

The spider genus *Micaria* Westring, 1851 in the Crimea (Aranei: Gnaphosidae)

Пауки рода *Micaria* Westring, 1851 Крыма (Aranei: Gnaphosidae)

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KEY WORDS: spiders, *Micaria*, redescription, new species, new record, phenology, spatial distribution, the Crimea.

КЛЮЧЕВЫЕ СЛОВА: пауки, *Micaria*, переописания, новые виды, новые находки, фенология, ландшафтное распределение, Крым.

ABSTRACT: Six species of the genus *Micaria* are recorded from the Crimea: *Micaria albovittata* (Lucas, 1846); *M. blicki* sp.n.; *M. bosmansii* sp.n.; *M. coarctata* (Lucas, 1846); *M. dives* (Lucas, 1846); and *M. rossica* Thorell, 1875. *M. coarctata* is new for the Crimea, and hence new to Ukraine. Earlier records of *M. formicaria* (Sundevall, 1831), *M. guttulata* (C.L. Koch, 1839) and *M. pulicaria* (Sundevall, 1831) from the Crimea were based on misidentifications and actually belong to *M. albovittata*, *M. bosmansii* sp.n. and *M. blicki* sp.n., respectively. For all species diagnostic drawings, distribution, spatial distribution and phenology are provided.

РЕЗЮМЕ: Шесть видов рода *Micaria* отмечено в Крыму: *Micaria albovittata* (Lucas, 1846), *M. blicki* sp.n., *M. bosmansii* sp.n., *M. coarctata* (Lucas, 1846), *M. dives* (Lucas, 1846) и *M. rossica* Thorell, 1875. Вид *M. coarctata* впервые отмечается для Крыма и Украины. Имеющиеся в литературе указания *M. formicaria* (Sundevall, 1831), *M. guttulata* (C.L. Koch, 1839) и *M. pulicaria* (Sundevall, 1831) из Крыма основаны на ошибочных определениях и на самом деле относятся к *M. albovittata*, *M. bosmansii* sp.n. и *M. blicki* sp.n. соответственно. Для всех видов приведены диагностические рисунки, географическое распространение, распределение по ландшафтными зонам в Крыму и фенология.

Introduction

The genus *Micaria* contains 100 described species [Platnick, 2008]. The genus has been well revised for North America [Platnick & Shadab, 1988], North Africa [Bosmans & Blick, 2000], Europe [Wunderlich,

1979], Crete [Chatzaki et al., 2002], Israel [Levy, 2002], Middle Asia [Mikhailov, 1987], Urals [Tuneva, 2007] and Siberia [Mikhailov, 1987; Danilov, 1993, 1996; Mikhailov & Marusik, 1996]. Therefore, it was surprising to discover that species identification of the Crimean *Micaria* was quite difficult, and that two new species are present in the peninsula. This paper aims to resolve this problem by describing and illustrating all of the Crimean *Micaria* species.

Material and Methods

Specimens for this study were recently collected in the Crimea by the first author (the other collectors are mentioned in the text below), mostly by pitfall traps. Some specimens used as comparative material were received for examination from several personal collections. All specimens were returned to, or deposited in, the following collections: CRB — personal collection of R. Bosmans, Gent, Belgium; EMZ — personal collection of E.M. Zhukovets, Minsk, Belarus; TNU — Zoology Department, V.I. Vernadsky Taurida National University, Simferopol, Ukraine, M.M. Kovblyuk; ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia, K.G. Mikhailov.

The following abbreviations are used in the text: a — apical; d — dorsal; pl — prolateral; rl — retrolateral; s.p. — same place; v — ventral. Most of the terms and abbreviations for genital descriptions are adopted from Tuneva [2006] with some additions: AEM — anterior epigynal margin; CO — copulatory opening; D — spermathecal duct; DTP — distal tegular projection; E — embolus; FD — fertilization duct; G — spermathecal gland; MA — median apophysis; P — epigynal pocket; R — spermathecal reservoir; T — tibial apophysis; TO — tegular outgrowth.

Coloration was described from specimens preserved in 75% ethanol/water solution with added glycerin (9:1 by volume). Legs and palpal segments were measured after separation from the cephalothorax. All measurements are in mm. All scale bars are equal 0.1 mm.

Because some new synonymies were established recently, the better known name for some species is provided in brackets. Below each species heading a reference to appropriate illustrations of this species is given in square brackets [].

Ranges of species have been characterized *sensu* K.B. Gorodkov [1984].

Survey of species

Micaria albovittata (Lucas, 1846) (= *M. romana* L. Koch, 1866)

Figs 1–10.

[Miller, 1967: tab. 9, fig. 2 (♀); Wunderlich, 1979: 260, f. 9a–c, 20a–d, 42a–f (♂♀); Mikhailov, 1991: 78, fig. 1 (♀); Heimer, Nentwig, 1991: 436, f. 1148.1–3, 5 (♂♀); Bosmans & Blick, 2000: 451, f. 13–16 (♂♀); Chatzaki et al., 2002: 580, f. 30, 37–38 (♂♀); Levy, 2002: 113, f. 1–7 (♂♀)]. For a complete list of references see Platnick [2008].

RECORDS FROM THE CRIMEA. As *M. romana*: Mikhailov, 1987, 1991, 1997, 1998, Kovblyuk, 2004. As *M. formicaria* (Sundevall, 1831) — misidentifications: Thorell, 1875a; Spassky, 1927; Charitonov, 1932; Azheganova, 1968; Mikhailov, 1987, 1997; Kovblyuk, 2004.

NOTE. The earlier record of *M. formicaria* from the Crimea was based on unknown sex and number specimens from “Jekaterinoslaw” (= Dnipropetrovsk, not in the Crimea!) and “Jeny-Sala?” [Thorell, 1875a: 80] and on 1 female from Yalta [Spassky, 1927: 15]. The females of *M. albovittata* and *M. formicaria* are very similar in epigynal structure. In our material from the Crimea *M. formicaria* is absent. It is reasonable to conclude that the earlier records *M. formicaria* from the Crimea were based on misidentifications of *M. albovittata*.

MATERIAL. UKRAINE, THE CRIMEA. Lenin Distr.: 1 ♀ (TNU), Kerch Peninsula, env. Verhnezamorskoe, 13.06.1997; 1 ♀ (EMZ), Kerch Peninsula, env. Ptashkino, 9.06.1999; 1 ♀ (TNU-1711/1), Opuk Mt., sweeping, 3.06.2002, M.V. Onchurov. Saky Distr.: 1 ♀ (EMZ), env. Pribrezhnaya railway station, 27.06.1999; 1 ♀ (TNU-1680/8), s.p., pitfalls, 28.05.–8.06.2000. Simferopol Distr.: 1 ♂ (TNU), Krasnolesye, 20.05.1997, R. Slushaenko; 1 ♀ (TNU), 2 km N of Pionerskoe, in tent, 10.06.1998; 2 ♀♀ (TNU), near Lozovoe-2, terraced slope, pitfalls, 23.06.–26.07.2000; 3 ♂♂, 1 ♀ (TNU-986/15, 987/18), Simferopol water reservoir, Zmeinyi Bay, *Phragmites communis*, pitfalls, 14.05.–6.06.2000; 5 ♂♂, 1 ♀ (TNU-1835/25/1, 1838/9, 1759/25, 1856/13, 1857/4, 1787/10/1), env. Skvortsovo, pitfalls, 9.05.–10.07.2002; 2 ♂♂ (TNU-1911/8), Chatyr-Dag Yailla Mt., pitfalls, 20.05.–1.06.2000; 2 ♀♀ (TNU-1201/15), Crimean State Nature Reserve, 2 km NW of kordon Zeleny Gay, Alma River bank, sweeping, 15.06.2000. Sudak Distr.: 1 ♂ (TNU), between Shelkovichnoe and Veseloe, 30.05.1998, M.V. Onchurov. Yalta Distr.: 1 ♂ (TNU-1488/7), Crimean State Nature Reserve, Nikitskaya Yailla, ~ 1200 m a.s.l., pitfalls, 23.06.–3.07.2001.

COMPARATIVE MATERIAL. UKRAINE. KHERSON AREA: 2 ♀♀ (TNU), Golopristansky Distr., Zhelezny Port Town, Chernomorsky Nature Reserve, 25.05.1990, N.Yu. Polchaninova. AZERBAIJAN: 2 ♀♀ (TNU), Ismaillinsky Reserve, 1500 m a.s.l., 12.07.2001, E.F. Guseinov.

DIAGNOSIS. The female of *M. albovittata* is very similar to that *M. formicaria*, but the male differs by having only

1 tibial apophysis (2 in *M. formicaria* — see: Tuneva, 2007: Figs 36–38), by ratio length/width of carapace about 1.5–1.6 (about 1.8–1.9 in *M. formicaria* — after Bosmans & Blick, 2000: 451). Females of *M. albovittata* can be distinguished by the shape of the anterior epigynal margin [for comparison with *M. formicaria* see Tuneva, 2007: Figs 34–35]. *M. albovittata* can be distinguished from all other *Micaria* species by the presence and shape of peculiar tegular outgrowth of the bulb.

DESCRIPTION. Measurements (♂ / ♀): total length 4.5 / 6.5; carapace 2.1 / 2.5 long, 1.3 / 1.6 wide. Length of leg segments (male / female):

	femur	patella	tibia	metatarsus	tarsus
I	1.5/1.7	0.7/0.8	1.3/1.3	1.2/1.3	1.0/1.1
II	1.4/1.7	0.6/0.7	1.2/1.3	1.1/1.2	1.0/1.1
III	1.3/1.5	0.6/0.7	1.0/1.1	1.1/1.2	0.9/0.9
IV	1.9/2.4	0.7/0.9	1.6/2.0	1.8/2.3	1.2/1.3

Male leg spination. Femur: I — d 1-1, pl 1; II — d 1-1, pl 1; III — d 1-2, pl 1, rl 1; IV — d 1-1, rl 1. Tibia: II — v 1-1(a); III — d 1, pl 1-1, rl 1-1, v 2-2-2(a); IV — d 1, pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — d 1-1, pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — d 1-1, pl 1-1(a), rl 1-1(a), v 2-2-4(a).

Female leg spination. Femur: I — d 1, pl 1; II d 1-1, pl 1; III — d 1-1, pl 1, rl 1; IV — d 1, rl 1. Tibia: I — v 2-2-1(a); II — v 2-2-1(a); III — dl 1, pl 1-1, rl 1-1, v 2-2-2(a); IV — d 1, pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — d 1, pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — d 1-1, pl 1-1(a), rl 1-1(a), v 2-2-3(a).

Carapace, sternum, legs and palps brown. Abdomen grey. General appearance: male — Fig. 6; female — Fig. 8.

♂ palp: Figs 1–3, 7; spermathecae: Fig. 4–5, 9–10. Tibia of male palp slightly shorter than cymbium. Tegulum with tegular outgrowth in base of embolus. Median apophysis well developed. Tibial apophysis of male palp robust. Epigyne with well developed II-shaped anterior epigynal margin and epigynal pockets. Copulatory openings directed meso-anteriorly.

VARIATION. Male carapace lengths (n=13) vary from 1.6 to 2.3; width — from 1.0 to 1.5; female carapace lengths (n=9) vary from 2.0 to 2.5; width — from 1.4 to 1.6.

TYPE LOCALITY. Algeria [Bosmans & Blick, 2000: 451, neotype designated].

DISTRIBUTION. West-Central-Palaeartic nemoral-sub-tropical range: Algeria, Morocco, temperate and Mediterranean Europe, Israel, Caucasus, Turkmenistan [Bosmans & Blick, 2000; Levy, 2002].

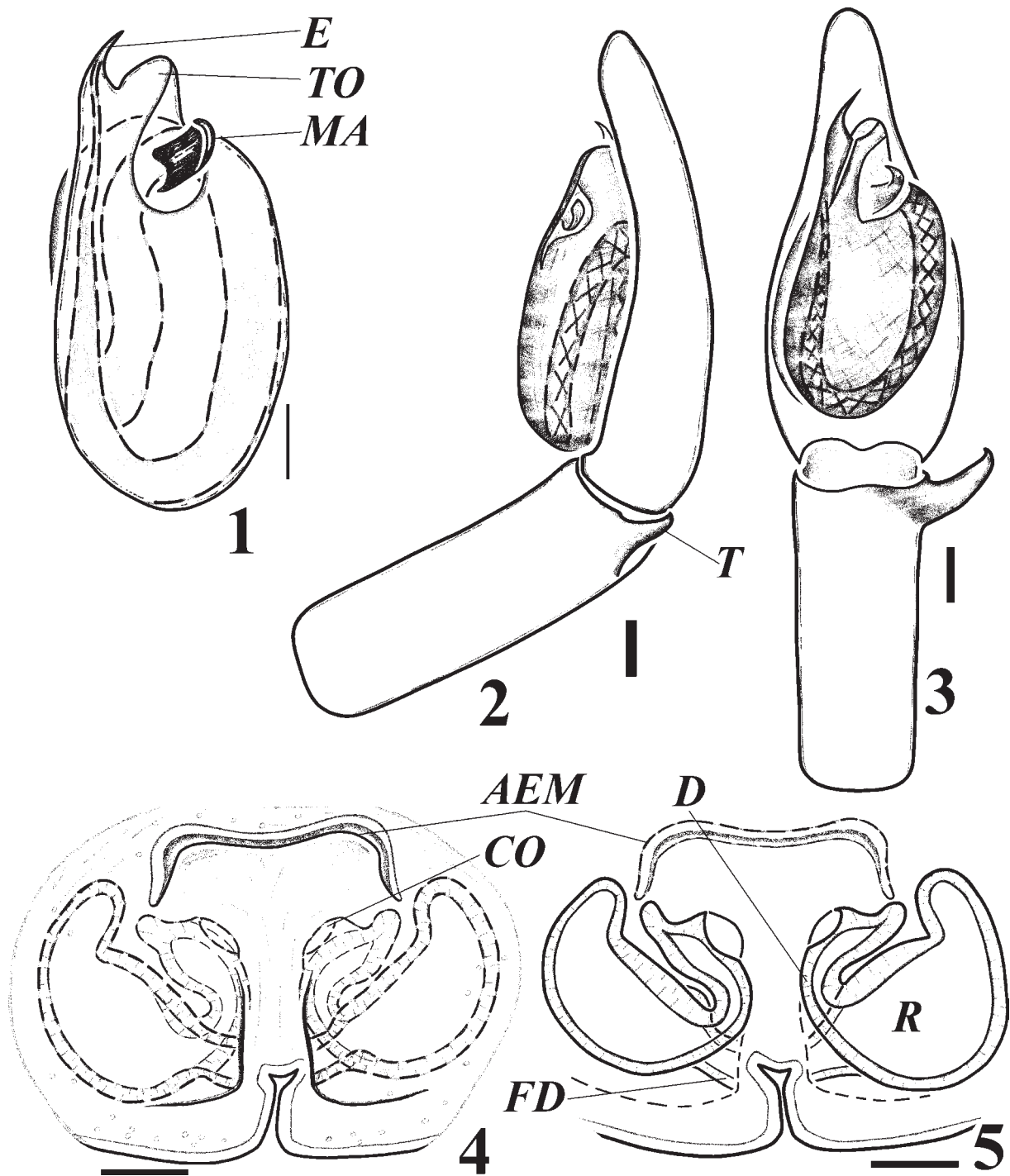
HABITATS. In grass and under stones in steppes (*Artemisia* and *Euphorbia* steppe, *Artemisia* and *Centaurea* steppe, *Stipa* and *Festuca* steppe, *Festuca* and *Rosa* steppe, steppe with *Spiraea hypericifolia*), in fallow lands, in meadows, on river banks, in *Phragmites communis*.

PHENOLOGY. ♂♀ — V–VII. Peak of adults' activity June. In Israel “adults were collected in April–May” [Levy, 2002: 115]. In the Crimea adults appear one month later than in Israel. In England ♂♀ — V–VII [Harvey et al., 2002 — as *M. romana*], as in the Crimea.

Micaria coarctata (Lucas, 1846) (= *M. albimana* O. P.-Cambridge, 1872)

Figs 11–20.

[Wunderlich, 1979: 264, f. 22a–f, 44a–e (♂♀); Heimer, Nentwig, 1991: 436, f. 1145.1–3 (♂♀); Bosmans & Blick, 2000:



Figs 1–5. Copulatory organs of *Micaria albovittata* from the Crimea: 1 — bulbus, ventral view; 2 — male palp, retrolateral view (spines not shown); 3 — male palp, ventral view (spines not shown); 4 — epigyne, ventral view; 5 — epigyne, dorsal view.

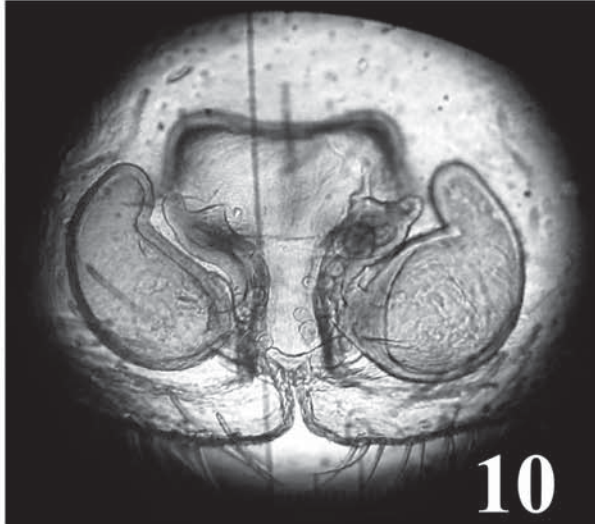
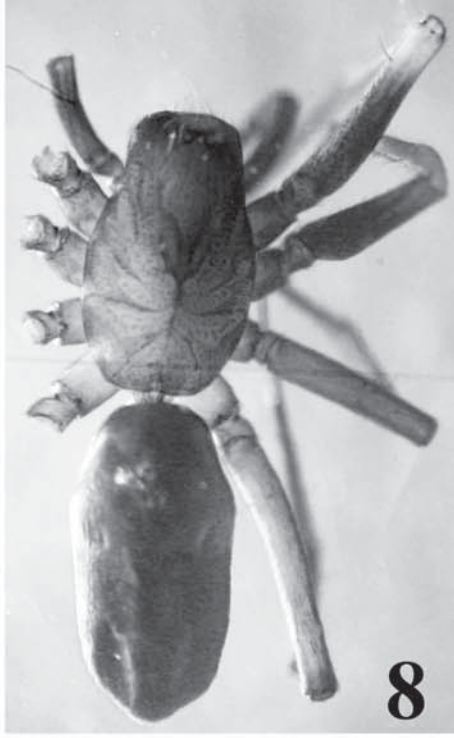
Рис. 1–5. Копулятивные органы *Micaria albovittata* из Крыма: 1 — бульбус, вентрально; 2 — пальпа самца, ретролатерально (шипы не показаны); 3 — пальпа самца, вентрально (шипы не показаны); 4 — эпигина, вентрально; 5 — эпигина, дорсально.

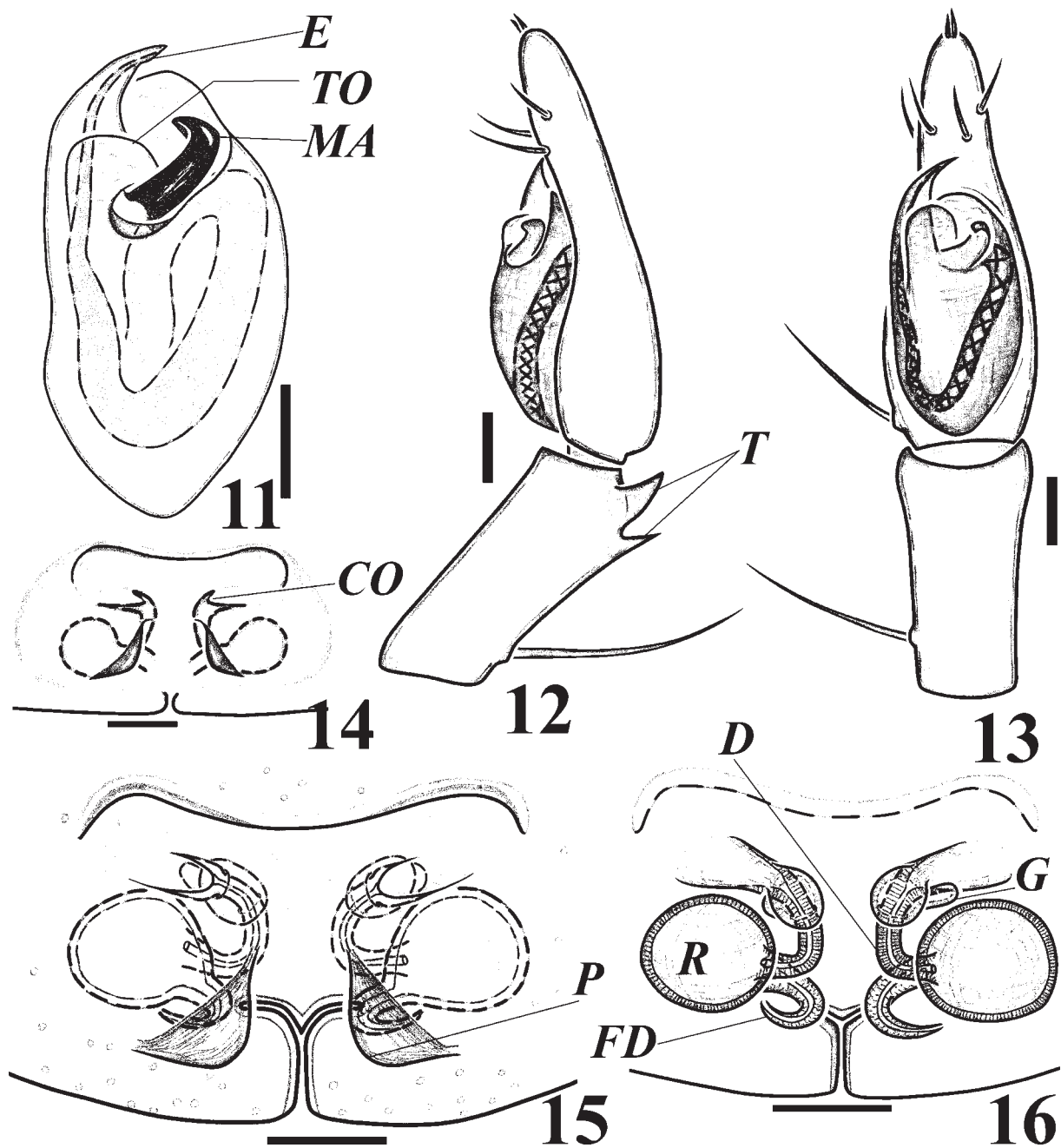
452, f. 17–20 (♂♀); Chatzaki et al., 2002: 577, f. 24–25, 31–32 (♂♀); Levy, 2002: 118, f. 13–22 (♂♀)]. For a complete list of references see Platnick [2008].

MATERIAL. UKRAINE, THE CRIMEA. Saky Distr.: 2 ♀♀ (TNU), Yevpatoriya, 24.08.1997, Kovblyuk & G.V. Reutov; 2

♂♂ (TNU–1714/8, 1600/19), env. Pribrezhnaya railway station, pitfalls, 3–19.07.2000. Feodosiya Distr.: 1 ♀ (TNU–2288/6), Karadag Nature Reserve, Lobovoy mountain range, 4.07.2006.

DIAGNOSIS. Males of *M. coarctata* are easily distinguished from other *Micaria* males by the two tibial apophy-





Figs 11–16. Copulatory organs of *Micaria coarctata* from the Crimea: 11 — bulbus, ventral view; 12 — male palp, retrolateral view; 13 — male palp, ventral view; 14 — epigyne, ventral view; 15 — epigyne, ventral view; 16 — epigyne, dorsal view.

Рис. 11–16. Копулятивные органы *Micaria coarctata* из Крыма: 11 — бульбус, вентрально; 12 — палпа самца, ретролатерально; 13 — палпа самца, вентрально; 14 — эпигина, вентрально; 15 — эпигина, вентрально; 16 — эпигина, дорсально.

Figs 6–10. *Micaria albovittata* from the Crimea: 6 — male, general appearance; 7 — bulbus, ventral view; 8 — female, general appearance; 9 — epigyne, ventral view; 10 — epigyne, dorsal view.

Рис. 6–10. Детали строения *Micaria albovittata* из Крыма: 6 — самец, габитус; 7 — бульбус, вентрально; 8 — самка, габитус; 9 — эпигина, вентрально; 10 — эпигина, дорсально.

ses (Fig. 12), as in *M. formicaria* (Sundevall, 1832) (see: Tuneva, 2007: Figs 36–38). But *M. coarctata* has ratio length/width of carapace about 1.6, as in *M. albobittata* (about 1.8–1.9 in *M. formicaria*: after Bosmans & Blick, 2000: 451). The median apophysis of *M. coarctata* is longer than the tegular outgrowth, while in *M. albobittata* the tegular outgrowth is longer than the median apophysis. Females of *M. coarctata* are easily distinguished by the Y-shaped distal end of spermathecal ducts near copulatory openings.

DESCRIPTION. Measurements (σ^7 / f): total length 4.6 / 5.8; carapace 1.9 / 2.1 long, 1.2 / 1.3 wide. Length of leg segments (male / female):

	femur	patella	tibia	metatarsus	tarsus
I	1.4/1.4	0.7/0.7	1.2/1.1	1.1/1.0	1.1/1.1
II	1.3/1.3	0.6/0.6	1.1/1.0	1.0/1.0	1.0/1.0
III	1.1/1.2	0.5/0.6	0.9/0.9	1.0/1.0	0.9/0.8
IV	1.7/1.8	0.7/0.7	1.4/1.5	1.7/1.7	1.2/1.1

Male leg spination. Femur: I — d 1, pl 1; II — d 1, pl 1; III — d 1-1, pl 1, rl 1; IV — d 1-1, pl 1. Tibia: I — v 1-1, II — v 1-1(a); III — pl 1-1, rl 1, v 1-2-2(a); IV pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-3(a).

Female leg spination. Femur I — d 1, pl 1; II — d 1, pl 1; III — d 1-1, pl 1, rl 1; IV — d 1-1, rl 1. Tibia: I — v 1-1-1(a); II — v 1-1-1(a); III — d 1, pl 1-1, rl 1-1, v 2-2-2(a); IV — pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-4(a).

Carapace, sternum, and palp dark brown. Legs brown. Abdomen grey. General appearance: male — Fig. 17; female — Fig. 19.

σ^7 palp: Figs 11–13, 18; epigyne: Fig. 14; spermathecae: Figs 15–16, 20. Cymbium longer than tibia of male palp. Tegulum with membranous tegular outgrowth in base of embolus. Median apophysis as long as embolus. Male palp with 2 tibial apophyses. Epigyne with M-shaped anterior epigynal margin and well-developed epigynal pockets. Copulatory openings directed laterally.

VARIATION. Male carapace (n=2) lengths vary from 1.8 to 1.9; width — 1.2; female carapace (n=3) lengths vary from 2.0 to 2.1; width — from 1.2 to 1.3.

TYPE LOCALITY. Algeria [Bosmans & Blick, 2000: 452, neotype designated].

DISTRIBUTION. Mediterranean and Central Asian nemoral-subtropical range: Northern Africa (Algeria, Morocco), southern Europe (Spain, France, Greece) and Switzerland to Central Asia (Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan), Israel [Mikhailov, 1987; Bosmans & Blick, 2000; Levy, 2002].

COMMENTS. *M. coarctata* is a species new to the Crimea, hence new to Ukraine.

HABITATS. Sand dunes with *Leymus sabulosus*; meadow steppe; *Pistacia mutica* with grass of *Ephedra distachia*, *Artemisia* sp., *Agropyron* sp.

PHENOLOGY. σ^7 — VII; f — VIII. Peak of adults' activity July. In Turkmenistan σ^7 — III–VII; f — IV–VII [Mikhailov, Fet, 1986 — as *M. albimana*]. In the Crimea adults appear 4 month later than in Turkmenistan. In Israel adults were collected in April–June and September [Levy, 2002: 121]. In the Crimea adults appear 2 month later than

they do in Israel, and have only one peak of abundance, not two peaks as in Israel.

Micaria dives (Lucas, 1846)

Figs 21–32.

[Heimer, Nentwig, 1991: 430, f. 1134.1–3, 5 (σ^7); Bosmans & Blick, 2000: 446, f. 1–4 (σ^7); Chatzaki et al., 2002: 577, f. 26–27, 33–34 (σ^7); Levy, 2002: 123, f. 31–33 (f); Tuneva, 2007: 233–234, f. 28–33 (σ^7)]. For a complete list of references see Platnick [2008].

RECORDS FROM THE CRIMEA. Kovblyuk, 2004.

MATERIAL. UKRAINE, THE CRIMEA. Simferopol Distr.: 1 σ^7 (TNU-966/21), env. Lozovoe, ~ 250 m a.s.l., pitfalls, 6–23.06.2000; 9 σ^7 , 2 f (TNU-1835/25/2, 1836/33, 1759/25, 1847/10, 1859/7), env. Skvortsovo, pitfalls, 9.05.–10.07.2002. Yalta Distr.: 1 σ^7 (TNU-1510/5), Nikitskaya Yaila, ~ 1200 m a.s.l., pitfalls, 23.06.–3.07.2001.

DIAGNOSIS. *M. dives* is a well-known Palaearctic species described in all guides. It is easy to identify because of its small size and the absence of closely related species. *M. dives* females have the anterior epigynal margin of specific arched form (Figs 24–26, 32).

DESCRIPTION. Measurements (σ^7 / f): total length 2.6 / 3.0; carapace 1.3 / 1.2 long, 0.8 / 0.8 wide. Length of leg

	femur	patella	tibia	metatarsus	tarsus
I	0.9/0.8	0.4/0.3	0.7/0.6	0.6/0.5	0.6/0.6
II	0.8/0.7	0.4/0.3	0.6/0.6	0.6/0.6	0.6/0.6
III	0.6/0.6	0.3/0.3	0.5/0.4	0.6/0.5	0.4/0.4
IV	1.0/1.0	0.4/0.4	0.8/0.8	0.9/0.9	0.6/0.6

segments (male / female):

Male leg spination. Femur: I — d 1, pl 1; II — d 1, pl 1; III — d 1-1, pl 1, rl 1; IV — d 1-1, pl 1. Tibia: I — v 1-1, II — v 1-1(a); III — pl 1-1, rl 1, v 1-2-2(a); IV — pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-3(a).

Female leg spination. Femur: I — d 1, pl 1; II — d 1. Tibia: I — v 2-2; III — v 2-2(a); IV — v 2-2-2(a). Metatarsus: III — pl 1(a), rl 1(a), v 1-2-2(a); IV — v 1-2-2(a).

Carapace with 4 black marks, sternum, and palps brown. Legs grey. Abdomen dark grey. General appearance: male — Fig. 27; female — Figs 30–31.

σ^7 palp: Figs 21–23, 28–29; epigyne: Figs 24, 31; spermathecae: Figs 25–26, 32. Tibia of male palp slightly shorter than cymbium. Bulbus without tegular outgrowth. Median apophysis longer than embolus. Tibial apophysis short and thick. Anterior epigynal margin arch-shaped. Epigynal pocket well developed.

VARIATION. Male carapace lengths (n=11) vary from 1.0 to 1.4; width — from 0.6 to 0.9; female carapace lengths (n=2) vary from 1.1 to 1.2; width — from 0.7 to 0.8.

TYPE LOCALITY: Algeria [Bosmans & Blick, 2000: 446].

DISTRIBUTION. Palaearctic polyzonal range: from Iberian Peninsula east to Japan, north to Denmark, Belorussia, South Ural and South Siberia, south to North Africa, Tajikistan and Shanxi [Bosmans & Blick, 2000: 446; Tuneva, 2007].

HABITATS. Steppes with *Stipa*, *Festuca*, *Artemisia*, *Centaurea*, *Asphodeline taurica*, *Amygdalus nana*; meadows; shelter forest belt.

Figs 17–20. *Micaria coarctata* from the Crimea: 17 — male, general appearance; 18 — bulbus, ventral view; 19 — female, general appearance; 20 — epigyne, ventral view.

Рис. 17–20. Детали строения *Micaria coarctata* из Крыма: 17 — самец, габитус; 18 — бульбус, вентрально; 19 — самка, габитус; 20 — эпигина, вентрально.



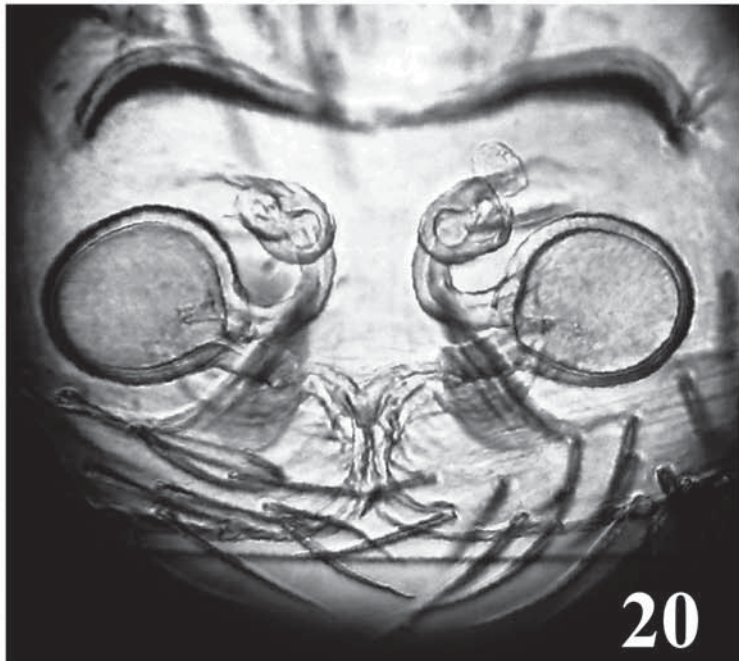
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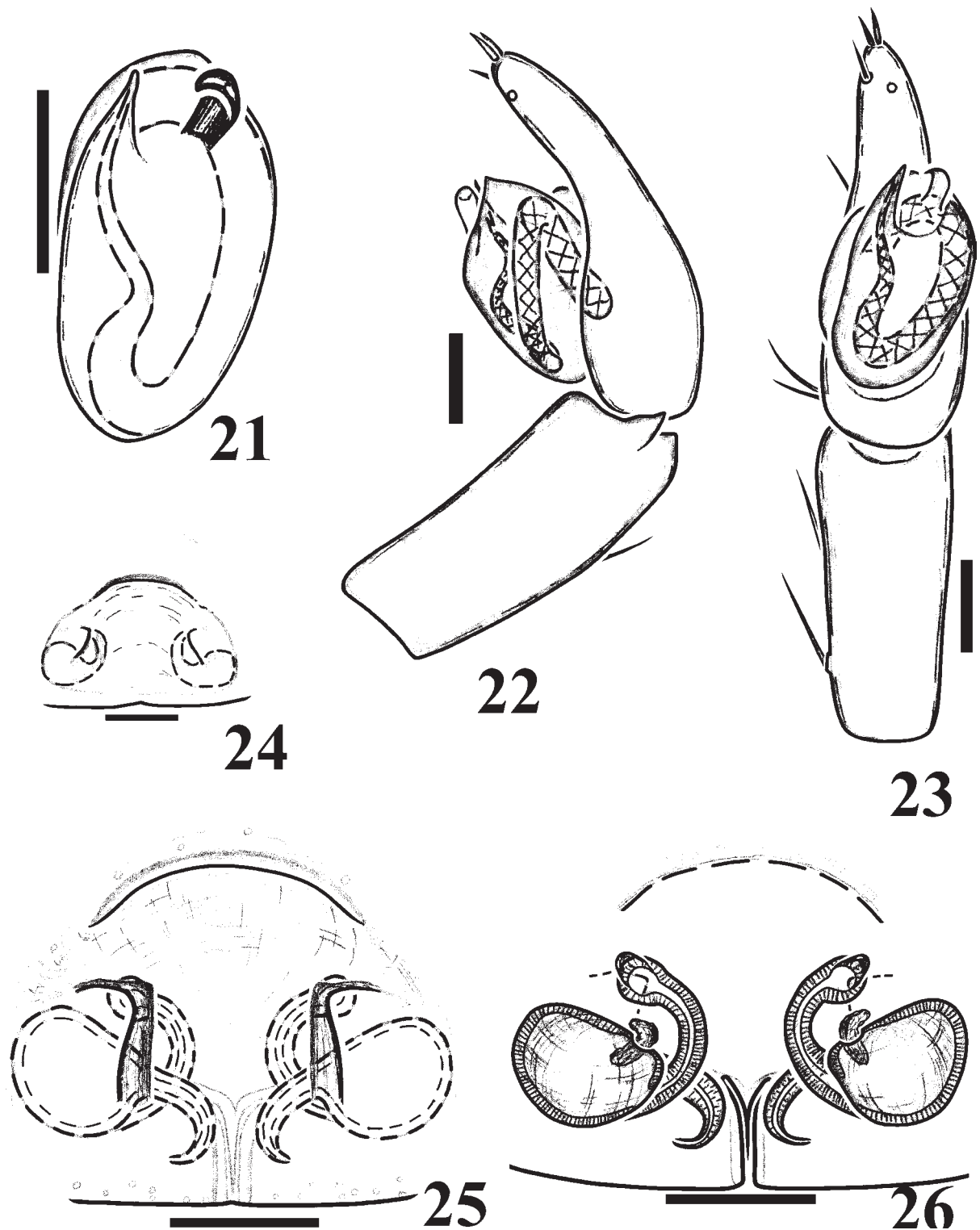
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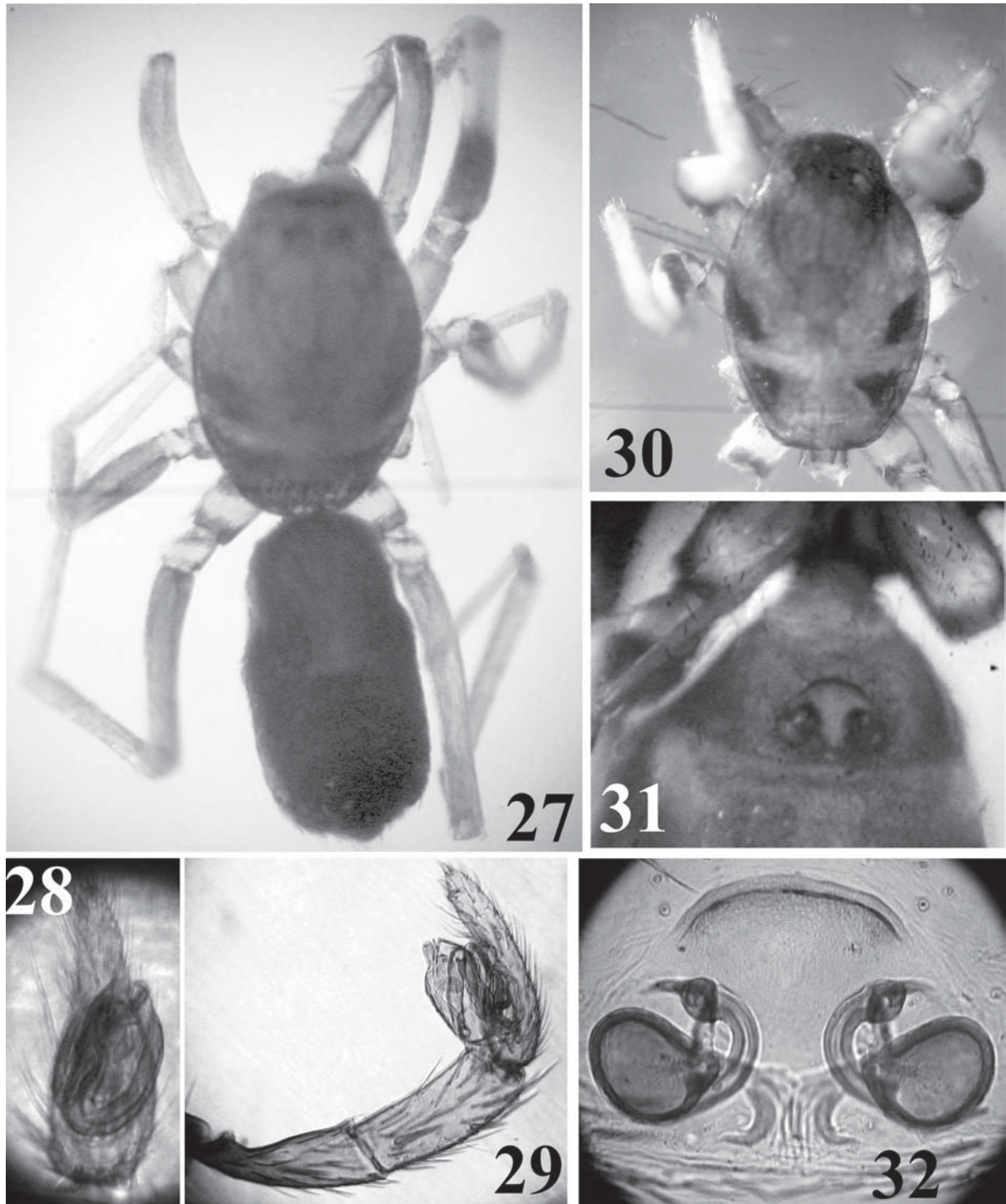


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Figs 21–26. Copulatory organs of *Micaria dives* from the Crimea: 21 — bulbus, ventral view; 22 — male palp, retrolateral view; 23 — male palp, ventral view; 24–25 — epigyne, ventral view; 26 — epigyne, dorsal view.

Рис. 11–16. Копулятивные органы *Micaria dives* из Крыма: 21 — бульбус, вентрально; 22 — палпа самца, ретролатерально; 23 — палпа самца, вентрально; 24–25 — эпигина, вентрально; 26 — эпигина, дорсально.



Figs 27–32. *Micaria dives* from the Crimea: 27 — male, general appearance; 28 — male palp, ventral view; 29 — male palp, retrolateral view; 30 — female carapace; 31 — epigyne, ventral view; 32 — epigyne, dorsal view.

Рис. 27–32. Детали строения *Micaria dives* из Крыма: 27 — самец, габитус; 28 — пальпа самца, вентрально; 29 — пальпа самца, ретролатерально; 30 — карапакс самки; 31 — эпигина, вентрально; 32 — эпигина, дорсально.

PHENOLOGY: ♂♀ — VII; ♂♂ — V–VI. Peak of adults' activity May.

Micaria rossica Thorell, 1875

Figs 33–47.

[Wunderlich, 1979: 286, 305, 308, f. 10, 33a–e, 66, 57a–e, 70a–c (♂♀); Mikhailov, Fet, 1986: 176, fig. 2a (♂); Platnick & Shadab, 1988: 27, f. 58–61 (♂♀); Heimer, Nentwig, 1991: 432, f. 1137.1–3 (♂♀); Mikhailov & Marusik, 1996: 101, f. 27–28, 35 (♂♀); Tuneva, 2007: 239–241, f. 67–74 (♂♀)]. For a complete list of references see Platnick [2008].

RECORDS FROM THE CRIMEA. Thorell, 1875a, b; Spassky, 1927; Charitonov, 1932; Mikhailov, 1987, 1997; Kovblyuk, 2004.

MATERIAL. UKRAINE, THE CRIMEA. Saky Distr.: 4 ♂♂ (TNU-1701/6, 1716/6, 1579/9, 1660/10), env. Pribrezhnaya railway station, pitfalls, 9.05.–9.08.2000. Simferopol Distr.: 2 ♂♂, 1 ♀ (TNU-1854/9, 1787/10/2, 1846/21), env. Skvortsovo Vil., pitfalls, 13.04.–1.06.2002.

COMPARATIVE MATERIAL. AZERBAIJAN: 2 ♀♀ (TNU), Apsheron, 19.04.2001, E.F. Guseinov.

DIAGNOSIS. *M. rossica* is most similar to *M. foxi* Gertsch, 1933, from the western Nearctic, but differs by the longer embolus and the larger epigynal septum [Platnick & Shadab, 1988].

NOTE. Variations in the shape of spermatheca were found by some authors (for example, see Wunderlich, 1979: Figs 57a–e, 66, 70c). We found that the shape of the spermatheca varies in different preservation solutions! For example, intact Crimean specimens have the shape of spermatheca as it is shown in Figs 36 and 38, but after deformation in glycerin, its shape looks as in Fig. 43.

DESCRIPTION. Measurements (♂ / ♀): total length 3.0 / 3.9; carapace 1.6 / 1.8 long, 1.0 / 1.2 wide. Length of leg segments (male / female):

	femur	patella	tibia	metatarsus	tarsus
I	1.2/1.2	0.6/0.5	1.0/0.9	0.9/0.9	1.0/0.9
II	1.1/1.2	0.5/0.5	0.9/0.9	0.8/0.9	0.9/0.8
III	1.0/1.2	0.4/0.6	0.8/0.9	0.9/1.0	0.8/0.8
IV	1.6/1.9	0.6/0.6	1.3/1.4	1.6/1.8	1.2/1.3

Male leg spination. Femur: I — d 1-1, pl 1; II — d 1-1; III — d 1-1, pl 1, rl 1; IV — d 1-1, rl 1-1. Tibia: I — v 2-2, II — v 2-2-1(a); III — d 1; pl 1-1, rl 1, v 2-2-2(a); IV — pl 1-1, rl 1-1, v 2-2-2(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-3(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-3(a).

Female leg spination. Femur: I — d 1-1, pl 1; II — d 1; III — d 1-1, pl 1, rl 1; IV — d 1-1, rl 1. Tibia: I — v 1-2-1(a); II — v 2-1-2-2(a); III — pl 1, rl 1, v 2-2-2(a); IV — pl 1-1, rl 1-1, v 2-2-3(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-4(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-4(a).

Carapace, sternum, palps and legs brown. Abdomen grey (female: with white diametrical marks on dorsal side). General appearance: male — Fig. 39; female — Figs 41–42.

♂ palp: Figs 33–35, 40; epigyne: Figs 36, 42; spermathecae: Figs 37–38, 43–45. Cymbium is longer than tibia. Bulbus with peculiar distal tegular projection. Median apophysis small. Embolus short and thin. Tibial apophysis short and thick. Epigyne without anterior epigynal margin.

VARIATION. Male carapace lengths (n=6) vary from 1.3 to 1.6; width — from 0.8 to 1.0.

TYPE LOCALITY. Odessa, Ukraine [Thorell, 1875b].

DISTRIBUTION. Trans-Palaeartic-West Nearctic polyzonal range [Mikhailov, Fet, 1986; Mikhailov & Marusik, 1996; Tuneva, 2007].

HABITATS. Humid salt-marshes with *Salicornia europaea* and *Halocnemum strobilaceum*; sand dunes with *Leymus sabulosus* and *Artemisia*; steppes with *Artemisia* and *Centaurea*; fallow lands, shelter forest belt.

PHENOLOGY. ♂♀ — V; ♂♂ — IV, VII–VIII. Peak of adults' activity May. In Turkmenistan ♂♂ — V–VI; ♀♀ — IV–VI [Mikhailov, Fet, 1986], in Magadan Area ♂♂ — V–VII; ♀♀ — V–VIII [Mikhailov & Marusik, 1996] as in the Crimea.

Micaria bosmansii sp.n.

Figs 48–62.

RECORDS FROM THE CRIMEA. As *M. guttulata* (C.L. Koch, 1839) — misidentifications: Spassky, 1927; Charitonov, 1932; Mikhailov, 1997, 1999, 2000; Kovblyuk, 2004.

NOTE. The earlier record of *M. guttulata* from the Crimea was based on two males and two females collected by V.G. Pliginsky in Sevastopol and identified by S.A. Spassky [1927]. When S.A. Spassky examined the specimens from the Crimea, *M. bosmansii* sp.n. had not yet been described. Furthermore, the specimens of *M. guttulata* and *M. bosmansii* sp.n. are very similar in shape of tibial apophyses and epigynal structure. For these reasons, it is reasonable to conclude that the earlier records *M. guttulata* from the Crimea were based on misidentifications of *M. bosmansii* sp.n.

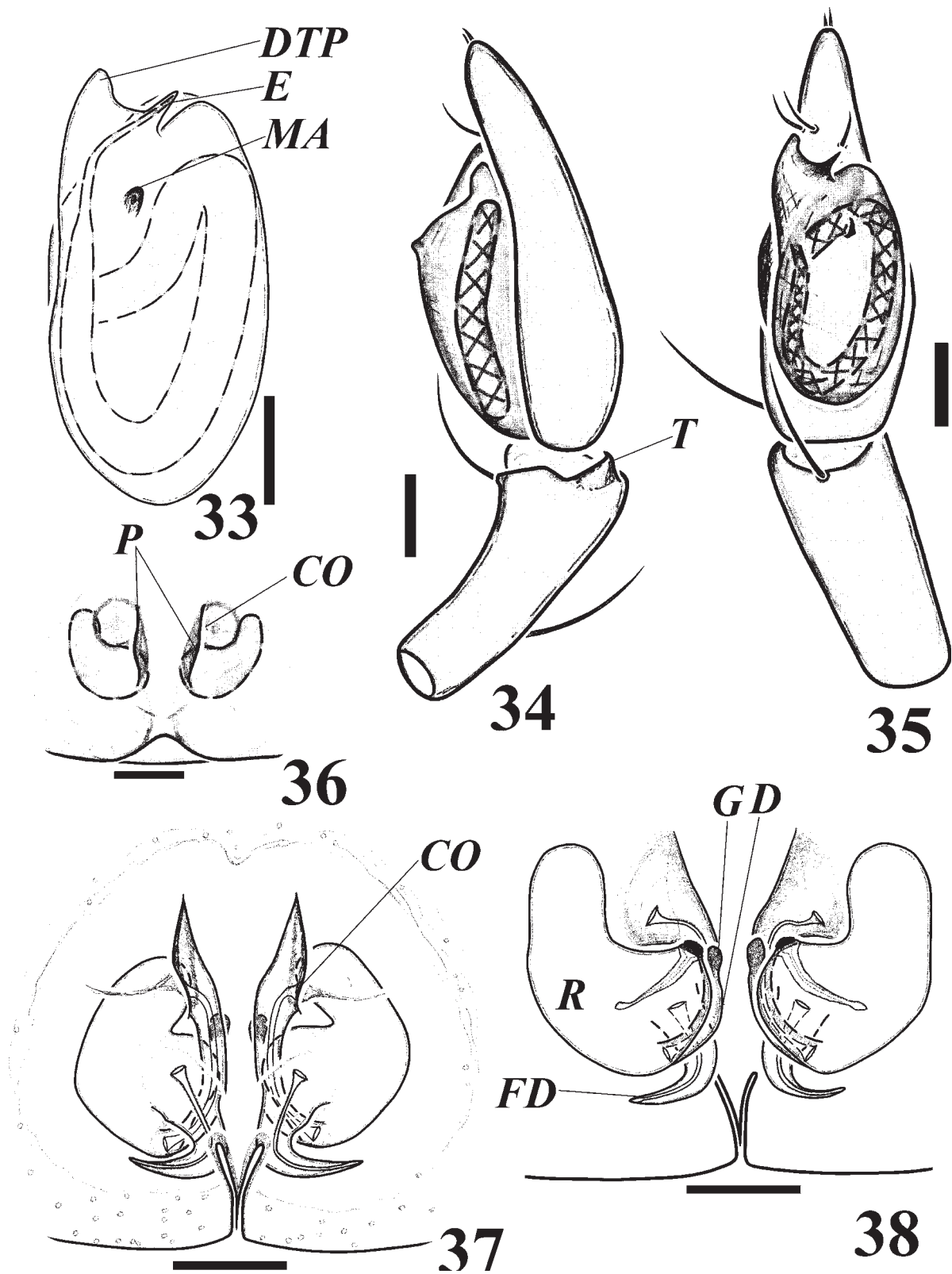
MATERIAL. UKRAINE, THE CRIMEA. Holotype: ♂ (ZMMU), Feodosiya Distr., Karadag Nature Reserve, Svyataya Mt., steppe, 23.04.2003. Paratypes: Sevastopol Distr.: 1 ♂ (EMZ), env. Rodnoe (= Uppa), 12–13.06.1999, O.V. Kukushkin. Simferopol Distr.: 1 ♂ (CRB-1834/21), env. Skvortsovo, meadow near canal, 6 pitfalls, 27.04.–9.05.2002. Feodosiya Distr.: 1 ♂ (TNU-1732/4), Karadag Nature Reserve, Svyataya Mt., steppe with *Rosa Paliurus*, 20.04.2003; 1 ♀ (ZMMU), Karadag Nature Reserve, with holotype, 23.04.2003; 1 ♀ (TNU-1740/5), Karadag Nature Reserve, Beregovoy Mt. Range, S slope, steppe, 24.04.2003; 1 ♀ (TNU-1749/8), Karadag Nature Reserve, Beregovoy Mt. Range, S slope, *Juniperus excelsa*, 26.04.2003. Yalta Distr.: 1 ♂ (TNU-1304/8), Yalta Mountain-Forest Nature Reserve, Yalta Distr., 1 km N of Nikita, fallow land, 10 pitfalls, 13–30.05.2000; 1 ♀ (TNU-2528/5), s.p., under stone, 10.03.2001.

COMPARATIVE MATERIAL. *M. guttulata* from GERMANY: 1 ♂, 1 ♀ (TNU), BAVARIA, near Dingolfing, NW of Mamming, nature reserve area "Rosenau", 345 m a.s.l., 12,58'E, 48,66'N, pitfalls, July–September 2006, leg. et det. Theo Blick.

DIAGNOSIS. *M. bosmansii* sp.n. is most similar to *M. belezma* Bosmans & Blick, 2000, from Algeria, and to *M. guttulata* with trans-Palaeartic range (general appearance of *M. guttulata*: male — Fig. 71; ♂ palp: Figs 63–67, 72; epigyne: Fig. 68; spermathecae: Figs 69–70, 73–74).

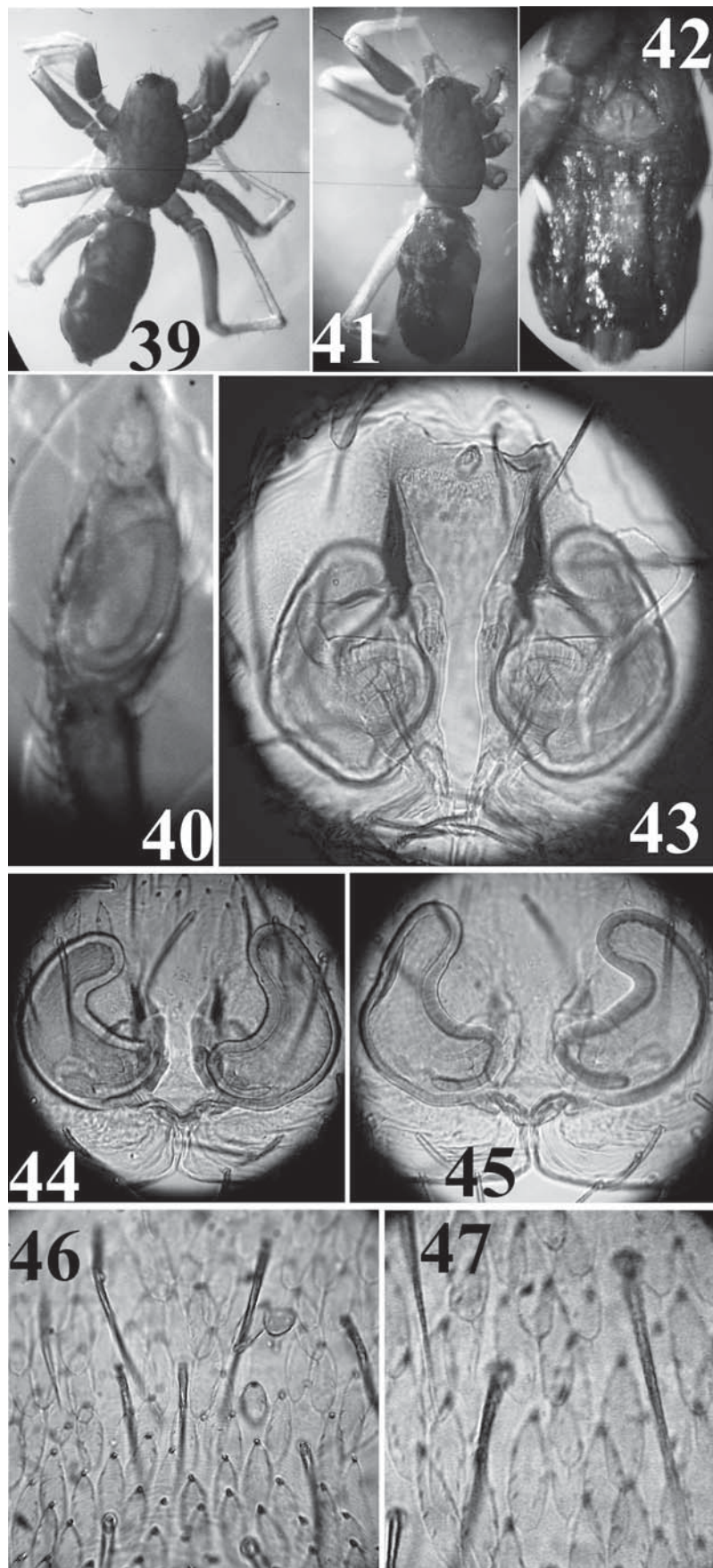
The male of *M. bosmansii* sp.n. differs from that of *M. belezma* by having a spirally curved embolus (Figs 48, 50–51) (in *M. belezma* embolus is curved but not spiral [Bosmans & Blick, 2000: Figs 22–23]). Also male *M. bosmansii* sp.n. differs from *M. belezma* and *M. guttulata* by having a tibial apophysis longer than the tibia (Figs 50–52) (in *M. belezma* [Bosmans & Blick, 2000: fig. 23] and *M. guttulata* (Figs 65–67) tibial apophysis is shorter than tibia). *M. bosmansii* sp.n. males also differ from those of *M. guttulata* by the shape of embolus and median apophysis (Figs 48–49, 63–64).

Females of *M. bosmansii* sp.n. and *M. guttulata* are not easily distinguished from one another, but the spermathecal ducts in *M. bosmansii* sp.n. are comparatively longer and thinner than are those in *M. guttulata*; spermathecae in *M. bosmansii* sp.n. are comparatively thinner than those in *M. guttulata* (Figs 55–56, 69–70). The female of *M. belezma* is unknown.



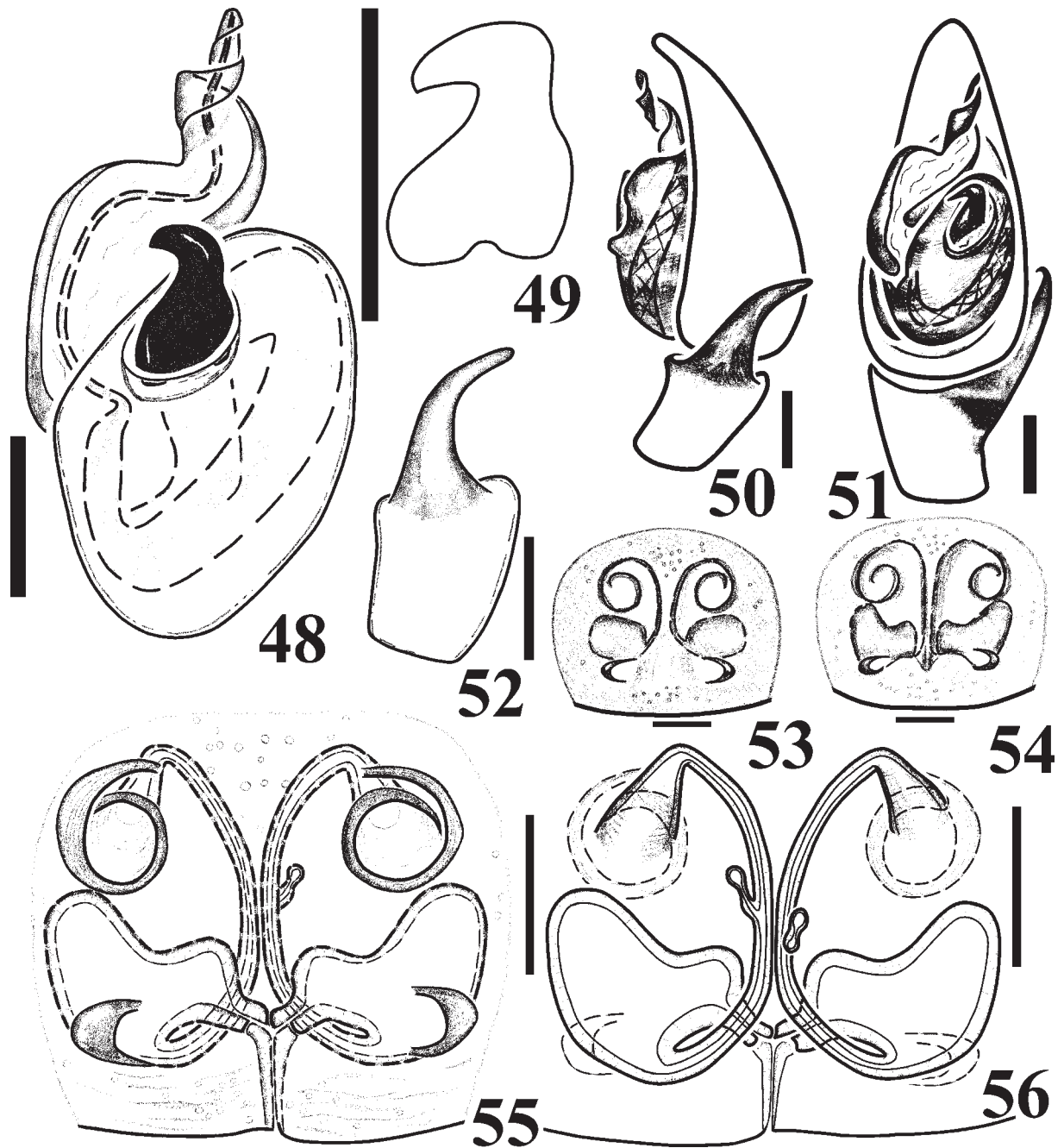
Figs 33–38. Copulatory organs of *Micaria rossica* from the Crimea: 33 — bulbus, ventral view, 34 — male palp, retrolateral view; 35 — male palp, ventral view; 36–37 — epigyne, ventral view; 38 — epigyne, dorsal view.

Рис. 33–38. Копулятивные органы *Micaria rossica* из Крыма: 33 — бульбус, вентрально, 34 — палпа самца, ретролатерально; 35 — палпа самца, вентрально; 36–37 — эпигина, вентрально; 38 — эпигина, дорсально.



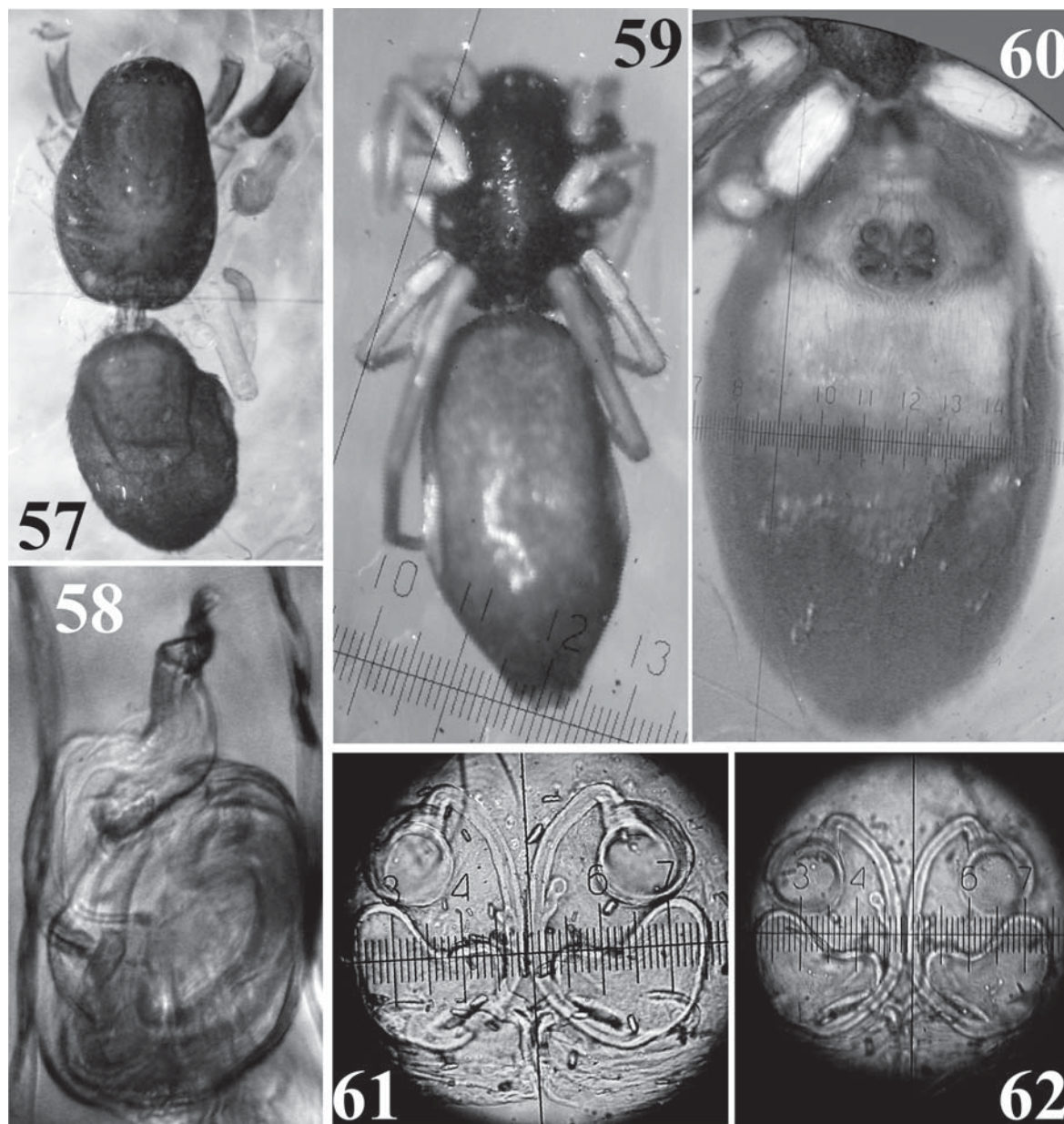
Figs 39–47. *Micaria rossica* from the Crimea (39–43) and Azerbaijan (44–47): 39 — male, general appearance; 40 — male palp, ventral view; 41 — female, general appearance; 42 — epigyne and abdomen, ventral view; 43–44 — epigyne, ventral view; 45 — epigyne, dorsal view; 46 — abdominal scales, ventral view; 47 — abdominal scales, dorsal view.

Рис. 39–47. *Micaria rossica* из Крыма (39–43) и Азербайджана (44–47): 39 — самец, габитус; 40 — пальпа самца, вентрально; 41 — самка, габитус; 42 — эпигина и брюшко, вентрально; 43–44 — эпигина, вентрально; 45 — эпигина, дорсально; 46 — чешуйки на брюшке, вентрально; 47 — чешуйки на брюшке, дорсально.



Figs 48–56. Copulatory organs of *Micaria bosmansii* sp.n.: 48 — bulbus, ventral view, 49 — median apophysis; 50 — male palp, retrolateral view (spines not showed); 51 — male palp, ventral view (spines not showed); 52 — tibia of male palp, retrolateral view; 53–55 — epigyne, ventral view; 56 — epigyne, dorsal view.

Рис. 48–56. Копулятивные органы *Micaria bosmansii* sp.n.: 48 — бульбус, вентрально, 49 — медиальный отросток бульбуса; 50 — палпы самца, ретролатерально (шипы не показаны); 51 — палпы самца, вентрально (шипы не показаны); 52 — голень пальпы самца, ретролатерально; 53–55 — эпигина, вентрально; 56 — эпигина, дорсально.



Figs 57–62. Details of structure of *Micaria bosmansii* sp.n.: 57 — male, general appearance; 58 — bulbus, ventral view; 59 — female, general appearance; 60 — epigyne and abdomen, ventral view; 61 — epigyne, ventral view; 62 — epigyne, dorsal view.

Рис. 57–62. Детали строения *Micaria bosmansii* sp.n.: 57 — самец, габитус; 58 — бульбус, вентрально; 59 — самка, габитус; 60 — эпигина и брюшко, вентрально; 61 — эпигина, вентрально; 62 — эпигина, дорсально.

DESCRIPTION. Measurements (♂ / ♀): total length 2.5 / 3.3; carapace 1.3 / 1.4 long, 0.8 / 0.9 wide. Length of leg segments (male / female):

	femur	patella	tibia	metatarsus	tarsus
I	0.8/0.8	0.4/0.4	0.5/0.5	0.5/0.5	0.5/0.5
II	0.6/0.7	0.3/0.3	0.4/0.5	0.4/0.5	0.4/0.4
III	0.6/0.6	0.3/0.3	0.4/0.4	0.5/0.4	0.4/0.4
IV	0.9/0.9	0.4/0.4	0.7/0.8	0.7/0.8	0.5/0.5

Male leg spination. Femur: I — d 1, pl 1; II — d 1; III — d 1; IV — d 1. Tibia: III — rl 1(a), v 1-2(a); IV — v 1-1-2(a). Metatarsus: III — pl 1(a), rl 1(a), v 3(a); IV — pl 1(a), rl 1(a), v 1-1-2(a).

Female leg spination. Femur: I — d 1, pl 1; II — d 1; III — d 1; IV — d 1. Tibia: III — pl 1(a), v 1-2(a); IV — v 1-1-2(a). Metatarsus: III — pl 1(a), rl 1(a), v 1-3(a); IV — pl 1(a), rl 1(a), v 1-2(a).

Carapace with 4 white marks, sternum, and palps brown. Legs brown. Abdomen light grey. General appearance: male — Fig. 57; female — Figs 59–60.

♂ palp: Figs 48–51, 58; epigyne: Figs 53–54, 60; spermathecae: Figs 55–56, 61–62. Cymbium more than 2 times longer than tibia. Embolus and borders of copulatory openings spirally curved. Median apophysis robust and long. Tibial apophysis longer than tibia. Anterior epigynal margin absent. Epigynal pockets well developed, C-shaped.

VARIATION. Male carapace lengths (n=3) vary from 1.3 to 1.4; width — from 0.9 to 1.0; female carapace lengths (n=4) vary from 1.3 to 1.4; width — from 0.8 to 0.9.

TYPE LOCALITY: Crimea.

DISTRIBUTION. Ukraine (Crimea).

HABITATS. Under stones in meadows, steppes with *Rosa* or *Paliurus*, fallow lands, *Juniperus excelsa* forest.

PHENOLOGY. ♂♀ — IV; ♂♂ — V–VI; ♀♀ — III. Peak of activity adult specimens — in April.

ETYMOLOGY. The species *M. bosmansii* sp.n. named in honour of Robert Bosmans (Gent, Belgium), who has made great contributions to the study of *Micaria*, and who has helped us considerably in study of Crimean *Micaria*.

Micaria blicki sp.n.

Figs 75–85, 87–90.

RECORDS FROM THE CRIMEA: As *M. pulicaria* (Sundevall, 1831) — misidentifications: Thorell, 1875a; Mikhailov, 1987, 1997, 1998; Kovblyuk, 2001, 2004.

NOTE. The earlier record of *M. pulicaria* from the Crimea was based on unknown material (males or females?) collected by A. Nordmann and identified by T. Thorell [1875a]. Furthermore, the specimens of *M. pulicaria* and *M. blicki* sp.n. are very similar. For these reasons, it is reasonable to conclude that the earlier records *M. pulicaria* from the Crimea were based on misidentifications of *M. blicki* sp.n.

MATERIAL. UKRAINE, THE CRIMEA. Holotype: ♂ (ZMMU), c. 1.5 km NE of Fersmanovo, Kesslers' forest, watershed (350–400 m a.s.l.), grassland, *Brachypodium pinnatum*, *Elytrigia maeotica*, *Filipendula vulgaris*, 10 pitfalls, 23.06.–13.07.2000. Paratypes: Feodosiya Distr.: 1 ♀ (TNU-2380/4), Karadag Nature Reserve, Kok-Kaya Mt. Range, 13.05.2007, O.V. Kukushkin. Simferopol Distr.: 1 ♂, 1 ♀ (ZMMU), c. 1.5 km NE of Fersmanovo, Kesslers' forest, watershed (350–400 m a.s.l.), forest edge, pitfalls, 23.06.–16.07.2000; 1 ♂, 1 ♀ (ZMMU), c. 1.5 km NE of Fersmanovo, Kesslers' forest, watershed (350–400 m a.s.l.), grassland, pitfalls, 27.05.–6.06.2000; 1 ♀ (TNU-x/4), s.p., pitfalls, 13–26.07.2000; 1 ♂ (TNU-1041/8), Crimean State Nature Reserve, env. Sosnovy Kordon, 1.07.2001. Yalta Distr.: 9 ♂♂, 3 ♀♀ (TNU-1456/2, 1460/7, 1464/8, 1467/12, 1469/9, 1470/4, 1475/3), Crimean State Nature Reserve, Nikitskaya Yaila, ~ 1200 m a.s.l., meadow, *Zerna cappadocica*, pitfalls, 9.03.–17.10.2001; 1 ♂, 2 ♀♀ (TNU-1553/5, 1554/4, 1555/3), s.p., forest, *Pinus pallasiana*, *Fagus*, *Populus*, *Acer*, pitfalls, 12.06.–16.07.2001; 7 ♂♂, 3 ♀♀ (TNU-1440/2, 1444/3, 1445/10, 1447/4, 1454/2), s.p., forest, *Pinus kochiana*, pitfalls, 14.05.–27.10.2001; 2 ♂♂, 1 ♀ (ZMMU), s.p., pitfalls, 12–23.06.2001.

COMPARATIVE MATERIAL. *M. pulicaria* (Sundevall, 1831) from GERMANY: 2 ♂♂, 2 ♀♀ (TNU), Bavaria, near Feuchtwangen, north of Kaierberg, south exposed fores border “Muehlholz”, 465 m a.s.l., 10.423°East, 49.176°North, pitfalls, 1989–1991, leg. et det. T. Blick; 1 ♀ (TNU), Martinfeld/Eichsfeld, roadside, 51.2829°N, 10.1846°E, 1.08.1999, leg. et det. S. Otto; 2 ♂♂ (TNU), Gerbrunn, 49.7750°N, 9.9936°E, below shrubs, 29.04.2001, leg. et det. S. Otto.

DIAGNOSIS. *M. blicki* sp.n. is most similar to the Holarctic *M. pulicaria* (general appearance *M. pulicaria*: male — Fig. 102; female — Fig. 104; ♂ palp: Figs 86, 91–95, 103; epigyne: Figs 96, 99, 105; spermathecae: Figs 97–98, 100–101, 106–109). Male *M. blicki* sp.n. differs from *M. pulicaria* by tip of median apophysis which is slightly more apical than is the tip of the embolus (Figs 75, 79) (in *M. pulicaria* tip of embolus is situated more apically than is the tip of median apophysis (Figs 91, 95); by shape of median apophysis (see Figs 76 and 92 respectively); size of male palpal tibia (Figs 85 and 86 respectively). Female *M. blicki* sp.n. is distinguished from that of *M. pulicaria* by V-shaped spermathecae (Figs 80–82, 88–90) (in *M. pulicaria* sper-

mathecae are L-shaped — see Figs 96–101, 106–109) and by the longer spermathecal glands.

DESCRIPTION. Measurements (♂ / ♀): total length 3.9 / 3.4; carapace 1.7 / 1.5 long, 1.2 / 1.0 wide. Length of leg segments (male / female):

	femur	patella	tibia	metatarsus	tarsus
I	1.4/1.0	0.7/0.5	1.1/0.7	0.9/0.6	0.8/0.6
II	1.2/1.0	0.6/0.5	0.9/0.7	0.8/0.6	0.7/0.6
III	1.0/0.8	0.5/0.4	0.7/0.6	0.8/0.7	0.6/0.5
IV	1.4/1.3	0.6/0.6	1.2/1.0	1.3/1.1	0.8/0.7

Male leg spination. Femur: I — d 1, pl 1; II — d 1, pl 1; III — d 1-1, pl 1, rl 1; IV — d 1-1. Tibia: III — pl 1-1, rl 1, v 2-1-2(a); IV — pl 1-1, rl 1, v 2-2. Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-3(a); IV — pl 1-1(a), rl 1-1(a), v 2-2-2(a).

Female leg spination. Femur: I — d 1, pl 1; II — d 1; III — d 1-1, pl 1; IV — d 1. Tibia: III — pl 1-1, v 1-2-2(a); IV — pl 1, rl 1, v 1-1-2(a). Metatarsus: III — pl 1-1(a), rl 1-1(a), v 2-2-3(a); IV — pl 1, rl 1, v 2-2-3(a).

Carapace, sternum, palps and legs brown. Abdomen grey. General appearance: male — Fig. 83; female — Fig. 87.

♂ palp: Figs 75–79, 84–85; epigyne: Figs 80, 88; spermathecae: Figs 81–82, 89–90. Cymbium more than 2 times longer than tibia. Embolus short. Median apophysis more than 2 times longer than the embolus. Tip of median apophysis situated more apically than is the tip of the embolus. Tibial apophysis small but pointed. Anterior epigynal margins M-shaped. Epigynal pockets well developed. Spermathecal ducts C-shaped.

VARIATION. Male carapace lengths (n=23) vary from 1.2 to 2.0; width — from 0.9 to 1.3; female carapace lengths (n=13) vary from 1.0 to 1.7; width — from 0.8 to 1.2.

TYPE LOCALITY. Crimea.

DISTRIBUTION. Ukraine (Crimea).

HABITATS. Meadows with *Zerna cappadocica*; grassland with *Brachypodium pinnatum*, *Elytrigia maeotica* and *Filipendula vulgaris*; forest edges with *Quercus pubescens*, *Cornus mas*, *Swida australis* and *Prunus spinosa*; forests with *Pinus pallasiana*, *P. kochiana*, *Fagus*, *Populus*, *Acer*.

PHENOLOGY. ♂♀ — V–VII; ♂♂ — III–IV, X; ♀♀ — VIII. Peak of activity adult specimens — in July.

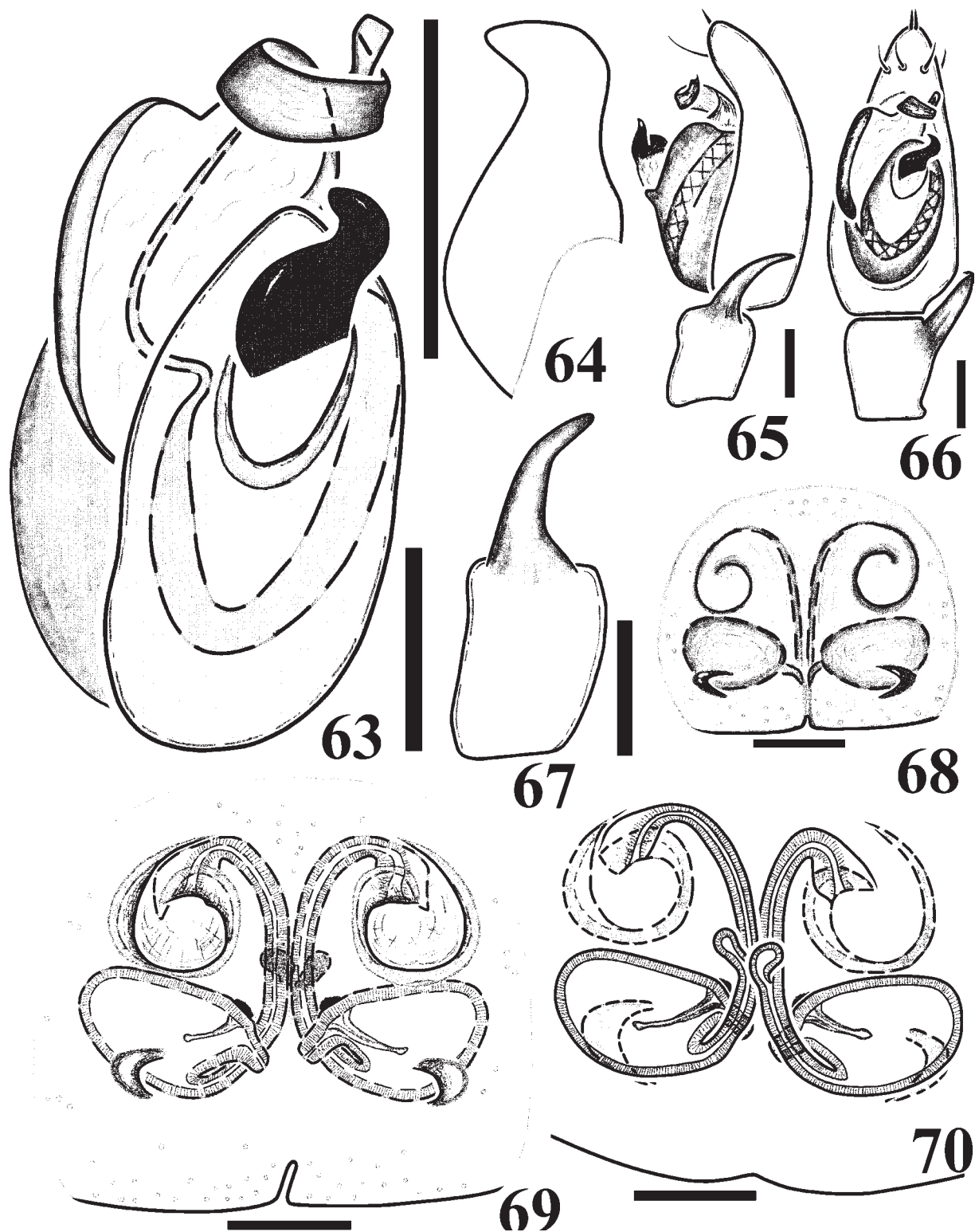
ETYMOLOGY. The species *M. blicki* sp.n. named in honour of Theo Blick (Hummeltal, Germany), who has made great contribution to the study of *Micaria*, and who has donated some important comparative material for our research.

Phenology

Most of specimens were collected by pitfall traps, which were regularly checked for one year or longer. Thus, it was possible to analyze the seasonal dynamics of the activity of adults. All Crimean *Micaria* species have one peak of adult activity in the year only. The maximum number of individuals and peak of activity for the adults of *M. bosmansii* sp.n. occurred in April; for *M. dives* and *M. rossica* in May; for *M. albovitata* in June; for *M. coarctata* and *M. blicki* sp.n. in July, respectively. It is most likely that all species studied in Crimea have only one generation per year.

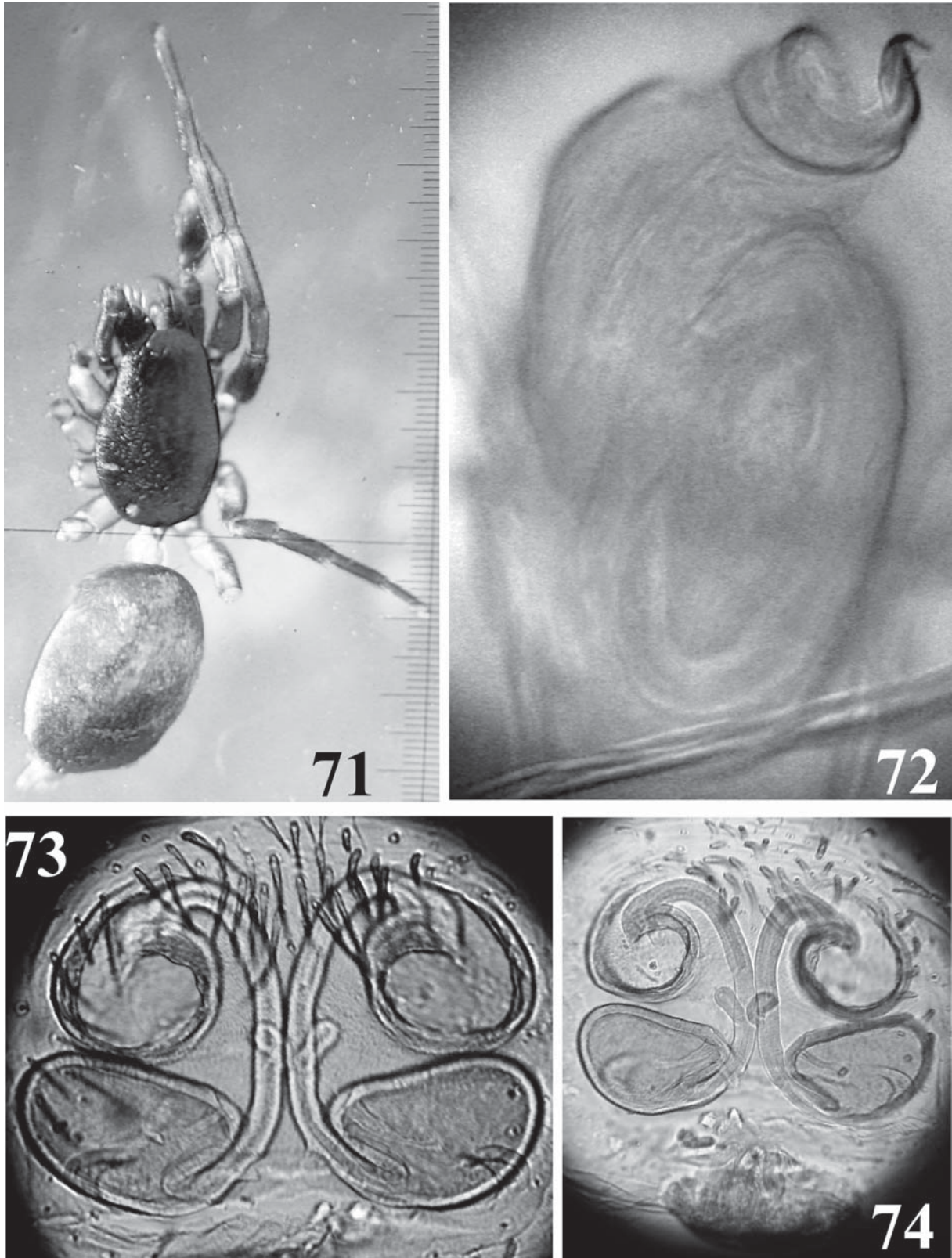
Distribution in the Crimea

Traditionally, seven natural (landscape, altitudinal, physico-geographical) zones are described from the Crimean pen-



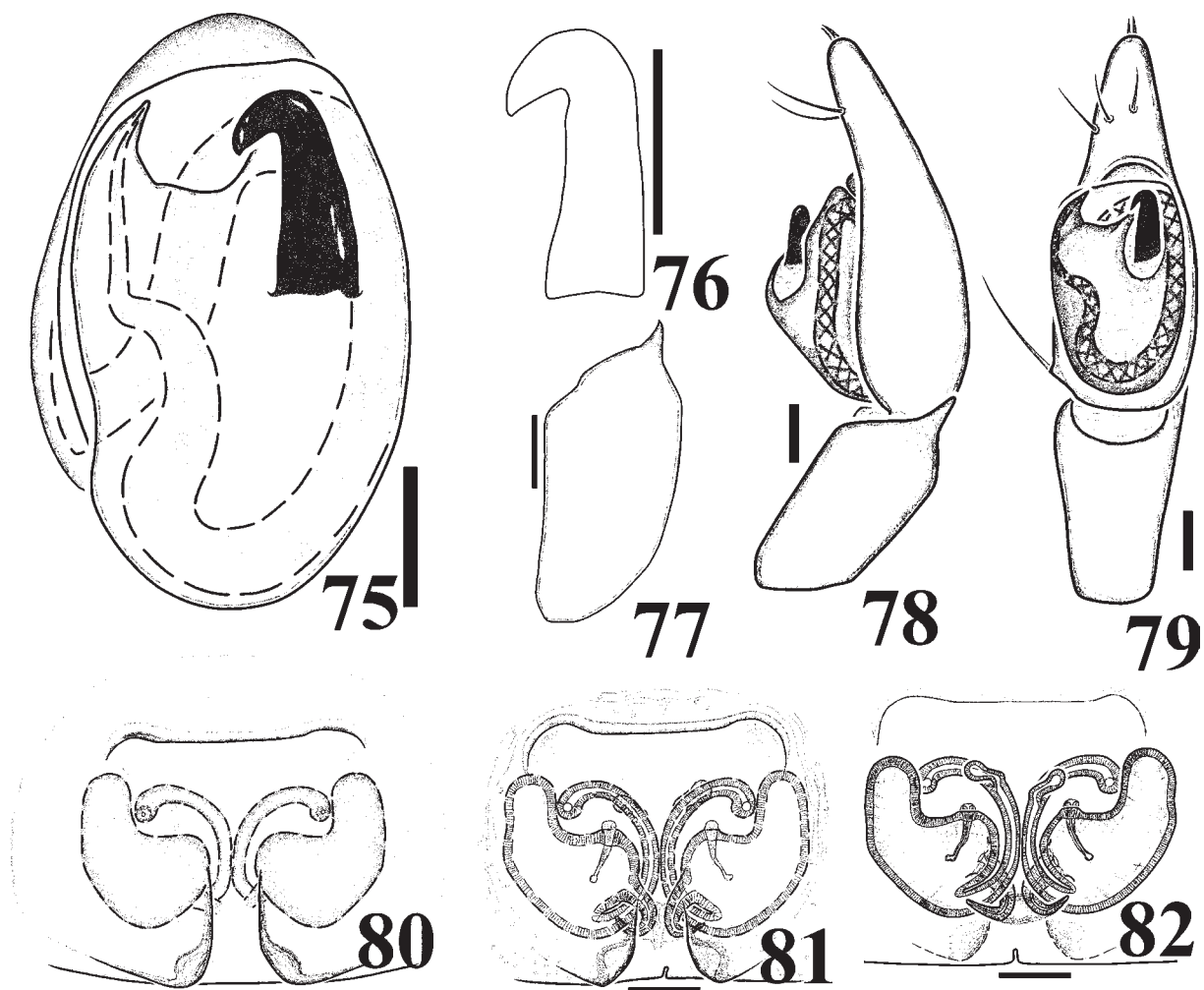
Figs 63–70. Copulatory organs of *Micaria guttulata* from Germany: 63 — bulbus, ventral view, 64 — median apophysis; 65 — male palp, retrolateral view; 66 — male palp, ventral view; 67 — tibia of male palp, retrolateral view; 68–69 — epigyne, ventral view; 70 — epigyne, dorsal view.

Рис. 63–70. Копулятивные органы *Micaria guttulata* из Германии: 63 — бульбус, вентрально, 64 — медиальный отросток бульбуса; 65 — пальпа самца, ретролатерально; 66 — пальпа самца, вентрально; 67 — голень пальпы самца, ретролатерально; 68–69 — эпигина, вентрально; 70 — эпигина, дорсально.



Figs 71–74. *Micaria guttulata* from Germany: 71 — male, general appearance; 72 — bulbus, ventral view; 73 — epigyne, ventral view; 74 — epigyne, dorsal view.

Рис. 71–74. Детали строения *Micaria guttulata* из Германии: 71 — самец, габитус; 72 — бульбус, вентрально; 73 — эпигина, вентрально; 74 — эпигина, дорсально.



Figs 75–82. Copulatory organs of *Micaria blicki* sp.n.: 75 — bulbus, ventral view, 76 — median apophysis; 77 — tibia of male palp, retrolateral view; 78 — male palp, retrolateral view; 79 — male palp, ventral view; 80–81 — epigyne, ventral view; 82 — epigyne, dorsal view.

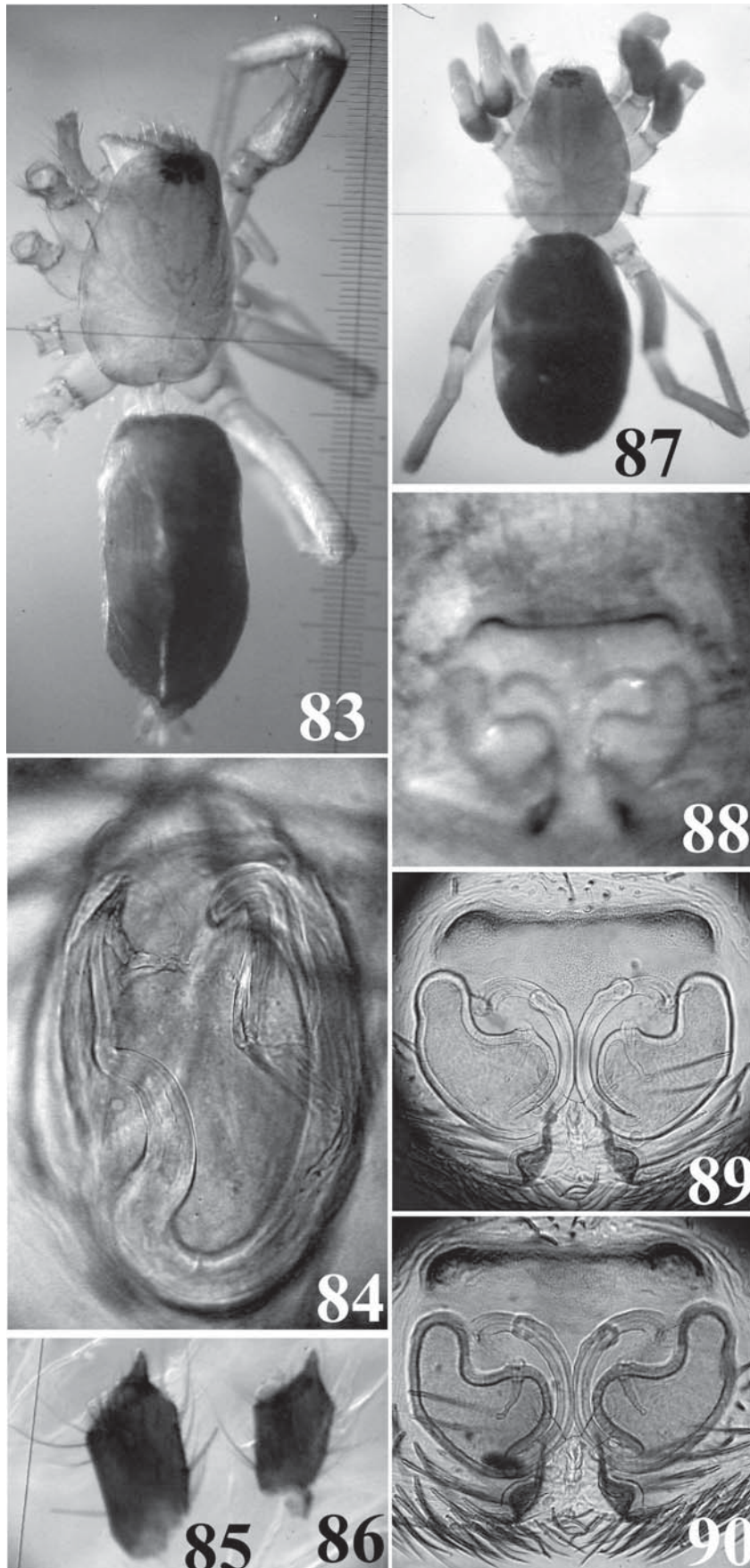
Рис. 75–82. Копулятивные органы *Micaria blicki* sp.n.: 75 — бульбус, вентрально, 76 — медиальный отросток бульбуса; 77 — голень пальпы самца, ретролатерально; 78 — пальпа самца, ретролатерально; 79 — пальпа самца, вентрально; 80–81 — эпигина, вентрально; 82 — эпигина, дорсально.

insula [Biodiversity..., 1999]. All of them were explored with regards to the *Micaria* fauna. Results of spatial distribution of *Micaria* species in Crimea are given in Table 1. The maximum species diversity of *Micaria* was observed in steppe zone (4 species). In submontane forest-steppe and in mountain meadows and steppe 3 species were recorded; in semi-desert steppe and saline lands, forests of Crimean Mts and sub-mediterranean park-lands of south Crimea only 2 species were found. *M. bosmansii* sp.n. was found in steppe, forest-steppe, forests of the southern slope of Crimean Mts and sub-mediterranean park-lands of south Crimea; *M. blicki* sp.n. in forest-steppe, forests of the northern slope and mountain meadows and steppes of Crimean Mtns.

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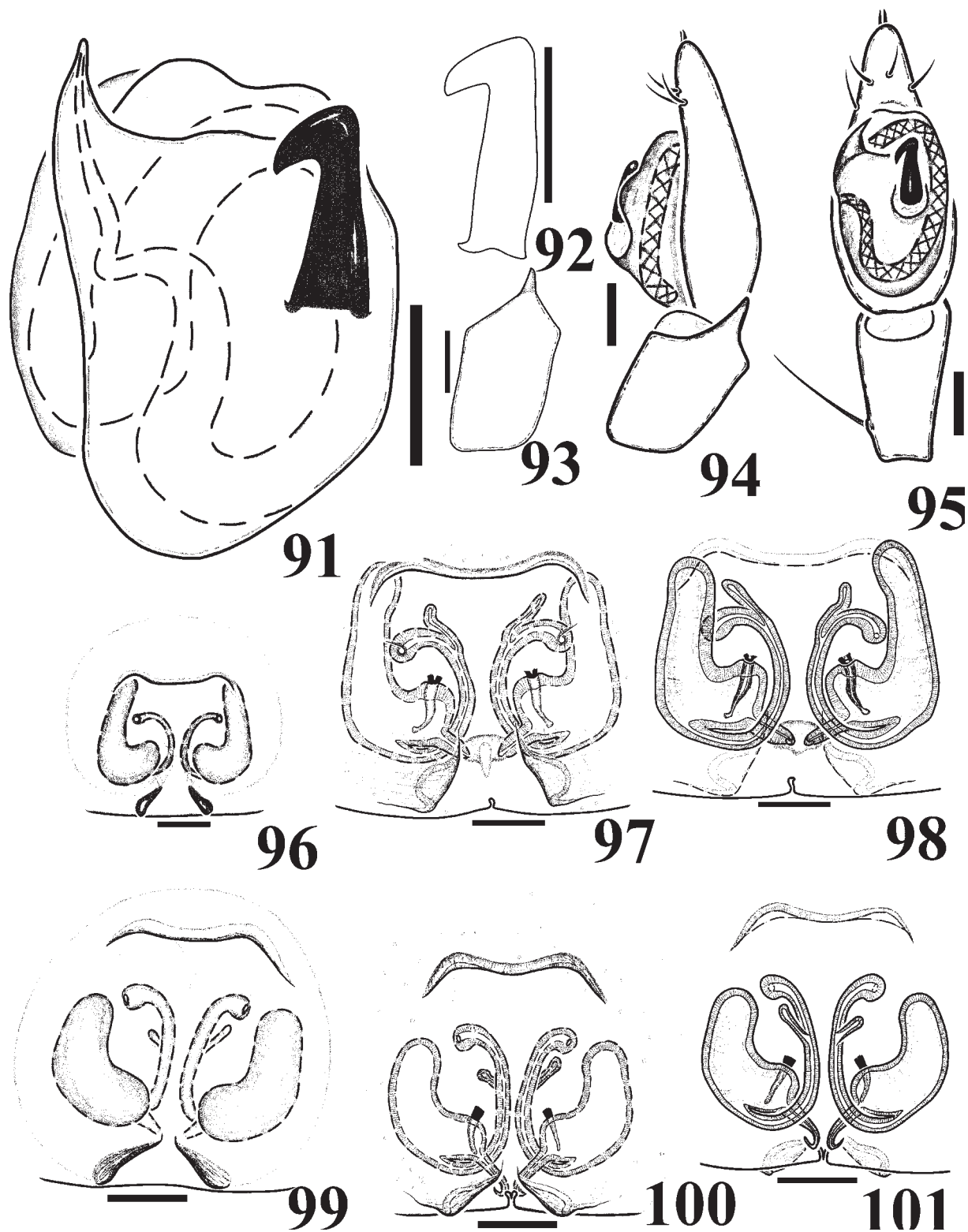
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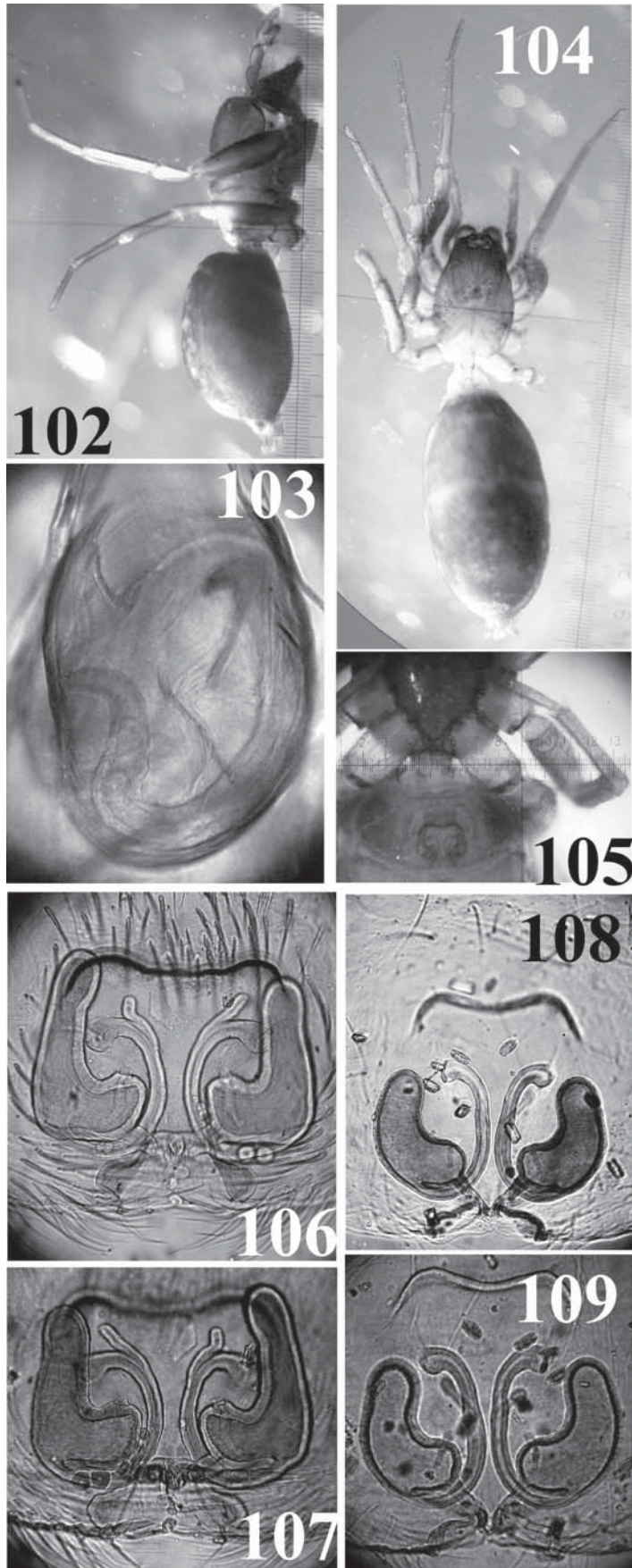
Figs 83–90. *Micaria blicki* sp.n. (83–85, 87–90) and *M. pulicaria* from Germany (86): 83 — male, general appearance; 84 — bulbus, ventral view; 85–86 — tibiae of male palps, retrolateral view; 87 — female, general appearance; 88–89 — epigyne, ventral view; 90 — epigyne, dorsal view.

Рис. 83–90. Детали строения *Micaria blicki* sp.n. (83–85, 87–90) и *M. pulicaria* из Германии (86): 83 — самец, габитус; 84 — бульбус, вентрально; 85–86 — голени пальп самцов, ретролатерально; 87 — самка, габитус; 88–89 — эпигина, вентрально; 90 — эпигина, дорсально.



Figs 91–101. Copulatory organs of *Micaria pulicaria* from Germany: 91 — bulbus, ventral view; 92 — median apophysis; 93 — tibia of male palp, retrolateral view; 94 — male palp, retrolateral view; 95 — male palp, ventral view; 96–97, 99–100 — epigyne, ventral view; 98, 101 — epigyne, dorsal view.

Рис. 91–101. Копулятивные органы *Micaria pulicaria* из Германии: 91 — бульбус, вентрально; 92 — медиальный отросток бульбуса; 93 — голень пальпы самца, ретролатерально; 94 — пальпа самца, ретролатерально; 95 — пальпа самца, вентрально; 96–97, 99–100 — эпигина, вентрально; 98, 101 — эпигина, дорсально.



Figs 102–109. *Micaria pulicaria* from Germany: 102 — male, general appearance; 103 — bulbus, ventral view; 104 — female, general appearance; 105–106, 108 — epigyne, ventral view; 107, 109 — epigyne, dorsal view.

Рис. 102–109. Детали строения *Micaria pulicaria* из Германии: 102 — самец, габитус; 103 — бульбус, вентрально; 104 — самка, габитус; 105–106, 108 — эпигина, вентрально; 107, 109 — эпигина, дорсально.

Table 1. Spatial distribution of the *Micaria* species in the Crimea.
Таблица 1. Ландшафтное распределение пауков рода *Micaria* в Крыму.

Landscape zones	<i>Micaria</i> species					
	<i>albovittata</i>	<i>coarctata</i>	<i>dives</i>	<i>rossica</i>	<i>bosmansii</i> sp.n.	<i>blickii</i> sp.n.
Semi-desert steppe and saline lands	–	+	–	+	–	–
Genuine steppe	+	–	+	+	+	–
Submontane forest-steppe	+	–	–	–	+	+
Forests of the northern slope	+	–	–	–	–	+
Mountain meadows and yaila steppe	+	–	+	–	–	+
Forests of the southern slope	+	–	–	–	+	–
Sub-Mediterranean vegetation of the southern coast	–	+	–	–	+	–

References

- Azheganova N.S. 1968. [A brief key to spiders (Aranei) of the forest and forest-steppe zone of the USSR]. Leningrad: Nauka. 149 pp. [in Russian].
- Biodiversity Support Program. Priority-setting in Conservation: A new approach for Crimea. 1999. Results of the Conservation Needs Assessment in Crimea. Washington: BSP. 257 pp.
- Bosmans R., Blick T. 2000. Contribution to the knowledge of the genus *Micaria* in the West-palaearctic region, with description of the new genus *Arboricaria* and three new species (Araneae, Gnaphosidae) // Mem. Soc. Entomol. Ital. T.78. N.2. P. 443–476.
- Charitonov D.E. 1932. Katalog der russischen Spinnen. AN SSSR. Leningrad: Izdatelstvo AN SSSR. 206 pp.
- Chatzaki M., Thaler K., Mylonas M. 2002. Ground spiders (Gnaphosidae; Araneae) of Crete (Greece). Taxonomy and distribution. I. // Revue Suisse de Zoologie. T.109. No.3. P.559–601.
- Danilov S.N. 1993. Spider of the genus *Micaria* Westring (Aranei Gnaphosidae) from Siberia // Ann. Naturhist. Mus. Wien. Bd.94/95B. P.427–431.
- Danilov S.N. 1996. New data on the spider genus *Micaria* Westring, 1851 in Asia (Aranei Gnaphosidae) // Arthropoda Selecta. Vol.5. No.3/4. P.113–116.
- Gorodkov K.B. 1984. [Range types of insect of tundra and forest zones of the European part of the USSR] // Gorodkov K.V. ed.). Provisional atlas of the insects of the European Part of the USSR. Atlas, Maps 179–221. Leningrad: Nauka. P. 3–20 [in Russian].
- Harvey P.R., Nellist D.R., Tefler M.G. 2002. Provisional Atlas of British spiders (Arachnida, Araneae). Vol. 1–2 / Huntington: Biological Records Centre. 406 pp.
- Heimer S., Nentwig W. 1991. Spinnen Mitteleuropas: ein Bestimmungsbuch. Berlin; Hamburg: Parey. 543 pp.
- Kovblyuk N.M. 2001. [About the necessity of forest edges examining during the study of local fauna of spiders (Arachnida, Aranei)] // Uchenye zapiski TNU. Series: Biology. Vol.14. No.1. P.94–98 [in Russian].
- Kovblyuk N.M. 2004. [Catalogue of the spiders (Arachnida: Aranei) of the Crimea, South Ukraine] // Points on the development of the Crimea. Analytical, scientific and practical collected articles open to discussion. 15-th issue: Problems of the ecology in the Crimea. Inventory animals and plants species in the Crimea. Simferopol: Tavriya-Plus. P.211–262 [in Russian].
- Levy G. 2002. Spiders of the genera *Micaria* and *Aphantaulax* (Araneae, Gnaphosidae) from Israel // Israel Journal of Zoology. Vol.48. P.11–134.
- Mikhailov K.G. 1987. Contribution to the spider fauna of the genus *Micaria* Westring, 1851 of the USSR // Spixiana. T.10. No.3. P.219–334.
- Mikhailov K.G. 1991. On the identity and distribution of *Micaria romana* (Aranei, Gnaphosidae) // Vestnik zoologii. No. 1. P. 77–79. [in Russian].
- Mikhailov K.G. 1997. Catalogue of the spiders of the territories of the former Soviet Union (Arachnida, Aranei). Moscow: Zoological Museum of the Moscow State University. 416 pp.
- Mikhailov K.G. 1998. Catalogue of the spiders (Arachnida, Aranei) of the territories of the former Soviet Union. Addendum 1. Moscow: KMK Scientific Press Ltd. 50 pp.
- Mikhailov K.G., Fet V.Ya. 1986. [Contribution to the spider fauna (Aranei) of Turkmenia. I. Families Anyphaenidae, Sparassidae, Zoridae, Clubionidae, Micariidae, Oxyopidae] // Sbornik Trudov Zoologicheskogo Muzeya. T.24. P.168–186. [in Russian].
- Mikhailov K.G., Marusik Yu.M. 1996. Spiders of the north-east of the USSR. Families Clubionidae, Zoridae, Liocranidae and Gnaphosidae (genus *Micaria*) (Arachnida, Aranei). In Entomological Studies in the North-East of the USSR. USSR Academy of Sciences, Institute of Biological Problems of the North, Vladivostok. P.90–113. [in Russian].
- Miller F. 1967. Studien über die kopulationsorgane der spinnengattung *Zelotes*, *Micaria*, *Robertus* und *Dipoena* nebst beschreibung einiger neuen oder unvollkommen bekannten spinnenarten // Acta scientiarum naturalium Academiae bohemoslovacae — Brno. 1. P.251–298.
- Oliger T.I. 1983. [New species of spider families Pholcidae, Clubionidae, Agelenidae from the Lazovsky State Reserve] // Zoological journal. No.4. P.627–629. [in Russian].
- Platnick N.I. 2008. The World Spider Catalog. Version 8.5. (Fam. Gnaphosidae Pocock, 1898). American Museum of Natural History. Online et. <http://research.amnh.org/entomology/spiders/catalog/inex.html>
- Platnick N.I., Shadab M.U. 1988. A revision of the American spiders of the genus *Micaria* (Araneae, Gnaphosidae) // American Museum Novitates. N.2916. P.1–64.
- Wunderlich J. 1980. Revision der europäischen Arten der Gattung *Micaria* Westring 1851, mit Anmerkungen zu den übrigen paläarktischen Arten (Arachnida: Araneida: Gnaphosidae) // Zoologische Beiträge. T. 25. No.2. P.233–341.
- Spassky S.A. 1927. [Materials to the spider fauna of the Tauric Gouvernement] // Izvestiya Donskogo Instituta Sel'skogo Khozaystva i Melioratsii. Vol.7. P.66–80. [in Russian].
- Thorell T. 1875a. Verzeichniss Sudrussischer Spinnen // Horae Societatis Entomologicae Rossicae. T.11. No.2. P.39–122.
- Thorell T. 1875b. Descriptions of several European and North-African spiders // Kungl. Svenska Vetenskaps-Akademiens Handlingar. Bd.13. No.5. 204 pp.
- Tuneva T.K. 2007. Review of the family Gnaphosidae in the Ural fauna (Aranei), 5. Genera *Micaria* Westring, 1851 and *Arboricaria* Bosmans, 2000 // Arthropoda Selecta. Vol.15. No.3. P.229–250.
- Tuneva T.K., Esysunin S.L. 2002. Review of the family Gnaphosidae in the fauna of Urals (Aranei), 3. New species and new records, chiefly from the South Urals // Arthropoda Selecta. Vol.11. No.3. P.223–234.