

Table S6. Comparison of *Asellus ismailsezarii* sp. nov. with *A. monticola*, *A. kosswigi*, and *Asellus aquaticus* and its known hypogean subspecies from Europe (*A. a. infernus*, *A. a. cavernicolous*). Abbreviations: A II – antenna II, Prp IV, VII – pereopods IV and VII, Plp IV, V – pleopods IV and V. Most discriminative features between *A. ismailsezarii* and any other species analysed here are presented in bold (note value overlapping).

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		<i>A. ismailsezarii</i> sp. nov.	<i>A. monticola</i> Birstein, 1932	<i>A. kosswigi</i> Verovnik, Prevorčnik & Jugovic, 2009
	References	this study	Birstein 1932, Henry & Magniez 1996	Verovnik et al., 2009
	Habitat	hypogean	epigean	hypogean
Body, eyes	pigmentation	absent, lack of eyes structures	present: almost evenly pigmented head with some small white patches, eyes black, fully pigmented with 3–4 ommatidia each	absent, lack of eyes structures
A II	Length, no. of flagellar segments	ca. 62 % BL, ca. 55 segments	n.d.	75–99% BL , ≤ 70 segments
Prp IV	shape of carpus & propodus in mature males	only slightly curved	clearly curved , facilitates grasping the female during mating	clearly curved , facilitates grasping the female during mating
	propodus superior margin and submarginal surface	6–13 simple spiniform setae	n.d.	6–12 simple spiniform setae
Prp VII	propodus superior margin and submarginal surface	9–18 simple spiniform setae	n.d.	10–17 simple spiniform setae
	propodus, longest robust seta on inferior margin	9–15% of propodus length	n.d.	8–13% of propodus length
Plp I	protopodite	<0.96 times as wide as long, around 4 hooks on medial margin	ca. 0.85 times as long as wide (cf. Henry and Magniez 1996, Fig. 2), around 4 hooks on medial margin	1.2–1.6 times as wide as long, 4–6 hooks on medial margin
	exopodite	1.05–1.12 times as long as wide, lacks concavity on lateral margin, without setation	lacks concavity on lateral margin, 26 simple setae along lateral and distal margins and 9 plumose terminal marginal setae	>1.4 times as long as wide, without or with extremely shallow concavity (with 0–5, mainly 1–4 simple setae)
Plp II	protopodite	longer than broad	longer than broad	longer or equally long than broad
	exopodite	biarticulate, distal article ovoid, 2 setae on basal article and 5–9 simple setae and 3–5 plumose setae on distal article	biarticulate, distal article ovoid, 2 setae on basal article and 9 simple setae and 4 plumose setae on distal article	biarticulate, with 16–22 simple setae and ≥7 plumose setae
	endopodite	ovoid shaped, spoon-shaped <i>Capitulum</i> with smooth surface and small <i>cannula</i>	ovoid shaped, spoon-shaped <i>Capitulum</i> with smooth surface, small <i>cannula</i>	elongated ovoid, <i>capitulum</i> helical , <i>cannula</i> short
Plp IV, V	setation along margins	absent	few setae along proximal margin	few (pleopod V: 3–5) simple setae on lateral margin proximally
	respiratory area	small, about ¼ of exopodite surface (pleopod V: 21–28% of exopodite area)	small, about ¼ of exopodite surface	pleopod V: 55–68% of exopodite surface
U	endopodite	8–9 simple spiniform setae	n.d.	15–25 simple spiniform setae
		<i>Asellus aquaticus aquaticus</i> Linnaeus, 1758	<i>Asellus aquaticus infernus</i> Turk-Prevorčnik & Blejec, 1998	<i>Asellus aquaticus cavernicolus</i> Racovitza, 1925
	References	Verovnik et al., 2009	Turk-Prevorčnik & Blejec, 1998	Racovitza, 1925
	Habitat	epigean (with possible subterranean populations)	hypogean	hypogean
Body, eyes	pigmentation	present , eyes black with 3 ommatidia each	absent	absent
A II	length, no. of flagellar segments	85–106% BL , 50–82 segments	66–98% BL , ≤ 90 segments	length > BL , >75 (mainly 90) segments
Prp IV	shape of carpus & propodus in mature males	clearly curved , facilitates grasping the female during mating	clearly curved , facilitates grasping the female during mating	clearly curved , facilitates grasping the female during mating
	propodus superior margin and submarginal surface	3–6 simple spiniform setae	n.d.	13–34 simple spiniform setae
Prp VII	propodus superior margin and submarginal surface	8–12 simple spiniform setae	n.d.	21–56 simple spiniform setae
	propodus, longest robust seta on inferior margin	18–21% of propodus length	n.d.	12–20% of propodus length
Plp I	protopodite	0.9–1.1 times as wide as long, 3–6 hooks on medial margin	around 1.3 times as wide as long, 3–6 hooks on medial margin	0.9–1.2 as wide as long

	exopodite	1.66-1.96 times as long as wide, with well-expressed concavity (with 3-12 simple setae)	>1.4 times as long as wide, symmetrical and shallow concavity (with around 5 simple setae)	>1.4 times as long as wide, symmetrical and well-expressed concavity (with more than 5, mainly 7-15 setae)
Plp II	protopodite	longer than broad	little longer than broad	n.d.
	exopodite	biarticulate, with 9-14 simple and 5-8 plumose setae	biarticulate, with 9-12 simple setae and 3-5 plumose setae	biarticulate, with 8-14 simple setae and ≥7 plumose setae
	endopodite	elongated ovoid, <i>capitulum helical</i> , <i>cannula</i> short	elongated ovoid, <i>capitulum helical</i> , <i>cannula</i> short	n.d.
Plp IV, V	setation along margins	some (pleopod IV: 7-11, pleopod V: 5-10) simple setae on lateral margin proximally	few (pleopod V) simple setae on lateral margin proximally (cf. Turk-Prevorčnik & Blejec 1998, Fig. 1f)	n.d.
	respiratory area	pleopod V: small, 30-39% of exopodite surface	pleopod V: 15-26% of exopodite surface	pleopod V: ≥55% of exopodite surface
U	endopodite	10-15 simple spiniform setae	n.d.	28-66 simple spiniform setae
