

A New Species of the Subgenus *Coecobrya* (Collembola: Entomobryidae) from China¹

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Abstract A new Chinese species of Collembola, *Sinella (Coecobrya) liui*, is described. It is closely related to *S. (C.) tibetensis* and *huangi*, but different in the chaetotaxy of the abdomen.

Key Words Collembola, Entomobryidae, *Sinella (Coecobrya)*, new species, *liui*, China

Twenty-seven species of the subgenus *Coecobrya* have been described; however, only five have been reported from China, including *tenebricosa* Folsom 1902, *communis*, *huangi*, *oligosea*, and *tibetensis* Chen & Christiansen 1997. A new species, *Sinella (Coecobrya) liui*, from China is described here. In the present paper we follow the groupings of the body macrochaetae developed in the work on *Sinella* by Chen and Christiansen (1993, 1997).

Materials and Methods

This study was based largely upon collections made by Wu Ming over several years and studied at Nanjing University.

Holotype female, P. R. China: Qinghai: foot of Laoye Mt., 6.VI.1997, collection number 8655, coll. by Wu Ming. Paratypes 14 females, 10 immatures, data as for holotype; 7 females, north hillside of Laoye Mt., 8661, other data as for the holotype. Deposited in Department of Biology, Nanjing University and the Institute of Zoology (Beijing), Academia Sinica.

Additional records. Qinghai: Huangyuan County: Riyue Countryside: Shangen Village, 9.VI.1997, 8656; Tibet: Jiacha County, alt. 3,200m, 28.VI.1997, 8659; vicinity of Langxian County by the Yarlung Zangbo River, alt. 3,200m, 29.VI.1997, 8660; Milin County, 3-4.VII.1997, 8663; Bomi County: Tongmai, alt. 2,900m, 11-15.VII.1997, 8665; Zhamu Countryside, 18.VII.1997, 8669; Linzhi County, 8&9.VII.1997, 8667; Chayu County: Guyu Countryside, 2-3.VII.1997, 8671; Sichuan: Ganzi: Dajinsi Village: Danduo, 10.VIII.1997, 8672; Ganzi: Daofu County, alt. 4,300m, 11.VIII.1997, 8674. All collected by Wu Ming.

Diagnosis. Using the system developed by Chen and Christiansen (1997), this species is distinguished from all congeners by the pattern of its macrochaetae.

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Sinella (Coecobrya) liui sp. nov. (Figs. 1-2)

Description. Color white to pale yellow. Eyes absent. Maximum body length 2.45 mm. Antennae 1.22-1.88 times as long as cephalic diagonal. Ant. III organ with setae 2 & 3 rod-like; seta 1 acuminate, distinctly longer than setae 2 & 3; setae 4 & 5 acuminate, slightly longer than setae 2 & 3; setae 6, 7 & 9 subequal in length, seta 8 gradually tapered and pointed (Fig. 1C).

Labral setae 4,5,5,4, all smooth (Fig. 1D). External differentiated seta of labial appendage well developed, straight or slightly curved, much thicker than normal setae, tip exceeding apex of same papilla by 0.36-0.57 of its length (Fig. 1E). All setae of labial triangle smooth; seta R about 0.40-0.79 times length of seta M_1 . Mental setae G_{1-4} & H_{1-4} smooth; X_2 ciliate; Setae X_1 , X_2 and X_4 , respectively, 0.44-1.44, 1.2-1.94 and 0.40-1.20 times length of seta R of labial triangle; X_3 absent (Fig. 1F).

Macrochaetae and large mesochaetae: Head—group I: 4, group II: 3-4; Th. II—group I: 1, group II: 4, group III: 3, group IV: 1 (rarely 2), group V: 3 (4) + 4, group VI: 0; Th. III—group I: 5 (4), group II: 8-10 (mostly 8), group III: 3, group IV: 4; Abd. I: 4 on each side arranged in pattern IV; Abd. II: 3 in M_3 arch and 1 lateral on each side; Abd. III: 2 + 2 dorso-central and 3 lateral on each side; Abd. IV: 14 dorso-central arranged in pattern I, and 6 lateral arranged in pattern III on each side (Figs. 1A & 1B).

Trochanteral organ setae 11-19, all smooth (Fig. 2B). Inner differentiated setae of tibiotarsus under low magnifications appears smooth with ciliations more closely appressed to setal axis than in *huangi* and similar to *tibetensis*. Outstanding inner macrochaetae of tibiotarsus usually 1, rarely 2 on each foot, acuminate but tapered only at extreme tip. If 1, located at 0.17-0.38 distance from base to apex; if 2, respectively at 0.24-0.28 and 0.35-0.38 distance (Fig. 2C). Unguis with 3 inner teeth, basal pair unequal, outer one much larger than inner, tip reaching 0.37-0.52 distance from base to apex of ventral edge; median tooth long and sharply pointed, at 0.62-0.72 distance. Unguiculus with large outer tooth. Tenent hair thin, approximately equal to or slightly longer than unguiculus, with tip acuminate or truncate on first pair and (slightly) clavate on last 2 pairs (Fig. 2D). Ventral tube with 12-18 ciliate setae on anterior face (Fig. 2E), 6-7 smooth setae on each lateral flap (Fig. 2F), setae on posterior face not clearly seen. Manubrium without smooth setae, manubrial plaque with 3 (2) ciliate setae and 2 (rarely 1) pseudopores on each side (Fig. 2G). Mucronal apical tooth sharply pointed, basal spine long and slightly curved with tip pointed and almost reaching the apex of the apical tooth. Uncrenulate dens 1.23-2.0 times length of mucro (Fig. 2H). Male genital plate unseen.

Ecology. Found in litter, under stones and decayed wood or in cavities with ants in coniferous woods, deciduous woods or shrubland.

Etymology. Named after Mr. Liu Renhua who made almost all the drawings for our publications.

Discussion

The mental setae appear to be quite variable in this species. Seta X is ciliate (in 6 specimens) or smooth (in 5 specimens) mesochaeta, rarely a microseta (in 2 specimens); seta X_4 ciliate (in 6 specimens) or smooth (in 4 specimens) and rarely short smooth seta (in 1 specimen); X_4 supplementary seta is rarely present, if present it is short and smooth (in 3 specimens) or ciliate (in 1 specimen) and somewhat longer

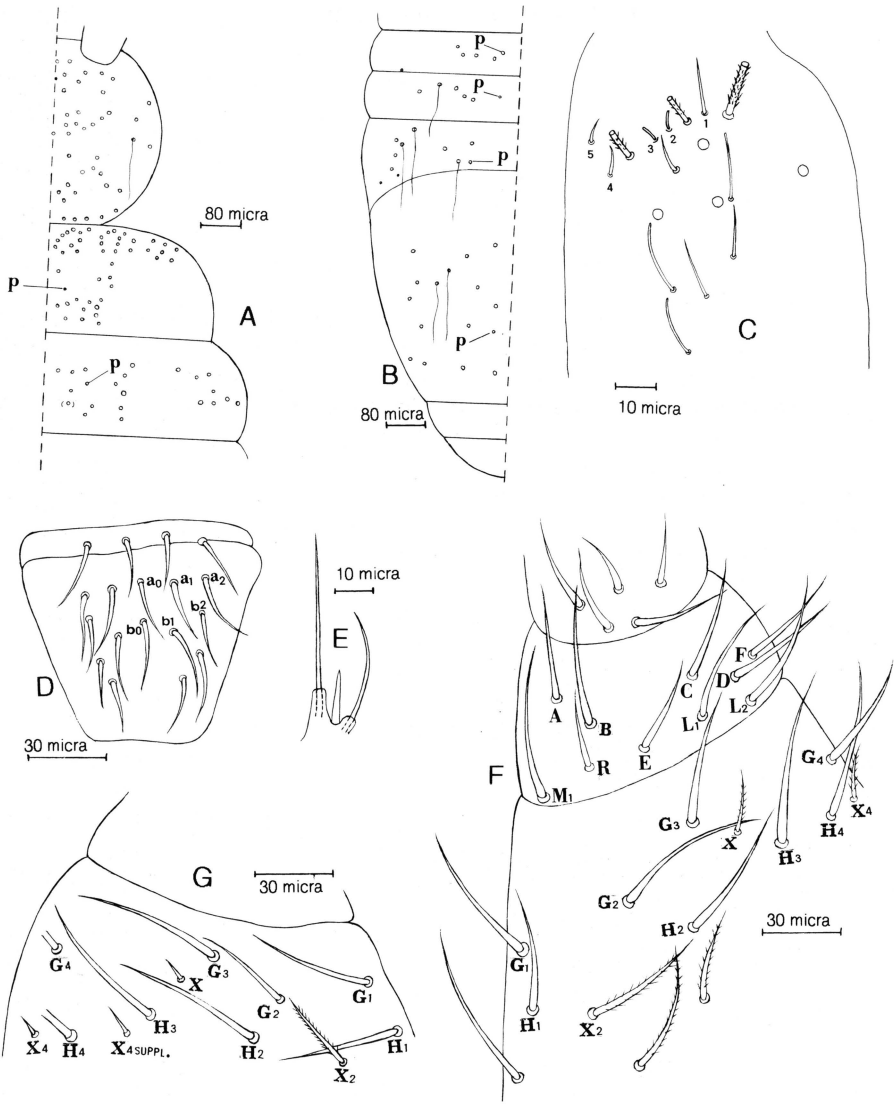


Fig. 1. *Sinella* (*Coecobrya*) *liui*, sp. nov. A. semi-diagrammatic dorsal chaetotaxy of head—Th.II; B. semi-diagrammatic dorsal chaetotaxy of Abd.I—IV; C. apex of Ant.III; D. labrum; E. external differentiated seta of labial appendage; F. typical labial and Mental chaetotaxy; G. rare variant Mental chaetotaxy.

and smooth (in 1 specimen); M_2 of labial triangle absent in all known Chinese species of this subgenus, but present in 2 specimens on one side in the new species (Fig. 1G).

The new species differs from all known Chinese species of the subgenus *Coecobrya* in the pattern of dorsal macrochaetae on Abd. I with 4 macrochaetae on each

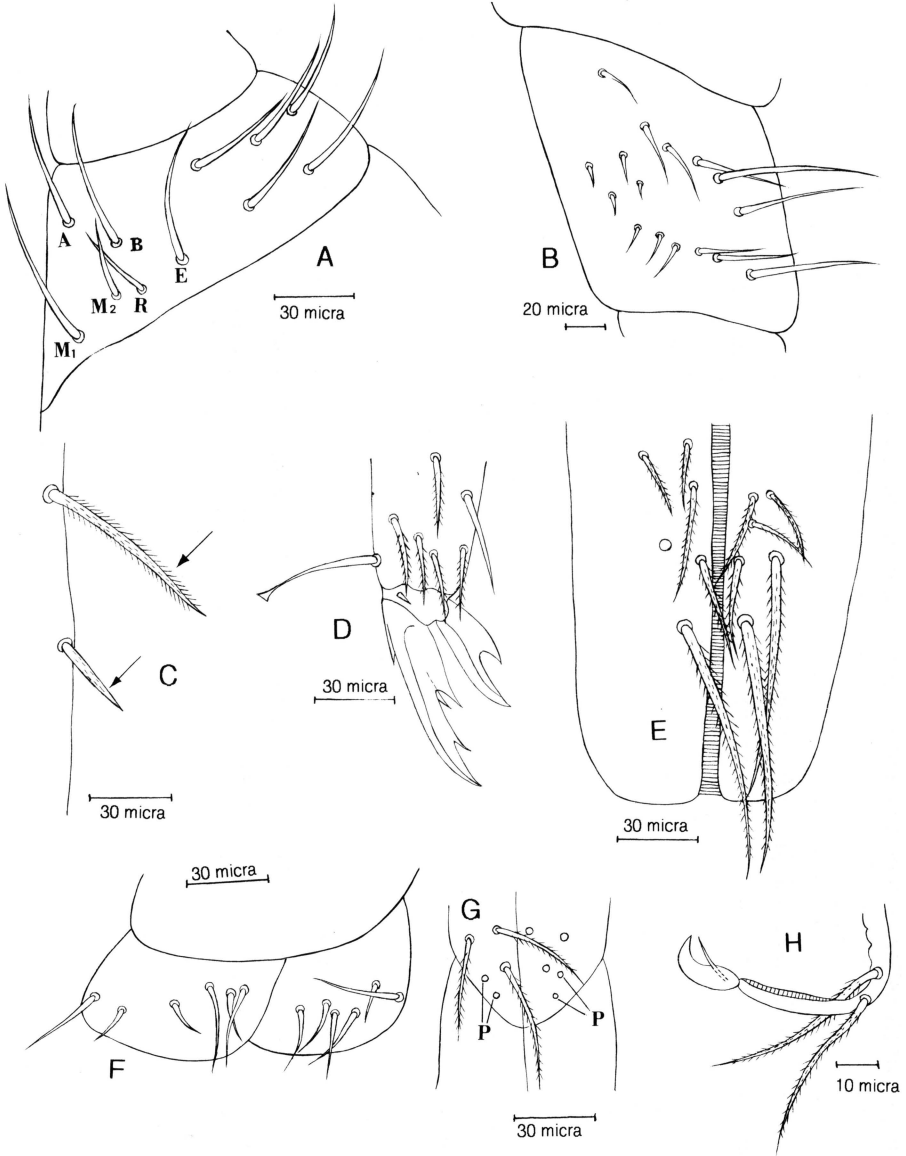


Fig. 2. *Sinella (Coecobrya) liui*, sp. nov. A. rare variant labial chaetotaxy; B. trochanteral organ; C. inner tibiotarsal setae; D. hind foot complex; E. anterior face of ventral tube one seta omitted; F. lateral flap of ventral tube; G. manubrial plaque, setae removed from right side, p = pseudopores; H. apex of dens and mucro.

Table 1. Distinguishing characteristics of species closely allied to *S. (Coecobrya) liui*

Character	<i>tibetensis</i>	<i>huangi</i>	<i>liui</i> sp. nov.
Abd. I dorsal macrochaetae	5 (6), pattern III (II)	5 (6), pattern III (II)	4, pattern IV
Dorsal central macrochaetae on Abd. IV	16-20, pattern I	10, pattern IV	14, pattern I
Dorsal lateral macrochaetae on Abd. IV	6, pattern III	4, pattern V	6, pattern III
Abd. II M_3 arch	5, 4	3	3
M_{3ei} in Abd. II M_3 arch	+	-	-
M_{3ei} suppl. in Abd. II M_3 arch	0-3	-	-
Chaetae in Gr. I of Th. II	1 (2)	3 (4)	1
Chaetae in Gr. IV of Th. II	(3) 4,5(6)	3-5	1 (2)
Chaetae in Gr. II of Th. III	9-10	9-11	8
Chaetae in Gr. IV of Th. III	7 (5-6)	4-5	4
Tenent hair	acuminate	clavate	truncate, slightly clavate
Mental setae X & X_4	smooth microseta	smooth (rarely smooth microseta)	ciliate or smooth (rarely smooth microseta)
Seta M_2 of labial triangle	absent	absent	rarely present

side arranged in pattern IV. It has 2 + 2 macrochaetae on Abd. III as in *tibetensis* and *huangi*, but different from the latter two, as shown in Table 1.

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