V. 1991 leg. IBRAEV & ZYUZIN, 1 ♂, 1 ♀ (IZB 287). – Uzbekistan, Bostandyksky Distr., Gazalkent [28], 11. V. 1990 leg. ANUFRIEV, 1 ♂ (IZB 271). – Djizak Distr., Nuratau Mt. Ridge, Nuratinsky Reserve [6], Khayatsay, 1400 m, under stones, 9. IV. 1990 leg. DASHDAMIROV & ALIEV, 2 ♂♂, 1 ♀ (IZB 282 and slide), 1 ♂, 1 ♀ (SMNS 3261). – Tadzhikistan, Dangara Distr., Sibeston [15], Kolkot, near Nurek Reservoir, 1450 m, under

stones, 2. V. 1990 leg. DASHDAMIROV, 17 ♂♂, 6 ♀♀ (IZB 281 and slide), 3 ♂♂, 2 ♀♀ (SMNS 3262), 2 ♂♂, 1 ♀ (MHNG). – Same locality, 3. V. 1990 leg. DASHDAMIROV, 2 ♂♂, 1 ♀ (IZB 286), 1 ♂, 2 ♀♀ (SMNS 3263). – Same locality, 1400 m, under bark of *Morus alba*, 2. V. 1990 leg. DASHDAMIROV, 1 ♂, 1 ♀, 1 T (IZB 284).

Remarks: The descriptions of *afghanicus* Beier 1959 and *cendsureni* Krumpal & Kiefer 1982 show not a single significant difference to the description of *popovi* Redikorzev 1949, so we consider them as conspecific. The males of the 3 „species“ are identical in size, *afghanicus* is slightly larger but fits well in the species range. The



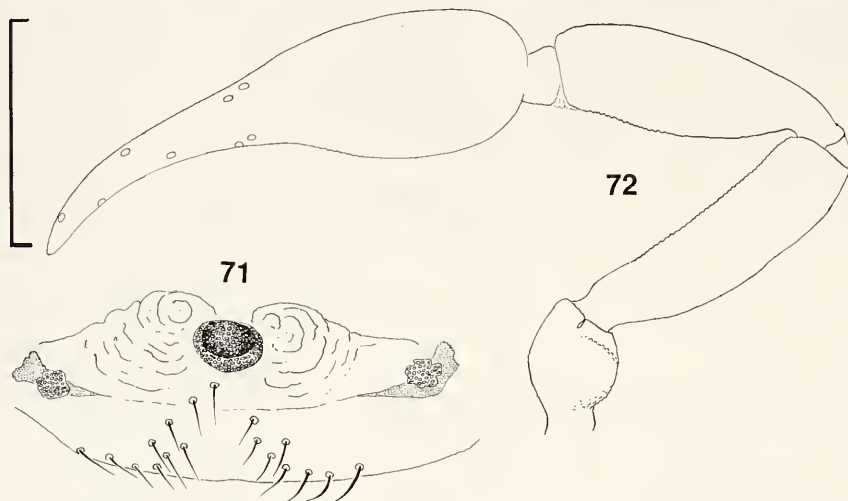
Figs. 64–66. *Dactylochelifer mrciaki*, IZB 283, ♂, from Karynzharyk. – 64. Genitalia, dorsal view; – 65. Pedipalp, dorsal view; – 66. Posterior tergite. – Scale line: 0.5 mm (65–66), 0.2 mm (64).

Figs. 67–70. *Dactylochelifer popovi*. – 67. Posterior tergite, IZB 281, ♂, from Sibeston; – 68. Pedipalp, dorsal view, IZB 282, ♂, from Sibeston; – 69. Pedipalp, dorsal view, IZB 179, ♂, from Zhunys; – 70. Tarsus I and tibia I, IZB 179, ♂, from Zhunys. – Scale line: 0.5 mm (67–68), 0.6 mm (69), 0.4 mm (70).

shape of the male anterior tarsus is more variable than BEIER (1959) stated, even within a single population (figs. 70, 74–75, 77). The structure of the male genitalia of *cendsureni* (KRUMPAL & KIEFER 1982: fig. 8) is very similar to the structure in *popovi* (figs. 61–62).

Description, ♂ from Gazalkent: Tergal chaetotaxy: 15–15–13–18–18–20–19–20–18–16–13 (11+2 tactile setae). Pedipalps: trochanter 1.94; tibia 2.90; femur 3.82; chela with pedicel 4.12; hand with pedicel 2.12; hand without pedicel 1.88 times as long as broad. Leg I: tibia 2.90; tarsus 3.22 times as long as broad.

Measurements (in mm): Pedipalps: trochanter 0.35/0.18; femur 0.65/0.17; tibia 0.58/0.20; chela with pedicel 1.03/0.25; hand with pedicel 0.53; hand without pedicel 0.47; finger 0.48. Leg I: tibia 0.29/0.10; tarsus 0.29/0.09.



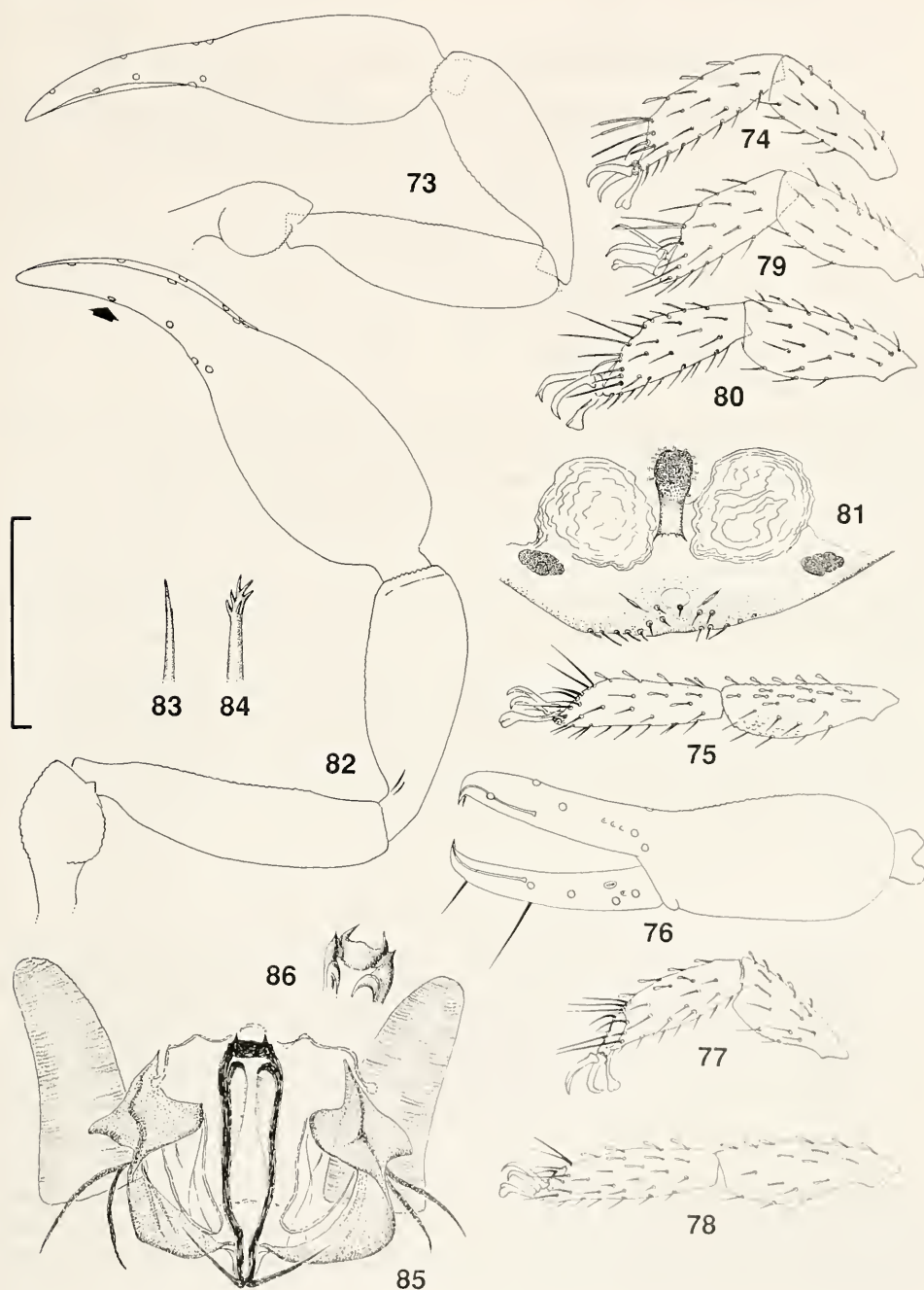
Figs. 71–72. *Dactylochelifera kussariensis*, IZB 285, ♀, from Kenderli. – 71. Genitalia, ventral view (median and lateral cribriform plates, membrane sac); – 72. Pedipalp, dorsal view. – Scale line: 0.5 mm (72), 0.2 mm (71).

Figs. 73–77. *Dactylochelifera popovi*. – 73. Pedipalp, dorsal view, IZB 271, ♂, from Gazalkent; – 74. Tarsus I and tibia I, IZB 271, ♂, from Gazalkent; – 75. Tarsus I and tibia I, IZB 281, ♂, from Sibeston; – 76. Chela, lateral view, IZB 281, ♂, from Sibeston; – 77. Tarsus I and tibia I, IZB 282, ♂, from Sibeston. – Scale line: 0.5 mm (73, 76), 0.35 mm (74–75, 77).

Fig. 78. *Dactylochelifera mrciaki*, IZB 283, ♂, from Karynzhyrk; tarsus I and tibia I. – Scale line: 0.35 mm.

Figs. 79–86. *Dactylochelifera gobiensis*. – 79. Tarsus I and tibia I, ZMMU, ♂, from Chechekty; – 80. Tarsus I and tibia I, IZB 272, ♀, from Chon-Uryukty; – 81. Genitalia, ventral view, IZB 272, ♀, from Chon-Uryukty; – 82. Pedipalp, dorsal view, IZB 272, ♂, from Chon-Uryukty; – 83. Galea, IZB 272, ♂, from Chon-Uryukty; – 84. Galea, IZB 272, ♀, from Chon-Uryukty; – 85. Genitalia, dorsal view, IZB 272, ♂, from Chon-Uryukty; – 86. Tip of lateral rods, IZB 272, ♂, from Chon-Uryukty. – Scale line: 0.5 mm (82), 0.35 mm (79–80), 0.2 mm (81, 85).

Description, ♂ (♀) from Sibeston: Pedipalps: trochanter 1.83 (1.89); femur 3.81 (3.68); tibia 3.05 (3.19); chela with pedicel 3.81 (2.45); chela without pedicel 3.50 (2.28); hand with pedicel 2.07 (1.30); hand without pedicel 1.77 (1.15) times as long as broad. Leg I: tibia 2.50; tarsus 3.38 times as long as broad. Structures of the genitalia as in figs. 61–63.



Measurements ♂ (♀) (in mm): Pedipalps: trochanter 0.33/0.18 (0.37/0.196); femur 0.61/0.16 (0.70/0.19); tibia 0.58/0.19 (0.67/0.21); chela with pedicel 0.99/0.26 (1.15/0.47); chela without pedicel 0.91 (1.07); hand with pedicel 0.54 (0.61); hand without pedicel 0.46 (0.54); finger 0.49 (0.53). Leg I: tibia 0.25/0.10; tarsus 0.27/0.08.

### 2.15. *Dactylochelifer spasskyi* Redikorzev 1949 (figs. 31–37)

Material: Kazakhstan, Pavlodar Area, Ermakovsky Distr., near Mal-Kalkaman Lake [45], 2. V. 1990 leg. LYAKHOV, 2 ♂♂, 2 ♀♀ (IZB 295 and slide), 2 ♂♂, 4 ♀♀ (ZMMU), 1 ♂, 1 ♀ (SMNS 3264). – Pavlodar Area, Ekibastuzsky Distr., 7 km N Agytay [46], Irtysh-Karaganda Canal, 27. VII. 1992 leg. LYAKHOV, 4 ♂♂, 4 ♀♀ (IZB 296), 15 ♂♂, 25 ♀♀, 2 T (ZMMU), 3 ♂♂, 3 ♀♀ (SMNS 3265), 1 ♂, 1 ♀ (MHNG). – Pavlodar Area, Ermakovsky Distr., near Mal-Kalkaman Lake [45], 10. IV. 1992 leg. LYAKHOV, 1 ♂, 2 ♀♀ (ZMMU). – Pavlodar Area, Bayanaul Distr., 5 km N Karaadyrsor Lake [44], 6. V. 1990 leg. LYAKHOV, 1 ♂, 1 ♀ (IZB 300), 2 ♂♂, 1 ♀ (ZMMU).

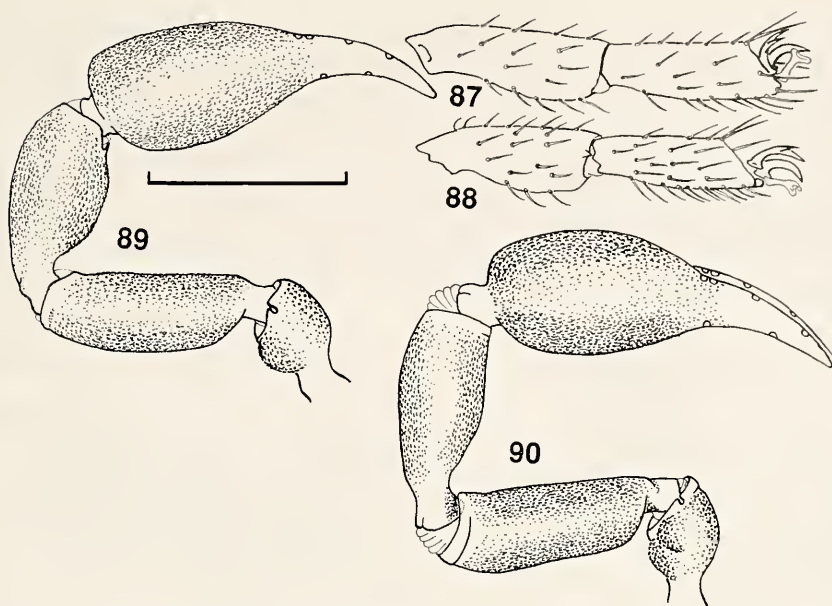
Description ♂♂ (♀♀): Carapace 1.12 (1.24) times as long as broad; setae of carapace and tergites short and slightly clavate. Pedipalps (figs. 31, 33) slender with small, but well-visible granulation; trochanter 1.96 (2.04); femur 4.45 (4.73); tibia 3.57 (3.58); chela with pedicel 4.45 (4.30); chela without pedicel 4.18 (4.03); hand with pedicel 2.27 (2.23); hand without pedicel 2.00 (1.95) times as long as broad; fingers with rows of small and blade-like setae (in ♀♀ less numerous. Leg I (males): tibia 2.85; tarsus with fine granulation on dorsal side (fig. 32), 2.69 times as long as broad. Tarsus of leg IV (both sexes) with 1 pseudotactile seta in the distal part (fig. 34). Structure of male genitalia as in figs. 36–37; lateral rods fused anteriorly and each only with 1 subterminal branch; dorsal apodeme small; reversible sacs large; median cribriform plates of the females very similar to those in *D. brachialis* (fig. 53).

Measurements ♂♂ (♀♀) (in mm): Carapace 0.83/0.74 (0.94/0.76). Pedipalps: trochanter 0.45/0.23 (0.51/0.25); femur 0.89/0.20 (1.04/0.22); tibia 0.82/0.23 (0.93/0.26); chela with pedicel 1.47/0.33 (1.72/0.40); chela without pedicel 1.38 (1.61); hand with pedicel 0.75 (0.89); hand without pedicel 0.66 (0.78); finger 0.70 (0.82). Leg I: tibia 0.37/0.13; tarsus 0.35/0.13.

### 2.16. *Dactylochelifer* spec. ♀

Material: Kazakhstan, Taldy-Kurgan Area, Dzhungarskie Vorota, S beach of Alakol Lake [42], desert, 15. VIII. 1988 leg. TARABAEV & ZARKO, 1 ♀ (IZB 204). – Chimkent Area, Turkestansky Distr., Karatau Mt. Ridge, Turlan Pass [24], near river, 24. VI. 1989 leg. TARABAEV, ZYUZIN, FEDOROV & KOMAROVA, 2 ♀♀ (IZB 255). – Chimkent Area, Turkestansky Distr., Karatau Mt. Ridge, canyon of Boyaldyr River [26], 11. VI. 1989 leg. TARABAEV, ZYUZIN, FEDOROV & KOMAROVA, 1 ♀ (IZB 256). – Kirghizia, Turkestan Mt. Ridge, Isfana [18], Karagatty, 17. VII. 1987 leg. ZONSTEIN, 1 ♀ (IZB 175). – Tadzhikistan, Tigrovaya Balka [10], in litter, 10. XI. 1968 leg. ANDREEVA, 1 ♀ (ZMMU).

Remarks: These females cannot be identified, for a secure identification within the genus males with the specific shape of the anterior tarsus are necessary. The subterminal setae of the tarsi are simple and not serrate and the median cribriform plates are unpaired, therefore we place these females in the genus *Dactylochelifer*.



Figs. 87–90. *Gobichelifer chelanops*. – 87. Tarsus I and tibia I, IZB 193, ♂, from Dzhangi-Pakhta; – 88. Tarsus I and tibia I, IZB 199, ♂, from Aksak-Ata; – 89. Pedipalp, dorsal view, IZB 199, ♂, from Aksak-Ata; – 90. Pedipalp, dorsal view, IZB 193, ♂, from Dzhangi-Pakhta. – Scale line: 1 mm (89–90), 0.53 mm (87–88).

## 2.17. *Gobichelifer chelanops* (Redikorzev 1922) (figs. 22–24, 87–90)

Material: Kirghizia, Chyuiskaya Valley, Dzhangi-Pakhta [31], under bark of *Ulmus*, 10. VI. 1986 leg. OVTCHINNIKOV, 1 ♂ (IZB 193). – Kirghizsky Mt. Ridge, Malinovoye [37], 1700 m, 21. X. 1984 leg. OVTCHINNIKOV, 3 ♂♂, 4 ♀♀, 1 T (IZB 203), 1 ♂, 1 ♀ (SMNS 3266), 1 ♂, 1 ♀ (MHNG). – Kirghizsky Mt. Ridge, near Bishkek [35], 12. IV. 1988, leg. OVTCHINNIKOV, 2 ♂♂, 1 ♀ (IZB 288), 1 ♂ (SMNS 3267). – Chon-Uryukty near Issyk-Kul Lake [39], 1600 m, under bark of *Salix*, 20. V. 1990 leg. DASHDAMIROV, 2 ♂♂, 3 ♀♀, 1 T, 1 P (IZB 290), 2 ♀♀ (SMNS 3268). – Issyk-Kul Reserve, Ananyevo [38], 1600 m, under bark, 19. V. 1990 leg. DASHDAMIROV, 1 ♀ (IZB 292). – Uzbekistan, Tashkent Area, Aksak-Ata [29], 21. VI. 1987 leg. ZORKIN, 2 ♂♂, 1 ♀ (IZB 199). – Djizak Distr., Nuratau Mt. Ridge, Nuratinsky reserve [6], Ukhumsay, under bark of *Juglans*, 8. IV. 1990 leg. DASHDAMIROV, 1 ♂, 1 ♀, 1 T, 1 D (IZB 291). – Kashkadarya Area, Kitabsky Reserve, Djaus [7], under bark of *Juglans*, 13. IV. 1990 leg. DASHDAMIROV, 1 ♀, 1 T, 5 D, 1 P (IZB 293). – 60 km ESE Tashkent, Chatkal Reserve [31], in house, 26. V. 1992 leg. ZOLOTUKHIN, 1 ♀ (IZB 303). – Tadzhikistan, Pamir Alai Mts., Sary-Khosor Reserve, 50 km N Khovaling, Mullo-Kuni [16], 1500 m, under bark of *Juglans*, 28. IV. 1990 leg. DASHDAMIROV, 8 ♂♂, 4 ♀♀, 2 T, 3 D, 1 P (IZB 289), 2 ♂♂, 1 ♀ (SMNS 3269), 1 ♂, 1 ♀ (MHNG). – Same locality, 29. IV. 1990 leg. DASHDAMIROV, 1 ♂, 1 ♀, 1 T (IZB 294), 1 ♂ (SMNS 3270). – Canyon Varzob, Kondara [13], Kvak, under stones, 11. VI. 1967 leg. ANDREEVA, 1 ♂ (IZB 302), 1 ♂ (ZMMU). – Same locality, under bark of *Juniperus*, 27. VII. 1967 leg. ANDREEVA, 1 ♂, 1 ♀, 1 T (ZMMU).

Description ♂: Carapace 1.04 times as long as broad. Serrula exterior with 20 lamellae. Male genitalia as in figs. 23–24, very similar with the structure in *Dactylochelifer*; lateral rods fused anteriorly; reversible sacs small. Genital operculum of females with approximately 33 short setae; median cribriform plate as in fig. 22, lateral cribriform plates elongate. Pedipalps: trochanter 1.75; femur 2.22; tibia 2.50;

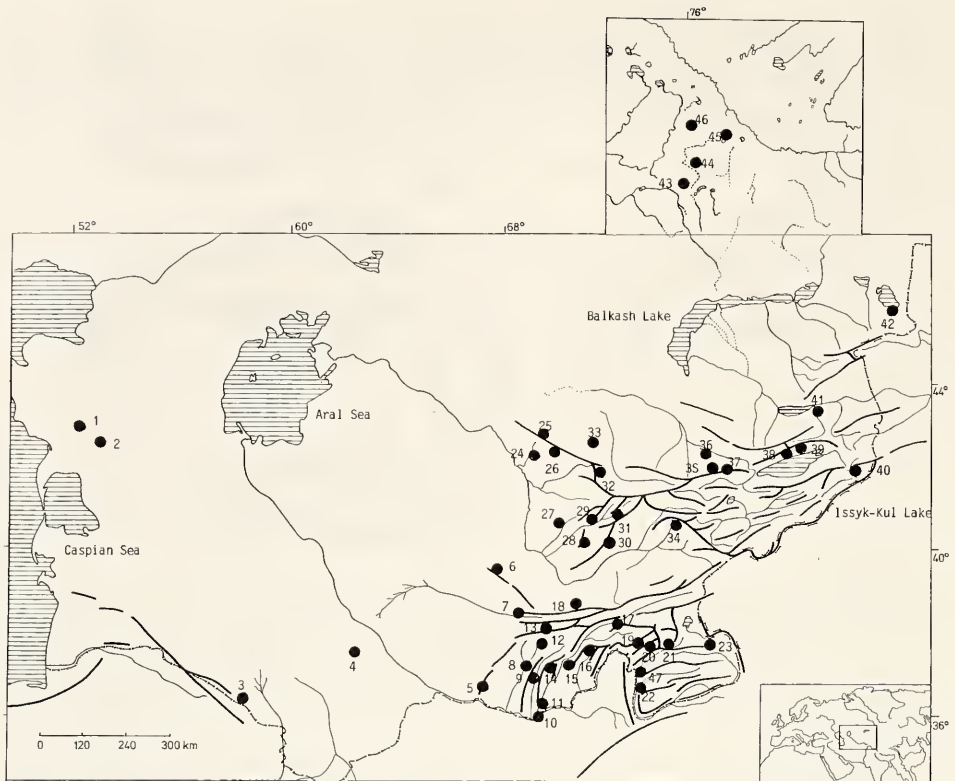


Fig. 91. Collecting localities of pseudoscorpions in Middle Asia. – 1. Kenderli (*Allocheres* (?) *turanicus*, *Dactylochelifer kussariensis*); – 2. Karynzharyk (*Dactylochelifer mrciaki*); – 3. Dushak (*Dactylochelifer brachialis*); – 4. Repetek (*D. mrciaki*); – 5. Tash-Yurak (*Megacheres pavlovskyi*); – 6. Nuratau (*A.* (?) *turanicus*, *D. brachialis*, *Dactylochelifer popovi*, *Gobichelifer chelanops*); – 7. Djaus (*G. chelanops*); – 8. Babatag (*Centrochelifer allocancroides*); – 9. Gandzhino (*Rhacochelifer melanopygus*); – 10. Tigrovaya Balka (*Dactylochelifer* spec. ♀); – 11. Kzyl-Kala (*D. mrciaki*); – 12. Dushanbe (*Dactylochelifer intermedius*); – 13. Kondara (*G. chelanops*); – 14. Karatau (*C. allocancroides*); – 15. Sibeston (*Allocheres* (?) *bactrinus* n. sp., *C. allocancroides*, *D. popovi*); – 16. Mullo-Kuni (*G. chelanops*); – 17. Sabzikharv (*Dinocheirus bulbipalpis*); – 18. Isfana (*Dactylochelifer* spec. ♀); – 19. Chikhoh (*D. brachialis*); – 20. Yazgulem (*D. brachialis*); – 21. Kudara (*D. brachialis*); – 22. Khorog Botanical Garden (*D. brachialis*); – 23. Chechekty (*Dactylochelifer gobiensis*); – 24. Turlan (*Dactylochelifer* spec. ♀); – 25. Zhunys (*D. popovi*); – 26. Boyaldyr (*Dactylochelifer* spec. ♀); – 27. Tashkent (*D. bulbipalpis*); – 28. Gazalkent (*D. popovi*); – 29. Aksak-Ata (*G. chelanops*); – 30. Kamchik-Say (*D. bulbipalpis*); – 31. Chatkal State Reserve (*G. chelanops*); – 32. Kulán (*D. popovi*); – 33. Akkol (*D. popovi*); – 34. Arslanbob (*D. bulbipalpis*); – 35. Bishkek (*G. chelanops*); – 36. Dzhanghi-Pakhta (*G. chelanops*); – 37. Malinovoe (*G. chelanops*); – 38. Ananyevo (*G. chelanops*); – 39. Chon-Uryukty (*D. gobiensis*, *Dendrocheres cyrneus*, *G. chelanops*); – 40. Sary-Djaz (*D. gobiensis*); – 41. Syugatin Valley (*Dinocheirus transcaspius*); – 42. Alakol (*Dactylochelifer* spec. ♀); – 43. Sulyrsor (*Dactylochelifer minor* n. sp.); – 44. Karaadyrsor (*Dactylochelifer spasskyi*); – 45. Mal-Kalkaman Lake (*D. spasskyi*); – 46. Agytay (*D. spasskyi*); – 47. Khuf (*D. brachialis*); – not located: Durum-Dara (*D. brachialis*).

chela with pedicel 3.17; chela without pedicel 2.95; hand with pedicel 1.97; hand without pedicel 1.72 times as long as broad; hand with pedicel 1.34 times longer than finger. Leg I: basifemur 1.67 times as long as broad, telofemur 2.58 times as long as broad and 1.38 times longer than basifemur; tibia 3.06; tarsus 3.00 times as long as broad; external claw with large subterminal accessory tooth.

Measurements (in mm): Carapace 1.50/1.44. Pedipalps: trochanter 0.70/0.40; femur 1.29/0.58; tibia 1.15/0.46; chela with pedicel 2.03/0.64; chela without pedicel 1.89; hand with pedicel 1.26; hand without pedicel 1.10; finger 0.94. Leg I: femur (total) 0.84/0.255; tibia 0.55/0.18; tarsus 0.48/0.16.

2.18. *Rhacochelifer melanopygus* (Redikorzev 1949) **n. comb.** (figs. 38–43)

*Rhacochelifer mongolicus* Beier 1969 **n. syn.**

Material: Tadjikistan, Gandzhino [9], 800 m, under bark of *Pistacia vera*, 19. IV. 1990 leg. DASHDAMIROV & ALIEV, 3 ♂♂ (IZB 251), 2 ♂♂ (SMNS 3271).

Remarks: The examination of the type material of *melanopygus* reveals two errors in the description of REDIKORZEV (1949). The hand of the chela bears only 4 setae (not 5) and the subterminal setae of the tarsi are dentate (not simple). Besides, the absence of a tactile seta on the tarsus IV, the presence of slightly clavate setae on the carapace, tergites and pedipalps, the absence of keels on the tergites in males, the characteristic position of the trichobothria on the palpal chela and the structures of the male genitalia clearly indicate the position of this species within the genus *Rhacochelifer* Beier 1932 (and not in *Lophochernes* Simon 1878). Therefore we transfer *melanopygus* to the genus *Rhacochelifer*.

*Rhacochelifer mongolicus* was described by BEIER (1969), based on 4 specimens from Bajanchongor aimak in Mongolia. The original description shows no significant differences to *melanopygus* (transferred herein to *Rhacochelifer*). Therefore we consider *mongolicus* a junior synonym of *melanopygus*.

The genus *Rhacochelifer* consists of 2 species groups, which may have subgeneric or even generic status. The first group (with *melanopygus*) possesses only 4 setae on the basal part of the chelicera and the lateral rods of the male genitalia are not fused anteriorly, whereas the second group possesses 5 setae on the basal part of the chelicera and the lateral rods are fused anteriorly.

Description ♂: Carapace with 4 setae on anterior margin and 8 setae on posterior margin, 1.08 times as long as broad. Chelicera with 4 setae on the basal part; serrula exterior with 16 lamellae; flagellum of 3 blades. Tergal chaetotaxy: 8–8–9–9–11–12–13–13–13–12–8 (6+2 tactile setae). Sternal chaetotaxy: x–x–8–8–8–9–10–9–9 (7+2 tactile setae)–8(6+2 tactile setae). Genitalia as in figs. 42–43; lateral rods not fused anteriorly; dorsal apodeme small; reversible sacs large. Pedipalps: trochanter 1.78; femur 3.68; tibia 2.73; chela with pedicel 3.55; chela without pedicel 3.31; hand with pedicel 2.07; hand without pedicel 1.79 times as long as broad. Nodus ramosus of both fingers near *et*. Leg IV: tibia 2.89; tarsus without tactile seta, 3.56 times as long as broad; subterminal seta dentate. Leg I: tibia 5.38; tarsus 4.85 times as long as broad; external claw with 1 large subterminal accessory tooth.

Measurements (in mm): Carapace 0.68/0.63. Pedipalps: trochanter 0.32/0.18; femur 0.70/0.19; tibia 0.60/0.22; chela with pedicel 1.03/0.29; chela without pedicel 0.96; hand with pedicel 0.60; hand without pedicel 0.52; finger 0.45. Leg I: tibia 0.43/0.08; tarsus 0.34/0.07. Leg IV: tibia 0.26/0.09; tarsus 0.32/0.09.

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