A NEW SPECIES OF *HOMIDIA* FROM CHINA (COLLEMBOLA: ENTOMOBRYIDAE)

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ABSTRACT

A new species of Entomobryidae, *Homidia pentachaeta*, is described from China. It is unique in the presence of 5 lateral macrochaetae on each side of abdominal segment 3.

Key Words: Collembola, Entomobryidae, *Homidia pentachaeta*, new species, China

RESUMEN

Una nueva especie de Entomobryidae, *Homidia pentachaeta*, es descrita de China. La especie es única por la presencia de 5 macrochetae en cada lado del tercer segmento abdominal.

Many species of the genus *Homidia* Börner have been described from Japan and Korea but only five species have so far been described from China: the widespread *Homidia socia* Denis, *H. nigrocephala* Uchida, *H. sinensis* Denis, n. status, *H. transitoria* Denis, and a species from Tibet currently in press. A sixth species is described here.

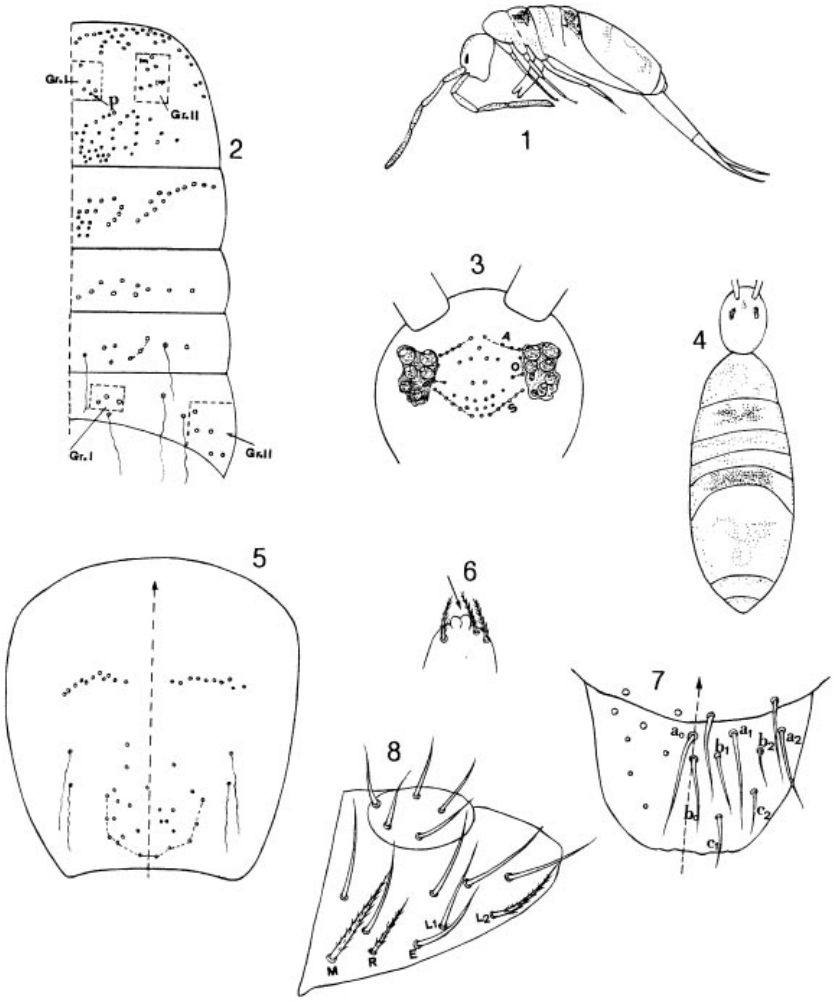
Homidia pentachaeta sp. nov. (Figs. 1- 15).

Maximum body length 3.0 mm. Pattern as in Figs. 1, 4: background color white to pale purplish; Ant. III & IV pale purple; eye patches dark blue; interantennal patch dark, small, and nearly triangular; Th. III with a pair of irregular slightly darker patches near midline; Abd. III with a wide, slightly darker, band on the central part of dorsum; other segments with unevenly scattered pigment.

Antenna 2.9 - 3.5 times as long as head. Mean ratios of antennal segments 1-4: 1.0/1.2/1.0/1.8. Ant. IV with 2 apical bulbs (Fig. 6). Dorsal chaetotaxy of head (after Szeptycki, 1973): 4-6 antennal (A), 3 ocellar (O), 6 sutural (S) macrochaetae on frontal area. Eyes 8+8, G and H much smaller than others and masked by dark pigment (Fig. 3). Labrum without papillae, seta a^2 shorter than a^1, but longer than b^2 (Fig. 7). Setal formula of labial base as M, R, E, L^1, L^2; setae E & L^1 smooth, others ciliate (Fig. 8).

In this paper we follow the groupings of the body macrochaetae developed in the work on *Sinella* s.s. by Chen & Christiansen (1993). Thorax with macrochaetae on thoracic tergites as in Fig. 2: Th. II with 4 macrochaetae in group I and 5 (6) in group II. Macrochaetal formula of coxae 3/4+1,3/4+2 (Fig. 9). Trochanteral organ with 28-35 smooth setae (Fig. 10). Inner tibiotarsal differentiated setae large, finely ciliate, and clearly different from the normal ciliate setae, only distalmost one on third pair of legs straight and smooth. Tenent hairs strongly clavate and slightly longer than inner margin of unguis. Unguis with 3 small inner teeth. Outer edge of unguiculus smooth, without tooth (Fig. 11).

Abdomen: Dorsal chaetotaxy of Abd. I-III as in Fig. 2. Abd. I with 10 macrochaetae on each side; Abd. II with 3 macrochaetae in M3 arch, 3 inner to M3 arch, and 1 lateral on each side; Abd. III with 3 dorso-central (Group I) and 5 lateral macrochaetae (Group II) on each side. Anterior part of Abd. IV with 10-13 macrochaetae on each side; posterior part with 5 + 5 macrochaetae arranged in U-shape, inside which 7-9 macrochaetae present (Fig. 5). Except numerous small ciliate setae, ventral tube with 3 + 3 ciliate macrochaetae on anterior face, line connecting proximal one (Pr) and external-distal one (Ed) oblique to ventral groove (Fig. 12); posterior face with 5 smooth



Figs. 1-8. *Homidia pentachaeta* n. sp. (type specimens): Fig. 1. habitus; 2. semi- diagrammatic dorsal chaetotaxy of Thor. II-Abd. III (right side), 3. dorsum of head; 4. body showing color pattern; 5. semi-diagrammatic dorsal chaetotaxy of Abd. IV.; 6. antennal apical bulbs; 7. labrum, 8. labial triangle (left side).

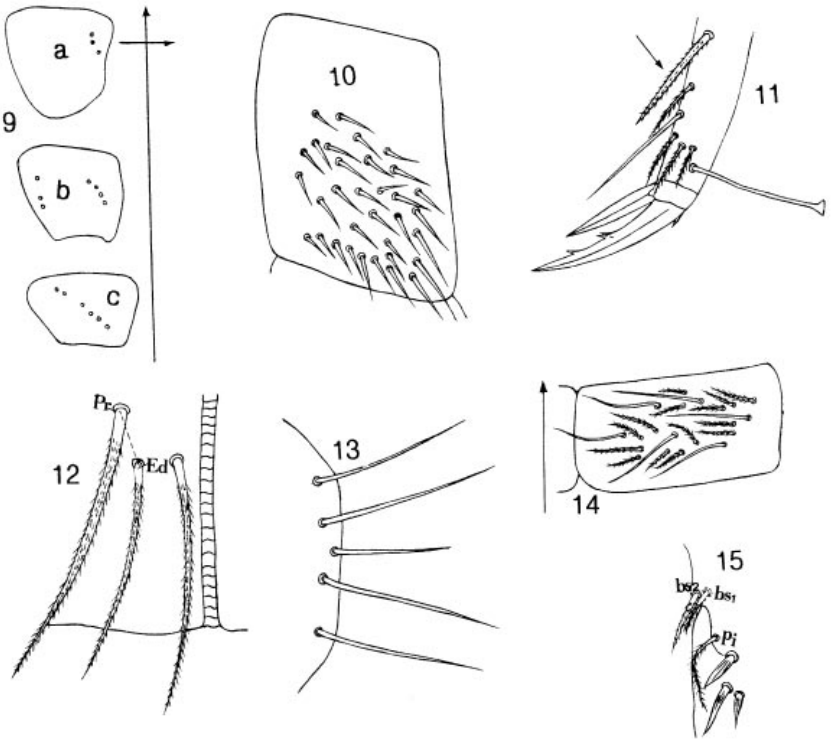
subapical setae, median one much shorter than others (Fig. 13); each lateral flap with 6 smooth setae (Fig. 14). Ratio of manubrium /(dens + mucro) = 1.0 / 1.2-1.3. Basal half of dens with 31-45 spines along inner edge in adult; basal setae (bs1 & bs2) subequal and multilaterally ciliate; proximal-internal seta (pi), much thinner and longer than bs (Fig. 15). Male genital plate not seen.

The name of this new species is derived from the Greek *pente chaite* = five chaetae. It refers to the unique feature of the species—the presence of 5 lateral macrochaetae on each side of Abd. III (in contrast to the 3-4 setae found in all other species).

Found only at the type locality in the soil among grassroots under a willow woods.

Holotype female and 6 female paratypes. **China**: Jiangsu: Nanjing: Baguazhou, IX-17-1994, collection number 8417, coll. by Jian-xiu Chen. Deposited in Department of Biology, Nanjing University, China.

Remarks: For convenience, we name the "proximal seta" and "external-distal seta" on the anterior face of ventral tube as "Pr" and "Ed" respectively. In this new species, there are more macrochaetae than in most species of the genus, especially in the dorsal cephalic groups, group II of Th. II, and dorso-central group on the posterior part



Figs. 9 - 15 *Homidia pentachaeta* n. sp. (type specimens): Fig. 9. macrochaetae of coxae, a. leg I, b. leg II, c. leg III; 10. trochanteral organ; 11. hind foot complex; 12. anterior face of ventral tube; 13. posterior face of ventral tube (showing apical smooth setae); 14. right lateral flap of ventral tube; 15. basal part of dens (bs1 & bs2—basal setae, pi—proximal-internal seta).

of Abd. IV. The unique character of the species lies in the presence of 5 lateral macrochaetae on each side of Abd. III, whereas all other species have 4 (3) macrochaetae. It is similar to the Korean species *H. similis* Szeptycki and *H. sinensis* Denis; however, it differs from both as shown below:

Character	*H. pentachaeta*	*H. similis*	*H. sinensis*
Labral papillae	absent	present	absent
Labral setae	a2 > b2	a2 < b2	a2 ≈ b2
Labial basal seta L1	smooth	ciliate	?
Dorsal cephalic chaetotaxy	4-6A, 3O, 6S	3A, 3O, 5S	3A, 3O, 4S
Coxal macrochaetae	3/4+1,3/4+2	3/4+1,3/4+3	3/?'/ 4 +2
Macrochaetae of Abd III in group I	3	2	3
in group II	5	4	4
Position of line connecting Pr & Ed to median furrow of ventral tube	oblique	parallel	?

In addition *H. penatachaeta* differs from *H. sinsensis* in having 10-13 anterior setae per side on the 4th abdominal segment as compared with 8 for *H. sinensis*. It also differs in chaetotaxy of the third thoracic and first abdominal segments (compare figures 2, 9). *H. sinensis* was originally described as a variation of *H. sauteri* but it differs from *H. sauteri* in these last two features and should be considered a valid distinct species.

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