

A NEW SPECIES OF THE GENUS *KAMPIMODROMUS* (PARASITIFORMES, PHYTOSEIIDAE) FROM CRIMEA

НОВЫЙ ВИД КЛЕЩЕЙ РОДА *KAMPIMODROMUS* (PARASITIFORMES, PHYTOSEIIDAE) ИЗ КРЫМА

L. A. Kolodochka

Л. А. Колодочка

Institute of Zoology, National Academy of Science of Ukraine, Bogdan Khmelnytsky str. 15, 01601 Kiev-30, GSP, Ukraine

Институт зоологии им. И.И. Шмальгаузена Национальной Академии Наук Украины, ул. Богдана Хмельницкого, 15, 01601 Киев-30, ГСП, Украина

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ABSTRACT

A new species of phytoseiid mites *Kampimodromus karadaghensis* Kolodochka, **sp.n.** (Parasitiformes, Phytoseiidae) from Karadag Natural Reservation (South-East Crimea, Ukraine) is described. It is closely related to *K. aberrans* (Oudemans, 1930) and *K. corylosus* Kolodochka, 2003. A description, drawings, measurements and diagnosis of the species are given.

РЕЗЮМЕ

Описан новый вид клещей-фитосейид *Kampimodromus karadaghensis* Kolodochka, **sp.n.** (Parasitiformes, Phytoseiidae) с растений Карадагского природного заповедника (Восточный Крым). Новый вид сходен с *K. aberrans* (Oudemans, 1930), от которого легко отличается увеличенным числом дорсальных соленостомов (5, а не 4 пары за счет наличия пары *is*), заметно более длинными дорсальными щетинками D3–D5, AL4, ML, PL1, PL3, PM3 и PV самки; иной формой сперматодактиля самца и другими признаками. Типовой материал хранится в Институте зоологии им. И.И. Шмальгаузена Национальной Академии Наук Украины, г. Киев.

INTRODUCTION

Phytoseiid mites are well known predators of many phytophagous mites and small insects. Phytoseiids in Ukraine were studied by several authors but this work is still incomplete. I found a new species belonging to the genus *Kampimodromus* from different plants in Karadag Natural Reservation (South-East Crimea, Ukraine). A description, drawings and measurements of *Kampimodromus karadaghensis* sp.n. are given below. The setal nomenclature follows that of Kolodochka [1998].

The measurements are given in micrometers. Type material is deposited to Institute of Zoology, National Academy of Sciences of Ukraine (IZNASU), Kiev.

Kampimodromus karadaghensis Kolodochka, sp.n.

Description of female (holotype). Dorsal shield (Fig. 1, 1) slightly sclerotized, smooth (except for slightly striated region of dorsal setae D5), with 5 pairs of solenostomes (*it, iv, il, is, ic*) and 16 pairs of setae. Dorsal setae sharp. Setae D1, AM1, AL1, AL3, AL4, PL1, PM2, PM3, AS, PS serrate, other setae smooth (in holotype one seta from D5 pair has one notch; in paratypes-females in one seta from D2–D5, ML, PL3 pairs occasionally have 1–2 notches). Dorsal setae AL4 and PL1 longer than others. Setae D1 situated close to each other. Setae D3 longer than distance between their bases. Seta AM1 slightly longer than distance between its base and base of seta AL1. Seta AL1 longer than distance between its base and base of seta AL2. Sternal shield (Fig. 1, 4) smooth, with 2 pairs of solenostomes and 3 pairs of setae (St1–St3) (Fig. 1, 4). Ventrianal shield long, smooth (weakly striated in circumanal part), narrow, vase shape in form. Three pairs of preanal setae (PrA1, PrA2, and V2) inserted in semi-longitudinal rows. Anal pores distinct, punctate, posterior to level of setae PrA2. Setae V1, MV1, MV2, and PV situated on integument surrounding ventrianal shield. Setae PV slightly serrated. Other ventral setae smooth, sharp, and thin. Peritreme narrow (near 2,5), extending anterior level of setae AM1. Chelicera (Fig. 1, 5) normal in relation to body size, fixed digit with 4 tiny denticles, movable digit without tooth. Metapodal plate-

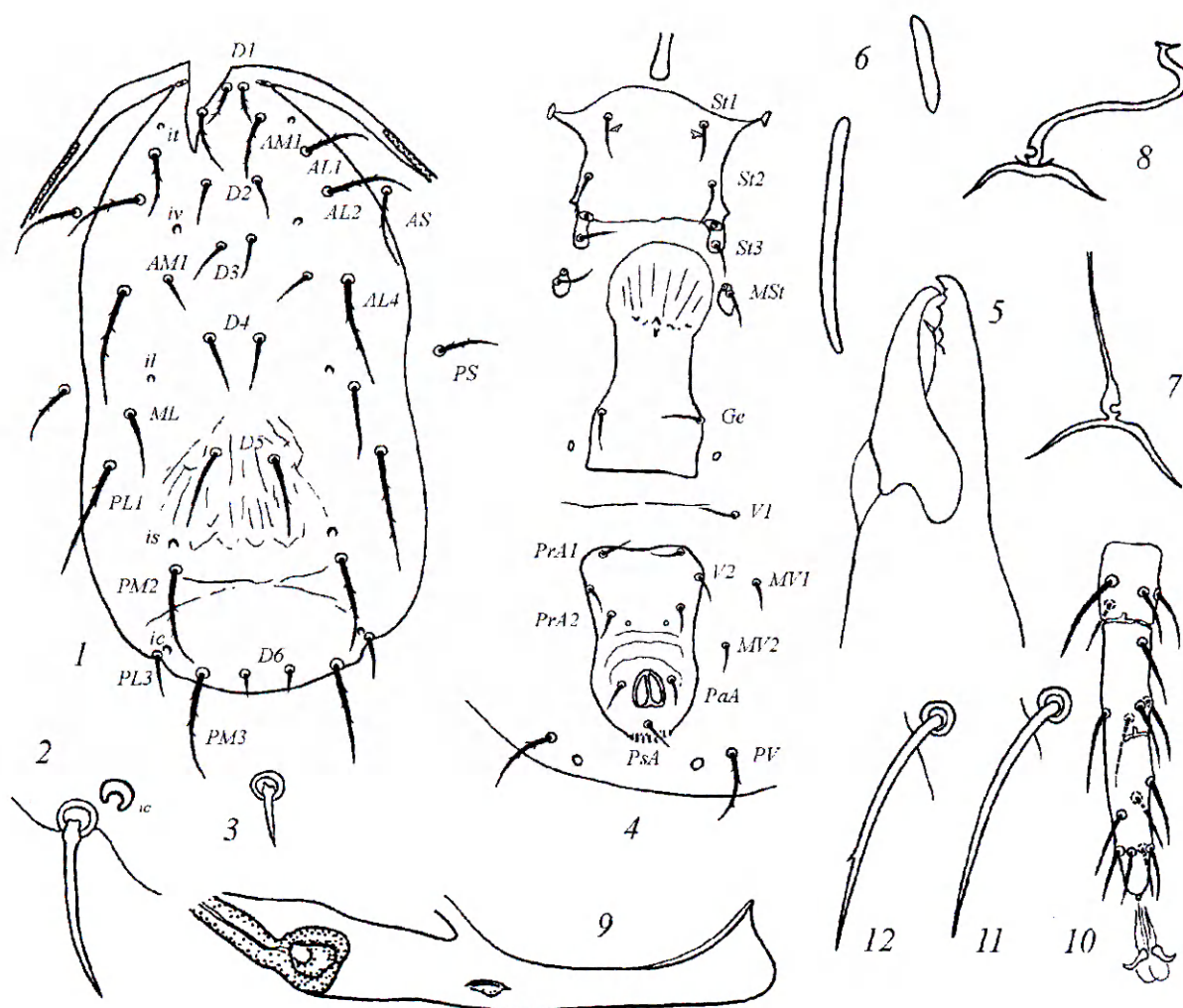


Fig. 1. *Kampimodromus karadaghensis* Kolodochka, sp. n. Female: 1 — dorsal shield; 2 — seta PL3; 3 — seta D6; 4 — fragment of ventral body surface; 5 — chelicera; 6 — metapodal plates; 7, 8 — spermatheca; 9 — caudal part of peritremal shield; 10 — tarsus of leg IV; 11, 12 — macroseta on tarsus of leg IV.

lets narrow (Fig. 1, 6). Spermatheca small, with saucer-shaped fundibulum and with small c-shaped atrium; cervix missing or very small (Fig. 1, 7–8). Posterior part of peritremal shield nearly straight with beak-like end (Fig. 1, 9). Macroseta on tarsus IV sharp and smooth (one from 11 paratype-females has one macroseta with one notch on) (Fig. 1, 10, 11, 12).

Measurements (see also Table 1 and 2): length of dorsal shield (Lds) — 293, width of dorsal shield at level of setae ML (Wds) — 146; length of ventrianal shield (Lvas) — 92, width of anterior part of ventrianal shield (Wvas-ap) — 57, width of middle part of ventrianal shield (Wvas-mp) — 45, width of posterior part of ventrianal shield (Wvas-pp) — 50; distance between anal pores (Lian) — 18; length of tarsus IV (Lt) — 84. Length of: D1 — 19.5; D2 — 21, D3 — 22; D4 — 27; D5 — 33–37; D6 — 6; AM1 — 30; AM2 — 16; AL1 — 31; AL2 — 39; AL4 — 50; ML — 34–37; PL1 — 49–59;

PL3 — 20–23; PM2 — 41–45; PM3 — 51; AS — 37; PS — 27; PV — 35; MCh tIV — 26.

Description of male (paratype, broken). Setae AS and PS situated on dorsal shield (Fig. 2, 1). Setae D1, AM1, AL1, PM2, and PM3 serrated. One seta in AL3 and AS pairs has one or two notches. Other setae smooth. All setae sharp. Ventrianal shield (Fig. 2, 3) with 3 pairs of preanal setae. Anal pores pointed, distinct, closely placed. Spermatodactyl (Fig. 2, 4) beak-shaped, beak-shape appendix (ramus) short and bulbous. Macroseta on tarsus IV sharp and smooth (Fig. 1, 10, 11).

Measurements: Lds — 275, Wds — 130; Lvas — 108, Wvas (maximal) — 120, Lian — 18; Lt — 72; D1 — 16; D2, D3 — 20; D4 — 23; D5 — 28; D6 — 7; AM1 — 32; AM2 — 16; AL1 — 26; AL2 — 39; AL4 — 49; ML — 26; PL1 — 41; PL3 — 16; PM2 — 34; PM3 — 41; AS — 27; PS — 21; PV — 20; MCh tIV — 27.

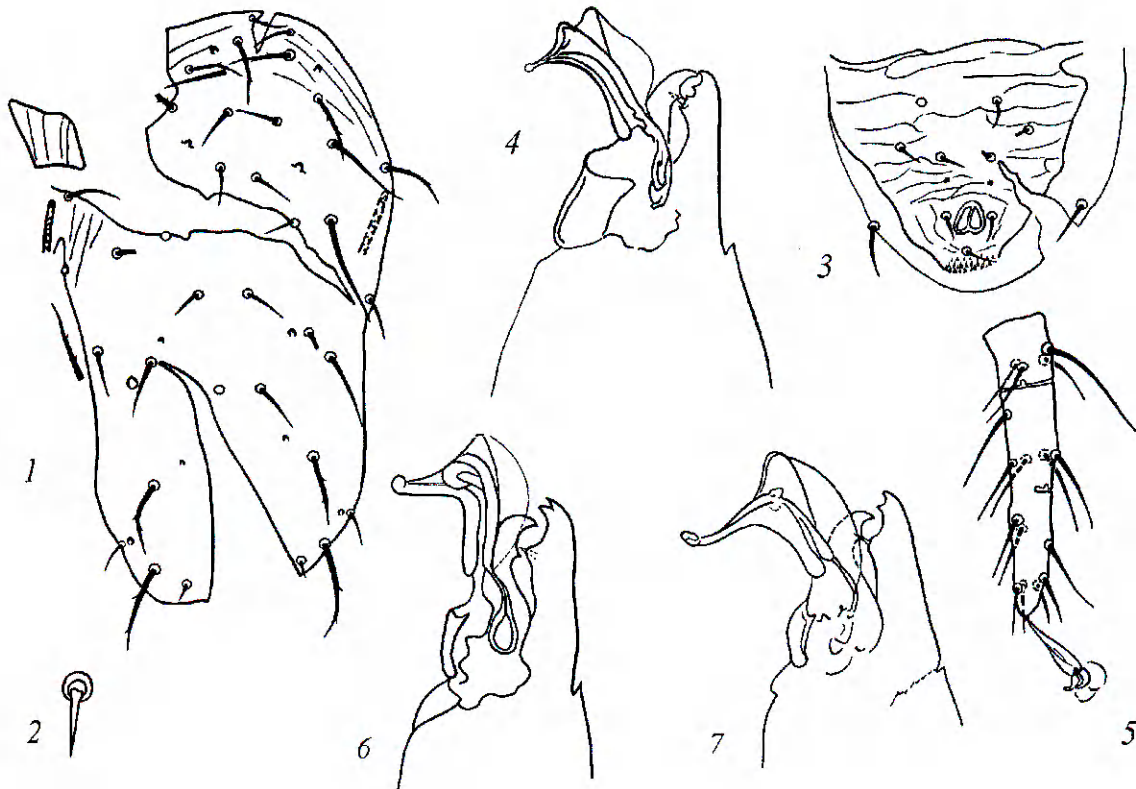


Fig. 2. *Kampimodromus karadaghensis* Kolodochka, sp. n. Male: 1 — dorsal shield; 2 — seta D6; 3 — ventrianal shield; 4 — chelicera and spermatodactyl; 5 — tarsus of leg IV.

K. aberrans (Oudemans). Male: 6 — chelicera and spermatodactyl [from Kolodochka, 1978].

K. corylosus Kolodochka. Male: 7 — chelicera and spermatodactyl [from Kolodochka, 2003].

Table 1
Measurements of body parts in *Kampimodromus karadaghensis*¹
Таблица 1
Размеры некоторых частей тела *Kampimodromus karadaghensis*¹

Body parts	n	Holotype	Mean (Range)	SE	CV, %
Lds	6	293	290 (286–294)	1.21	1.0
Wds	6	146	141.2(135–147)	1.86	3.2
Lvas	6	92	92.3 (86–95)	1.38	3.7
Wvas-ap	6	57	52.8 (50–57)	1.50	5.8
Wvas-mp	6	45	45.3 (44–47)	0.42	2.3
Wvas-pp	6	50	52.8 (50–56)	0.87	4.0
Lian	7	18	19 (18–21)	0.52	6.6
LtlV	7	84	83.7 (83–86)	0.49	1.5

¹ holotype and paratype females

Material. Holotype — female (# 1293), hawthorn (*Crataegus* sp.), Karadag Natural Reservation, South-East Crimea, Ukraine, 5.06 1975, L. Kolodochka leg. Paratypes (same locality as holotype)—6 females (# 1331), plum (*Prunus stepposa* Kotov), 7.06 1975; 5 females, 1 male (# 1369), pubescent oak (*Quercus pubescens* Willd), 10.06 1975.

DIFFERENTIAL DIAGNOSIS

K. karadaghensis is similar to *K. aberrans* (Oudemans, 1930) but can be easily distinguished from the latter by having five not four pairs of dorsal solenostomes (*is* are present), by distinctly longer dorsal setae D3–D5, AL4, ML, PL1, PL3, PM3, and PV in female (Table 2), and by the shape of male spermatodactyl (Fig. 2).

Table 2
Measurements of the idiosomal setae in three species of *Kampimodromus*
Таблица 2
Размеры щетинок идиосомы трех видов рода *Kampimodromus*

Seta	<i>K. karadaghensis</i> ¹					<i>K. aberrans</i> ²	<i>K. corilosus</i> ³
	Holotype	n	Mean (Range)	SE	CV, %	Mean (Range)	Holotype
D1	20.5	14	20.4 (18.5–22)	0.29	5.25	20 (19–22)	21.5
D2	21.0	14	20.7 (19–23)	0.32	5.75	16 (12–19)	14
D3	22.0	14	21.1 (19.7–22)	0.24	4.28	13 (12–17)	14
D4	27.5	14	26.6 (22–28)	0.37	5.28	18 (15–20)	16
D5	36.5	14	34.4 (33–37)	0.40	4.36	26 (22–20)	23
D6	6.5	14	6.5 (6–7)	0.12	7.01	–	7
AM1	32.5	14	31.6 (28–35)	0.53	6.27	31 (29–34)	29
AM2	17.8	14	18.2 (17–19)	0.21	4.25	15 (12–17)	15
AL1	30.5	14	29.2 (27–32)	0.39	5.06	28 (24–31)	25
AL3	42.0	14	40.00 (37–42)	0.49	4.62	35 (32–37)	34
AL4	53.5	14	49.00 (45–54)	0.69	5.29	42 (39–44)	41
ML	34.8	13	29.7 (26–37)	0.78	9.52	20 (17–22)	21
PL1	56.5	14	51.8 (47–58)	0.82	5.96	41 (39–44)	43
PL3	20.0	13	21.7 (18.5–25)	0.55	9.14	12 (10–14)	18
PM2	44.0	13	41.8 (39–44)	0.39	3.41	39 (36–41)	39
PM3	49.5	13	49.5 (47–53)	0.51	3.69	41 (37–44)	48
AS	37.5	14	37.1 (34–39)	0.37	3.74	35 (34–39)	35
PS	29.0	14	28.6 (27–31)	0.39	5.05	22 (20–26)	25
PV	33.5	13	34.5 (32–39)	0.51	5.38	26 (24–27)	29
MChIV	26.0	14	25.1 (22–27)	0.40	6.01	20 (19–22)	22

¹ holotype and 6 paratype females

² topotypic material [from Ragusa di Chiara, Tsolakis, 1994]

³ from Kolodochka [2003]

Table 3
Some differential characters in *Kampimodromus* species
Таблица 3
Некоторые дифференциальные признаки видов рода *Kampimodromus*

Species	Feature			
	Teeth on Dm	D6	Distance between preanal pores	Number of dorsal solenostomes
<i>K. hmiminai</i> McMurtry and Bounfour	absent	smooth	wide	6
<i>K. coryli</i> Meshkov	1	smooth	narrow	6
<i>K. karadaghensis</i> n.sp.	absent	smooth	narrow	5
<i>K. corylosus</i> Kolodochka	absent	smooth	narrow	5
<i>K. alettae</i> (Ueckermann and Loots)	no visible	serrate	wide	5
<i>K. langi</i> (Wainstein and Arutunjan)	1	serrate	wide	5
<i>K. ericinus</i> Ragusadi Chiara and Tsolakis	absent	serrate	narrow	5
<i>K. aberrans</i> (Oudemans)	absent	smooth ¹	wide ²	4
<i>K. molle</i> (Ueckermann and Loots)	absent	serrate	narrow	4
<i>K. keae</i> (Papadoulis and Emmanouel)	1	smooth	narrow	4
<i>K. judaicus</i> (Swirski and Amitai)	absent	smooth	wide	3

¹ in examined Ukrainian specimen. In Italian and Greek *K. aberrans* seta D6 serrated in females but not in the allotype-male [Ragusa di Chiara, Tsolakis, 1994: figs. 5, 10]

² in studied Ukrainian specimen. In Italian and Greek females *K. aberrans* and in the allotype-male preanal pores are close to each other [Ragusa di Chiara, Tsolakis, 1994: figs. 5, 10]

Kampimodromus species with five dorsal solenostomes, *K. alettae* (Ueckermann and Loots, 1985) from South Africa, *K. langei* (Wainstein and Arutunjan, 1973) from the Caucasus, *K. ericinus* Ragusa di Chiara and Tsolakis, 1994 from the Mediterranean Region, have serrate dorsal setae D6 and PL3 [Ragusa di Chiara, Tsolakis, 1994], while in the new species, these setae are smooth (Table 3). *K. corylosus* Kolodochka, 2003 from Ukraine and Moldova also has 5 solenostomes [Kolodochka, 2003] but its dorsal setae D2–D3, AL4, ML, PL1 are distinctly shorter than those in *K. karadaghensis* (Table 2).

NOTES

Nothing is known about the biology or food habits of *K. karadaghensis*. This description and illustrations are based on the holotype and paratype specimens.

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