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Acerentomon szeptyckii sp. n. (Protura: Acerentomidae) from Ukraine

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Abstract. *Acerentomon szeptyckii* sp. n. is described from Transcarpathian Lowland, Ukraine. The new species is most similar to *A. balcanicum* IONESCU, 1933, but differs from this species in the shape of foretarsal sensilla *a* and *b*, the shape of the male squama genitalis, localization of teeth on laterotergite VIII, the presence of pore *al* on tergite I, and in measurements and indices.

Key words: Protura, *Acerentomon*, new species, Ukraine.

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I. INTRODUCTION

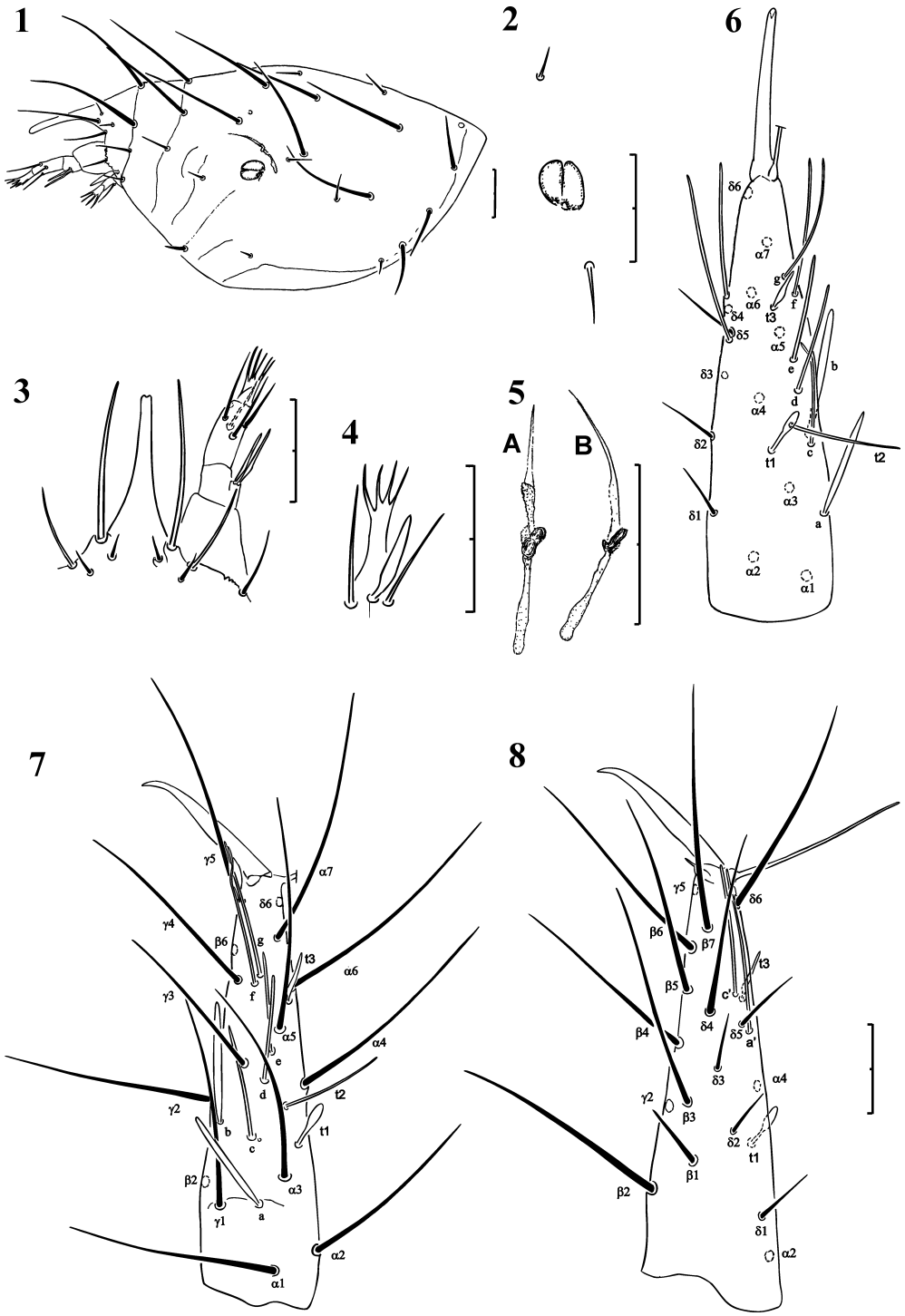
Of the 10 species of the *Acerentomon* SILVESTRI recognized from Ukraine (SHRUBOVYCH 2006), most have been collected from the Ukrainian Carpathians. In material of Protura from Transcarpathian Lowland I found a new species of *Acerentomon* together with *A. skuhravyi* RUSEK, 1965. This new species belongs to the "*microrhinus*" group (TUXEN 1964), characterised by the lack of seta *x* on tergite VII and lack of posterior setae on sternite VIII. The new species described below is most similar to *A. balcanicum* IONESCU, 1933.

Acerentomon szeptyckii sp. n.

(Figs 1-23, Tbl. 1)

D e s c r i p t i o n. Head setae long. Additional seta absent (Fig. 1). Pseudoculus nearly round, PR 17.9-18.9 (Fig. 2). Rostrum long, LR 5.2 (Fig. 3). Sensilla of maxillary palp with distinct basal dilation, lateral sensillum slightly longer than dorsal (Fig. 3). Sensillum of labial palp leaf-like, slender, dilated basally (Fig. 4). Canal of maxillary gland short, with two indistinct dilations in posterior part, 1.4-1.6 length of pseudoculus, CF 11.3-13.1 (Fig. 5).

Setae on nota long. Chaetotaxy normal (Table 1). All accessory setae of normal shape. Seta *1* on pronotum 2.7 times longer than seta *2* (Fig. 9). On mesonotum the length ratio of *P1* : *P1a* : *P2* as



Figs 1-8. *Acerentomon szeptyckii* sp. n. (2, 3, 5A, – paratype, others – holotype). 1 – head; 2 – pseudoculus; 3 – rostrum and maxillary palp; 4 – labial palp; 5 – maxillary glands; 6 –foretarsus, lateral view; 7 – foretarsus, exterior view; 8 – foretarsus, interior view. Scale bars 20 μm.

Table 1

Body chaetotaxy of *Acerentomon szeptyckii* n. sp.

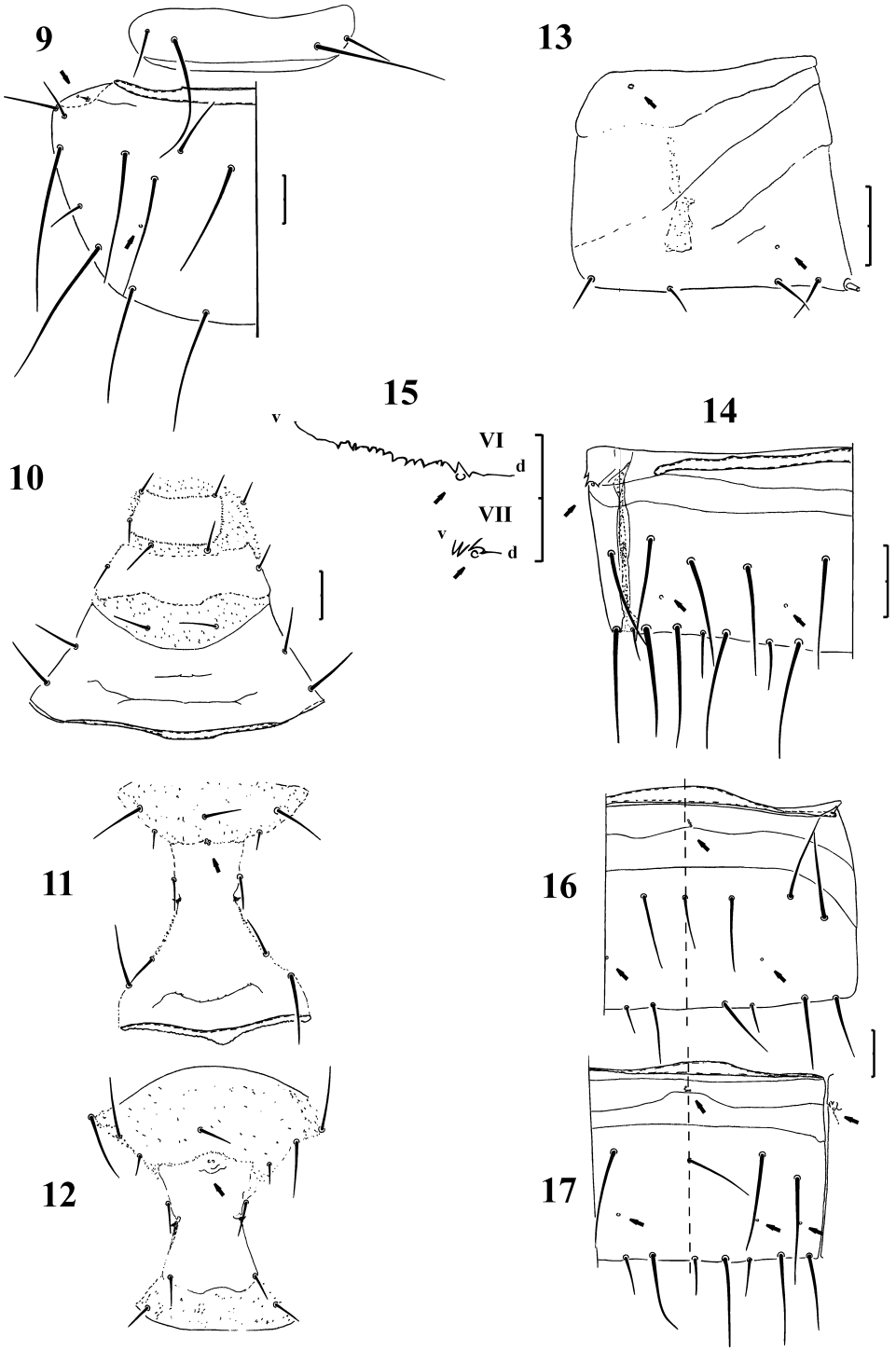
	Dorsal		Ventral	
	Setae	Formula	Setae	Formula
Th. I	1,2	4	A1, 2, M1, 2 P1, 2, 3	4+4 6
Th. II	M, A2, 3, 4 P1, 1a, 2, 2a, 3, 3a, 4, 5	8 16	Ac, 2, 3, M P1, 3	5+2 4
Th. III	M, A2, 3, 4, 5 P1, 1a, 2, 2a, 3, 3a, 4, 5	10 16	Ac, 2, 3, 4, M P1, 3	7+2 4
Abd. I	A1, 2, 3 P1, 1a, 2, 2a, 3, 3a, 4	6 14	Ac, 2 P1, 1a	3 4
Abd. II	A1, 2, 3, 4, 5 P1, 1a, 2, 2a, 3, 4, 4a, 5	10 16	Ac, 2, 3 Pc, 1a, 2	5 5
Abd. III	A1, 2, 3, 4, 5 P1, 1a, 2, 2a, 3, 4, 4a, 5	10 16	Ac, 2, 3 Pc, 1a, 2	5 5
And. IV-VI	A1, 2, 3, 4, 5 P1, 1a, 2, 2a, 3, 4, 4a, 5	10 16	Ac*, 1, 2, 3 P1, 1a, 2, 3	7 8
Abd. VII	A1, 2, 3, 4, 5 P1, 1a, 2, 2a, 3, 4, 4a, 5	10 16	Ac, 2, 3 Pc, 1, 1a, 2, 3	5 9
Abd. VIII	A1, 2, 4, 5 Pc, 1, 1a, 2, 2a, 3, 3a, 5	8 15	1, 2	4
Abd. IX	1, 1a, 2, 2a, 3, 3a, 4	14	1, 2	4
Abd. X	1, 2, 2a, 3, 4	10	1, 2	4
Abd. XI	1, 3, 4	6		6
Telson		9		0 6

* – in one specimen *Ac* absent on sternite IV.

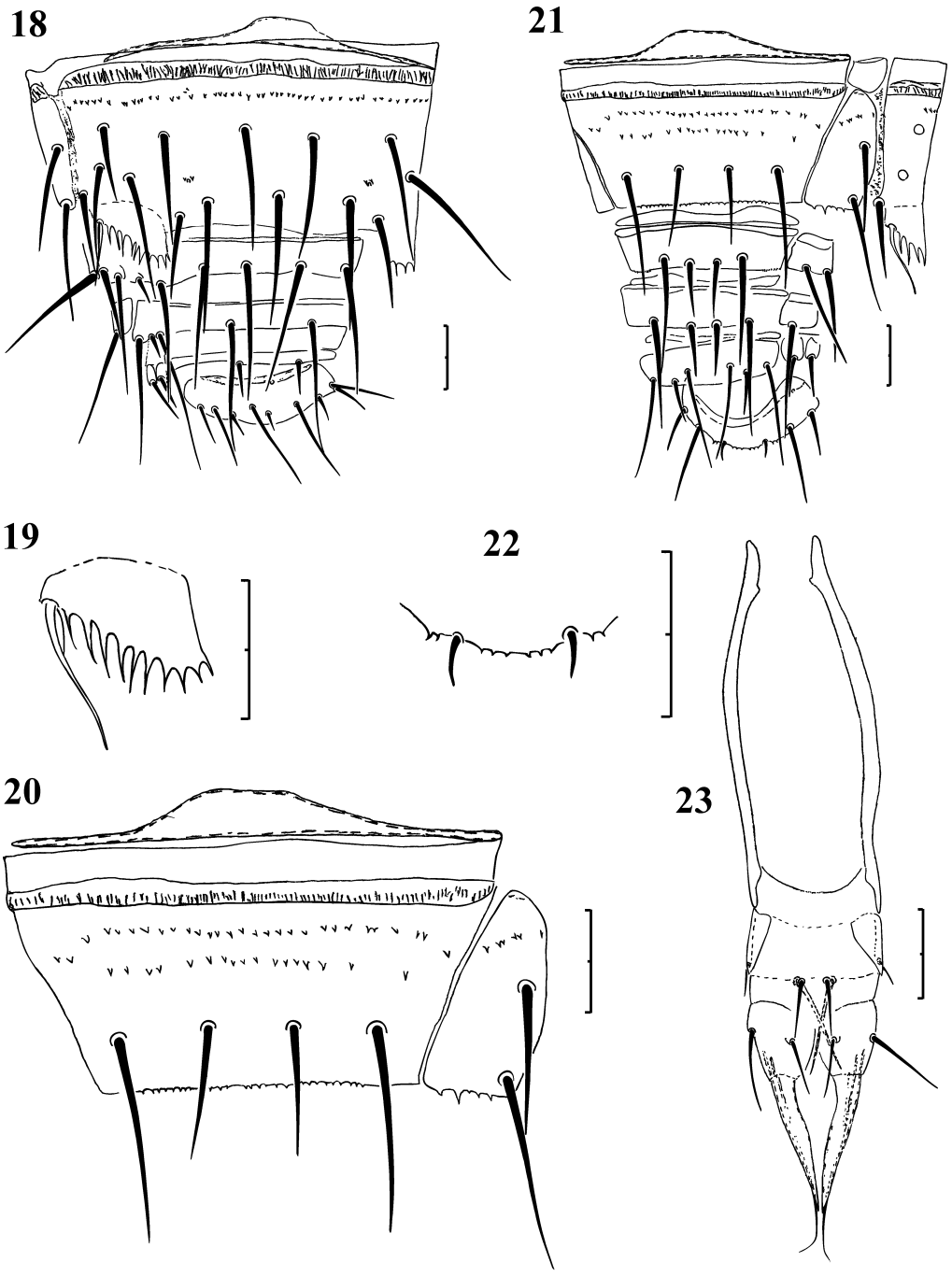
1.1-1.2 : 1 : 1.4-1.5 (Fig. 9). Seta *P5* on meso- and metanotum a small, conical sensillum longer on meso- than on metanotum. Pronotum without pores. Mesonotum with 2+2 pores (*al* and *l*). Metanotum with 1+1 pore (*l*).

Seta *A1* and *A2* on prosternum of equal length (Fig. 10). Lateral margin of meso- and metasternum with small, indistinct coxal incision (Figs 11, 12). Prosternum without pores. Meso- and metasternum with group of 2-4 pores posterior to seta *Ac*.

Foretarsal sensilla, with exception of *a, b*, *t1* and *t3*, thin, parallel-sided. Sensillum *a* short, reaching base of *t2*, thicker than other sensilla; *b* much thicker, parallel-sided, reaching base of α*5*; *b* and *c* equal, longer than *a*, shorter than *f* and *g* (Figs 6, 7). Sensilla *a'* and *c'* long, sensillum *a'* longer than *c'* (Figs 6, 8). Length formula of sensilla $t1 = t3 < e < (a = t2) < (b = c = d) < (f = g) < c' < a'$. *Claw without inner teeth. Seta s* longer than claw. BS 0.6; TR 3.1-3.3; EU 0.1.



Figs 9-17. *Acerentomon szeptyckii* sp. n. (10, 15, – paratype, others – holotype) 9 – pronotum and mesonotum (left side); 10 – prosternum; 11 – mesosternum (magnif. as 10); 12 – metasternum (magnif. as 10); 13 – lateral part of tergite I; 14 – tergite VII (left side); 15 – laterotergal structures; 16-17 – sternite VI and VII. Arrows indicate pores. Scale bars 20 μm.



Figs 18-23. *Acerentomon szeptyckii* sp. n. (17, 20, 23 – paratype, others – holotype) 18 – tergite VIII-telson; 19 – comb VIII; 20 – sternite VIII and hind margin of laterotergite VIII; 21 – sternite VIII-telson; 22 – hind margin of ventral lobe of telson; 23 – male squama genitalis. Scale bars 20 μm.

Chaetotaxy of abdominal segments as in Table 1. Tergite VII without seta *x* (Fig. 14). Accessory setae on tergite I-VII much shorter than principal ones, of normal shape. Tergites I-VII with 3+3 pores (*psm*, *psl* and *al*) (Figs 13, 14). Pleural structures not developed on tergites I-V, but on VI 15-18 teeth anterior to pore *al*, on VII several distinct teeth near pore *al* (Fig. 15).

Abdominal legs with 4, 2, 2 setae. Accessory setae on sternites I-VII slightly shorter than those on tergites. Sternites I-V with single median pore posterior to *Ac*. Sternites VI and VII with group of three or four pores situated medially, near anterior margin of sternite, and 1+1 pores on VI sternite and 2+2 single pores on VII sternite (Figs 16, 17).

Tergite VIII with one row of distinct teeth (Fig. 18). Pore *psm* with 1-2 accompanying teeth. Comb VIII composed of 10-12 teeth (Fig. 19). Laterotergite VIII with row of teeth anteriorly, without teeth posteriorly (Fig. 20). Hind margin of laterotergite VIII with 3-4 large teeth and several small teeth. Sternite VIII with two rows of distinct teeth and toothed hind margin (Fig. 20), seta *1a* and pores absent.

On tergite IX seta *1a* subequal to seta *1*, seta *2a* short and thin, seta *3a* thick, more than half the length of seta *3* (Fig. 18). Tergite XI with 3+3 setae. Hind margin of tergite IX-XI smooth. Dorsal lobe of telson with simple median pore, hind margin smooth. Sternites IX and X with 4 setae, XI with 6 setae (Fig. 21). Ventral lobe of telson with about 10 teeth on hind margin (Fig. 22) and with 1+1 anterolateral pores. Male squama genitalis with 6+6 setae, and without a pointed median process on acrostyli (Fig. 23). Female squama genitalis not observed.

Measurements (in μm) – adult

Body about 1 600, head: 170, rostrum: 33, pseudoculus: 9-10, posterior part of maxillary gland: 13-15, pronotal seta *1*: 60-65, pronotal seta *2*: 22-24, mesonotal seta *P1*: 58-60, *P1a*: 52-54, *P2*: 74-77, foretarsus: 114-115, claw: 35-37, empodial appendage: 3-4.

M a t e r i a l e x a m i n e d. Holotype male, and paratype male, Ukraine, Transcarpathian Lowland, near Uzhorod city, beech-oak forest (*Fagus sylvatica*, *Quercus robur*); in soil and litter, 20. 05. 2008; leg. K. GOBLYK.

The types are deposited in the collection of the State Natural History Museum of Ukrainian National Academy of Sciences, L'viv (SNHMU).

R e m a r k s. *Acerentomon szeptyckii* sp. n. is most closely related to *A. balcanicum* by the shape of the sensilla of the maxillary palps (dilated basally), shape of the laterotergal structure on tergite VI-VII, and possession of a toothed hind margin on sternite VIII. The new species differs in the localization of teeth on laterotergite VIII (in *A. balcanicum* distinct row of little teeth present in posterior part, whereas in *A. szeptycki* absent). The new species lacks a pointed median process on the acrostyli near the mouths of the ductus ejaculatorii, whereas *A. balcanicum* possesses it. The morphology of foretarsal sensilla is similar in these species, but in the new species sensillum *a* is thicker than in *A. balcanicum* and sensillum *b* is broad and parallel-sided, not spindle-shaped. The shape of sensillum *b* in the new species is similar to that of *A. meridionale* NOSEK, 1960 and *A. brozai* SZEPTYCKI & SHRUBOVYCH, 2008. However the new species differs from them in having a toothed hind margin of sternite VIII, by small coxal incisions on the meso- and metasternum, by another proportion of setae on pronotum and by different shape of laterotergal structures on laterotergite V and VI.

The other differences found in the shape of comb VIII, in the presence of pore *al* on tergite I and in the measurement and indices.

N a m e d e r i v a t i o n. I have the honour of dedicating the new species to my teacher Prof. Andrzej SZEPTYCKI, the eminent taxonomist in Protura.

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