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Damaeus lupus **n. sp.** (Acarina), a new oribatid mite species from the Carpathian wilderness (Tatra Mountains, Slovakia).

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ABSTRACT — A new species of oribatid mite from the family Damaeidae, *Damaeus lupus* **n.sp.**, belonging to the nominate subgenus, is described from litter of *Pinus cembra* forest in a wilderness area of the Vysoké Tatry Mts. in the West Carpathians, Slovakia. The unusual set of characters (position of bothridia, epimeral and partial anal neotrichy), as well as possible relationships of this new species are discussed. The larva of the species is also described.

KEYWORDS — oribatid mites; *Damaeus*; new species; Carpathians; Slovakia

INTRODUCTION

Oribatid mites from family Damaeidae, despite being mostly represented by medium large to the large species, are not yet sufficiently well known. This is partly result of similarity of many species, and also of still not settled taxonomy of the whole group. In my studies and studies conducted with several other colleagues (Miko 2006; Miko and Mourek 2008; Miko *et al.* 2011; Mourek *et al.* 2011a,b; Miko 2015; etc.), an attempt is made to build on important contributions made by other authors (e.g. Behan-Pelletier and Norton 1983, 1985; Grandjean 1960; Norton 1977, 1978; Pérez-Iñigo 1997; Seniczak and Seniczak 2011, 2013; Seniczak *et al.*, 2013) and stabilise the system of Damaeidae based on providing more detailed characters, on their careful analysis and also on reviews of species described earlier. In parallel, I am also trying to collect additional, new material from different locations in Europe and elsewhere, to find how the characters are distributed and modified among as big set of species as possible.

Following my recent study visits of some areas in Slovakian West Carpathians, I also had opportunity to analyse soil samples from one of the most impressive wilderness areas in Tatra Mountains, particularly from remaining fragments of ancient forest of *Pinus cembra*. Among very rich set of species present in this habitat, I found an unknown species of *Damaeus* C. L. Koch, 1835 with very interesting combination of characters. The aim of this paper is to describe this new species, and shortly discuss it´s placement within Damaeidae.

METHODS AND MATERIAL EXAMINED

Altogether 4 adult individuals (all females) and one larva were collected in summer 2014 (30 July, L.

Miko leg.) in Slovakia, High Tatra mountains (Western Carpathians), Kôprová Valley at the western slope of Mt. Kriváň (GPS 49°09'44"N, 19°58'39"E). A single individual (holotype) and one larva were collected from decaying wood mixed with organic soil layer from the hollow of very old *Pinus cembra* tree, three further individuals (paratypes) were found in the litter in vicinity of the same tree, growing in large fragment of virgin mountain forest within the wilderness area "Tichá and Kôprová dolina", belonging to core zone of Tatra National Park.

Soil samples were extracted into 75 % alcohol (ethanol), using modified Berlese-Tullgren apparatus heated by light bulbs for 7 days reaching final temperature of 45 °C. Before further study, part of the material was macerated in lactic acid (one paratype and larva), and subsequently observed in the same medium using glass with hollows, in translucent light microscope. Microphotographs were taken by the author, using Canon EOS 70D camera with microscope adaptor, and processed via software Olympus QuickPhoto Camera 3.1. and Helicon Focus 6.

Terminology used for description of morphological characters follows the same used in my previous works, summarised recently (Miko 2015). Measures are given in μm.

The material (holotype, one paratype and larva) is preserved in acarological collection of Senckenberg Museum in Görlitz (Saxony, Germany) and in thy personal collection of the author (2 paratypes).

DESCRIPTION

Damaeus (s. str.) lupus n.sp.

Diagnosis — Large sized (around 950 – 1150 μm) *Damaeus* with distinct costular structures on prodorsum, arched translamellar line (*tl*) and axially interrupted anterior prodorsal tectum (*apt*) bearing a distinct tubercle. Rostrum with distinct rostral protuberance (*rop*). Usual set of prodorsal tubercles (*Ba, Bp, Da*) present, well developed. Propodolateral apophysis *P* present, not particularly large, but still pedotectum-like. Carina *kpI* anterior to acetabulum I developed as angular or tubercular anterolateral protuberance (*alp*), carina *kpII* on posterior end of propodolateral area angular, sometimes weaker developed. Bothridia shifted anteriad and laterad, far from anterior border of notogaster. Sensillus long, setiform, distally slightly attenuated, with rugose surface. Parastigmatic apophyses *Sa* and *Sp* well developed, blunt, of subequal length, both visible in dorsal view, *Sa* sharply pointed, *Sp* blunt. Epimeral area with complex set of ridges and tubercles, tubercles *E2a* and *E2p* weakly developed, *Va* and *Vp* medium sized, tubercular, *Vp* particularly large. Ventrolateral ridge absent or only indistinct and interrupted, additional two tubercles (*VLa*, *Ua*) present, *VLa* shifted laterally and pointing laterad. Anterior border of notogaster with 1-2 arched ridges between spinae adnatae. Spinae adnatae small, triangular, difficult to observe. Distance of insertions c_1-c_1 subequal to c_1-c_2. Setae c_1 directed anteriad, c_2 laterad, both pairs slightly curved and longest of all notogastral setae. Remaining notogastral setae more or less curved and directed laterad, lateroposteriad or posteriad. Legs moderately long, both leg I and leg IV longer than body. Leg setae rather short with few exceptions, seta *ft"* of leg IV the longest, both genual and tibial solenidia particularly short – never longer than half-length of respective leg segment. Larva with very long notogastral setae *c2*, *lp* and *h1* (particularly *lp* which is longer than whole body) and with very strong, thick, arched and distinctly rugose setae *le*.

Description of adult — Figures 1-5. *Dimensions*. Total body length of holotype 1050 (paratypes 950 – 1150), ventral length 980 (830 – 1040), maximum width of notogaster 670 (620 – 670), prodorsum length 345 (330 – 390), maximum prodorsum width 445 (410 – 450). For other measures see Table 1.

Integument — Body colour dark, almost black, with reddish brown colour tones appearing after maceration in lactic acid. Body surface covered by layer of cerotegument, mostly granular or amorphous. Cerotegument granules fine, subequal in size over whole body including legs except distal part of tarsi and leg setae. Integument under cerotegument with fine punctate microstructure, well visible particularly on posterior part of ventral plate. All studied individuals carried nymphal

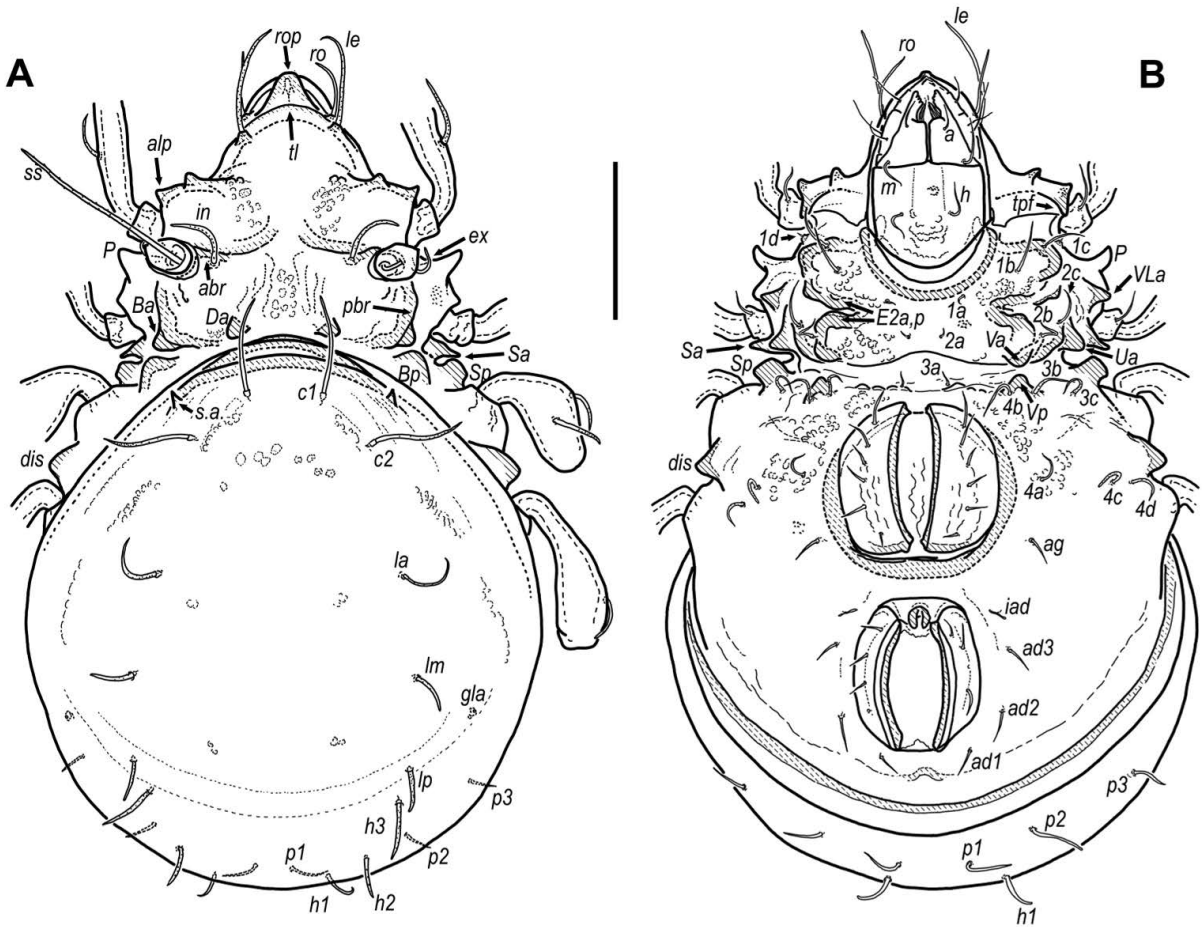


FIGURE 1: *Damaeus lupus* **n. sp.** (adult, paratype): A – dorsal view, B – ventral view. Acronyms: *alp* – anterolateral protuberance, *abr* – anterobothridial ridge, *dis* – discidium, *pbr* – postbothridial ridge, *rop* – rostral protuberance, *s. a.* – spina adnatum, *tl* – translamellar line, *tpf* – tectum of podocephalic fossa (scale bar = 200 μm).

scalps, with attached fine soil and debris, creating soil particle resembling camouflage cover similarly as in some *Belba* species.

Prodorsum — Figures 1A, 2A,B, 4A-C, 4E. Broadly triangular or slightly pentagonal, with rather weakly developed propodolateral apophysis *P*, appearing as a blunt perpendicular projection. Carinae *kpI* and *kpII* anterior to acetabulum I and II, respectively, well developed, *kpI* forming distinct triangular projection directed anterolaterad (anterolateral protuberance, *alp*, Fig 1A). Rostrum (Figs 2A, B) of complicated structure, rounded in outline, but with prominent rostral protuberance (*rop*) and 1-2 carinae, visible as simple lines (sub-)parallel to rostral margin in dorsal view. Usual set of three pairs of tubercles (*Ba, Bp, and Da*) present. Tubercle *Ba* rather small, placed on posterolateral angle of distinct and strongly developed postbothridial ridge (*pbr*), quite far behind bothridium and laterally, so that *pbr* appears almost rectangular curved. Tubercle *Bp* largest of prodorsal tubercles (Figs 1A, 4B), blunt, positioned even slightly more lateral than *Ba*. Tubercle *Da* small but distinct, cuticle anteriad rugose with indistinct longitudinal thickenings, which nevertheless do not create a distinct interbothridial ridge. Tubercles *Dp* absent. Central part of prodorsum elevated, forming flat prodorsal protuberance. Bothridial protuberance anteri-

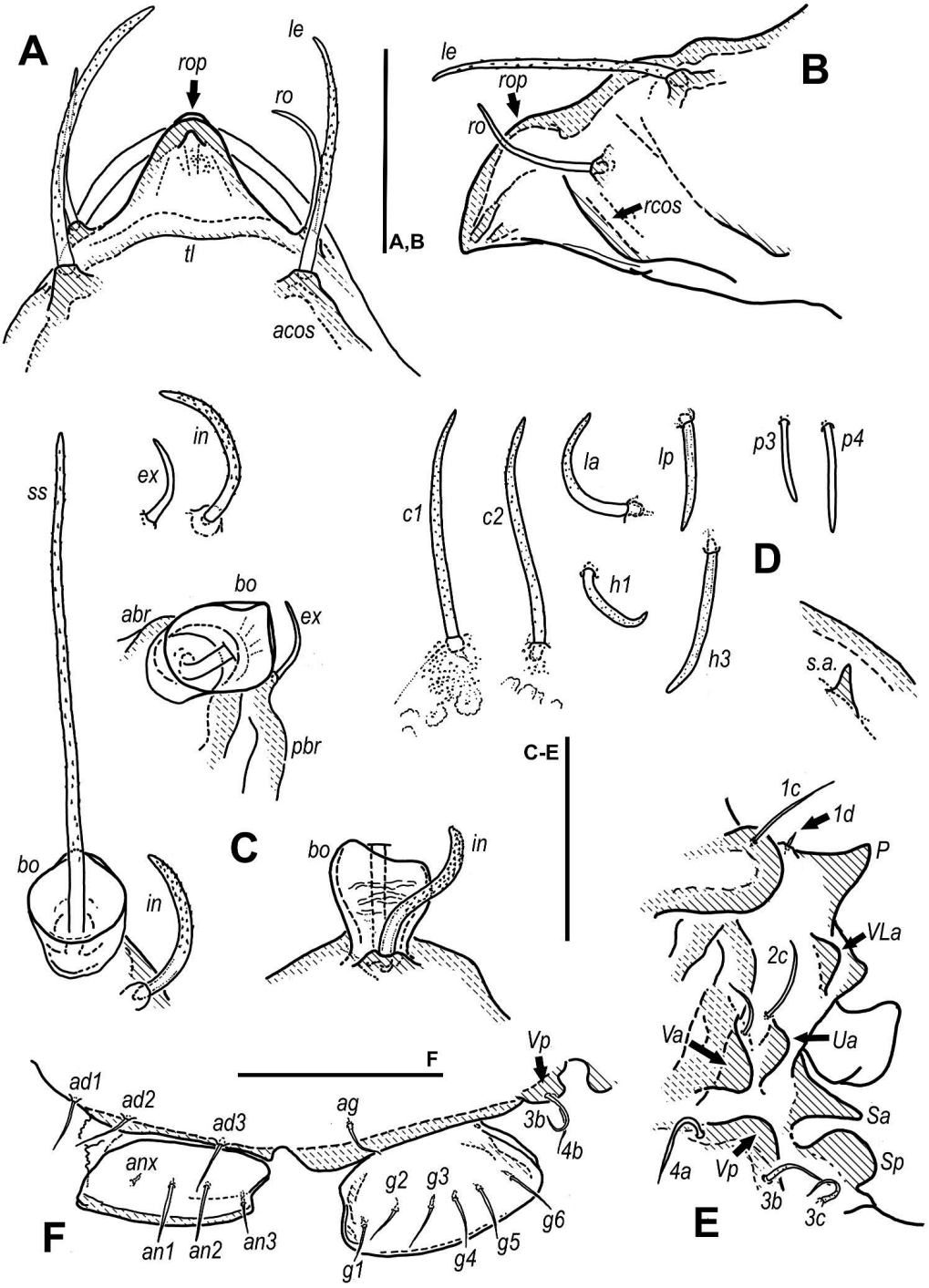


FIGURE 2: Details of *Damaeus lupus* **n. sp.** (adult, paratype): A – rostral part of prodorsum, dorsal view, B – rostral part, lateral view, C – sensillus and prodorsal setae, D – notogastral setae and spina adnatum, E – ventral ridges and tubercles in epimeral area, F – anogenital area, lateral view. Acronyms: *abr* – anterobothridial ridge, *acos* – anterior lamellar costula, *anx* – insertion of additional anal seta, *bo* – bothridium, *pbr* – postbothridial ridge, *rcos* – rostral costula, *rop* – rostral protuberance (scale bars: A-B, C-E = 100 μm, F = 200 μm).

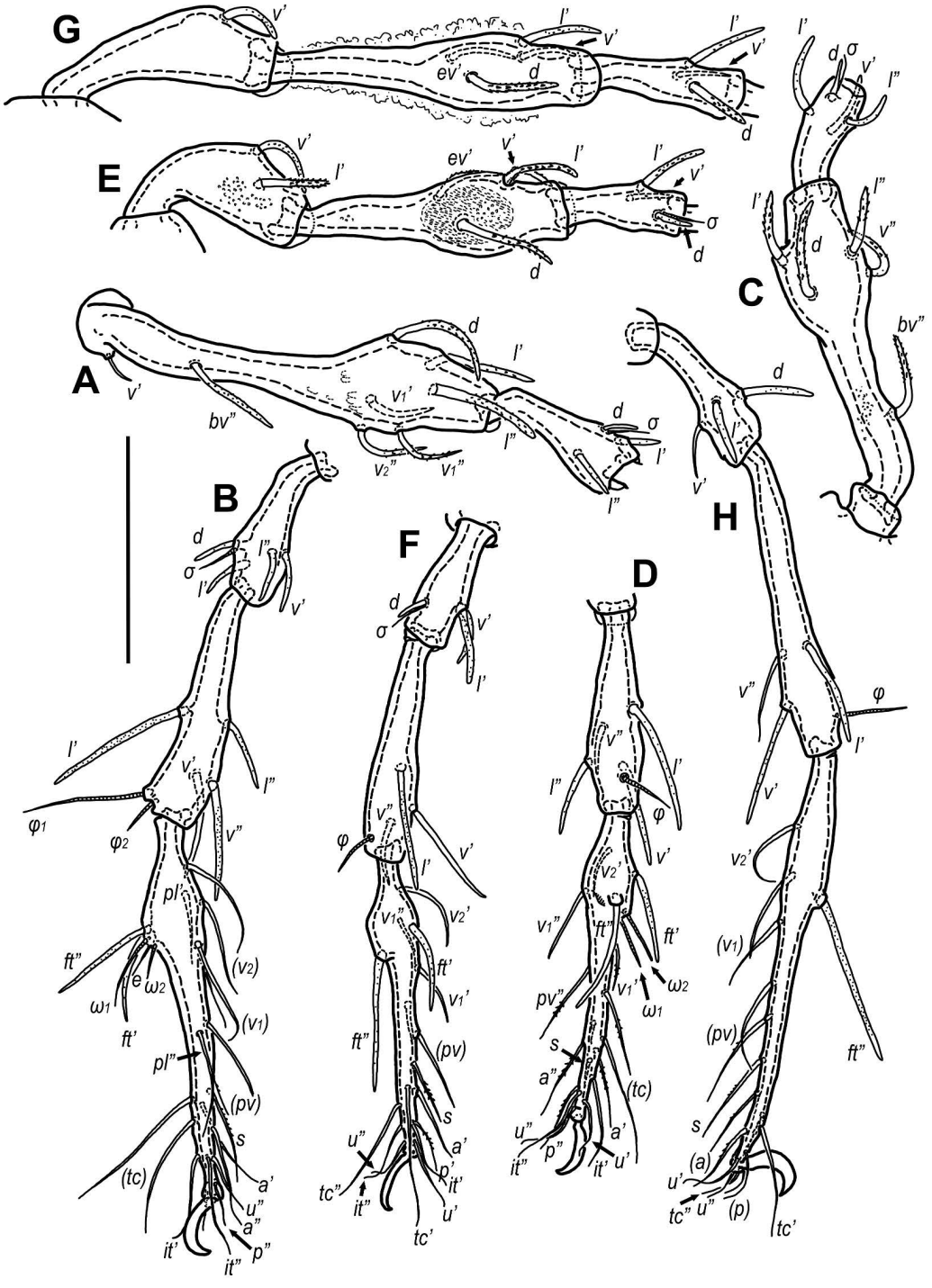


FIGURE 3: Legs of *Damaeus lupus* **n. sp.** (adult, paratype): A – femur and genu of leg I, B – genu, tarsus and tibia of leg I, C – femur and genu of leg II, D – tibia and tarsus of leg II, E – trochanter, femur and genu of leg III, F – genu, tibia and tarsus of leg III, G – trochanter, femur and genu of leg IV, H – genu, tibia and tarsus of leg IV (scale bar = 200 μm).

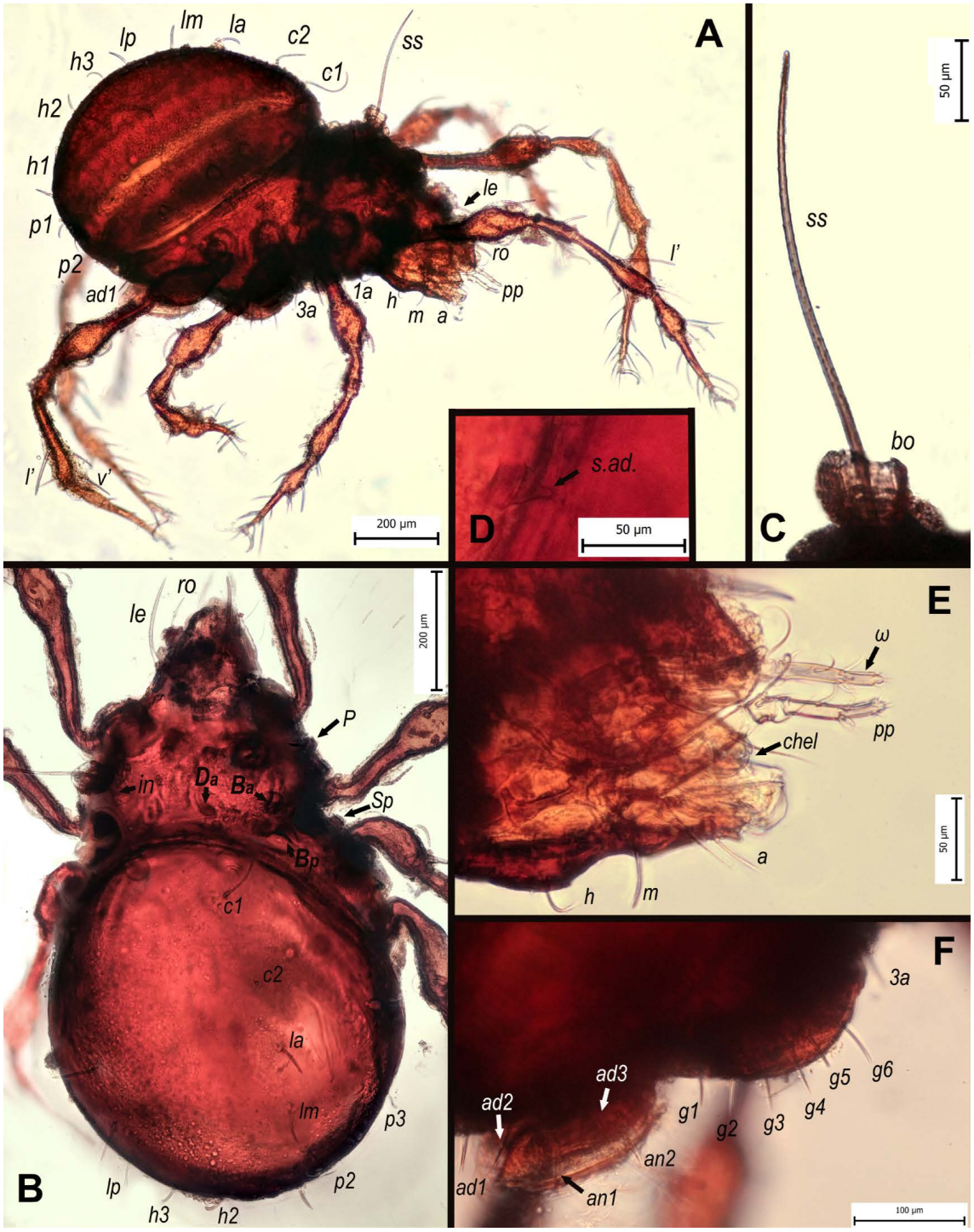


FIGURE 4: *Damaeus lupus* **n. sp.** (adult, paratype): A – lateral view of the body with legs, B – dorsal view of the body, C – sensillus and bothridium, D – spina adnatum, E – rostrum and gnathosoma from lateral view, F – anogenital region, lateral view. Acronyms: *bo* – bothridium, *chel* – chelicere, *pp* – palps, *s. ad.* – spina adnatum.

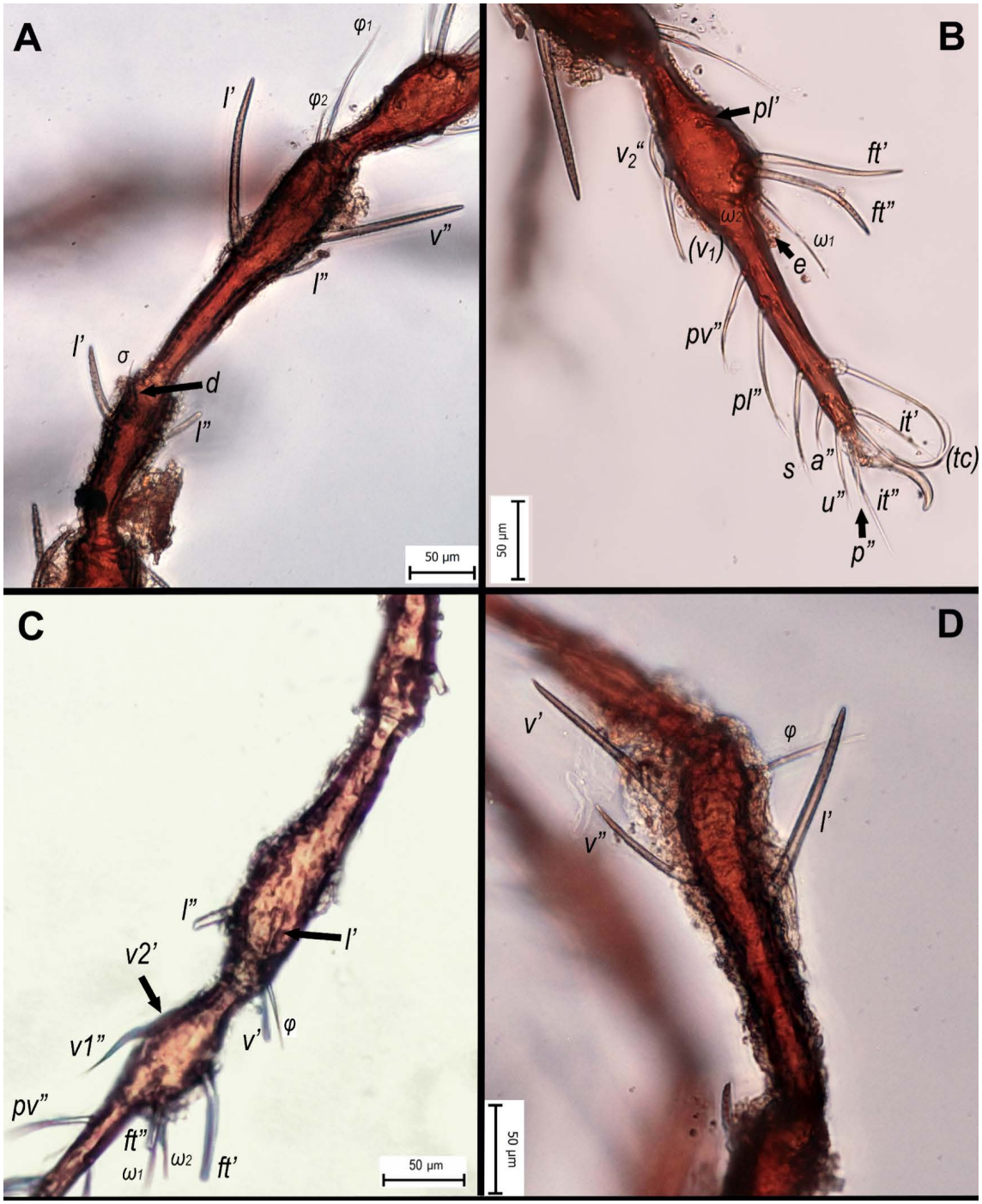


FIGURE 5: *Damaeus lupus* **n. sp.** (adult, paratype): A – genu and tibia of leg I, B – tarsus of leg I, C – tibia and tarsus of leg II, D – tibia of leg IV.

TABLE 1: Selected measures of *Damaeus lupus* **n. sp.**
Values correspond to paratype individual studied in detail and to larva. Measures given in μm.

adult (paratype)					
body – total length	1003	sensillus	298–300	seta *l″* on genu I	58
body – ventral length	831	spina adnatum	18–19	seta *l′* on genu I	39
body – maximum width	670			seta *d* on genu I	30
prodorsum – length	345	seta *ro*	100	solenidion σ on genu I	42
prodorsum – width	410	seta *le*	139		
		seta *in*	94	seta *l′* of tibia I	131
femur I	342	seta *ex*	51	seta *v″* of tibia I	112–115
genu I	119			solenidion φ_1 of tibia I	112
tibia I	229	seta *c1*	138–144	solenidion φ_2 of tibia I	36
tarsus I	340	seta *c2*	97–99		
leg I total length	1030	seta *la*	78–81	seta *tc* on tarsus I	130
		seta *lm*	67–75		
trochanter IV	216	seta *lp*	73	seta *l′* of tibia IV	112
femur IV	264	seta *h3*	75–88	seta *v′* of tibia IV	107–117
genu IV	109	seta *h2*	70	seta *v″* of tibia IV	72
tibia IV	222	seta *h1*	68	solenidion φ of tibia IV	69
tarsus IV	379	seta *p1*	58		
leg IV total length	1190	seta *p2*	38 – 45	seta *ft″* of tarsus IV	138
		seta *p3*	31 – 45		
ratio leg I/ventral length	1,24				
ratio leg I/total length	1,03				
ratio leg IV/ventral length	1,43				
ratio leg IV/total length	1,19				
larva					
body length	430	sensillus	180	seta *c1*	185
body width	240	seta *ro*	48	seta *c2*	282
prodorsum length	161	seta *le*	123	seta *h1*	277
prodorsum width	178	seta *in*	55	seta *lp*	461

orly bordered by distinct and quite long antebothridial ridge (*abr*), distal ends of the two ridges however not reaching each other, leaving narrow gap in the middle of prodorsum. Anteroprodorsal tectum (*apt*) visible as weakly developed line between protuberances *alp*, broadly interrupted in the middle, with strong tubercular projection near protuberance *alp* on each side. Arched translamellar line (*tl*) well developed. Parastigmatic apophyses visible in dorsal view but rather short, not very prominent. *Sa* smaller, spiniform, with acute tip pointing slightly posterolaterad, *Sp* broadly tubercular and blunt, oriented anteriolaterad. Rostral seta (*ro*) inserted on small tubercle positioned slightly behind short, oblique rostral costula (*rcos*, Fig 2B). Lamellar seta (*le*) inserted on more prominent tubercle at distal end of sclerotised ridge (*acos*, anterior lamellar costula, Fig 2A). Prodorsal setae (Figures 2 A-C) differ in length, lamellar seta (*le*) being the longest, followed by rostral (*ro*), interlamellar (*in*) and exobothridial (*ex*) setae. All setae more or less curved, setiform, with rather blunt tip, *le* and *in* with rough surface. Sensillus (Fig 2C, Plate 1C) long, setiform, hardly attenuated distally, with rough surface, protruding well (by more than half of its length) beyond margin of prodorsum. Bothridium funnel-like, its' asymmetric expanded rim with blunt anterolateral angle. Bothridium positioned unusually for *Damaeus*, shifted rather far laterad and slightly anteriad, more or less in the mid-

dle of the line connecting tips of protuberance *alp* and tubercle *Ba*. Three areas with less distinct muscle sigillae present: pair anterior to distal ends of anterolateral ridges and single one axially in interbothridial area between and anteriad to tubercles *Da*; sigillae quite small and not very dense.

Notogaster — Figures 1A, 4A,B,D. Broadly ovate, narrowed anteriorly. Spinae adnatae (*s.ad.*) small, short and triangular (Figs 2D, 4D), pointing anteriad or slightly anterolaterad. Two distinct, arched transversal folds or ridges present at notogaster anterior edge, between *s.ad.* and anterior to *c1* insertions. Notogastral setae (Figures 1A, 2D) of different size and shape, with rough surface except setae of row *p*, in principle with decreasing size from anterior to posterior ones. Setae c_1 and c_2 longest, subequal in length, c_1 oriented anteriad, appearing slightly bent in dorsal view but distinctly curved upwards in lateral view (Figure 4A), c_2 slightly S-shaped, pointing more or less laterad, both distally attenuating and pointed. Distance of insertions c_1-c_1 slightly less or subequal to c_1-c_2. Seta *la* strongly curved, erect, attenuated distally with tips oriented anteriad. Setae *lm*, *lp*, *h2* and *h3* of similar shape, shorter and more robust, less bent or almost straight, almost spiniform with shorter and less acute tips, pointing laterad or posterolaterad (*lm*) or more or less posteriad, or slightly posterolaterad. Setae *h1* and p_1-p_3 closer to posterior border of notogaster so that their insertions are not visible from dorsal view, finer and smoother than other notogastral setae, curved at their base, more or less straight distally. Setae p_2 and p_3 shorter than other notogastral setae, directed laterad or even anteriolaterad. Circumgastric row of small and fine muscle sigillae present, larger sigillae present between *lm* insertions, 4 smaller groups or individual spots present in central part of notogaster. Common set of lyrifissures and notogastral gland openings present in usual position for *Damaeus*, difficult to observe.

Gnathosoma — Figures 1B, 4E. As usual of *Damaeus*. Mentum relatively broad, slightly shorter than its width, its surface posteriad rugose. Setae *h* and *m* of medium length, subequal, seta *a* shorter and finer. Palp setation 0-2-1-3-9(1), palp tarsal solenidion straight, blunt distally, adhered to surface of segment (Figure 4E).

Epimeral region — Figures 1B, 2E. With deep epimeral and ventrosejugal grooves and very complex set of cuticular ridges and tubercles. Tectum of podocephalic fossa (*tpf*) with complicated structure, laterally with attenuated, rather sharp but only slightly protruding posterolateral projection. Mentotectum broad, collar-like, without median incision. Ridges and tubercles in epimeral area distinct, with complicated structure. Tubercles *E2a* and *E2p* flat and indistinct, placed on strong and curved ridges, which frame large part of epimeres I and II. These ridges sometimes with additional small angular projections laterally. Tubercles of ventrosejugal enantiophyse more prominent, *Va* smaller than *Vp*, *Vp* bearing insertions of epimeral setae *3b* and *4b* on its base. Bases of tubercles *E2p* and *Va* connected by distinct curved ridge which may be interrupted in the middle. Ventrolateral ridge broadly interrupted or transformed into irregular longitudinal rugosity in area of epimeral furrow, well developed only in its posterior (between tubercles *Va* and *Sa* as a flatly arched ridge) and anterior ends (anterior to *E2a* as strongly bent ridge with anterior part running mediad and almost reaching borders of mentotectum). Sub-parastigmatic tubercle *Ua* present lateral to ventrolateral ridge, in area between tubercles *Va* and *Sa*, very well developed, larger than *Va*, spiniform, with acute or blunt tip. Anterior ventrolateral tubercle (*VLa*) present anterior to *Ua*, shifted more laterally so its tip could even slightly overlook margins of prodorsum, *VLp* absent. Epimeral setation with additional setae on epimeres I and II, epimeral setal formula 4-3-3-4, with setae differing in shape and size. All setae setiform, most of them smooth, only setae *3b*, *3c*, *4c* and *4d* are rough on surface and usually strongly bent. Setae *1b*, *3b* and *4b* longest, setae *1a*, *1d*, *2a* and *3a* shortest. Epimeral seta *1c* inserted anteriorly on ventrolateral ridge, setae *3b* and *4b* inserted at the base of tubercle *Vp*. Additional epimeral seta *1d* very small, inserted on distinct tubercle on the edge of the body above anterior part of ventrolateral ridge, behind acetabulum I. Additional epimeral setae *2a* and *2b* inserted in area between

TABLE 2: Homology of leg setae of *Damaeus lupus* **n. sp.**

	Leg I	Leg II	Leg III	Leg IV
Trochanter	v′	v′	v′, l′	v′
Femur	***d, bv″***, *(l), (v_1), v_2″*	***d, bv″***, *v″, (l)*	***d, ev′***, *v′, l′*	*ev′, v′, l′, d*
Genu	***dσ, (l)***, *v′*	***dσ, (l)***, *v′*	*v′, l′, dσ*	*v′, l′, d*
Tibia	***$\underline{d}$ φ$_1$, (l), v_1***, *v_2, φ$_2$*	***$\underline{d}$ φ, (l),*** *(v)*	***$\underline{d}$ φ, l′***, *(v)*	*(v), l′, φ*
Tarsus	***(ft), e, ω$_1$***, *ω$_2$*, ***(tc), (p), (u), (a), s, (pv), (pl),*** *(it), (v_1), (v2)*	***(ft), ω$_1$, (tc), (p), (u), (a), s, (pv),*** *$\underline{?}$, (it), (v_1), v_2′, ω$_2$*	***(ft), (tc), (p), (u), (a), s, (pv),*** *(it), (v_1), v_2′*	*ft″, (tc), (p), (u), (a), s, (pv), (v_1), v_2′*

Note: Larval setation is indicated in bold, underlined setae are lost in adult; question mark (?) indicates additional seta in larva which was difficult to homologize.

tubercles *E2p*, *Ua* and *VLa*. Muscle sigillae present in most of epimeral area. Discidium (*dis*) triangular, dentiform, with blunt tip, rather short, not reaching laterally as far as margins of acetabulum IV.

Anogenital region — Figures 1B, 2F. Genital opening broader and larger than anal opening, framed by thicker cuticle. Preanal sclerite appearing round, in detail horseshoe-shaped. Short concave thickening (ridge) present caudally, posterior to anal opening. All setae simple setiform and of similar length, except of anal setae in usual numbers: *6g, 1ag, 3ad*. Anal plates with variable number of setae, holotype with additional setae, with 3 anal setae present (*3an*); insertions of 4th anal seta (*anx*) observed unilaterally (Fig 2F). One paratype unilaterally (on left valve in ventral view) with 3 setae and insertion of fourth seta as in holotype, with other anal plate bearing 2 setae. Two other paratypes with normal number of anal setae (*2an*). Seta ad_1 inserted in postanal area, seta ad_2 and ad_3 lateral to anal opening. Lyrifissures *iad* apoanal, oblique or almost horizontal, positioned lateral to anterolateral angles of ventral opening, closer to anal opening than insertions of ad_3 (Fig 1B).

Legs — Figures 3A-H, 4A, 5A-D. Legs moderately long, both leg I (about 1,2 times) and leg IV (1,4-1,5 times) longer than ventral body length. Segments of legs I and II only slightly expanded, of leg IV-elongated and more slender. Leg setae generally short, dorsal and lateral setae usually stronger than ventral, thorn-like, slightly bent or curved with rather blunt tips, ventral setae more setiform, bent, with elongated and acute tips. Only few setae of tarsi and tibiae longer (around 110 – 135 μm): tarsal *ft″* and tibial *l′* and *v′* of leg IV and tarsal *tc and* tibial *l′* and *v′* of leg I being the longest (Figures 5A,B,D). Famulus short, straight, simple setiform. All solenidia also rather short, always shorter than longest seta of respective leg segment, genual solenidia fine, gently curved and slightly longer or subequal to accompanied seta *d*, tibial solenidia short, more or less straight, erect, short. Tarsal solenidia of leg I and II setiform, slightly bent and subequal in length to the other setae of the segment. Companion seta *d* absent on all tibia, all tibial solenidia free and short. All solenidia of genua I-III with companion seta *d*. Both v_2 setae present on tarsus I. Setal formula of legs as follows (famulus included, solenidia in parentheses): leg I: 1-7-4[1]-4(2)-22(2), leg II: 1-5-4[1]-4(1)-18(2), leg III: 2-4-3[1]-3(1)-18, leg IV: 1-4-3-3(1)-15. Homology of the setae is presented in table 2.

Ontogeny — Single individual of larva found together with adults (Figures 6, 7), nymphs unknown. Description of larva as follows:

Dimensions — Body length 426, maximum width 240. Legs I and II longer than body (470 and 430, respectively), other measures are given in Table 1.

Integument — Body colour pale or white, with some parts (legs, mouthparts, apophyses) more sclerotised and slightly brownish, darker. Surface of body irregular, with transverse elevated parts around setal insertions, whole body covered with layer of transparent, mostly granular cerotegument, forming lines and small spots (Figures 3A, B; Plate 3A – *ctg*). Legs covered with more amorphous, almost transparent cerotegument with folds, which appear as irregular lines and nets (Figures 3C-E, 7B).

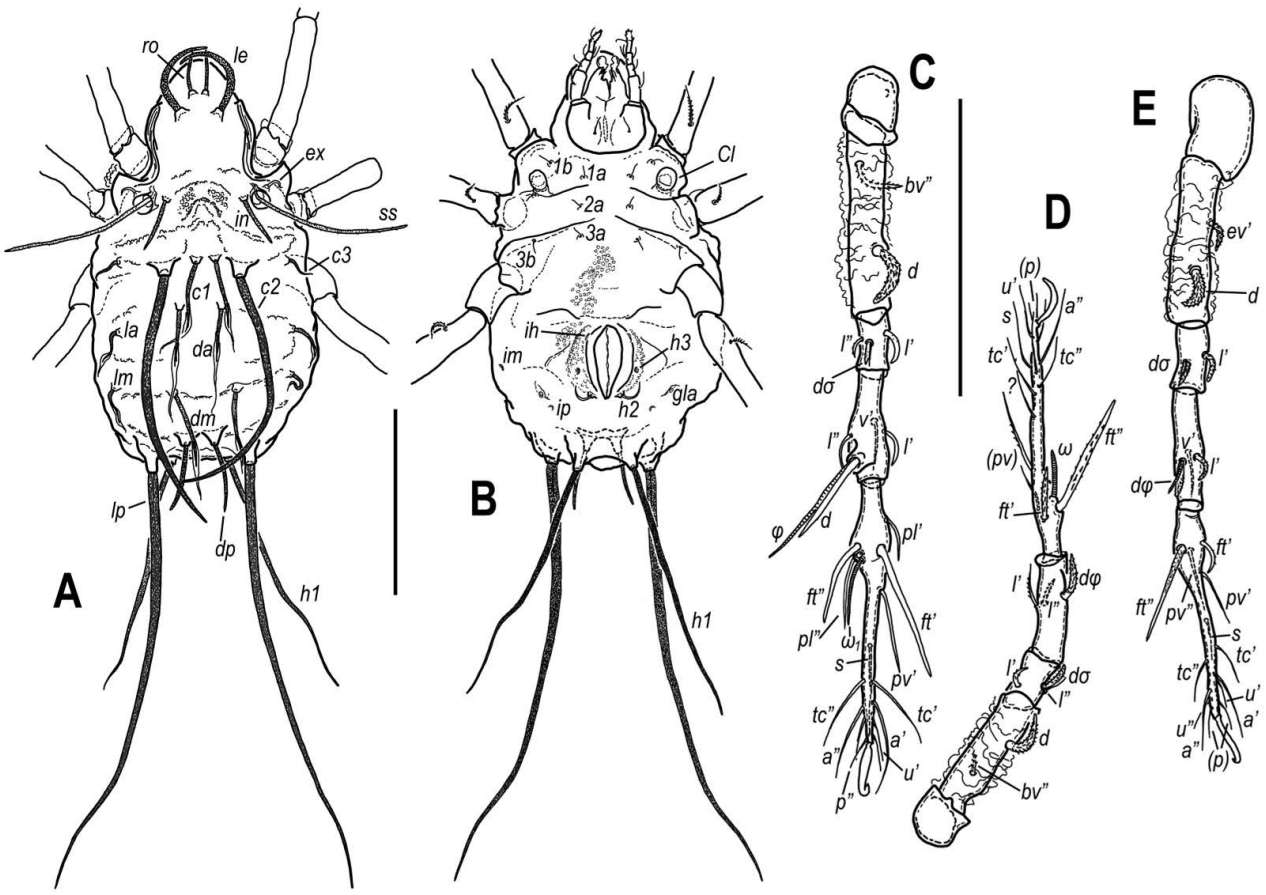


FIGURE 6: *Damaeus lupus* **n. sp.** (larva): A – dorsal view, **B** – ventral view, C – leg I, D – leg II, E – leg III (scale bars = 200 μm).

Dorsal characters — Pronotum generally triangular, with deep incisions above acetabula I. Prodorsum laterally with broad, more sclerotised, S shaped ridges resembling lamellar ridges of adults of higher oribatids (*lam* – Figure 7A). Anterolaterad to bothridia, between acetabula I and II, with irregularly triangular, pointed pedotectum-like projections. Lamellar setae very strong, rugose, regularly curved, inserted on distinct apophyses (Figs 6A, 7A). Rostral setae shorter and much narrower than *le*, finely rugose as well and inserted on small apophyses. Interlamellar setae straight, setiform, rugose. Exobothridial setae shortest on pronotum, inserted on small apophyses, curved, rugose, with few longer hairs distally. Sensilli rather long, setiform, with sparse spinuli on the surface except of parts in close vicinity to bothridium opening. Bothridia rather small, almost circular, with expanded transparent funnel-like rims. Opisthonotum soft, irregularly hexagonal, with lateral margins more or less parallel in first two thirds of length. Standard set of 9 setae present dorsally (*c1, c2, c3, la, lm, lp, da, dm, dp*). All lateral and most of centronotal setae inserted on tubercles, however c_2, *dp*, *lp* and *h1* on large, distinct apophyses. Opisthonotal setae very variable in size, colour and shape, but all well developed and visible. Three pairs of setae particularly long (*c2, lp, h1*), of which *lp* clearly the longest, longer than the whole body. These setae are darkly coloured, appearing as almost black, covered by dense spinuli on all they length except a very short base close to insertions (Figure 7A). Setae *dp* strong,

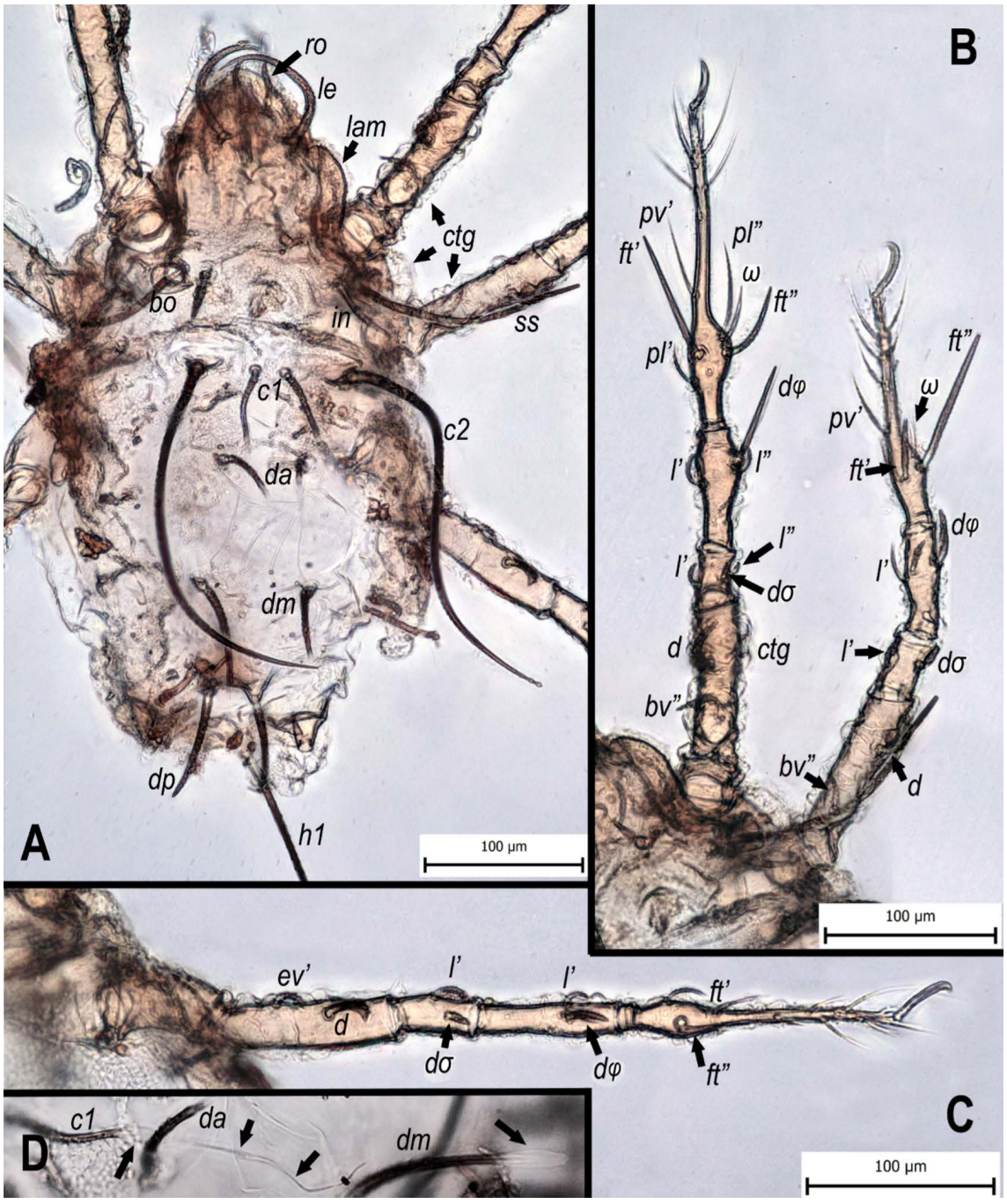


FIGURE 7: *Damaeus lupus* **n. sp.** (larva): A – dorsal view of the body, B – leg I and II, C – leg III, D – details of setae of opisthonotum.

dark, setiform, of medium length, blunt distally, covered by dense spinuli. Three pairs of setae closest to plane of symmetry (*c1, da* and *dm*) with very specific shape, with proximal part dark and covered by spinuli, resembling setae *dp*, but distally prolonged by transparent, hyaline extension, extended along end of dark part of seta and then narrowing and elongated, these elongated hyaline parts are not easily visible (Figure 7D, black arrows). Lateral setae (*c3, la, lm*) shorter, strongly curved or S- shaped, distally sometimes also with hyaline extension.

Ventral characters — Fig 3B. Gnathosoma and epimeral region without particular characters, epimeral setal formula 2-1-2, Claparéde's organ (*Cl*) well developed, distinctly rounded distally. Paraproct without setae or setal insertions. Setae *h1* very long, inserted on long and distinct apophyses, setae *h2* short, curved, inserted on distinct tubercles, setae *h3* absent, present only as insertion points. All lyrifissures (*ih, im, ip*) as well as opisthosomal gland opening (*gla*) present in usual locations.

Legs — Figures 6C-E, 7B-C. Legs with usual larval setation, leg formula as follows (famulus not included, solenidia in parentheses). Leg I: 0-2-3(1)-4(1)-15(1); leg II: 0-2-3(1)-3(1)-14(1), leg III: 0-2-2(1)-3(1)-13. Homology of setae indicated on Figures 6C-E, 7B-C, one additional seta observed on tarsus of leg II behind seta *tc'* (indicated by ? in Figure 6D). Distal setae of tarsi simple setiform, rest of setae differently shaped. Setae *d* on tibia I, *ft'* on tarsus I and *ft"* on tarsi II and III long, strong, straight and pointed, at least partly rugose. Dorsal setae of femora curved, very strong, thick, with dense spinuli. Other setae of proximal part of leg (femora, genua, partly also tibiae) also thickened and covered by spinuli, but usually short and less curved, ventral setae narrower and with hairs or smooth. Famulus (*e*) sunken in small sclerotised cup. Solenidia of different size and shape, solenidia φ and ω_1 of leg I rather long, setiform, solenidion ω of leg II shorter, ceratiform, all remaining solenidia (on genu I-III, tibia II and III) thin, almost filiform, about as long as their respective companion seta, and often difficult to observe.

Remarks — The new species clearly belongs to the nominate subgenus of *Damaeus*. It shares all important characters of the taxon such as free tibial solenidia, presence of apophysis *P*, presence of additional ventral setae (*v2'*) on tarsi I and IV, development of prodorsum with set of tubercles (*Ba Bp and Da*) and with rugose surface with various ridges. However, it also bears some very specific characters, which to my knowledge are in present combination unique among *Damaeus*. First of all, bothridia are shifted laterad and partly anteriad, so they are positioned quite close to prodorsum margins, above acetabulum I. This is unusual, as this character is very typical for most of the species closer to genus *Belba* von Heyden, 1826 and usually do not appear within *Damaeus* sensu lato. I consider this character being an apomorphy of *Belba* related group of species, with quite high taxonomic importance at generic or even higher level, and it´s appearance within *Damaeus* could be interpreted as very rare, perhaps parallel developed trait. Other special characters of this species are rather of lower, specific level. Presence of transversal curved ridges at anterior end of notogaster is not surprising, as cuticular thickenings here, even if of different kind, are quite common within *Damaeus*. Development of rostral protuberance, even if much more pronounced, have been observed in some of broader relatives, namely in *Epidamaeus nasutus* Behan-Pelletier & Norton 1985. Other remarkable characters are epimeral neotrichy, slightly ovoid form of notogaster and presence of load of soil particles on the notogaster providing "camouflage" effect. These are all characters more commonly present in genus *Belba*, similarly as shifted bothridia. If all these characters indicate more derived state of *Damaeus* "towards" the line of *Belba*, or rather combination of parallel developed derived characters and more ancient ones which could have been shared by some common ancestors remains to be clarified.

When considering affinities within *Damaeus*, the new species does not seem to belong to any clear species-group. Curved and heterotrichous notogastral setae, as well as mostly very short setae on legs indicate some relations to *D. crispatus* group, but the mentioned specific characters separate this species quite significantly also from species of this group.

Identification of the new species is therefore easy, as the combination of characters is unique and species cannot be misidentified with any of known *Damaeus* sensu lato species.

Unfortunately, only single larva was available in our material, and judgements about ontogeny are therefore very difficult. Nevertheless, the larva is easily recognized by very long notogastral setae, some of them being longer than the whole body. Porose, double-walled sejugal apodeme and sac-like porose vestibules from apodemes I and III in immatures, typical for *Belba* species were not observed, which supports the placing of the species within *Damaeus* sensu lato, despite of some characters being similar to those of *Belba* in adult.

Derivatio nominis — The species name "*lupus*" refers to the Latin name of wolf, an iconic species of remaining European wilderness territories. At the same time, the Slovak word for wolf is "vlk", which is also the name of well-known Slovak non-governmental organisation, which is active in protection of natural habitats and large carnivores in Slovakian Carpathians. The new species is dedicated to all friends and colleagues from this organisation as expression of gratitude for their so important work, and also namely to the founder of this initiative, Juraj "Vlk" Lukáč.

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