

A New Species of the Bristletail Genus *Allopsontus* Silv. (Thysanura, Machilidae) from Southeastern Kazakhstan

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Abstract—A new bristletail species, *Allopsontus asiaticus* sp. n., is described from Southeastern Kazakhstan. It is most similar to *A. europaeus* Kaplin, 1983 described from the southern coast of the Crimea.

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Examination of the material collected by the author in 2013 from Southeastern Kazakhstan has revealed a new species of the genus *Allopsontus* Silv.; its description is given below.

The types of the new species are deposited in the collection of the Zoological Institute, the Russian Academy of Sciences, St. Petersburg.

Allopsontus asiaticus Kaplin, sp. n.
(Figs. 1–13)

Material. Kazakhstan, Taldy-Kurgan Prov., environs of Sary-Ozek, fescue + feather-grass steppe, under stones, 16.IX.2013, ♂ (holotype, in slide), 1 ♀ (paratype, in slide) (V.G. Kaplin).

Description. Body length 8.5–10.3 mm, width 1.9–2.4 mm. Body whitish, with weak hypodermal pigment in area of head capsule around eyes, ocelli, and antennal bases, at sides of clypeus, on maxillae and mandibles, and at bases of cerci and caudal filaments. Antenna much shorter than body. Cercus of female about 3.5 mm long, or 0.34 times as long as body, with 1 apical spine (Fig. 13). Chains in apical part of antennal flagellum 5-segmented.

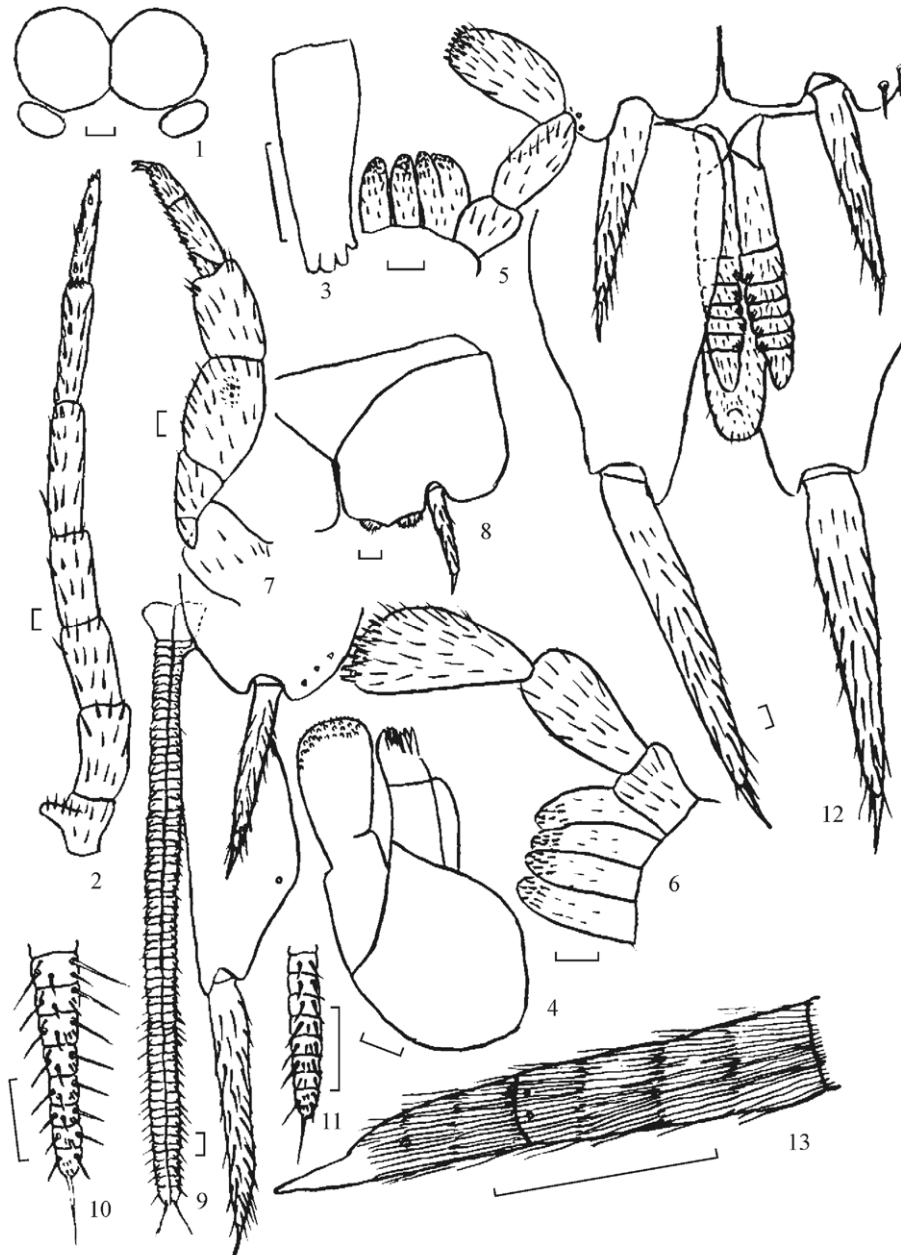
In ethanol-preserved specimens, eyes dark, with bluish tint. Total width of eyes 0.68–0.76 mm, length 0.38–0.39 mm. Length to width ratio of eye 1.05–1.15. Eye contact line 0.42–0.45 times eye length. Paired ocelli oval, lying sublateral to eyes, pale brown with white borders; size of ocelli 0.22–0.27 × 0.11–0.15 mm, their width 1.8–2.0 times their length. Distance between ocelli 0.45–0.47 times total width of eyes (Fig. 1).

5th segment of maxillary palpus 1.42–1.46 times in male, and 1.52–1.56 times in female as long as 4th segment (Fig. 2). Maxillary and labial palpi of male and female without small appressed setae. 7th segment of maxillary palpus with 8–10, 6th with 6–8, and 5th with 3 or 4 colorless dorsal spines. Apex of inner chewing lobe of maxillae split (Fig. 4). Ultimate segment of labial palpus triangularly oval, 2.1–2.2 times as long as wide (Figs. 5, 6). Apex of mandible clearly 4-lobed (Fig. 3).

Fore femur widened, 1.67 times and 1.82 times as long as wide in male and in female, respectively. In male, fore femur with narrow sensory areas including 2–4 rosette-like papillae (Fig. 7). All pairs of tarsi of male and female with 2 rows of needle-shaped pigmented ventral setae; tibiae and femora with separate setae. Number of setae: 2 or 3 on 1st tarsal segment, 6–8 on 2nd and 3rd tarsal segments, 2–4 on tibiae, and 1 or 2 femora. Styli present on middle and hind legs; their length 0.5–0.6 mm in female, 0.4–0.45 mm in male.

In male, posterior angles of abdominal sternites II, III, and VIII equal to 115–120°, those of sternites IV and V, to 95–98°, and those of sternites VI and VII, to 98–103°. In female, posterior angles of abdominal sternites II–IV equal to 108–111°, those of sternites V and VI, to 99–102°, and that of sternite VII, to 117°. Abdominal coxites II–V in male and female with 2 + 2 retractile vesicles; coxites I, VI, VII with 1 + 1 retractile vesicles (Fig. 8). For length ratio of styli, sternites, and coxites of abdomen, see Table 1.

Thoracic tergites, abdominal tergites and coxites I–III, and abdominal coxite IV of female without mac-



Figs. 1–13. *Allopsontus asiaticus* sp. n.: (1) eyes and paired ocelli; (2) maxillary palpus; (3) apex of mandible; (4) maxilla; (5, 6) labium and labial palpus; (7) fore leg; (8) sternite and coxite of abdominal segment IV; (9) ovipositor of female with abdominal coxites VIII and IX; (10, 11) apical part of anterior and posterior gonapophyses of ovipositor; (12) male genitalia with abdominal coxites VIII and IX; (13) apex of cerci [(1, 6, 9–11, 13) female; (2–5, 7, 8, 12) male, holotype]. Scale 0.1 mm.

rochaetae. Abdominal tergite IV with 2–3 + 2–3, and V–VII with 3–4 + 3–4 sublateral macrochaetae; abdominal tergites VIII and IX with 5 + 5 sublateral macrochaetae in male, and with 6–7 + 6–7 sublateral macrochaetae in female; tergite X with 2 + 2 sublateral macrochaetae. Abdominal coxites IX with 0–1 + 0–1 outer sublateral macrochaetae; coxites V–VIII with 1–2 + 1–2 outer sublateral macrochaetae in male and

with 2–3 + 2–3 outer sublateral macrochaetae in female.

Ovipositor long, fine, articulate, of first type. Anterior gonapophyses of ovipositor consisting of 65, and posterior one, of 70 segments. Ovipositor 2.6 mm long, 0.1 mm not reaching apices of styli of coxites of abdominal segment IX. Apical needles of ovipositor

Table 1. Morphological parameters of *Allopsontus asiaticus* sp. n.

Abdominal segments	Abdominal sternite to coxite length ratio		Length ratio of styli (without supporting spines) to abdominal coxites		Length ratio of supporting spines to abdominal styli (without supporting spines)	
	male	female	male	female	male	female
II–VI	0.50–0.56	0.58–0.61	0.55–0.62	0.58–0.62	0.19–0.22	0.19–0.20
VII	0.46	0.46	0.54	0.62	0.20	0.20
VIII	?		0.68	0.83	0.19	0.16
IX	0.34		0.84	0.74	0.13	0.14

about 3.1–3.2 times as long as distal segments combined (Figs. 9–11). For number of setae on segments of anterior and posterior gonapophyses (except for apical needles), see Tables 2 and 3.

Male genitalia with parameres on abdominal segment IX. Parameres 1 + 6-segmented (Fig. 12). Penis projecting distinctly beyond apices of parameres; distance at which penis not reaching apices of coxites of segment IX equal to width of terminal segment.

Differential diagnosis. *Allopsontus asiaticus* sp. n. belongs to the subgenus *Allopsontus* s. str. comprising

Table 2. Chaetotaxy of anterior gonapophyses of the ovipositor of *Allopsontus asiaticus* sp. n.

Segments of gonapophyses (from apex)	Number of setae on segments	
	long simple	short conical sensory
1	2	4 or 5
2–4	3	2 or 3
5	4	2
6	5	2
7–17	5	0
18–34	4	0
35–58	3	0
59–63	2	0
64–65	0	0

Table 3. Chaetotaxy of posterior gonapophyses of the ovipositor of *Allopsontus asiaticus* sp. n.

Segments of gonapophyses (from apex)	Number of setae on segments	
	long simple	short conical sensory
1	3	5
2–4	2	2
5	2	1
6–11	2	0
12–32	1	0
33–70	0	0

14 species (Kaplin, 1993) with 2 + 2 retractile vesicles on abdominal coxites II–V of the male and female and with a long fine ovipositor without digging spines. In this subgenus, the new species is attributed to the group comprising the species characterized by the following features: the posterior angles of abdominal sternites III–VI are equal to 95–115°; the length to width ratio of one eye is equal to 0.9–1.15; the eye contact line is 0.32–0.45 mm long; the chains of the apical half of the flagellum are 5-segmented; the fore femur bears narrow sensory areas; and the maxillary and labial palpi of the male bear no small appressed setae. This group includes two species, *A. europaeus* Kaplin, 1983 (Kaplin, 1983) and *A. asiaticus* sp. n., which differ in the following characters.

Characters	<i>A. europaeus</i>	<i>A. asiaticus</i> sp. n.
Length to width ratio of eye	0.9–1.0	1.05–1.15
Eye contact line	0.32–0.40	0.42–0.45
Width to length ratio of simple ocellus	2.0–2.5	1.8–2.0
Ratio of length of 5th segment of maxillary palpus to that of 4th segment	1.55–1.60	1.42–1.55
Length to width ratio of ultimate segment of maxillary palpus	1.8–2.0	2.1–2.2
Number of rosette-like sensillae of fore femur of male	~ 9	2–4
Number of segments of ovipositor	72–74	64–70
Number of segments of paramere	1 + 5	1 + 6

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