

Four new harvestman species from Azerbaijan (Arachnida: Opiliones: Phalangiidae)

Четыре новых вида сенокосцев из Азербайджана (Arachnida: Opiliones: Phalangiidae)

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КЛЮЧЕВЫЕ СЛОВА: Фауна, сенокосцы, распространение, описания, Азербайджан.

ABSTRACT. Four new opilionid species of the family Phalangiidae, viz. *Opilio apsheronicus* sp.n. (♂), *Phalangium armatum* sp.n. (♂), *Phalangium zuvandicum* sp.n. (♂) and *Phalangium staregai* sp.n. (♂), are diagnosed and described from Azerbaijan.

РЕЗЮМЕ. В статье приводятся описания 4 видов сенокосцев из семейства Phalangiidae из Азербайджана, а именно: *Opilio apsheronicus* sp.n. (♂), *Phalangium armatum* sp.n. (♂), *Phalangium zuvandicum* sp.n. (♂) и *Phalangium staregai* sp.n. (♂).

Introduction

The Opiliones fauna of Azerbaijan currently numbers 37 valid species, but still remains poorly studied. A complete faunistic survey of original and literature-derived data on the Azeri Opiliones was given by Snegovaya [2004a, b]. In the present paper, four new species of the family Phalangiidae (one from Absheron-Gobustan zone and three from Zuvand) are described.

Type specimens are shared between the following depositories: ZIN — The Zoological Institute RAN, St.-Petersburg, Russia (V.A. Krivokhatski); IZB — The Zoological Institute of the National Academy of Sciences of Azerbaijan, Baku (N.Yu. Snegovaya); ISEA — The Siberian Zoological Museum, Institute for Systematics and Ecology of Animals, Novosibirsk, Russia (G.N. Azarkina).

Names of collectors are abbreviated as follows: Drs Halid Aliyev (HA), Elchin Guseinov (EG), Yuri Marusik (YuM), Selvin Dashdamirov (SD) and the author (NS). Other abbreviations used in the text and table are: Fm = femur, Pt = patella, Tb = tibia, Mt = metatarsus, Ta = tarsus. All measurements are in mm.

Descriptions

Opilio Herbst, 1798

The genus *Opilio* Herbst, 1798 currently includes 60 species [see Hallan, 2004]. A brief review of this genus related to the fauna of Azerbaijan was given in Snegovaya [2004b]. Below, a new species of *Opilio* is described.

Opilio apsheronicus sp.n.

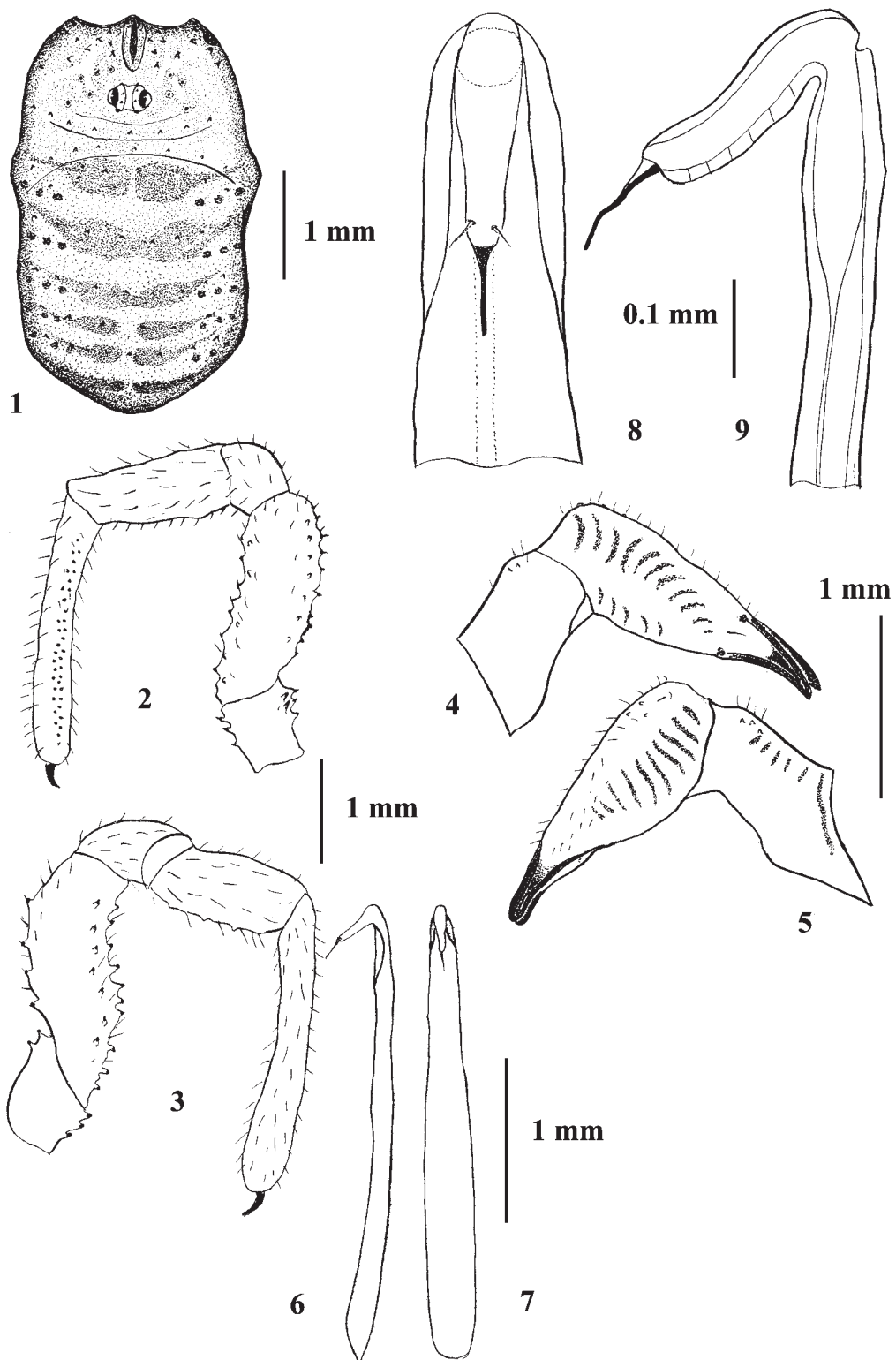
Figs 1–16.

MATERIAL. Holotype ♂, Azerbaijan, Gobustan (40°07'N 49°23'E), c. 150 m a.s.l., 17–31.05.2003, YuM (ZIN). Paratypes: 1 ♀ (ZIN), 1 ♂, 3 ♀♀ (IZB, 206), together with the holotype; 1 ♂, 1 ♀ (ISEA), Gobustan, near Karakush Mts, 5.05.2004, NS; 1 ♀ (IZB, 3), Gobustan, environs of Karakush and Bakinskie Ushki Mts, 300–400 m a.s.l., 28.05.1992, HA & SD; 4 ♀♀, 1 juv. (IZB, 204), c. 75 km N of Baku, Kilyazi Vil. (40°51,5'N 49°11,5'E), 260 m a.s.l., 7.06.2003, YuM; 1 ♀ (IZB, 7), same village, c. 5 km W of Varafta Mt. Range, 500 m a.s.l., 21.05.1992, SD & HA; 2 ♂♂, 1 ♀ (IZB, 221), Absheron, environs of Ganly-Gel' (lake), 6.05.2004, HA.

DESCRIPTION. MALE. Measurements. Body: length 4.1; width 2.6. Chelicera: basal segment 1.35; distal segment 1.6. Penis: length 3.2; width at base: 0.3; length of glans: 0.3. Length (in mm) of palp and leg segments:

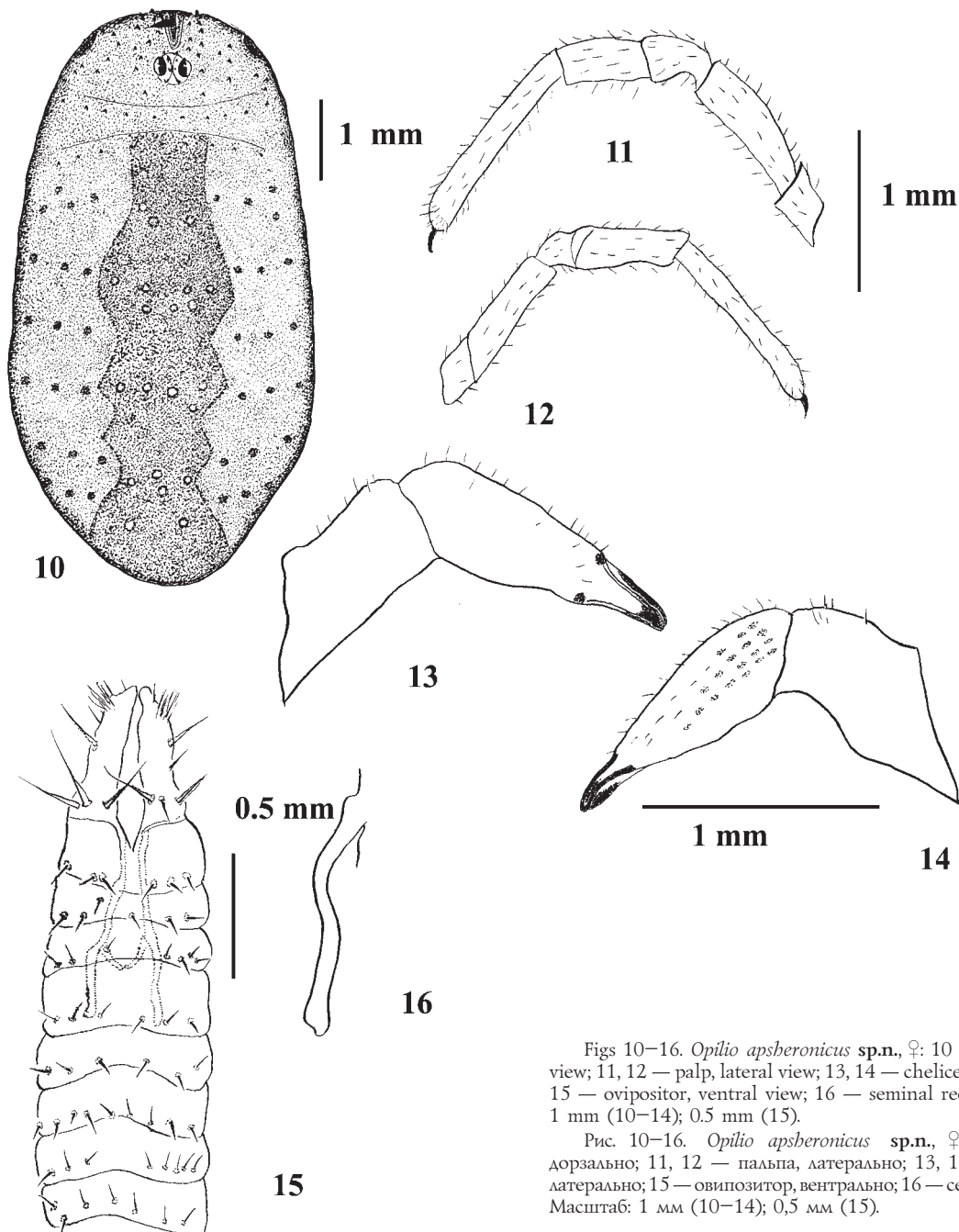
	Fm	Pt	Tb	Mt	Ta	Total
Palp	0.95	0.45	0.7	-	1.25	3.35
Legs						
I	1.75	0.65	1.8	1.65	3.1	8.95
II	3.4	3.5	3	2.2	5.55	17.65
III	2.1	0.75	1.85	1.85	3.55	10.1
IV	3.5	1.05	2.85	3.05	4.8	15.25

Anterior margin of cephalothorax with a group of 12–13 black tipped denticles on each side of the ocularium. These are separated by a longitudinal dark brown stripe, which does not reach the ocularium. Ocularium low, twice its diameter from the anterior margin of the carapace. On each side of the saddle there are three to four black-tipped denticles. Each of the anterior-lateral angles of the carapace with four denticles. Ventral aspect of carapace covered with hairs. Coxae smooth,



Figs 1–9. *Opilio apsheronicus* sp.n., ♂: 1 — body, dorsal view; 2, 3 — palp, lateral view; 4, 5 — chelicera, lateral view; 6 — penis, lateral view; 7 — penis, dorsal view; 8 — glans of penis, dorsal view; 9 — glans of penis, lateral view. Scales: 1 mm (1–7); 0.1 mm (8, 9).

Рис. 1–9. *Opilio apsheronicus* sp.n., ♂: 1 — тело, дорзально; 2, 3 — пальпа, латерально; 4, 5 — хелицера, латерально; 6 — пенис, латерально; 7 — пенис, дорзально; 8 — головка пениса, дорзально; 9 — головка пениса, латерально. Масштаб: 1 мм (1–7); 0.1 мм (8, 9).



Figs 10–16. *Opilio apsheronicus* sp.n., ♀: 10 — body, dorsal view; 11, 12 — palp, lateral view; 13, 14 — chelicera, lateral view; 15 — ovipositor, ventral view; 16 — seminal receptacle. Scales: 1 mm (10–14); 0.5 mm (15).

Рис. 10–16. *Opilio apsheronicus* sp.n., ♀: 10 — тело, дорзально; 11, 12 — пальпа, латерально; 13, 14 — хелицера, латерально; 15 — овипозитор, вентрально; 16 — семяприемники. Масштаб: 1 мм (10–14); 0,5 мм (15).

also covered with thin hairs. Legs short and robust. Femora, patellae and tibiae I and III significantly thickened. Femora pentagonal, each side with a transverse row of tubercles and long black setae. Patellae and tibiae covered with small tubercles and long black setae. Metatarsi and tarsi covered only with setae. Chelicerae: segment I dorsally and segment II dorsally and laterally with small spines and bristles. Palps short, their femora covered with denticles and setae, remaining segments covered with setae only. Tarsi covered ventrally with micro-denticles.

Penis (Figs 6–9). Corpus long, narrowing towards its distal end. Concave plates narrow and relatively long. Glans narrows towards its distal end and bears two bristles. Stylus slightly bent.

FEMALE. Measurements. Body: length 6.9; width 3.8. Chelicera: basal segment 1.2; distal segment 1.6. Ovipositor: length 2.3, width 0.3. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	0.65	0.25	0.6	-	1.25	2.75
Legs						
I	2.7	0.75	1.75	1.7	3.15	10.05
II	3.35	1.1	3.2	2.4	5.75	15.8
III	2.05	0.8	1.8	2.05	3.1	9.8
IV	3.3	1	2.65	3.25	4.3	14.5

Female bigger than male, its body elongated and has more rounded angles. Chelicerae and palps smooth, covered

Table 1.
Differs *Opilio apsheronicus* sp.n. and *Opilio lederi* Roewer, 1911

	<i>Opilio apsheronicus</i> sp.n.	<i>Opilio lederi</i> Roewer, 1911
Body	Length 4.1 mm; 15-16 smaller denticles in front of the ocularium (Fig. 1).	Length 6.5 mm; 18-20 larger denticles in front of the ocularium [Snegovaya, 1999: fig. 19].
Chelicerae	Poorly developed (Figs 4-5).	Robust [Chevrizov, 1979: fig. 144; Snegovaya, 1999: fig. 20]
Palps	Femora covered both with denticles and setae, the remaining segments with setae only (Figs 2, 3).	All segment except tarsi covered both with denticles and setae [Chevrizov, 1979: fig. 146; Snegovaya, 1999: fig. 21].
Legs	Femur I angular, with a single row of denticles and long black setae on each edge; remaining segments covered with long setae and denticles.	Femur I angular, with 2-3 rows of denticles and small setae on each edge; remaining segments with a single row of denticles and setae.
Penis	Corpus long, narrowing towards glans; the latter long and thin; stylus long and slightly bent (Figs 6-9).	Corpus short and wide, widened in the middle and narrowing towards glans; the latter normal; stylus straight [Chevrizov, 1979: fig. 145; Snegovaya, 1999: figs 22-23].

with hairs only. Ovipositor situated between first and fifth segments and consists of a single atrium.

COLORATION. Body light brown, with dark patches. The carapace with the well-marked saddle consisting of five wide, dark brown patches divided in the middle by light yellow patches. Brown spots on both sides of the saddle. Ventral aspect of the cephalothorax light yellow, with small dark brown patches on sternites. Femora light brown basally and dark brown distally. Patellae and tibiae dark brown. Chelicerae light yellow, with dark brown patches. Palps light yellow. Penis light yellow, penis glans brownish.

DIAGNOSIS. The new species is close to *Opilio lederi* Roewer, 1911, but differs from it by the characters given in Table 1.

ETYMOLOGY. The species is named after the type locality, the Absheron Peninsular of Azerbaijan.

HABITAT. This species was collected in stony semi-desert and on the dry slopes from under stones and in litter.

DISTRIBUTION. The Absheron-Gobustan zone of Azerbaijan.

Phalangium Linnaeus, 1758

The genus *Phalangium* Linnaeus, 1758 currently includes more than 30 species [see Hallan, 2004], of which three, relatively well-known species have been recorded from the Caucasus, viz. *Phalangium opilio* Linnaeus, 1761, *P. punctipes* (L. Koch, 1878) and *P. savignyi* Audouin, 1825 [Chevrizov, 1979; Starega, 1966, 1978]. Reliable descriptions and illustrations are available for a taxonomic comparison with regard to the following species *Phalangium riedeli* Starega, 1973, *P. licenti* Schenkel, 1953 and *P. iberica* Schenkel, 1939 [see Starega, 1973; Schenkel-Haas, 1939a,b, 1953]. For the remaining *Phalangium* species the original descriptions are inadequate for diagnostic purposes and the types are considered lost.

The characteristic features of *Phalangium* are as follows: femora, patellae and pedipalps without distinct apophyses; segment II of the chelicerae always bears a cheliceral horn (sometimes half-moon shaped); the ocularium as wide as long; the corpus is widened at its base and narrowed in its mid-region, and possesses a wing-shaped concave plate on its distal end; the stylus has a bent distal hook [Roewer, 1956; Martens, 1978; Chevrizov, 1979; Gritzenko, 1979; Starega, 1966, 1973; Šilhavý, 1956; Chemeris, 1998].

Below the descriptions of three new *Phalangium* species are given.

Phalangium armatum sp.n.

Figs 17–34.

Phalangium savignyi (nec Audouin, 1825; misidentified): Snegovaya 1999: 454–455, figs 9–13; 2004: 313, figs 17–19.

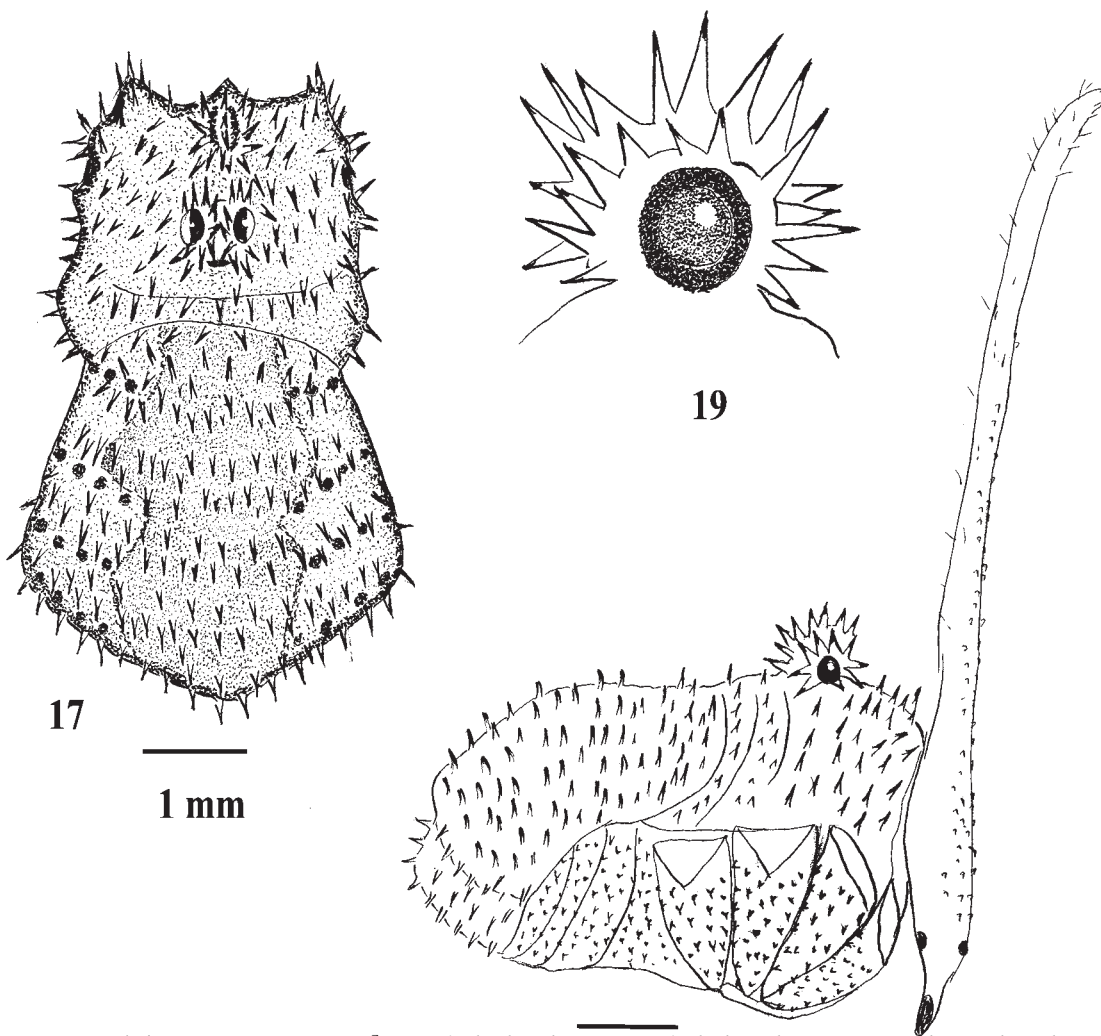
MATERIAL. Holotype ♂, Azerbaijan, Lerik Distr., Zuvand, near Gosmalyan, 14.06.1996, NS (ZIN). Paratypes: 1 ♀ (ZIN), 1 ♂, 6 ♀♀, 7 juv. (IZB, 53, 189), Azerbaijan, Lerik Distr., c. 3 km W of Lerik (38°43.834'N 48°25.669'E), 1200 m a.s.l., 25.05.2003, YuM; 1 ♂, 1 ♀ 1 juv. (IZB, 118, 120), same distr., near Divagach, 1400 m a.s.l., 25–26.05.2003, NS; 1 ♂, 1 ♀ (ISEA), 2 ♂♂ (IZB, 223), same distr., 6 km N of Gosmalyan, 9.05.2004, NS.

COMPARATIVE MATERIAL on *Phalangium savignyi* (Audouin, 1825). ISRAEL: 2 ♂♂, 5 ♀♀, (IZB), Adulam, Pitfall Traps, 03.2004 coll. Yael Lubin (Israel).

DESCRIPTION. MALE. Measurements. Body: length 5.3; width 3.3. Chelicera: basal segment 1.75; distal segment 9.1, horn 6.8. Penis: length 2.75; width at base: 0.95; length of glans: 0.25, stylus 0.18. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	5.4	1.35	2.3	-	5.75	14.8
Legs						
I	5.0	1.3	3.8	4.9	5.25	20.25
II	7.5	1.7	6.5	8.4	6.8	30.9
III	4.4	1.3	3.75	6.1	6.3	21.85
IV	6.5	1.5	4.8	8.65	8	29.45

Body rounded–quadrangular, anterior margin of carapace covered with numerous large tubercles, which are most dense in front of the ocularium. On each side of each odoriferous gland there is a group of three tubercles. The saddle is poorly marked. Tergites IV–VIII with transverse rows of small dots along their edges. All sternites with two rows of short, black-tipped tubercles, last few sternites with rows of tall, black-tipped tubercles. Supra-cheliceral lamellae smooth. Ocularium high, crown-shaped, dorsally with two rows of 10–11 tall tubercles; one its diameter from the anterior margin of the carapace. Cheliceral segment I covered dorsally with small tubercles; segment II covered anteriorly with small tubercles and hairs and bearing a very long horn covered with tubercles and hairs; size of the horn variable. Pedipalps long and thin,



Figs 17–19. *Phalangium armatum* sp.n., ♂: 17 — body, dorsal view; 18 — body, lateral view; 19 — ocularium, lateral view. Scales: 1 mm (17, 18).

Рис. 17–19. *Phalangium armatum* sp.n., ♂: 17 — тело, дорзально; 18 — тело, латерально; 19 — глазной бугор, латерально. Масштаб: 1 мм (17, 18).

twice as long as the body. All segments of the pedipalps except tarsi covered with regular rows of thin, long tubercles; tarsi covered with hairs. Palpal patella and tibia with a single, apical-median, hairy apophysis. Legs long and thin; the second pair thinner than others. Femora, patellae and tibiae of all legs with longitudinal rows of tubercles, metatarsi and tarsi covered with hairs, coxae covered with small tubercles, trochanters covered laterally and irregularly with tubercles.

Penis. Body club-shaped at base, narrowing in the middle and then widening towards the glans. Glans with two setae on each side. Stylus long and thin, hooked at its tip.

FEMALE. Measurements. Body: length 8.5; width 4.5. Chelicera: basal segment 1.6; distal segment 2.0. Ovipositor: length 4.0, width 0.5. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	1.9	0.9	1	-	2.25	6.05
Legs						
I	4.25	1.2	3	4.5	5.25	18.2
II	7.6	1.5	6.4	4.5	5.8	25.8
III	4.6	1.2	3.4	5.7	5.6	20.5
IV	7.1	1.5	4.4	8.2	6.5	27.7

Body rounded from the rear, abdomen swollen. Body covered with tubercles as in males. Chelicerae of usual shape, without a horn. Palps significantly shorter than in males. Legs thick, long and armed with tubercles as in males.

COLORATION. In both sexes, body light yellow dorsally, with light brown patches on cephalothorax and sides of abdomen. Abdomen light yellow. The first cheliceral segment, pedipalps and all legs yellow, with light brown patches. Penis light yellow.

DIAGNOSIS. The new species is close to *P. opilio* and *P. savignyi*, but differs from both of them by the characters given in Table 2.

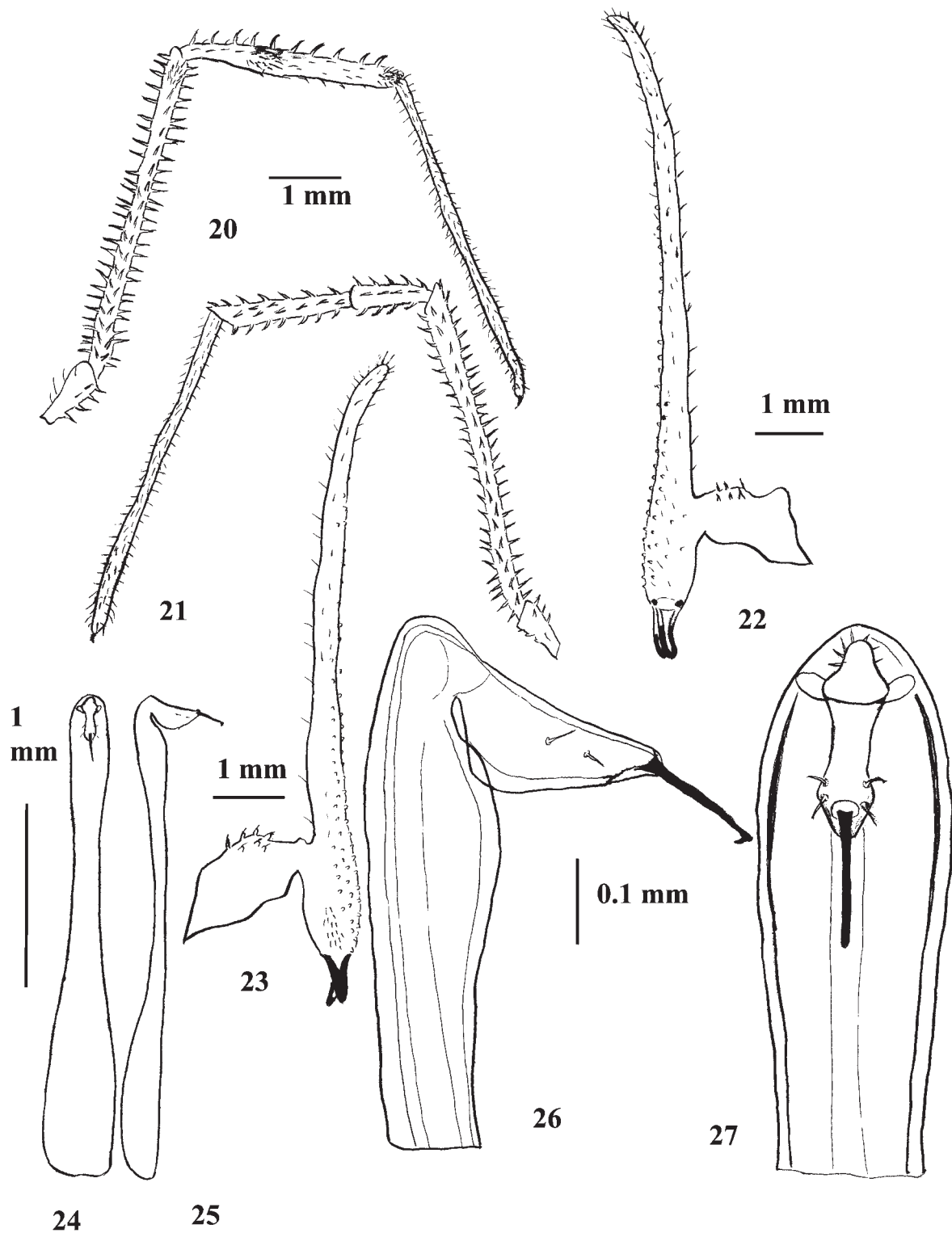
ETYMOLOGY. From the Latin "armatum" meaning "armed".

HABITAT. This species was collected from under stones.

DISTRIBUTION. Azerbaijan: Zuvand.

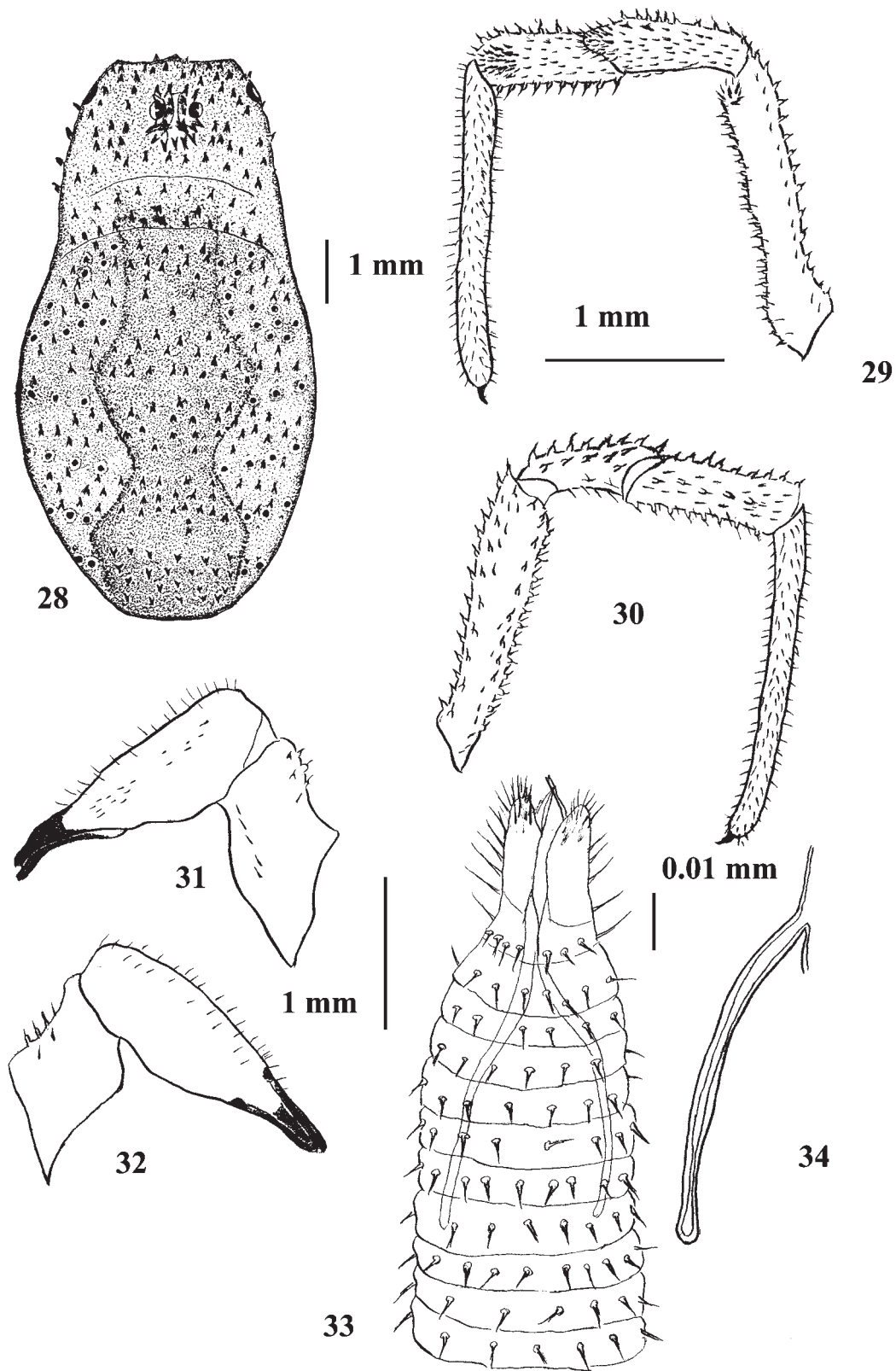
Phalangium zuvandicum sp.n.
Figs 35–45.

MATERIAL. Holotype ♂, Azerbaijan, Lerik Distr., Zuvand, c. 6 km W of Gosmalyan, 9.05.1996, NS (ZIN). Paratypes: 1 ♂



Figs 20–27. *Phalangium armatum* sp.n., ♂: 20, 21 — palp, lateral view; 22, 23 — chelicera, lateral view; 24 — penis, dorsal view; 25 — penis, lateral view; 26 — glans of penis, lateral view; 27 — glans of penis, dorsal view. Scales: 1 mm (20–25); 0.1 mm (26, 27).

Рис. 20–27. *Phalangium armatum* sp.n., ♂: 20, 21 — палпа, латерально; 22, 23 — хелицера, латерально; 24 — пенис, дорсально; 25 — пенис, латерально; 26 — головка пениса, латерально; 27 — головка пениса, дорсально. Масштаб: 1 мм (20–25); 0,1 мм (26, 27).



Figs 28–34. *Phalangium armatum* sp.n., ♀: 28 — body, dorsal view; 29, 30 — palp, lateral view; 31, 32 — chelicera, lateral view; 33 — ovipositor, ventral view; 34 — seminal receptacle. Scales: 1 mm (28, 32); 0.01 mm (33).

Рис. 28–34. *Phalangium armatum* sp.n., ♀: 28 — тело, дорзально; 29, 30 — пальпа, латерально; 31, 32 — хелицера, латерально; 33 — овиопозитор, вентрально; 34 — семяприемник. Масштаб: 1 мм (28, 32); 0,01 мм (33).

Table 2.
Differs *Phalangium armatum* sp.n., *Phalangium opilio* Linnaeus, 1761 and *Phalangium savignyi* (Audouin, 1825)

	<i>Phalangium armatum</i> sp.n.	<i>Phalangium opilio</i> Linnaeus, 1761	<i>Phalangium savignyi</i> (Audouin, 1825)
Body	Short, rounded-quadrangular; covered with tall, black-tipped tubercles; saddle poorly marked (Figs 17, 18).	Quadrangular, widening towards the caudal end and constricted in the middle; covered with short black-tipped tubercles; saddle clearly marked [Chemeris, 1998: fig. 55; Martens, 1978: fig. 414].	Sparsely covered with small tubercles; saddle clearly marked; ventrally densely covered with setae.
Ocularium	Crown-shaped, dorsally with two rows of 10, 11 tall tubercles (Fig. 19).	Usual shape, with two rows of 6-8 black-tipped tubercles [Chemeris, 1998: figs 53, 54; Martens, 1978: fig. 413].	Usual shape, with two rows of small tubercles [Chevrizov, 1979: fig. 113].
Cheliceral horn	Very long and narrow (Figs 22, 23).	Short, wide and robust [Chemeris, 1998: figs 50-51; Martens, 1978: fig. 408].	Long, densely covered with denticles [Chevrizov, 1979: fig. 112].
Palps	Covered with longitudinal rows of tubercles, tarsi covered with hairs, apophyses not distinct (Figs 20, 21).	Covered with hairs; patellae with a small apophysis [Chemeris, 1998: fig. 49; Martens, 1978: fig. 411].	Very long, covered with hairs (tarsi ventrally covered with denticles); patellae with a small apophysis.
Legs	Femora I not widened, all segments covered with longitudinal rows of large tubercles.	Femora I not widened, all segments covered with ordinary tubercles.	Femora I strongly widened, all segments sparsely covered with small ordinary tubercles and hairs, but patellae, tibiae and metatarsi I ventrally covered with black-tipped tubercles.
Penis	Relatively large; body widened at its base and narrowed in the middle; stylus long, with a hook-shaped tip (Figs 24-27).	Relatively large; body widened at its base and strongly narrowed in the middle; stylus long, and straight [Chemeris, 1998: figs 56-58; Martens, 1978: figs 406, 407].	Relatively small; body less widened at its base and less narrowed in the middle; glans wide and robust [Chevrizov, 1979: fig. 114, Starega, 1973: figs 10, 11].

(IZB, 190), same locality, near Divagach (38°41.74'N 48°22.86'E), 1400 m a.s.l., 25–26.05.2003, YuM.

DESCRIPTION. MALE. Measurements. Body: length 6.5; width 3.8. Chelicera: basal segment 2.5; distal segment 5.2, horn 2.2. Penis: length 3.1; width at base: 0.5; length of glans: 0.25, stylus 0.13. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	1.9	1	0.9	-	2	5.8
Legs						
I	2.5	0.9	2	2.45	3.35	11.2
II	4.7	1.3	4.15	4.2	6.1	20.45
III	2.8	0.9	1.8	2.9	3.6	12
IV	4.15	1	3	4.5	5.2	17.85

Saddle well-marked, separated by a transverse light brown stripe in two subequal parts. Body rounded–quadrangular, its anterior margin uniformly covered with black-tipped tubercles that do not form distinct rows. Ocularium high, bearing two rows of 8–9 tubercles (Fig. 37). Abdomen covered with transverse rows of tubercles. Coxae densely covered with tubercles. Supra-cheliceral lamellae smooth. Cheliceral segment I dorsally covered with small tubercles; segment II with a low horn, which is covered anteriorly with tubercles and hairs. Palps of a moderate length. Palpal femur covered ventrally with tubercles, but dorsally with hairs; it bears a small apical-medial apophysis with dense hairs. Palpal tibia covered with regular rows of small tubercles and also with a well-marked apical-medial apophysis with dense hairs. Palpal tarsi densely covered with hairs. Legs relatively long, femora and tibiae covered with longitudinal rows of tubercles, remaining segments with hairs. Femora and tibiae have angles armed with tubercles and long spines.

Penis. Body widened at base, slightly constricted in the middle and then widened at the concave plates. Glans with two pairs of setae. Distal end of the stylus hooked.

FEMALE unknown.

DIAGNOSIS. The new species is close to *P. opilio*, but differs from it by the characters given in Table 3.

COLORATION. Body light brown, with numerous dark brown spots and patches over the whole body. Saddle dark brown, clearly marked. Abdomen light brown. Coxae light brown, with small dark brown patches. Penis light yellow.

ETYMOLOGY. The species is named after the type locality, Zuvand of Azerbaijan.

HABITAT. This species was collected from under stones.

DISTRIBUTION. Azerbaijan: Zuvand.

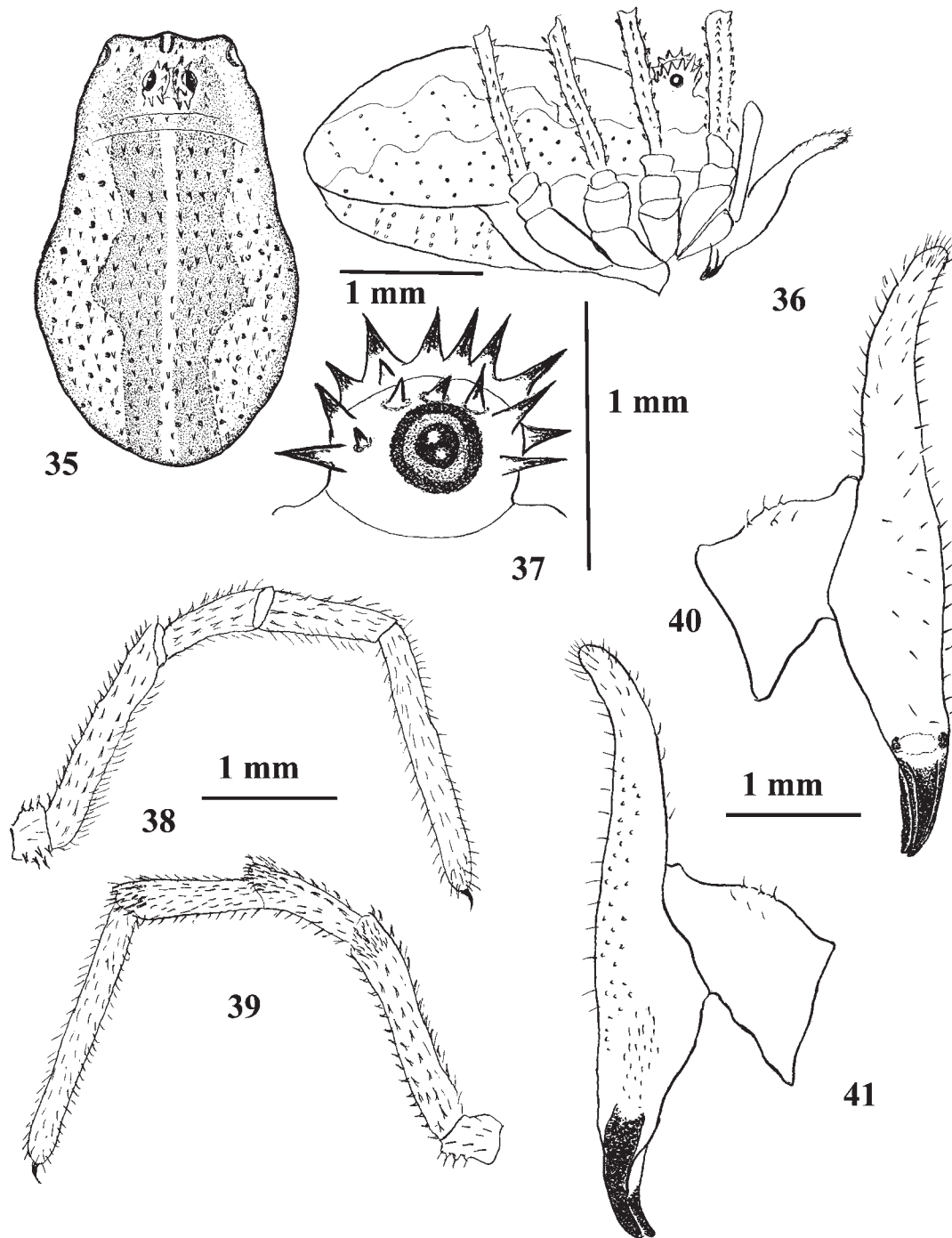
Phalangium staregai sp.n.

Figs 46–62.

MATERIAL. Holotype ♂, Azerbaijan, Lerik, 1200 m a.s.l., 25.05.2003, NS (ZIN). Paratypes: 1 ♀ (ZIN), 1 ♂, 5 ♀♀, 2 juv. (IZB 136), together with the holotype.

DESCRIPTION. MALE. Measurements. Body: length 5.6; width 3.6. Chelicera: basal segment 2.2; distal segment 5.9, whip-shaped process 3.3. Penis: length 2.8; width at base: 0.5; length of glans: 0.3, stylus 0.1. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	4	1.25	2.1	-	3.9	11.25
Legs						
I	4.1	1.35	3.7	3.65	4.45	17.25
II	4.8	1.2	4.35	3.35	9.65	23.35
III	3.25	1.3	2.75	3.25	7.45	18
IV	4.6	1.35	3.8	3.75	11.95	25.45

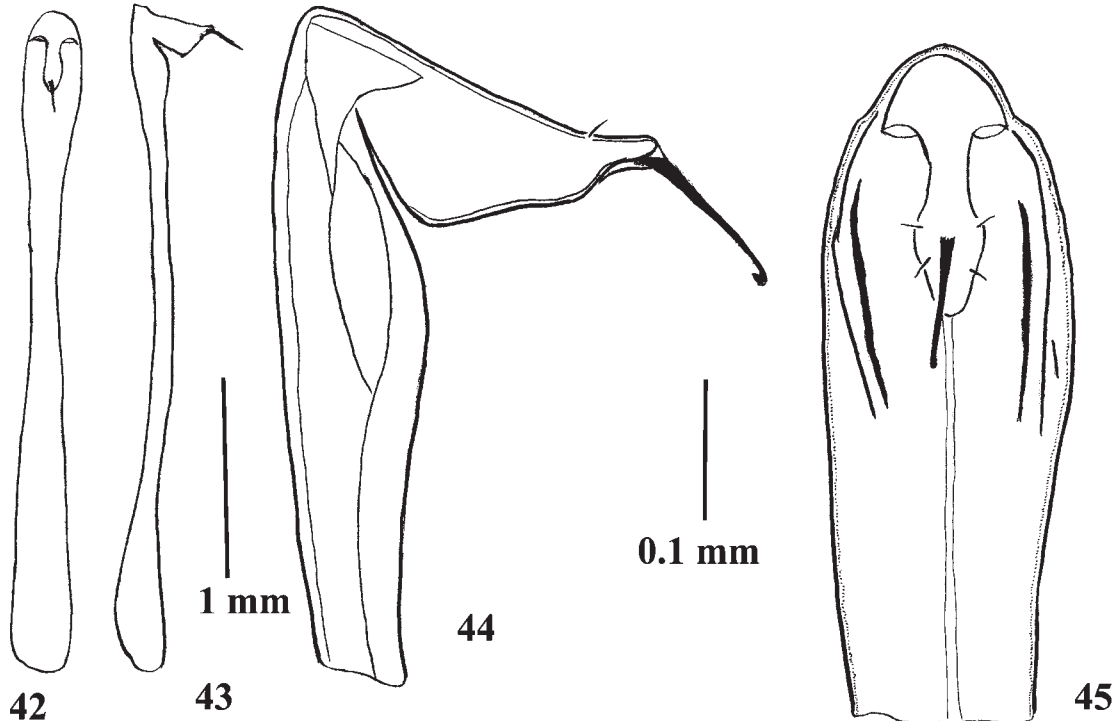


Figs 35–41. *Phalangium zuvandicum* sp.n., ♂: 35 — body, dorsal view; 36 — body, lateral view; 37 — ocularium, lateral view; 38, 39 — palp, lateral view; 40, 41 — male chelicera, lateral view. Scale 1 mm.

Рис. 35–41. *Phalangium zuvandicum* sp.n., ♂: 35 — тело, дорсально; 36 — тело, латерально; 37 — глазной бугор, латерально; 38, 39 — пальпа, латерально; 40, 41 — хелицера, латерально. Масштаб 1 мм.

Table 3.
Differs *Phalangium zuvandicum* sp.n., and *Phalangium opilio* Linnaeus, 1761

	<i>Phalangium zuvandicum</i> sp.n.	<i>Phalangium opilio</i> Linnaeus, 1761
Body	Oval, widened towards the caudal end; densely covered with tubercles; saddle clearly marked (Figs 35, 36).	Quadrangular, widened towards the caudal end and constricted in the middle; covered with small, black-tipped tubercles; saddle clearly marked [Chemeris, 1998: fig. 55; Martens, 1978: fig. 414].
Ocularium	High, with two rows of 8-9 tubercles (Fig. 37).	Usual shape, with two rows of 6-8 black-tipped tubercles [Chemeris, 1998: figs 53, 54; Martens, 1978: fig. 413].
Cheliceral horn	Short and comparatively narrow, covered with denticles and setae (Figs 40, 41).	Short, wide and robust, covered with setae [Chemeris, 1998: figs 50, 51; Martens, 1978: fig. 408].
Palps	Relatively short, covered with tubercles and hairs; femora, patellae and tibiae with small hairy apophyses (Figs 38, 39).	Covered with hairs; patellae with a small apophysis [Chemeris, 1998: fig. 49; Martens, 1978: fig. 411].
Legs	Short, covered with longitudinal rows of tubercles and hairs (Fig. 36).	Long, all segments covered with tubercles.
Penis	Body slightly widened at its base and almost uncontracted in the middle; glans with a pair of setae; stylus with hook-shaped tip (Figs 42-45).	Body widened at its base and strongly narrowed in the middle; stylus long, and straight [Chemeris, 1998: figs 56-58; Martens, 1978: figs 406, 407].



Figs 42–45. *Phalangium zuvandicum* sp.n.: 42 — penis, dorsal view; 43 — penis, lateral view; 44 — glans of penis, lateral view; 45 — glans of penis, dorsal view. Scales: 1 mm (42, 43); 0.1 mm (44, 45).

Рис. 42–45. *Phalangium zuvandicum* sp.n.: 42 — пенис, дорсально; 43 — пенис, латерально; 44 — головка пениса, латерально; 45 — головка пениса, дорсально. Масштаб: 1 мм (42, 43); 0,1 мм (44, 45).

Table 4.
Differs *Phalangium staregai* sp.n., and *Phalangium punctipes* (L. Koch, 1878)

	<i>Phalangium staregai</i> sp.n.	<i>Phalangium punctipes</i> (L.Koch, 1878)
Body	Quadrangle, widening towards the caudal end; covered with hairs (Fig. 46).	Quadrangle; covered with short hairs and black-tipped tubercles [Snegovaya, 1999: fig. 24].
Chelicerae	Segment II in ♂ with long, bent and whip-shaped process (Figs 53, 54).	Strong, segment II in ♂ without a process, covered with tubercles and hairs [Snegovaya, 1999: fig. 26; Chevrizov, 1979: fig. 111].
Palps	Moderate length, covered with hairs and micro-denticles (Figs 51, 52).	Moderate length, femora with 3-5 basal tubercles [Snegovaya, 1999: fig. 25].
Legs	First pair strongly widened, ventral surfaces of femora, patellae, tibiae and metatarsi densely covered with micro-denticles and tubercles.	First pair not widened (as other legs), all segments covered with hairs only.
Penis	Constricted in the middle, with wide concave plates (Figs 47-50).	Concave plates not marked [Snegovaya, 1999: figs 27-28; Chevrizov, 1979: fig. 110; Starega, 1973: figs 13, 14].

Body almost quadrangular, covered with setae. The saddle is clearly marked. Small dark brown spots on tergite margins are clearly visible. Ocularium as wide as long, with a group of 10–11 small hairs and a group of four tubercles on each side of it. In front of the ocularium, there is a dark V-shaped figure with a longitudinal, median, yellowish stripe. Along the yellow stripe and each branch of the V-shaped figure, there are lines of 5–6 spine-tipped tubercles. Dorsal surface of the carapace covered with short hairs. Each of the supra-cheliceral lamellae with a single seta. Cheliceral segment I covered dorsally with tiny, spine-tipped tubercles and hairs; segment II covered anteriorly with micro-denticles and hairs and with a long, whip-shaped process covered with hairs. Palps long and thin, all their segments covered with hairs and micro-denticles; patellae possesses an apical-medial apophysis densely covered with micro-denticles. Legs I significantly widened, remaining legs thin and slender. The ventral surfaces of the femora, patellae, tibiae and metatarsi are densely covered with micro-denticles and tubercles (especially dense on tibiae and metatarsi). Remaining legs covered with short hairs.

Penis wide at base, narrowed in the middle and then widened in the apical region. Glans thin, with two setae on each side. Stylus straight, with hooked-shaped tip.

FEMALE. Measurements. Body: length 7.5; width 4.1. Chelicera: basal segment 1.3; distal segment 2.3. Ovipositor: length 4.8, width 0.4. Length (in mm) of palp and leg segments:

	Fm	Pt	Tb	Mt	Ta	Total
Palp	1.55	0.7	0.85	-	2.05	5.15
Legs						
I	2.65	1.25	2.5	1.65	7.55	15.6
II	4.25	1.35	3.55	2.8	11.25	23.2
III	3	1.15	2.3	1.85	8.55	16.85
IV	4.75	1.3	3.25	3.3	11.75	24.35

Female bigger than male and the body has a sharper caudal region; leg I thinner than in males; the second cheliceral segment without a process; palps smaller.

COLORATION. Males and females are alike. Body light yellow, with numerous dark brown patches and spots. The saddle is dark brown. Ventral aspect of body light yellow, with small brown spots. Chelicerae and legs light brown, with dark brown spots. Palps light brown.

DIAGNOSIS. The new species is close to *P. punctipes*, but differs from it by the characters given in Table 4.

Phalangium staregai sp.n. is somewhat similar to *Bac-trophalangium jakesi* Šilhavý, 1966, especially in its general appearance and the structure of the penis [cf. Figs 47–50 and Šilhavý, 1966: figs 1–7].

ETYMOLOGY. The species is named after Prof. W. Starega (Warsaw, Poland), the famous specialist of Opiliones, who has made a significant contribution to study of their taxonomy.

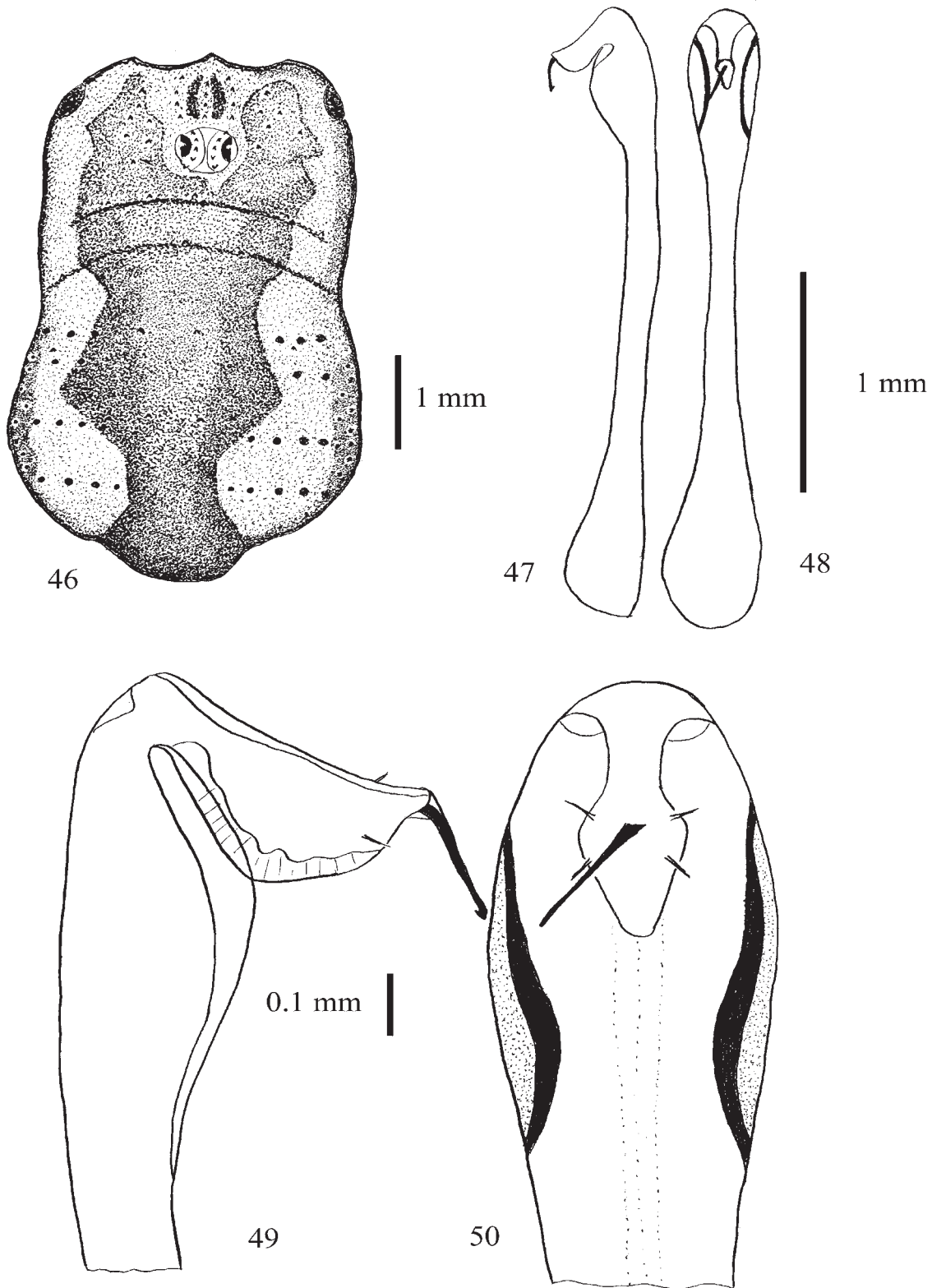
HABITAT. This species was collected in grass of mountain meadows.

DISTRIBUTION. The type locality only, Azerbaijan: Lerik.

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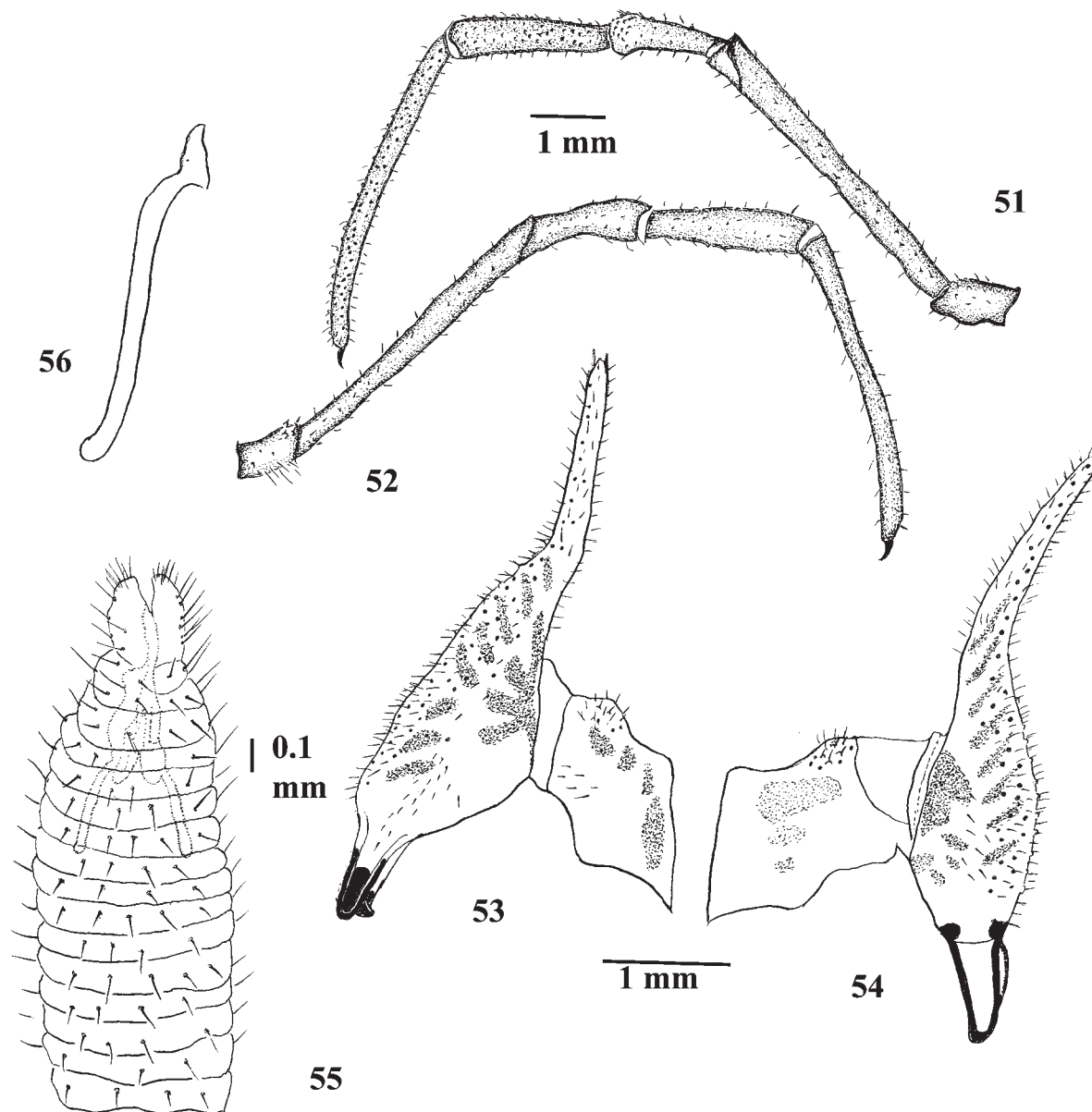
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Figs 46–50. *Phalangium staregai* sp.n., ♂: 46 — body, dorsal view; 47 — penis, lateral view; 48 — penis, dorsal view; 49 — glans of penis, lateral view; 50 — glans of penis, dorsal view. Scales: 1 mm (46–48); 0.1 mm (49, 50).

Рис. 46–50. *Phalangium staregai* sp.n., ♂: 46 — тело, дорсально; 47 — пенис, латерально; 48 — пенис, дорсально; 49 — головка пениса, латерально; 50 — головка пениса, дорсально. Масштаб: 1 мм (46–48); 0,1 мм (49, 50).



Figs 51–56. *Phalangium staregai* sp.n.: 51, 52 — male palp lateral view; 53, 54 — male chelicera, lateral view; 55 — ovipositor, ventral view; 56 — seminal receptacle. Scales: 1 mm (51–54); 0.1 mm (55).

Рис. 51–56. *Phalangium staregai* sp.n.: 51, 52 — палепа самца, латерально; 53, 54 — хелицера самца, латерально; 55 — овиопозитор, вентрально; 56 — семяприемник. Масштаб: 1 мм (51–54); 0,1 мм (55).

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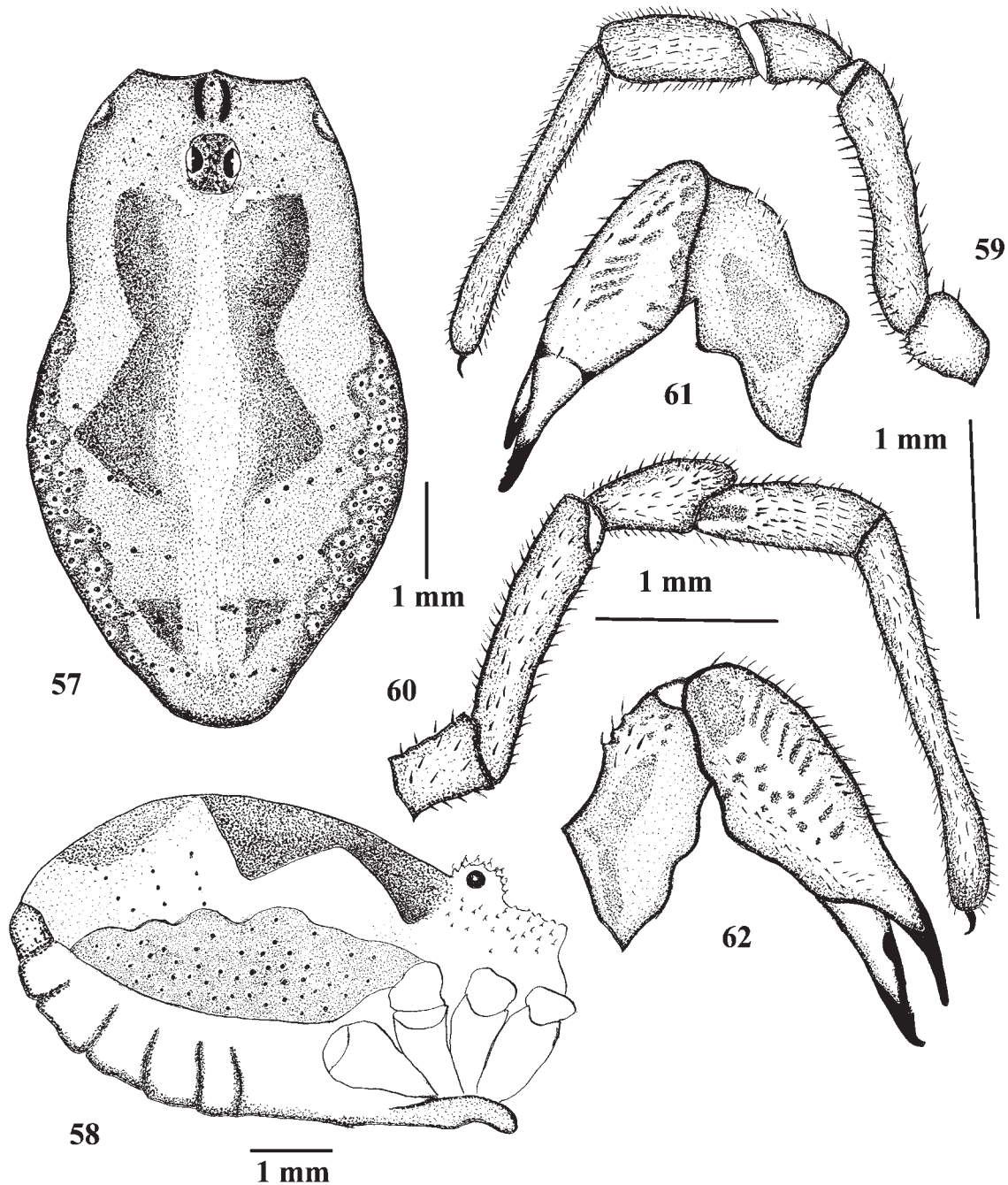
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Figs 57–62. *Phalangium staregai* sp.n., ♀: 57 — body, dorsal view; 58 — body, lateral view; 59, 60 — palp, lateral view; 61, 62 — chelicera, lateral view. Scale 1 mm.

Рис. 57–62. *Phalangium staregai* sp.n., ♀: 57 — тело, дорсально; 58 — тело, латерально; 59, 60 — палпа, латерально; 61, 62 — хелицера, латерально. Масштаб 1 мм.

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