European Journal of Taxonomy 1116: 1–69
https://doi.org/10.5852/ejt.2026.1116.3352
This work is licensed under a Creative Commons Attribution License (CC BY 4.0)

europeanjournaloftaxonomy.eu
ISSN 2118-9773
2026 · Huang L. *et al.*

Received: 20 March 2026 • *Accepted: 11 September 2026* • *Published: 5 November 2026*

Topic editor: Magalie Castelin • *Desk editor: Kristiaan Hoedemakers*

Monograph

urn:lsid:zoobank.org:pub:D7A8275A-9623-435F-A35A-564AEC4308C3

Five new species and a new record of *Entomobrya* (Collembola: Entomobryidae) from West China with the aid of *COI* barcoding

Ling HUANG[1], Hui ZHANG[2] & Yitong MA[3,*]

[1,2,3]School of Life Science, Nantong University, Nantong, Jiangsu, 226000, China.

[*]Corresponding author: mayitong@ntu.edu.cn
[1]Email: huangdl@126.com
[2]Email: 3192276412@qq.com

Abstract. In this study, species of *Entomobrya* Rondani, 1861 from West China are studied based on molecular and morphological characters. One new species, *Entomobrya guanshanensis* sp. nov., is described from Chongqing Municipality and four new species, *Entomobrya baqueroi* sp. nov., *Entomobrya jordanai* sp. nov., *Entomobrya rikazeensis* sp. nov. and *Entomobrya similis* sp. nov., as well as a new record of *Entomobrya unostrigata* Stach, 1930 are described from Xizang Autonomous Region. Some characters of *Entomobrya retingensis* Baquero & Jordana, 2008 are also provided for the first time and a key to the Chinese species of *Entomobrya* is given.

Keywords. Chaetotaxy, Chongqing, Tibet, new species, molecular markers, springtails.

Huang L., Zhang H. & Ma Y. 2026. Five new species and a new record of *Entomobrya* (Collembola: Entomobryidae) from West China with the aid of *COI* barcoding. *European Journal of Taxonomy* 1116: 1–69.
https://doi.org/10.5852/ejt.2026.1116.3352

Introduction

The genus *Entomobrya* was established by Rondani in 1861 and is characterised by four-segmented antennae, eyes 8+8, scales absent, mucro bidentate with a basal spine, and dens without spine. Colour pattern usually plays a key role in its taxonomy, although it may be variable among specimens from a single population (Stach 1963); The molecular phylogenetic study by Katz *et al*. (2015) revealed that colour pattern is a valid tool for specific delimitation in *Entomobrya*. Chaetotaxy has also proved to be extremely important in its taxonomy (Jordana 2012).

To date, 350 species of the genus have been described worldwide (Bellinger *et al*. 1996–2024), of which 26 are from China, with five from Xizang Autonomous Region (Tibet) and no species from Chongqing Municipality (Ye *et al*. 2025). Here, we describe four new species and one new record from Tibet as well as one new species from Chongqing. Detailed descriptions of body chaetotaxy and *COI* sequences are provided for them.

Material and methods

Distribution and habitat

Specimens of *Entomobrya guanshanensis* sp. nov. were collected from the Yintiaoling National Nature Reserve, located in the northeast of Chongqing Municipality, which belongs to Southwestern China (Fig. 1). It has a subtropical humid monsoon climate with an annual average temperature of about 10°C and an annual average precipitation of 1500 mm. The total area of the reserve is about 22 000 hectares and its highest point is 2798 m above sea level. There are 3595 vascular plant species in the reserve, including *Ginkgo biloba* L., *Taxus chinensis* (Pilger) Rehder, and *Davidia involucrata* Baillon. The reserve harbours 319 terrestrial vertebrate species, such as *Panthera pardus* L., 1758 and *Moschus berezovskii* Flerov, 1929 (Zhang 2025).

The other specimens were collected from Tibet, which is located on the Qinghai-Tibetan Plateau (Fig. 1), distinguished by the highest elevation, youngest uplifts, and significant impacts on the biodiversity of East Asia (Zhang *et al*. 2025). Its average altitude is about 4000 m and its annual average temperature is -5°C. There are about 7500 vascular plant species including *Pinus densata* Mast, *Pinus yunnanensis* Franchet, *Cupressus torulosa* D. Don, *Hordeum vulgare* var. *coeleste* L. and 1000 terrestrial wild vertebrates in Tibet, such as *Pantholops hodgsonii* (Abel, 1826) and *Bos mutus* (Przewalski, 1883) (Feng *et al*. 1986; Wu 1993).

Taxon sampling and specimen examinations

Specimens were collected with an aspirator from leaf litter and stored in 99% alcohol. They were mounted on glass slides in Marc André II solution (Christiansen 1990) and were studied with a Leica DM2500 phase contrast microscope (Wetzlar, Hessen, Germany). Photographs were taken using a Leica DFC300 FX digital camera (Wetzlar, Hessen, Germany) mounted on the microscope and enhanced with Photoshop CS2 (Adobe Inc., San Jose, CA, USA). SEM photographs were taken under a ZEISS GeminiSEM 300 (Carl Zeiss AG, Oberkochen, Baden-Württemberg, Germany) after the specimens were

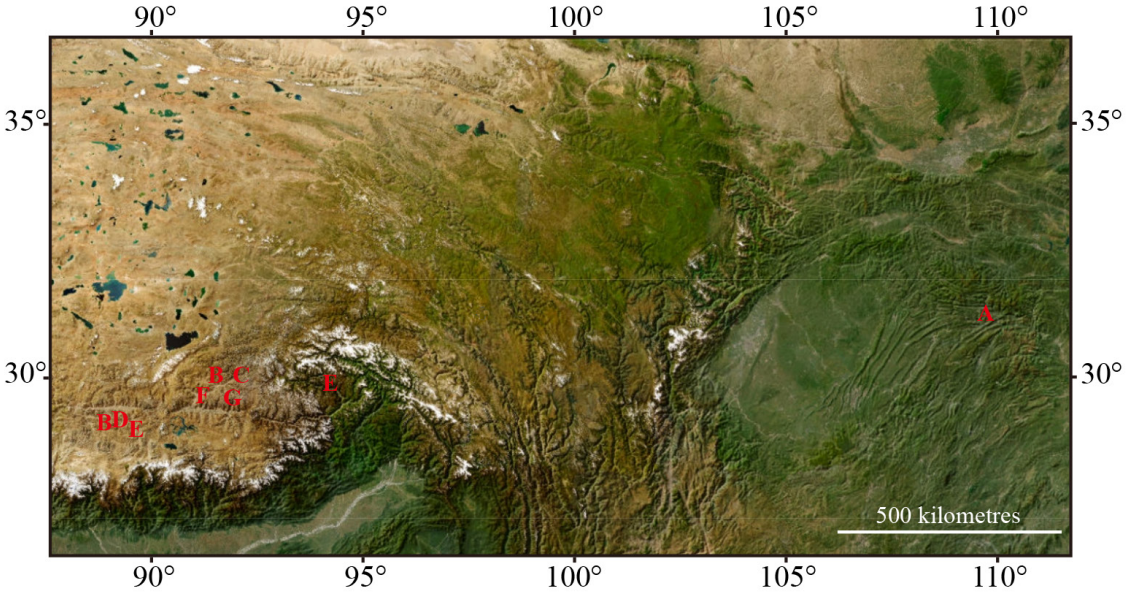


Fig. 1. Sampling map of the species from Chongqing and Tibet described in this study: A = *E. guanshenensis* sp. nov.; B = *E. baqueroi* sp. nov.; C = *E. jordanai* sp. nov.; D = *E. rikazeensis* sp. nov.; E = *E. similis* sp. nov.; F = *E. unostrigata* Stach, 1930; G = *E. retingensis* Baquero & Jordana, 2008.

coated with a Leica EM ACE600 (Wetzlar, Hessen, Germany). Type specimens were deposited in the School of Life Sciences, Nantong University, Jiangsu, China (NTU).

Chaetal nomenclature

The nomenclature of the dorsal macrochaetotaxy of the head and interocular chaetae follows Jordana & Baquero (2005), Mari-Mutt (1979, 1986) and Chen & Christiansen (1993). Labial chaetae are designated following Gisin (1964). Terminology of labral chaetae follows Szeptycki (1973) and trunk dorsal chaetotaxy follows Szeptycki (1979) adapted from Zhang *et al*. (2019).

Abbreviations

Ant. = antennal segment(s)
Abd. = abdominal segment(s)
as = anterosubmedial normal sens
bs = the normal sens behind the as
Ed = external-distal
Gr. = group
l. p. = lateral process
mac = macrochaeta(e)
mes = mesochaeta(e)
Mm = medio-medial
Ms = medio-sublateral
ms = specialised microchaeta(e)
Pr = proximal
ps = posterior normal sens
sens = specialised ordinary chaeta(e)
Th. = thoracic segment(s)

Institutional acronym

NTU = Nantong University, Nantong, China

DNA extraction and amplification

DNA was extracted using an Ezup Column Animal Genomic DNA Purification Kit (Sangon Biotech, Shanghai, China) following the manufacturer's standard protocols. Amplification of a 658 bp fragment of the mitochondrial *COI* gene was carried out using a Prime Thermal Cycler (TECHNE, Bibby Scientific Limited, Stone, Staffordshire, UK), performed in 25 µl volumes using Premix Taq polymerase system (Takara Bio, Otsu, Shiga, Japan). The primers and polymerase chain reaction (PCR) programs followed Greenslade *et al*. (2011). All PCR products were checked using a 1% agarose gel electrophoresis. Successful products were purified and sequenced on an ABI 3730XL DNA Analyser (Applied Biosystems, Foster City, CA, USA). All experiments were completed by Shenggong (Shanghai, China).

DNA sequences were assembled using Sequencher ver. 4.5 (Gene Codes Corporation) and then deposited in GenBank (GenBank accession numbers are provided in Table 1). Sequences were aligned using ClustalW implemented in MEGA ver. 5.1 (Tamura *et al*. 2011) with default settings. Pairwise genetic distances were analysed in MEGA ver. 5.1 employing the Kimura 2-parameter (K2P) model (Kimura 1980). A neighbor joining tree was constructed (Fig. 2)

Table 1. Included species and their respective GenBank accession numbers.

Species	Voucher	GenBank	Data
E. guanshanensis sp. nov.	m1321-28 m1321-29 m1321-30	PX896517 PX896518 PX896519	This study
E. baqueroi sp. nov.	m1293-2 m251293-2	PX896521 PX896533	This study
E. jordanai sp. nov.	m251295-6 m251295-7	PX896515 PX896516	This study
E. rikazeensis sp. nov.	m1297-3 m1297-4	PX896525 PX896526	This study
E. similis sp. nov.	m1297-1 m1297-2	PX896523 PX896524	This study
E. aino (Matsumura & Ishida, 1931)		KM978350	GenBank
E. dingi Ma & Shi, 2018	m251149-1 m251149-3	PX896531 PX896532	This study
E. koreana Yosii, 1965	2013DBCC-1	KY468323	GenBank
E. leviseta Ma & Shi, 2018	m1114-2 m1214-1 m251102-1	PX896528 PX896529 PX896530	This study
E. pekinensis Stach, 1963	NM08031	KY468321	GenBank
E. proxima Folsom, 1924		KM978351	GenBank
E. quadrilineata Büker, 1939	11-JCIL1-qu-2	KM610096	GenBank
E. retingensis Baquero & Jordana, 2008	m1295-1 m251295-1 m251295-2	PX896522 PX896534 PX896535	This study
E. shaanxiensis Jing & Ma, 2023	m1109-1	PX896527	This study
E. unostrigata Stach, 1930	m251294-2 BIOUG11727-A07 BIOUG02088-B04	PX896514 KR118969 KM618009	This study GenBank GenBank
E. vigintiseta Lee & Park, 1984	m1181-1	PX896520	This study

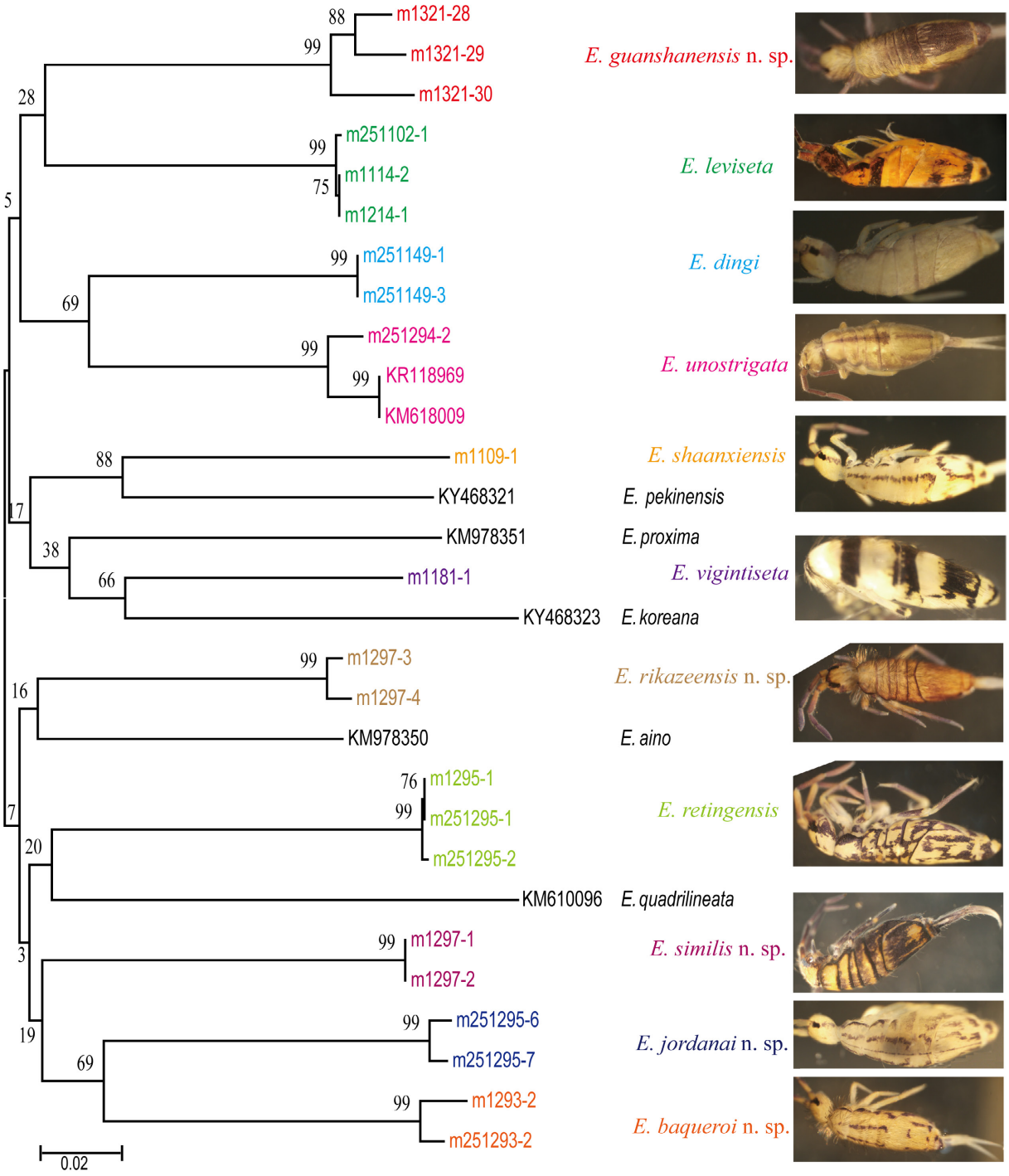


Fig. 2. Neighbor joining tree (using K2P mode) of 16 species of *Entomobrya* Rondani, 1861 based on *COI* sequences.

Table 2. Genetic distances (mean K2P divergence) between the related species in this study. The bolds are species abbreviations: *ain* = *E. aino*; *baq* = *E. baqueroi* sp. nov.; *din* = *E. dingi*; *gua* = *E. guanshanensis* sp. nov.; *jor* = *E. jordanai* sp. nov.; *kor* = *E. koreana*; *lev. E. leviseta*; *pek* = *E. pekinensis*; *pro* = *E. proxima*; *qua* = *E. quadrilineata*; *ret* = *E. retingensis*; *rik* = *E. rikazeensis* sp. nov.; *sha* = *E. shaanxiensis*; *sim* = *E. similis* sp. nov.; *uno* = *E. unostrigata*; *vig* = *E. vigintiseta*.

Species	***ain***	***baq***	***din***	***gua***	***jor***	***kor***	***lev***	***pek***	***pro***	***qua***	***ret***	***rik***	***sha***	***sim***	***uno***	***vig***
ain																
baq	19.9															
din	18.2	21.5														
gua	19.4	22.7	19.0													
jor	19.8	18.5	21.4	22.6												
kor	21.6	24.9	21.8	23.0	24.8											
lev	18.1	21.4	17.7	16.9	21.3	21.7										
pek	20.1	23.4	20.3	21.5	23.3	22.7	20.2									
pro	20.8	24.1	21.0	22.2	24.0	21.4	20.9	21.9								
qua	21.6	23.6	22.7	23.5	23.7	27.0	22.1	24.7	24.9							
ret	19.0	21.5	20.6	21.8	21.4	24.0	20.5	22.5	23.2	21.9						
rik	16.0	19.7	18.0	19.2	19.6	21.4	17.9	19.9	20.6	21.6	18.8					
sha	20.1	23.4	20.3	21.5	23.3	22.7	20.2	17.2	21.9	25.1	22.5	19.5				
sim	18.4	20.5	20.0	21.2	20.4	23.4	19.9	21.9	22.6	22.6	20.0	17.8	21.9			
uno	18.6	21.9	15.0	19.4	21.8	22.2	18.1	20.7	21.4	22.9	21.0	18.4	20.7	20.4		
vig	19.6	22.9	19.8	21.0	22.8	18.8	19.7	20.7	19.4	23.9	22.0	19.0	20.7	21.4	20.2	

Results

Molecular analysis

In the present study, the smallest interspecific distance is 15.0% (between *E. dingi* Ma & Shi, 2018 and *E. unostrigata* Stach, 1930) and the largest is 27.0% (between *E. koreana* Yosii, 1965 and *E. quadrilineata* Büker, 1939) (Table 2). Therefore, the interspecific distances of *COI* between the seven species were more than the accepted barcoding gap recently reported for species of Entomobryidae (Katz *et al*. 2015) and Tomoceridae (Yu *et al*. 2017). The molecular distances coincided with the morphological divergences, thus further supporting the separation of the four new species.

Taxonomy

Class Collembola Lubbock, 1873
Order Entomobryomorpha Börner, 1913
Family Entomobryidae Tömösvary, 1882
Subfamily Entomobryinae Schäffer, 1896

Genus ***Entomobrya*** Rondani, 1861

Diagnosis

Moderate size, usually 1–3 mm; antennae four segmented and usually with apical bulb; eyes 8+8; intersegmental membranes without microchaetae; scales absent and body chaetae not scale-like; mucro bidentate and with basal spine; dens without spine (Ma & Shi 2018).

Entomobrya guanshanensis sp. nov.
urn:lsid:zoobank.org:act:779C5FE0-62D4-4368-B65B-C575AB0E0A6A
Figs 1–8, Tables 1–3, 9

Diagnosis

Wide brown stripe present from Th. II to Abd. IV dorsally; antennae, legs and Abd. V–VI brown; prelabral chaetae smooth; interocular chaetae as p, r, t mes; Th. II with 4–5 Mm and three Ms mac; Abd. I–IV with 11, 6, 3, 7 mac centrally, respectively.

Etymology

The name is composed of the locality name Guanshan plus the Latin suffix "-*ensis*", meaning 'pertaining or originating' and referring to its type locality, the Guanshan Protection Station.

Type material

Holotype

CHINA • ♀ on slide; Chongqing Municipality, Wuxi County, Yintiaoling National Nature Reserve, Guanshan Protection Station, Stone Pillar; 31°32′15″ N, 109°41′54″ E; 2168.92 m a.s.l.; 28 Jul. 2024; Y.T. Ma leg.; sample number 1321 or CQWX0717; NTU slide 1321-1.

Paratypes

CHINA • 4 ♀♀ on slides; same data as for holotype; NTU slides 1321-2, 1321-31, 1321-32, 1321-33.

Description

Measurement. Body (head + trunk) length up to 1.67 mm.

Colour. Ground colour pale yellow; eye patches dark blue; antennae, legs and Abd. V–VI brown; wide brown stripe present from Th. II to Abd. IV dorsally and lateral part of Abd. II–Abd. IV with brown pigment (Fig. 3A–B).

Head. Antenna not annulated, 1.96–2.50 and 0.42–0.60 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/1.40–2.00/1.20–2.20/2.20–3.60. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb bilobed (Fig. 4A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 4B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, r, t mes. Dorsal chaetotaxy of head with four antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), eight sutural (S0–5, S4i, S5i) mac, one post-sutural mac (Ps2) and mes (Ps5), 9–13 posterior mac in Gr. II (Fig. 4C). Prelabral and labral chaetae as 4/5, 5, 4, all smooth, a2 and b2 slightly

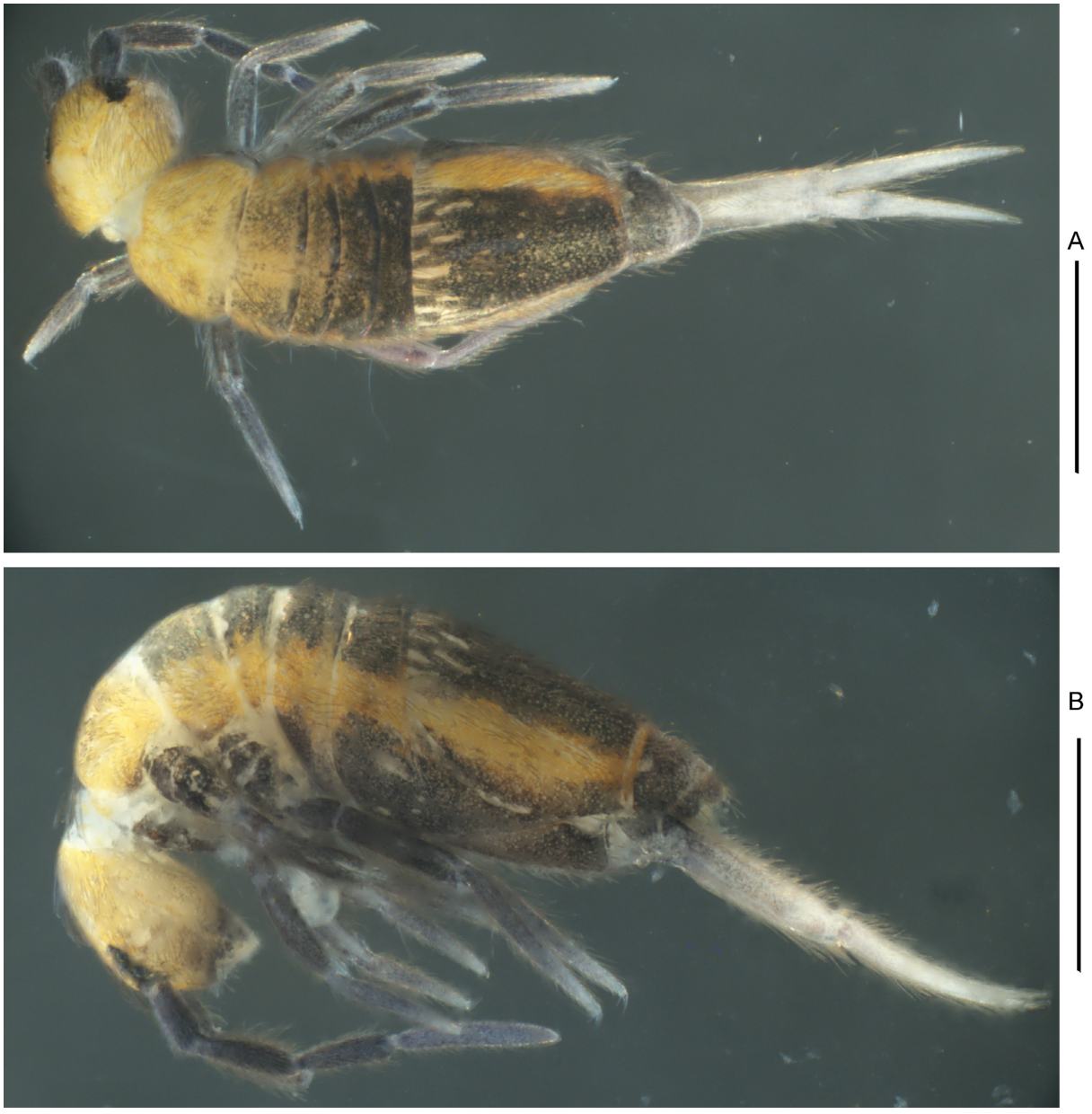


Fig. 3. *Entomobrya guanshanensis* sp. nov., paratype, habitus (NTU slide 1321-32). **A**. Dorsal view. **B**. Lateral view. Scale bars: 500 µm.

shorter than middle ones, labral papillae conical (Fig. 4D). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 4E). Lateral process (l. p.) of labial palp E finger-shaped with tip not reaching apex of papilla E (Fig. 4F). Labial base with MREL1L2, all ciliate, R 0.67–0.71 length of M (Fig. 4G).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 2, 3 (Figs 5A, 6D, 7, 8A). Th. II with 4–5 Mm (m1, m1p, m2, m2i, m2i2 sometimes absent), three Ms (m4, m4i, m4p), m5 and 38–47 posterior mac. Th. III with 42–47 mac (Fig. 5A). Coxal chaetal formula as 3/5 (anterior), 3 (posterior)/6 (Fig. 5B–D). Trochanteral organ with 25–32 smooth chaetae (Fig. 6A). Tibiotarsus without smooth or appressed chaetae and with 7–8 slightly stout chaetae almost arranged in two rows ventrally

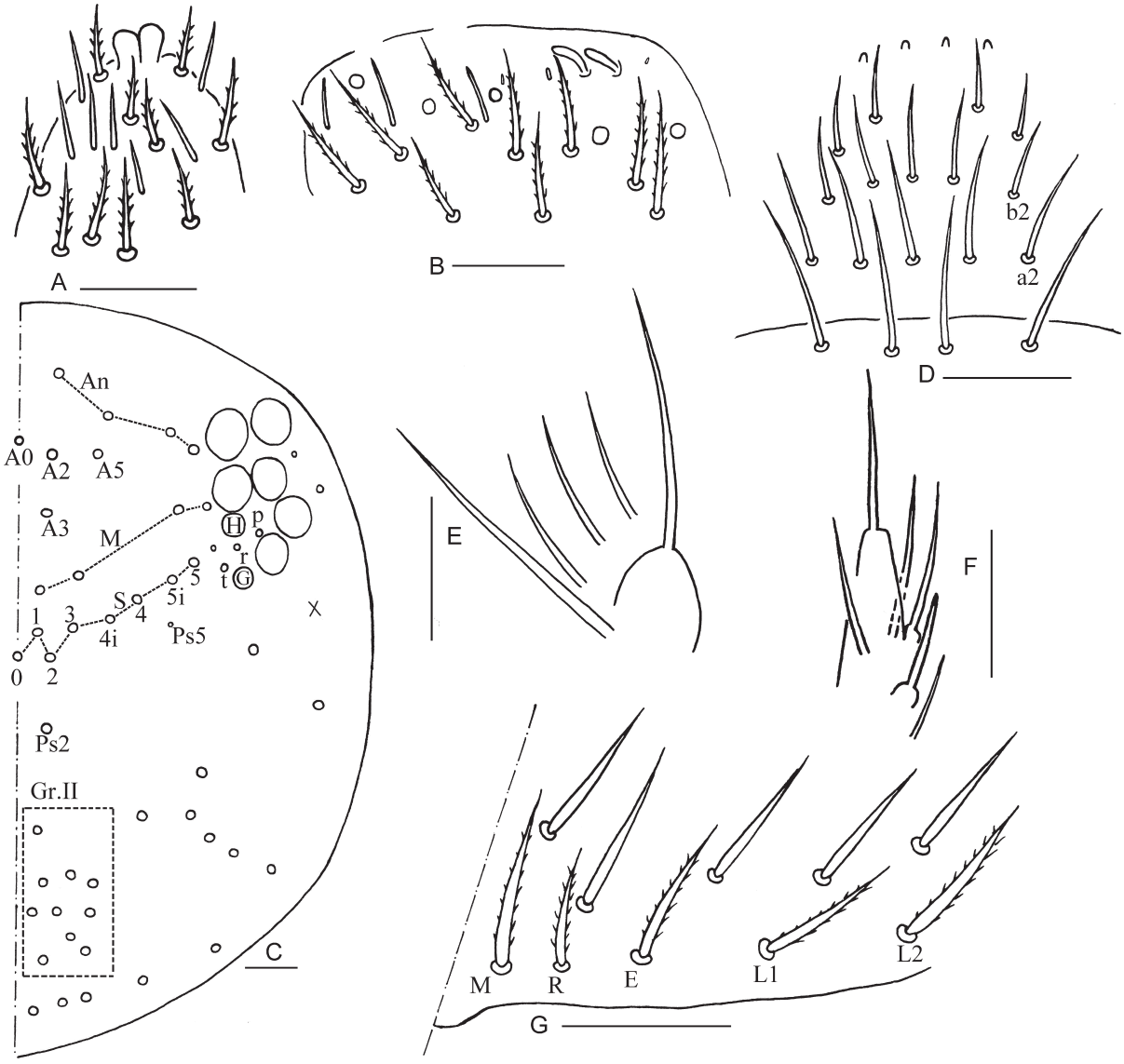


Fig. 4. *Entomobrya guanshanensis* sp. nov. **A**. Apex of Ant. IV (dorsal view, holotype, NTU slide 1321-1). **B**. Distal Ant. III (dorsal view, paratype, NTU slide 1321-2). **C**. Head in dorsal view (right side, paratype, NTU slide 1321-2). **D**. Prelabral and labral chaetotaxy (dorsal view, holotype, NTU slide 1321-1). **E**. Maxillary palp and outer lobe (right side, holotype, NTU slide 1321-1). **F**. Labial palp (right side, holotype, NTU slide 1321-1). **G**. Labial chaetotaxy (right side, paratype, NTU slide 1321-2). Scale bars: 20 μm.

(Fig. 6B). Tenent hair clavate, 0.95–1.00 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and three inner teeth, basal paired inner teeth located at 0.47–0.52 distance from base of inner edge of unguis, distal unpaired inner tooth at 0.68–0.75 distance from base; unguiculus lanceolate, outer edge slightly serrate (Fig. 6C).

Abdomen. Range of Abd. IV length 4.41–6.50 times as long as dorsal axial length of Abd. III. Abd. I with 11 (a1a, a1–3, a5, m2–4, m2i, m4i, m4p) mac. Abd. II with six (a2, a3, m3, m3e, m3ea, m3ep) central, one (m5) lateral mac. Abd. III with three (a2, a3, m3) central, four (am6, pm6, m7a, p6) lateral mac (Fig. 6D). Abd. IV with 17–25 elongate sens, two normal sens (as, ps), seven (Si, Sm, A5–6, B4–6) central and 16–19 lateral mac on each side (Fig. 7). Abd. V with three sens (Fig. 8A). Anterior face of ventral tube with 3+3 large and 13–15 small ciliate chaetae, line connecting Pr and Ed mac oblique to median furrow (Fig. 8B); posterior face with two apical smooth chaetae besides 20 ciliate chaetae of different sizes (Fig. 8C); each lateral flap with 5–7 smooth and 7–9 ciliate chaetae (Fig. 8D). Manubrial plate dorsally with 9–13 ciliate mac and three pseudopores (Fig. 8E); ventrally with 19–26 ciliate chaetae of each side (Fig. 8F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens slightly longer than mucro in length (Fig. 8G).

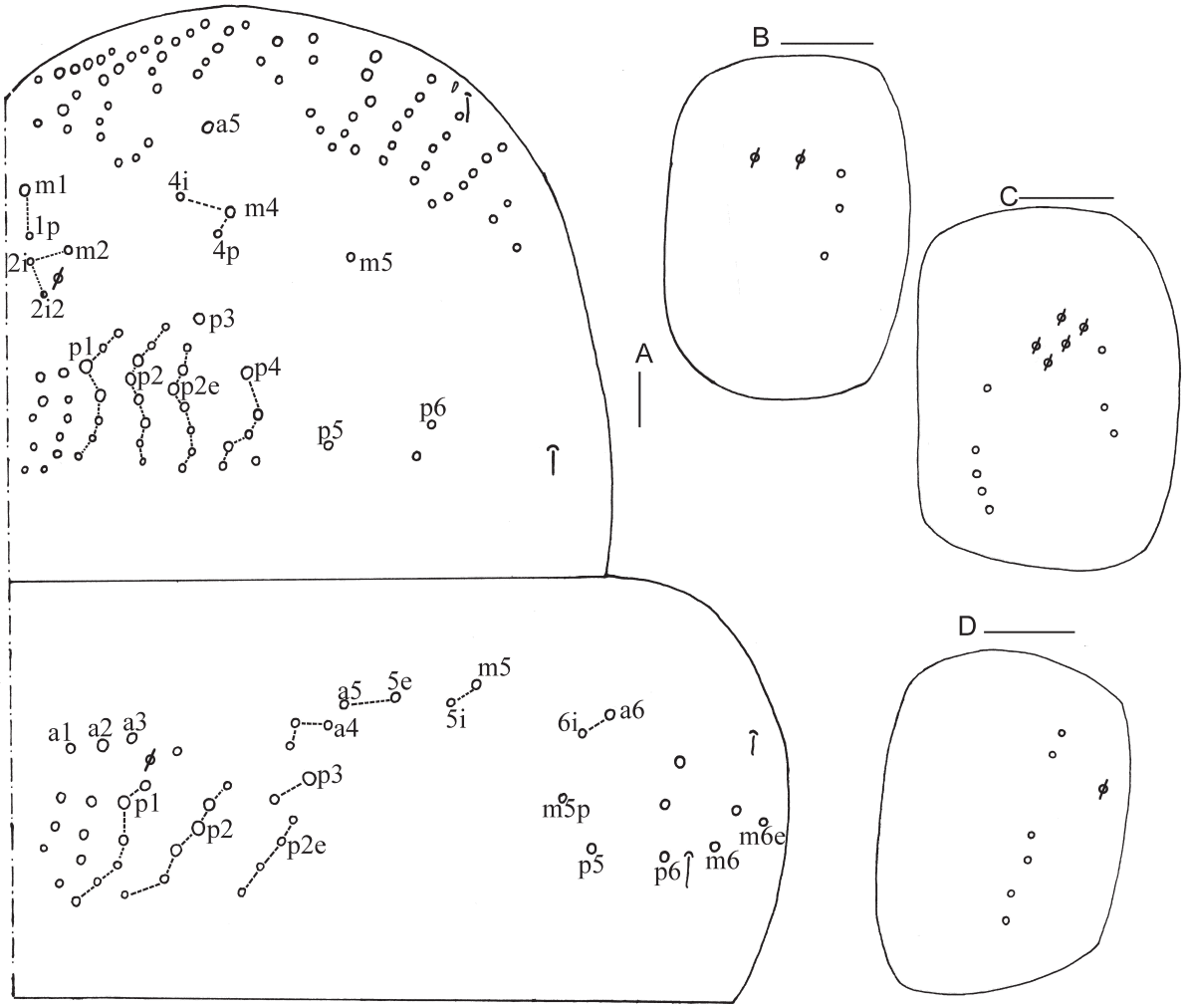


Fig. 5. *Entomobrya guanshanensis* sp. nov. **A**. Chaetotaxy of Th. II−III (right side, holotype, NTU slide 1321-1; paratype, NTU slide 1321-2, a half solid circle representing the mac that may be absent). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, paratype, NTU slide 1321-32). Scale bars: 20 µm.

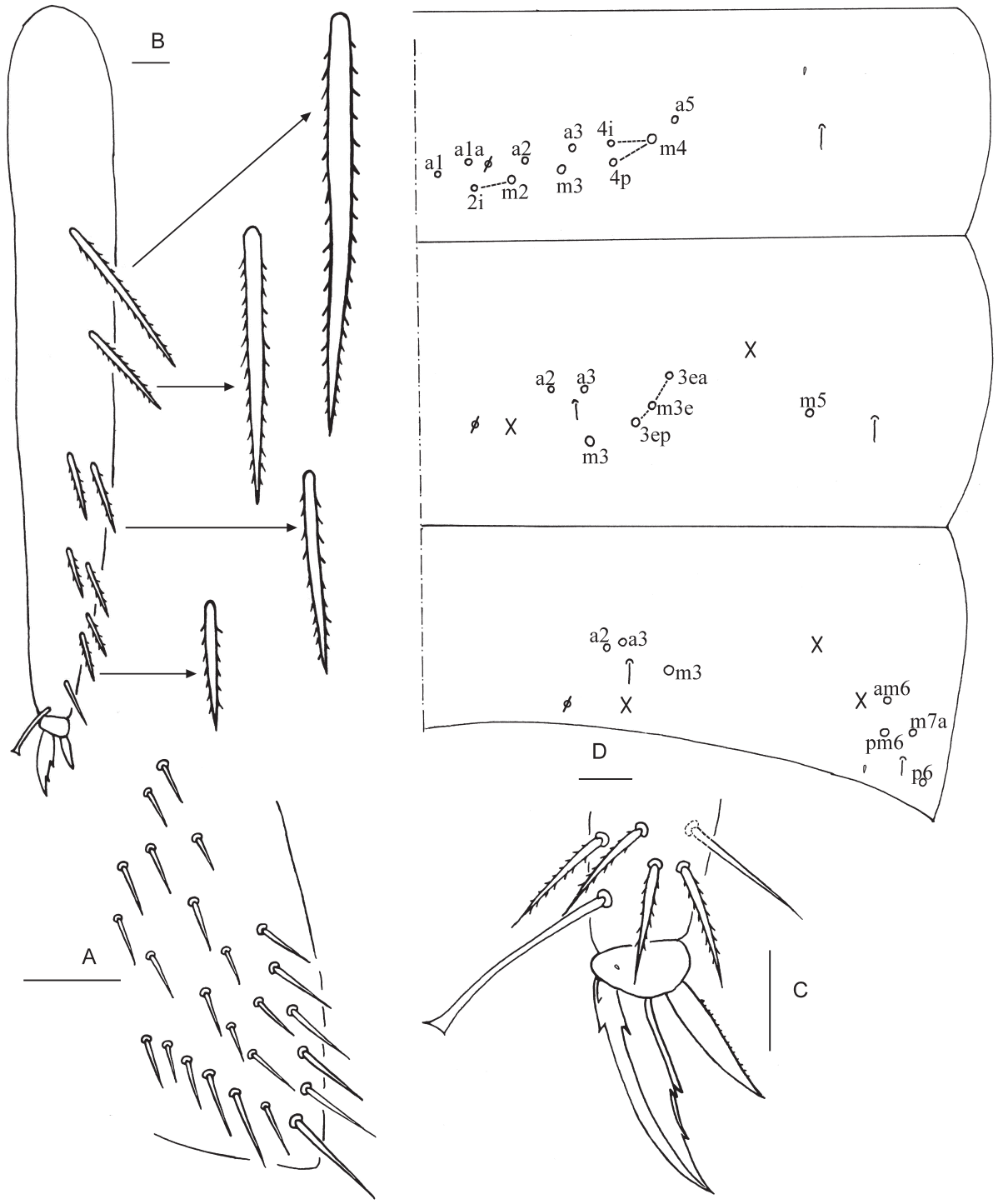


Fig. 6. *Entomobrya guanshanensis* sp. nov. **A**. Trochanteral organ (posterior side, holotype, NTU slide 1321-1). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, paratype, NTU slide 1321-31). **C**. Hind foot complex (lateral view, paratype, NTU slide 1321-33). **D**. Chaetotaxy of Abd. I−III (right side, holotype, NTU slide 1321-1). Scale bars: 20 μm.

Habitat

Found in litter of subtropical forests, mainly composed of leaves of *Buxus sinica* (Rehder & Wilson) Cheng, *Pinus armandii* Franchet and *Rosa corymbulosa* Rolfe.

Remarks

The prelabral chaetae on the labrum are ciliated in *Entomobrya* generally (Jordana 2012), but they are smooth in *E. leviseta* Ma & Shi, 2018, *E. striatella* Börner, 1909 and *E. tristriata* Ma & Chang, 2020. The new species also has smooth prelabral chaetae, but the differences in colour pattern and dorsal chaetotaxy on the body are great. The new species is also similar to *E. oleniensis* (Tshelnokov, 1987) and *E. vigintiseta* Lee & Park, 1984 in chaetotaxy of the body, but their colour pattern and other characters are different (Table 3).

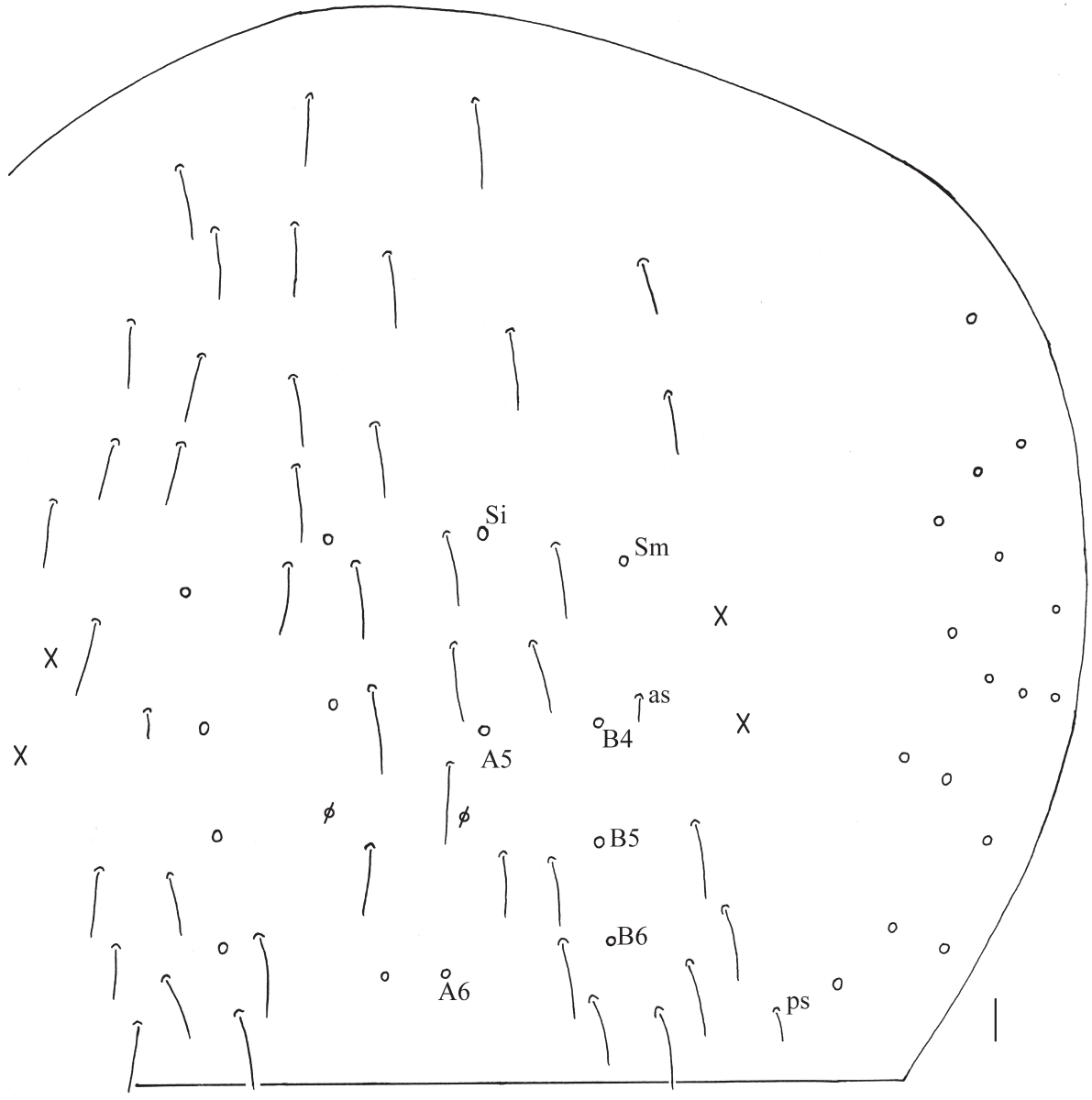


Fig. 7. *Entomobrya guanshanensis* sp. nov., chaetotaxy of Abd. IV (right side and partially left side, paratype, NTU slide 1321-32). Scale bar: 20 μm.

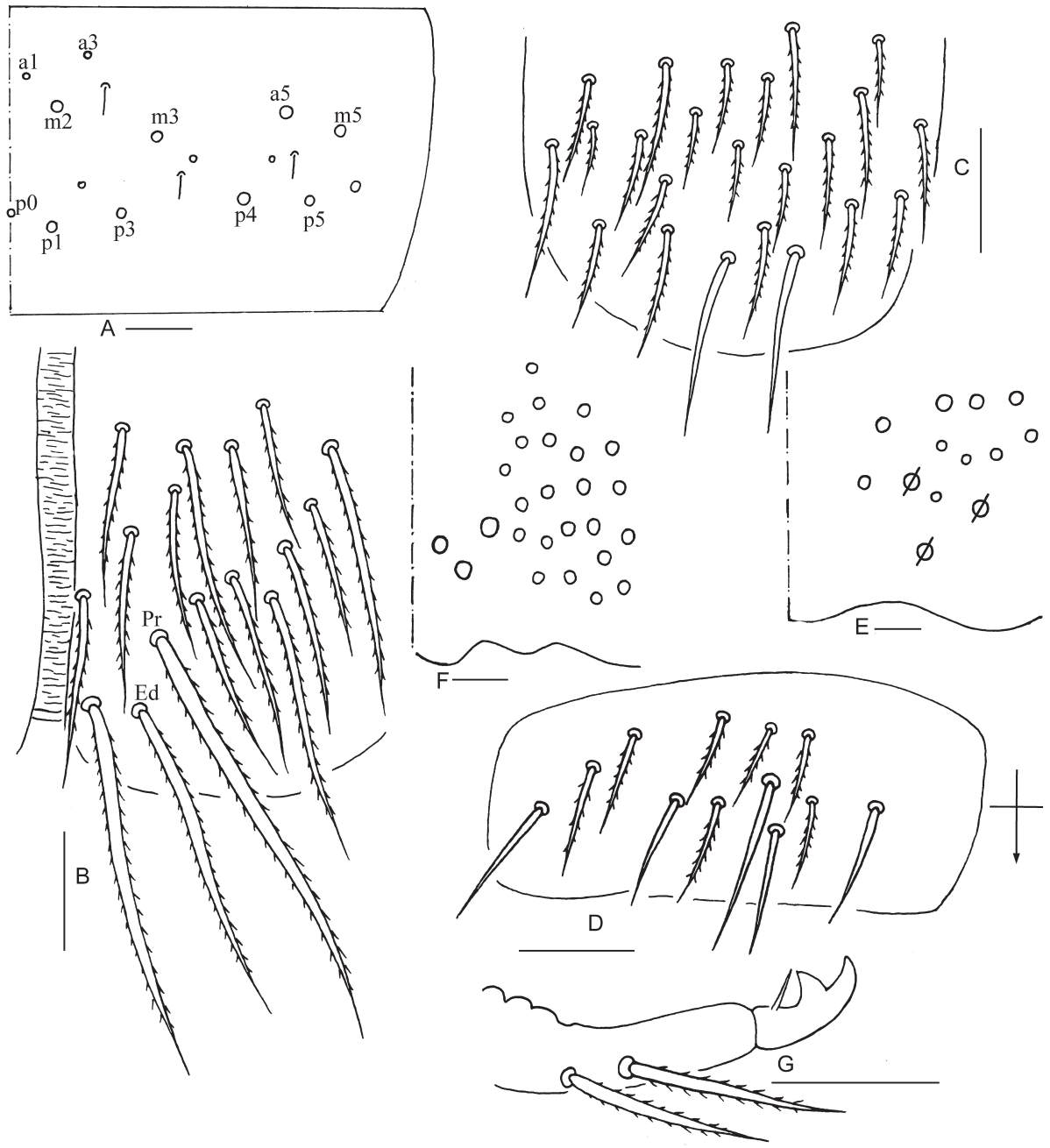


Fig. 8. *Entomobrya guanshanensis* sp. nov. **A**. Chaetotaxy of Abd. V (right side, holotype, NTU slide 1321-1). **B**. Anterior face of ventral tube (holotype, NTU slide 1321-1). **C**. Posterior face of ventral tube (holotype, NTU slide 1321-1). **D**. Lateral flap of ventral tube (paratype, NTU slide 1321-2). **E**. Manubrial plaque (dorsal view, paratype, NTU slide 1321-33). **F**. Ventro-apical part of manubrium (paratype, NTU slide 1321-33). **G**. Distal part of dens and mucro (lateral view, holotype, NTU slide 1321-1). Abbreviations: Ed = external-distal chaeta; Pr = proximal chaeta. Scale bars: 20 μm.

Table 3. Main differences between the new and similar species of *Entomobrya* Rondani, 1861.

Characters	***E. guanshanensis* sp. nov.**	***E. leviseta***	***E. striatella***	***E. tristriata***	***E. oleniensis***	***E. vigintiseta***
Prelabral chaetae on labrum	smooth	smooth	smooth[1]	smooth	unknown	ciliate[4]
A narrow longitudinal stripe on Th. II centrally	absent	present	present[1]	present	absent	absent
A wide stripe on Abd. I–IV centrally	present	absent	absent[1]	absent	absent	absent
M2 chaeta on labium	absent	absent	present[1]	present	unknown	absent[4], present
Mac on Abd. I	11	11(10)	10[2]	10–13	9	8–9[4]
Central mac on Abd. II	6	6(7)	6[2]	6	6[3], 4	6
Central mac on Abd. III	3	3	3[2]	3	3[3], 2	3
Central mac on Abd. IV on each side	7	17–25	12[2]	15–17	8[3]	16–22[4]

Based on [1] Yosii & Lee (1963); [2] Lee & Park (1992); [3] Jordana (2012); [4] Zhou & Ma (2023).

Entomobrya baqueroi sp. nov.
urn:lsid:zoobank.org:act:A161C845-1A96-4EC6-B65A-D8B74F87E5EA
Figs 1–2, 9–14, Tables 1–2, 4, 9

Diagnosis

Th. II–Abd. IV with two pairs of longitudinal irregular brown stripes, one dorso-laterally and other laterally; interocular chaetae as p, q, r, s, t mes; Th. II without Mm mac; Abd. I–IV with 6–8, 5, 3, 7 mac centrally, respectively.

Etymology

It is named after Dr Enrique Baquero from the University of Navarra, Spain, who published important contributions in the taxonomy of the genus *Entomobrya*.

Type material

Holotype

CHINA • ♀ on slide; Xizang Autonomous Region, Lasa City, Chengguan District, Luobulinka Park; 29°38′59″ N, 91°05′33″ E; 3651.5 m a.s.l.; 9 Aug. 2023; Y.T. Ma leg.; sample number 1293; NTU slide 1293-3A.

Paratypes

CHINA • 1 ♀ on slide; same data as for holotype; NTU slide 1293-3B • 1 ♀ on slide; Xizang Autonomous Region, Rikaze City, Sangzhuzi District, Renmin Park; 29°18′10″ N, 88°53′36″ E; 3845.2 m a.s.l.; 12 Aug. 2023; Y.T. Ma leg.; sample number 1297; NTU slide 1297-8.

Description

Measurement. Body (head + trunk) length up to 2.17 mm.

Colour. Ground colour pale yellow; eye patches dark blue, brown pigment present between and behind eyepatches, short longitudinal brown stripe also present along midline of head; Ant. III–IV and distal parts of Ant. I–II blue; legs with scattered blue pigment; Th. II–Abd. IV with two pairs of longitudinal irregular brown stripes, one dorso-laterally and other laterally; posterior parts of Abd. IV–VI brown pigmented (Fig. 9A–B).

Head. Antenna not annulated, 1.89–2.00 and 0.41–0.44 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/1.71–2.08/1.57–2.08/2.57–2.92. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb bilobed (Fig. 10A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 10B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with five antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), seven sutural (S0, S2–5, S4i, S5i) mac, one post-sutural mac (Ps2) and mes (Ps5), 3–4 posterior mac in Gr. II (Fig. 10C–D). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 2–3 minute projections (Fig. 10E). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 10F). Lateral process (l. p.) of labial palp E finger-shaped with tip not reaching apex of papilla E (Fig. 10G). Labial base with MREL1L2, all ciliate, R 0.57–0.70 length of M (Fig. 10H).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 3, 3 (Figs 11A, 12D, 13, 14A). Th. II without Mm mac, with one MS (m4), 19–23 posterior mac. Th. III with 25–30 mac (Fig. 11A). Coxal chaetal formula as 2/5 (anterior), 3–4 (posterior)/6 (Fig. 11B–D). Trochanteral organ with 15 smooth chaetae (Fig. 12A). Tibiotarsus without smooth or appressed chaetae and with 11–14

slightly stout chaetae almost arranged in two rows ventrally (Fig. 12B). Tenent hair clavate, 0.90–0.96 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.42–0.55 distance from base of inner edge of unguis, distal unpaired inner teeth at 0.66–0.72 and 0.86–0.89 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 12C).

Abdomen. Range of Abd. IV length 3.30–5.23 times as long as dorsal axial length of Abd. III. Abd. I with 6–8 (m2–4, m2i, a3, a5 always present, a1a, a1 and m5 sometimes present) mac. Abd. II with five (a2, a3, m3, m3e, m3ep) central, one (m5) lateral mac. Abd. III with three (a2, a3, m3) central, three (am6, pm6, p6) lateral mac (Fig. 12D). Abd. IV with 5–7 elongate sens, three normal sens (as, bs, ps), seven (Si, Sm,

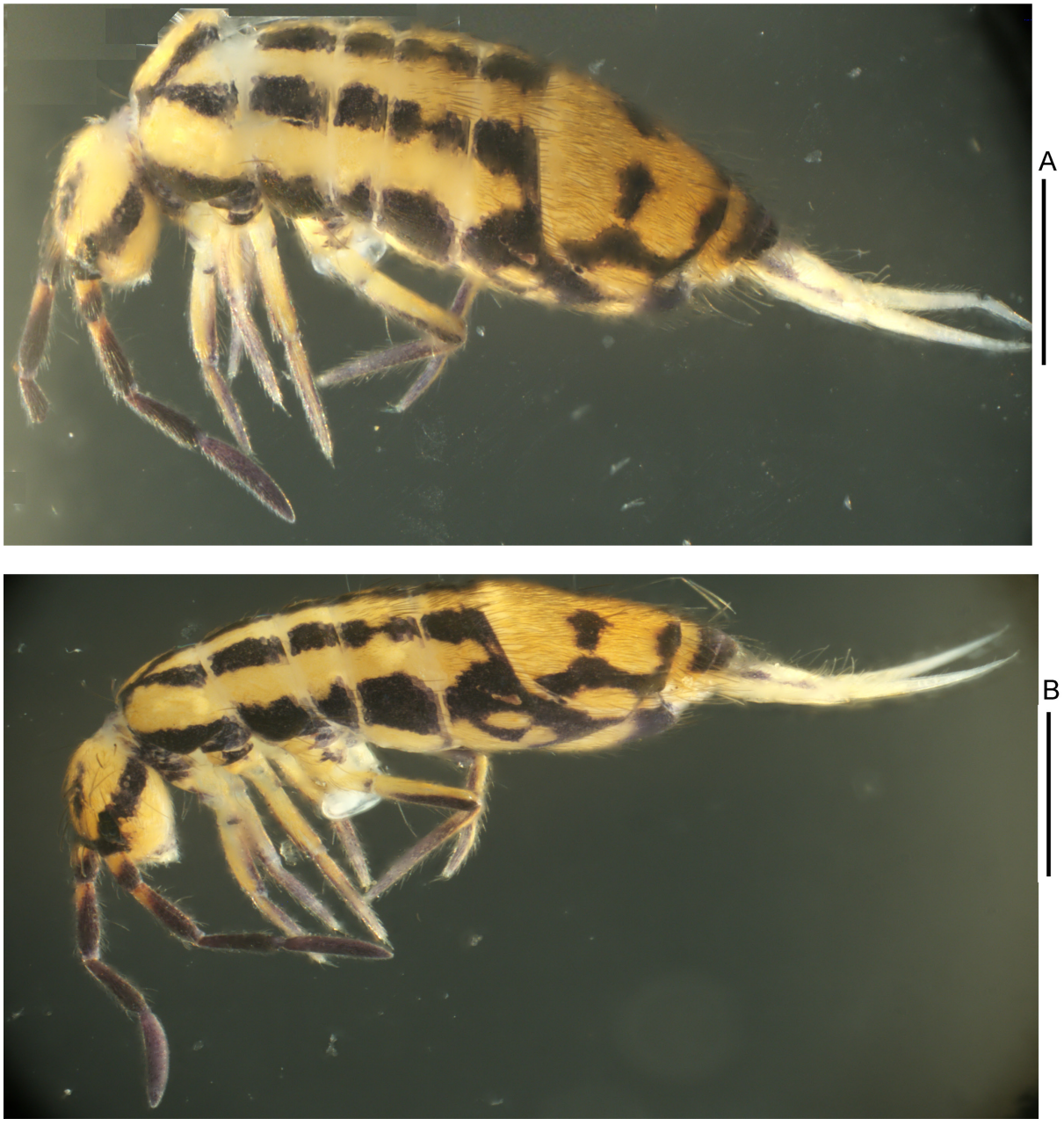


Fig. 9. *Entomobrya baqueroi* sp. nov., habitus. **A**. Paratype, dorsal view (NTU slide 1297-8). **B**. Holotype, lateral view (NTU slide 1293-3A). Scale bars: 500 µm.

A5–6, B3, B4, B6) central and 14–15 lateral mac on each side (Fig. 13). Abd. V with three sens (Fig. 14A). Anterior face of ventral tube with 3+3 large and 13–21 small ciliate chaetae, line connecting Pr and Ed mac oblique to median furrow (Fig. 14B); posterior face with two apical smooth chaetae besides about 11 ciliate chaetae of different sizes (Fig. 14C); each lateral flap with 3–4 smooth and 6–7 ciliate chaetae (Fig. 14D). Manubrial plate dorsally with three ciliate mac and two pseudopores (Fig. 14E); ventrally with 7–9 ciliate chaetae of each side (Fig. 14F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens slightly longer than mucro in length (Fig. 14G).

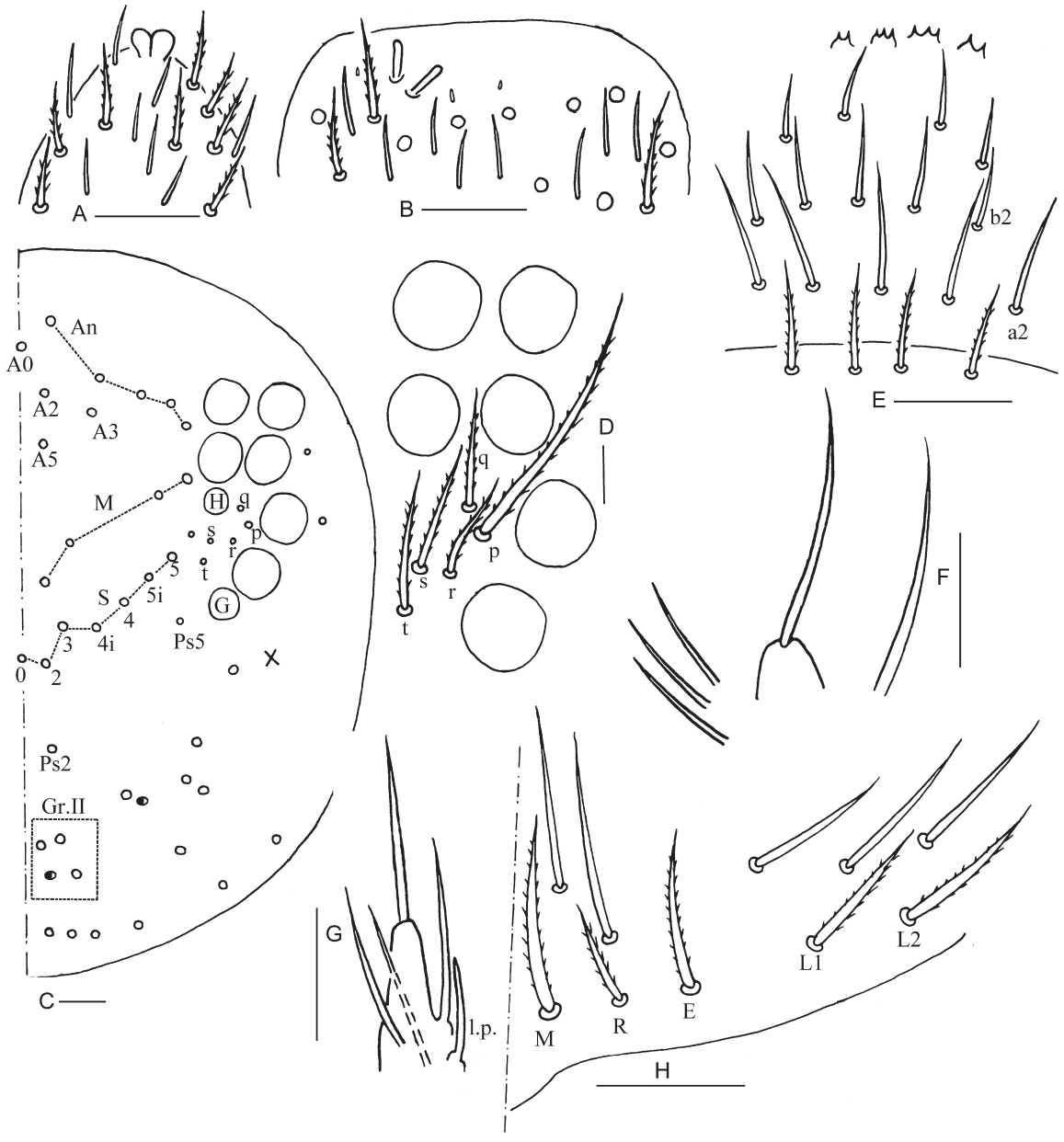


Fig. 10. *Entomobrya baqueroi* sp. nov. **A**. Apex of Ant. IV (dorsal view, holotype, NTU slide 1293-3A). **B**. Distal Ant. III (dorsal view, holotype, NTU slide 1293-3A). **C**. Head in dorsal view (right side, holotype, NTU slide 1293-3A). **D**. Interocular chaetae (right side, paratype, NTU slide 1293-3B). **E**. Prelabral and labral chaetotaxy (dorsal view, paratype, NTU slide 1293-3B). **F**. Maxillary palp and outer lobe (right side, holotype, NTU slide 1293-3A). **G**. Labial palp (right side, holotype, NTU slide 1293-3A). **H**. Labial chaetotaxy (right side, paratype, NTU slide 1293-3B). Scale bars: 20 μm.

Habitat

Found in litter, mainly composed of leaves of *Ulmus pumila* L., *Salix babylonica* L., *Buxus sinica* var. *parvifolia* Cheng and *Platycladus orientalis* (L.) Franco.

Remarks

The new species is characterised by its colour pattern and chaetotaxy of Abd. IV and is mostly similar to *E. fjellbergi* Baquero & Jordana, 2008 and *E. quadrilineata* in colour pattern, but there are some differences between them, such as the relative length of the antennae to the body, the dorsal chaetotaxy of Th. II and Abd. IV. It is also similar to *E. erratica* Brown, 1932, *E. nana* Lee & Park, 1992 and *E. regularis* Stach, 1963 in the chaetotaxy of Abd. II & III, but their colour pattern and other characters are different. The detailed characteristic comparisons are listed in Table 4.

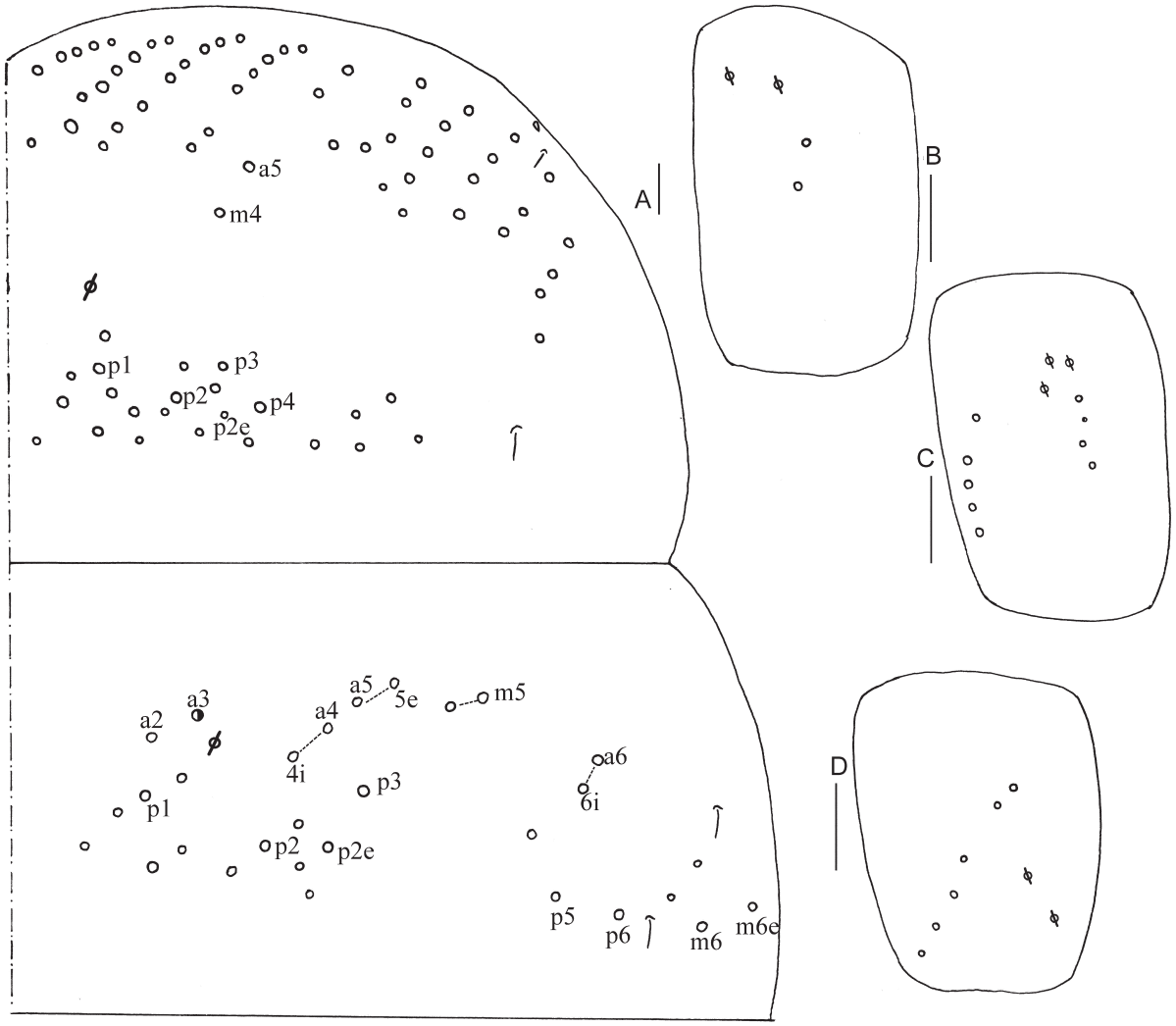


Fig. 11. *Entomobrya baqueroi* sp. nov. **A**. Chaetotaxy of Th. II−III (right side, holotype, NTU slide 1293-3A; paratype, NTU slide 1293-3B). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, holotype, NTU slide 1293-3A). Scale bars: 20 μm.

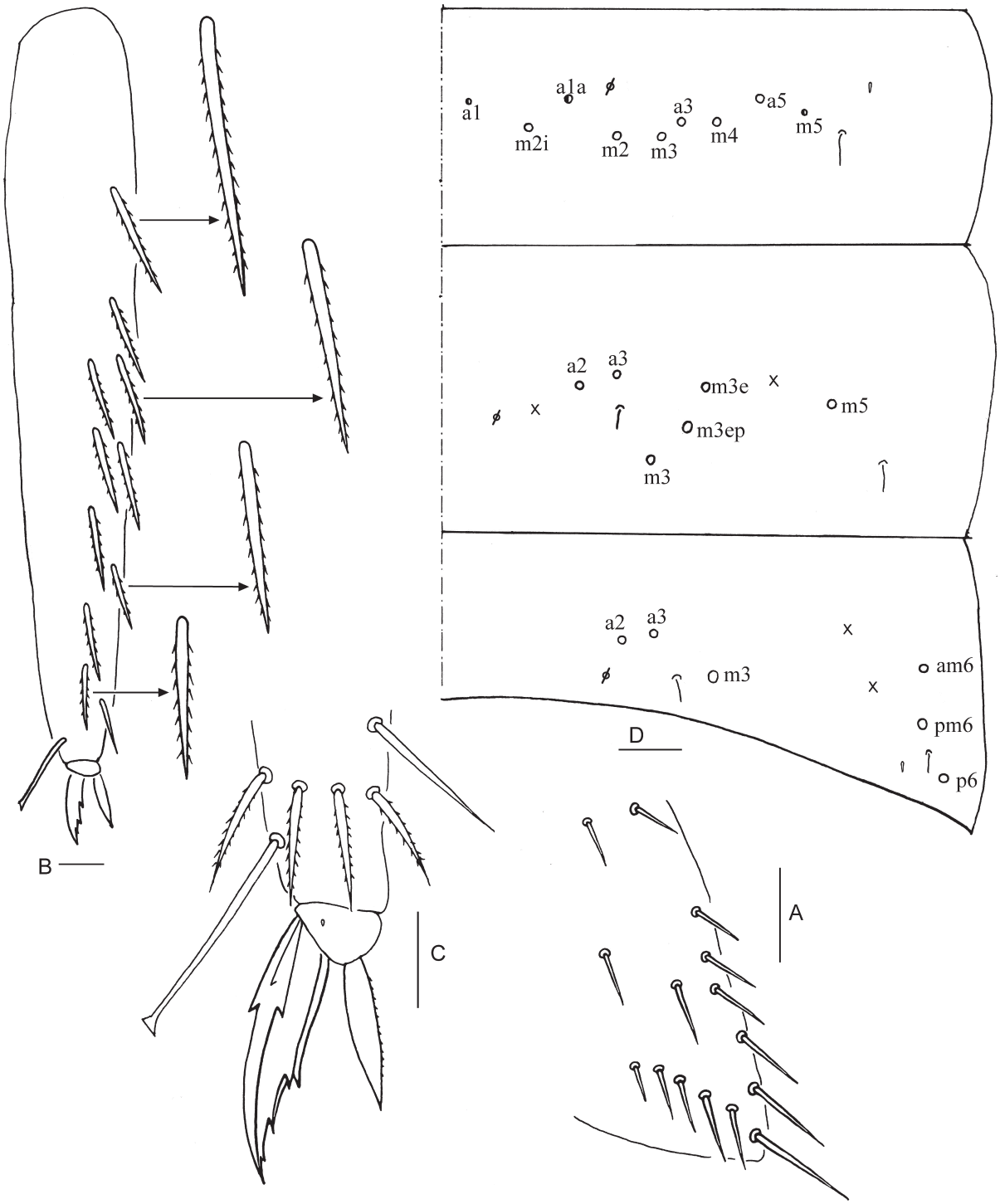


Fig. 12. *Entomobrya baqueroi* sp. nov. **A**. Trochanteral organ (posterior side, holotype, NTU slide 1293-3A). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, holotype, NTU slide 1293-3A). **C**. Hind foot complex (lateral view, paratype, NTU slide 1297-8). **D**. Chaetotaxy of Abd. I−III (right side, holotype, NTU slide 1293-3A; paratype, NTU slide 1293-3B). Scale bars: 20 μm.

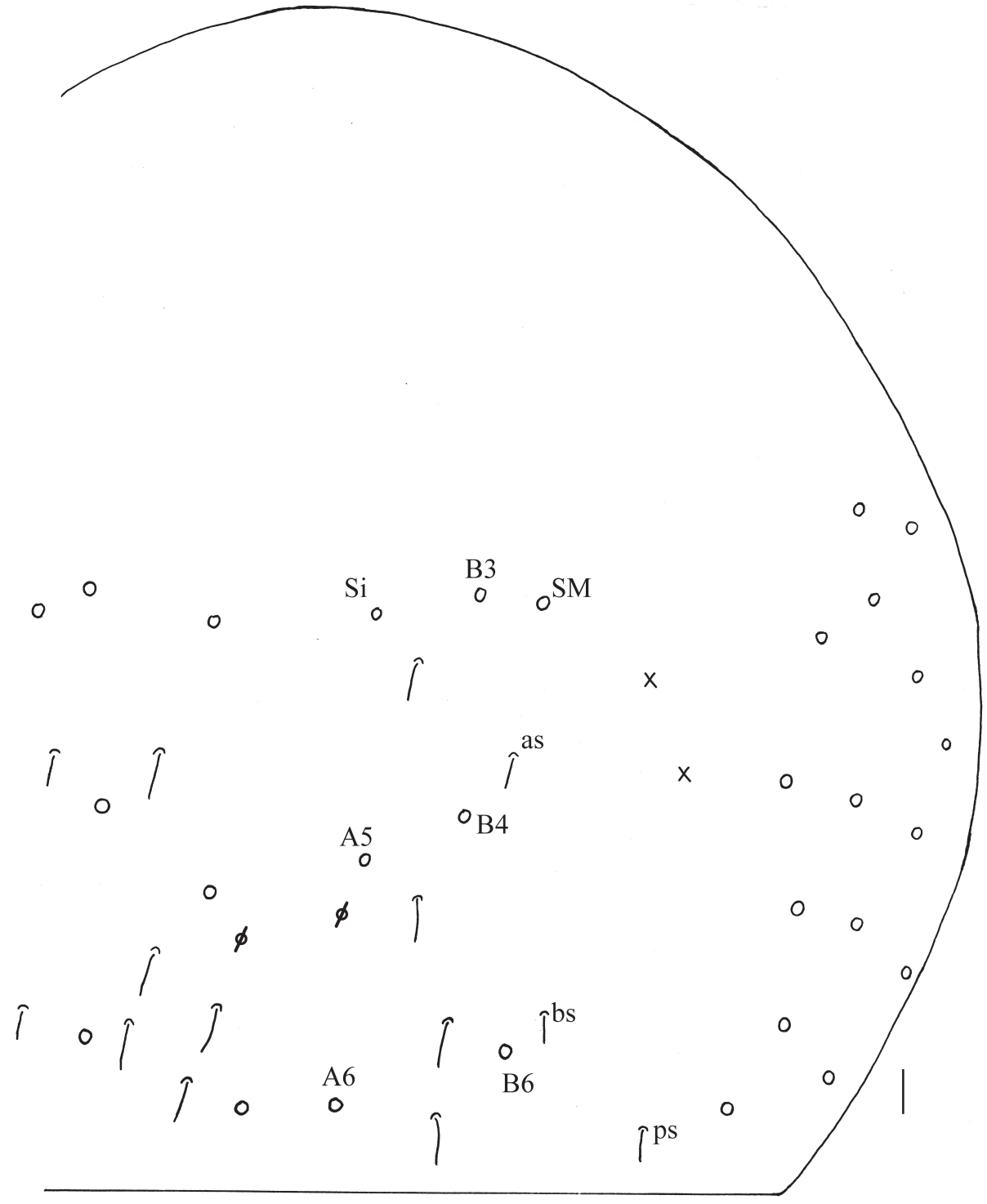


Fig. 13. *Entomobrya baqueroi* sp. nov., chaetotaxy of Abd. IV (right side and partially left side, holotype, NTU slide 1293-3A). Scale bar: 20 µm.

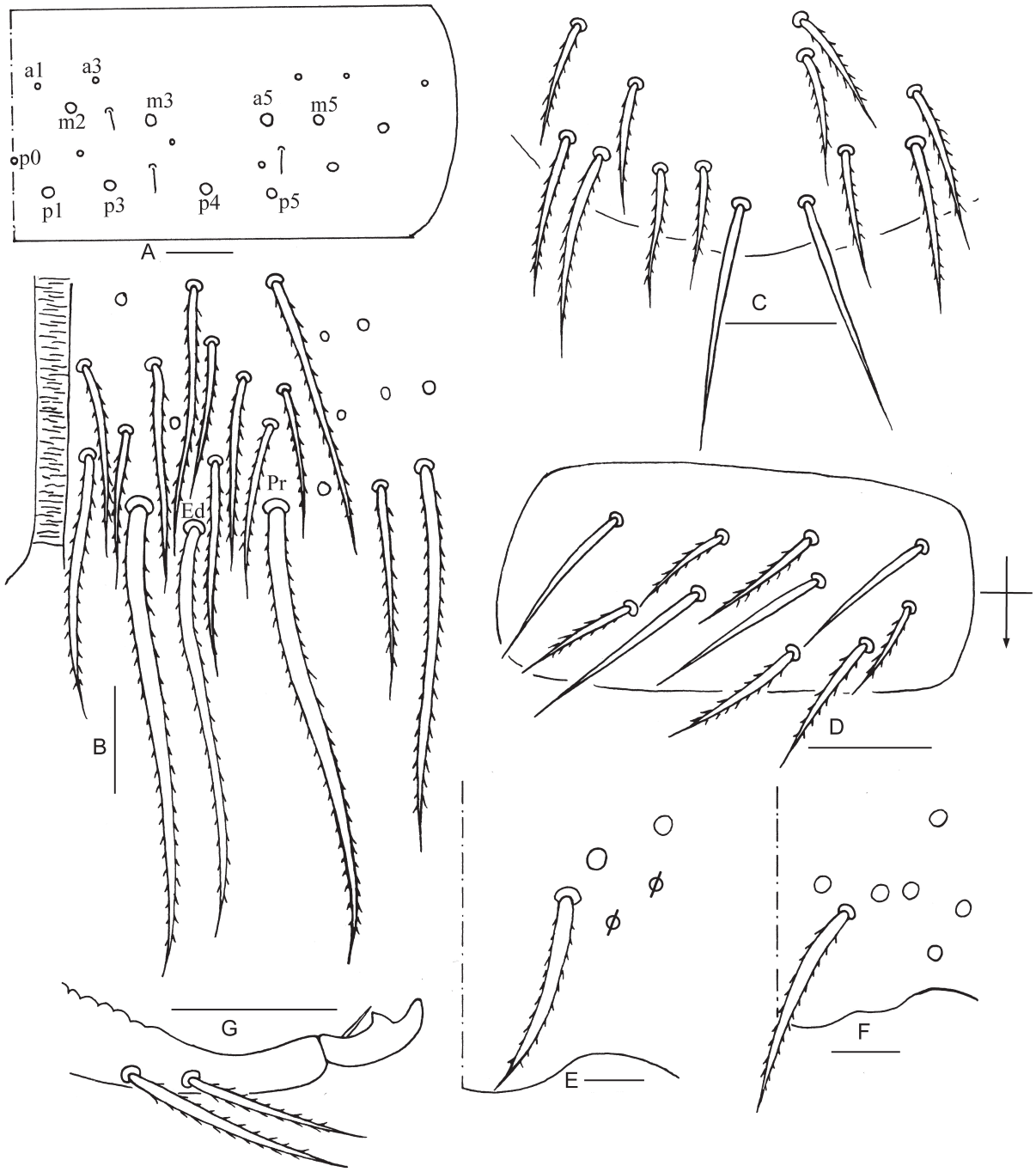


Fig. 14. *Entomobrya baqueroi* sp. nov. **A**. Chaetotaxy of Abd. V (right side, paratype, NTU slide 1293-3B). **B**. Anterior face of ventral tube (holotype, NTU slide 1293-3A). **C**. Posterior face of ventral tube (holotype, NTU slide 1293-3A). **D**. Lateral flap of ventral tube (holotype, NTU slide 1293-3A). **E**. Manubrial plaque (dorsal view, paratype, NTU slide 1293-3B). **F**. Ventro-apical part of manubrium (paratype, NTU slide 1293-3B). **G**. Distal part of dens and mucro (lateral view, paratype, NTU slide 1297-8). Scale bars: 20 μm.

Table 4. Main differences between the new and similar species of *Entomobrya* Rondani, 1861.

Characters	*E. baqueroi* **sp. nov.**	*E. fjellbergi*	*E. quadrilineata*[1]	*E. erratica*[2]	*E. nana*	*E. regularis*[3]
Length ratio of antenna/body	0.41–0.44	0.57	0.88	0.40	0.50	0.50
Projection on labral papilla	2–3	2–4	1	1	1	unknown
Mac in Mm area of Th. II	0	0	7–8	4	3[2]	2
M5 mac on Th. II	absent	absent	present	unknown	unknown	unknown
Mac a2 & a3 on Th. III	present	absent	present	unknown	unknown	unknown
Mac on Abd. I	6–8	5	12–16	unknown	6	unknown
Central mac on Abd. II	5	5	7–8	5	5	5
Central mac on Abd. III	3	4	3	3	3	3
Central mac on Abd. IV on each side	7	10	at least 25	7	5–6	12(13)

Based on [1] Katz *et al*. (2015); [2] Jordana (2012).

Entomobrya jordanai sp. nov.
urn:lsid:zoobank.org:act:F1EB1C8F-7C01-480F-B537-649A02462172
Figs 1–2, 15–21, Tables 1–2, 5, 9

Diagnosis

Five (one median, two dorso-lateral and two lateral) longitudinal brown stripes on Th. II–Abd. IV dorsally; interocular chaetae as p, q, r, s, t mes; Th. II without Mm mac; Abd. I–IV with 8, 4, 3–4, 10–11 mac centrally, respectively.

Etymology

It is named after Dr Rafael Jordana from the University of Navarra, Spain, whose help was essential in the taxonomy of the new species in this study.

Type material

Holotype

CHINA • ♀ on slide; Xizang Autonomous Region, Lasa City, Chengguan District, Bronze Ox Park; 29°39′15″ N, 91°06′06″ E; 3656.3 m a.s.l.; 10 Aug. 2023; Y.T. Ma leg.; sample number 1295; NTU slide 1295-7.

Paratypes

CHINA • 2 ♀♀ on slides; same data as for holotype; NTU slides 1295-8, 1295-9.

Description

Measurement. Body (head + trunk) length up to 2.00 mm.

Colour. Ground colour pale yellow; eye patches dark blue; brown stripe present between and behind eyepatches and narrow brown stripe on midline of dorsal head; five (one median, two dorso-lateral and two lateral) longitudinal brown stripes on Th. II–Abd. IV dorsally; Abd. V–VI with scattered brown pigment (Fig. 15).

Head. Antenna not annulated, 2.62–3.00 and 0.43–0.49 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/1.93–2.17/1.73–2.00/1.87–2.83. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb unilobed (Fig. 16A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 16B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with 7–8 antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), seven sutural (S0, S2–5, S4i, S5i) mac, one post-sutural mac (Ps2) and mes (Ps5), 4–5 posterior mac in Gr. II (Fig. 16C). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 3–4 minute projections (Fig. 16D). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 16E). Lateral process (l. p.) of labial palp E finger-shaped with tip not reaching apex of papilla E (Fig. 16F). Labial base with MREL1L2, all ciliate, R 0.56–0.72 length of M (Fig. 16G).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 3, 3 (Figs 17A, 18D, 19, 21A). Th. II without Mm mac, with one Ms (m4), 18–20 posterior mac. Th. III with 21–22 mac (Fig. 17A). Coxal chaetal formula as 2/6–7 (anterior), 4–5 (posterior)/6 (Fig. 17B–D). Trochanteral organ with 16–24 smooth chaetae (Fig. 18A). Tibiotarsus without smooth or appressed chaetae and with 12–15 slightly stout chaetae almost arranged in two rows ventrally (Fig. 18B). Tenent hair clavate, 1.09–1.30 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.46–0.50 distance from base of inner edge of unguis, distal

unpaired inner teeth at 0.69–0.73 and 0.83–0.89 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 18C).

Abdomen. Range of Abd. IV length 3.36–5.50 times as long as dorsal axial length of Abd. III. Abd. I with eight (a1, a5, m2–5, m2i, m2i2) mac. Abd. II with four (a2, m3, m3e, m3ep) central, one (m5) lateral mac. Abd. III with 3–4 (a1, m3, m3a, a2 sometimes present) central, three (am6, pm6, p6) lateral mac (Fig. 18D). Abd. IV with 2–4 elongate sens and three normal sens (as, bs, ps), 10–11 central and 13 lateral mac (Figs 19–20). Abd. V with three sens (Fig. 21A). Anterior face of ventral tube with 31 ciliate chaetae in different sizes, line connecting Pr and Ed mac oblique to median furrow (Fig. 21B); posterior face with two apical smooth chaetae (Fig. 21C); each lateral flap with three smooth and six ciliate chaetae (Fig. 21D). Manubrial plate dorsally with four ciliate mac and two pseudopores (Fig. 21E); ventrally with seven ciliate chaetae of each side (Fig. 21F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens as long as mucro in length (Fig. 21G).



Fig. 15. *Entomobrya jordanai* sp. nov., habitus. **A**. Paratype, lateral view (NTU slide 1295-9). **B**. Holotype, dorsal view (NTU slide 1295-7). Scale bars: 500 µm.

Habitat

Found in litter, mainly composed of leaves of *Platycladus orientalis*, *Salix babylonica*, *Juniperus chinensis* L. and *Buxus megistophylla* Léveillé.

Remarks

The new species is characterised by its five longitudinal brown stripes on the body and it is very similar to *E. handschini*, Stach, 1922 (Winkler *et al*. 2023), *E. longisticta* Baijal, 1958 (Baquero *et al*. 2013) and *E. quinquelineata* Börner, 1901 (Winkler *et al*. 2023), but the differences in dorsal chaetotaxy are important (Table 5).

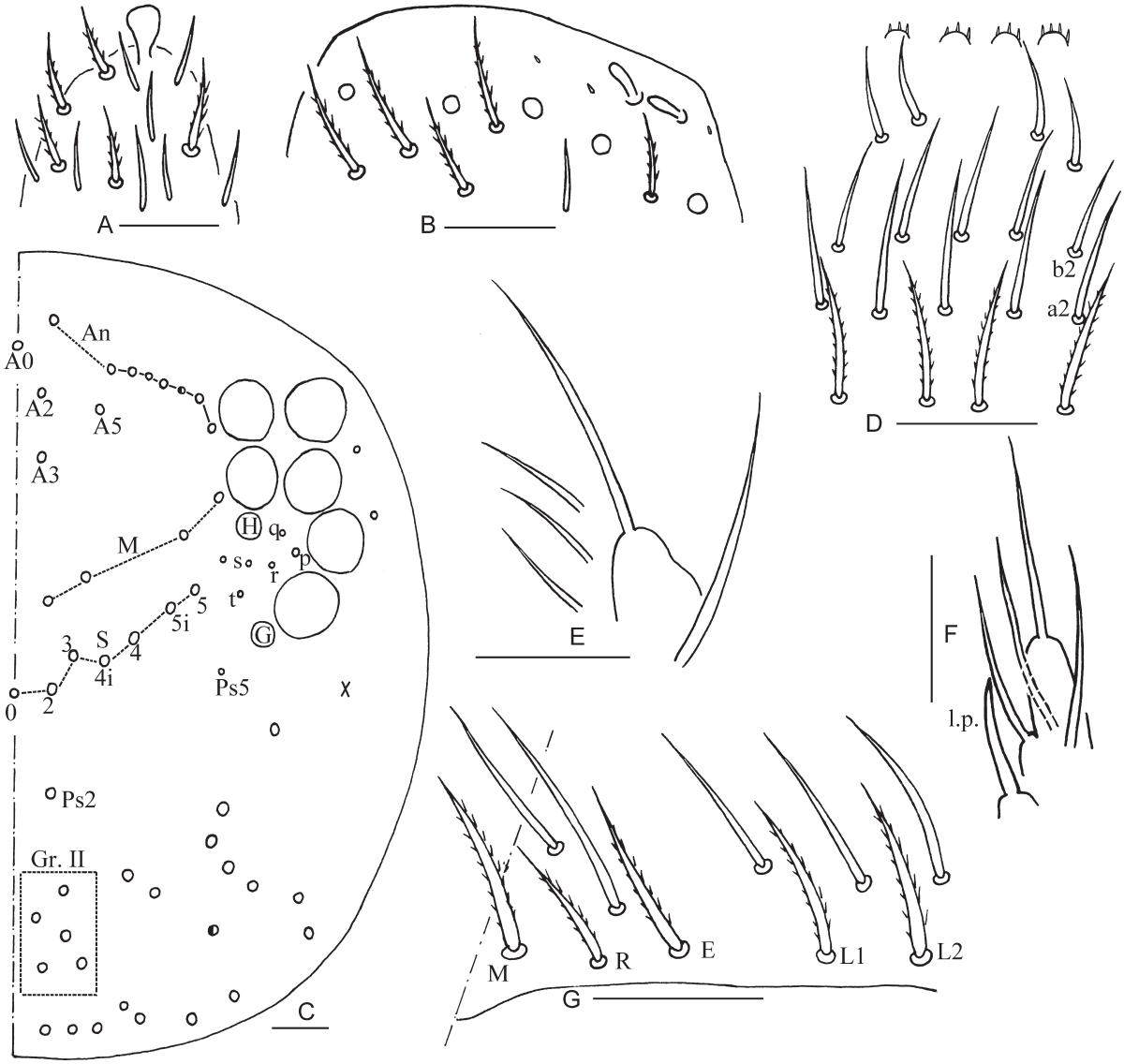


Fig. 16. *Entomobrya jordanai* sp. nov. **A**. Apex of Ant. IV (dorsal view, holotype, NTU slide 1295-7). **B**. Distal Ant. III (dorsal view, holotype, NTU slide 1295-7). **C**. Head in dorsal view (right side, holotype, NTU slide 1295-7; paratype, NTU slide 1295-9). **D**. Prelabral and labral chaetotaxy (dorsal view, holotype, NTU slide 1295-7). **E**. Maxillary palp and outer lobe (right side, holotype, NTU slide 1295-7). **F**. Labial palp (left side, holotype, NTU slide 1295-7). **G**. Labial chaetotaxy (right side, holotype, NTU slide 1295-7). Scale bars: 20 μm.

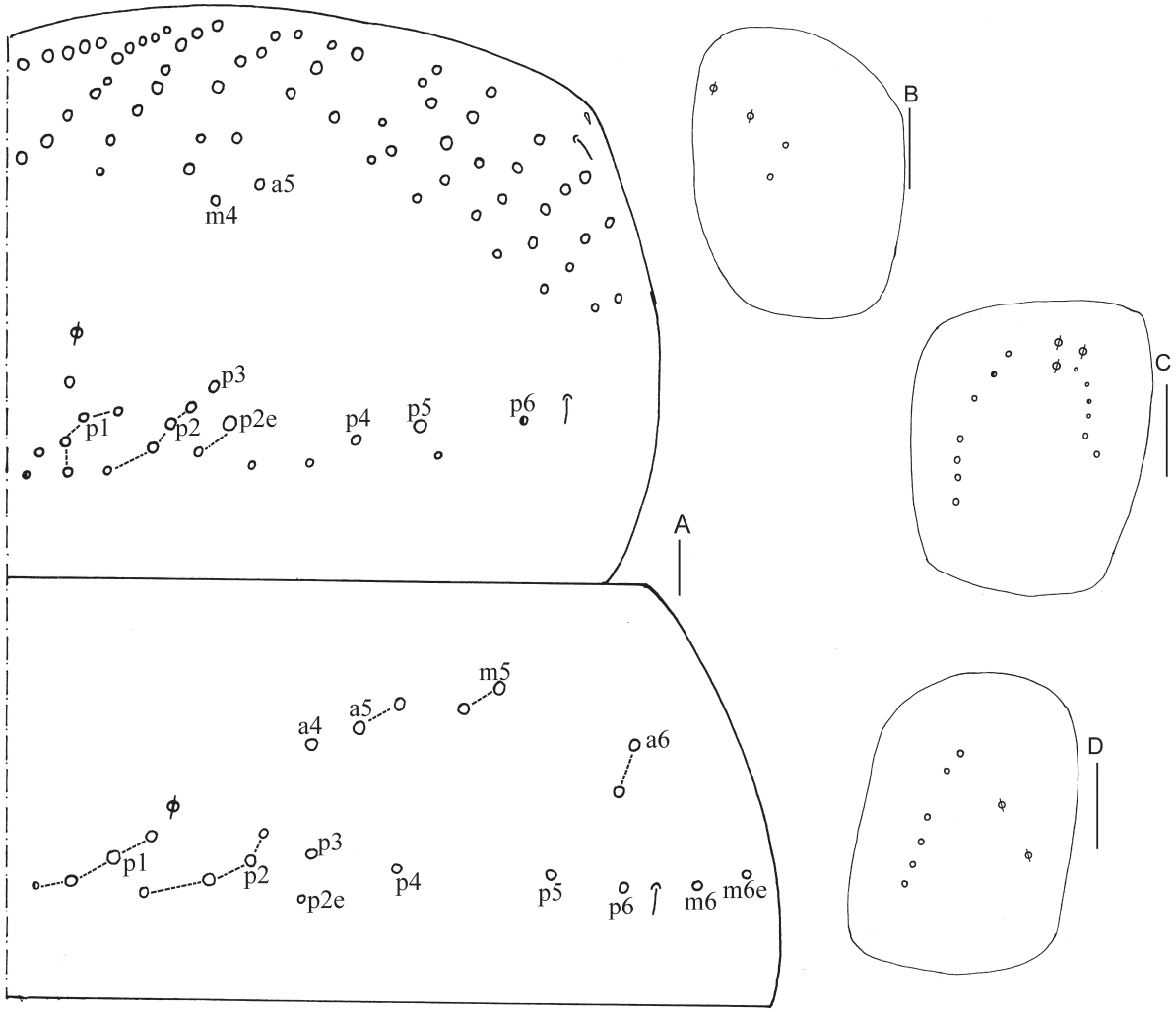


Fig. 17. *Entomobrya jordanai* sp. nov. **A**. Chaetotaxy of Th. II−III (right side, holotype, NTU slide 1295-7; paratype, NTU slide 1295-8). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, holotype, NTU slide 1295-7; paratype, NTU slide 1295-9). Scale bars: 20 μm.

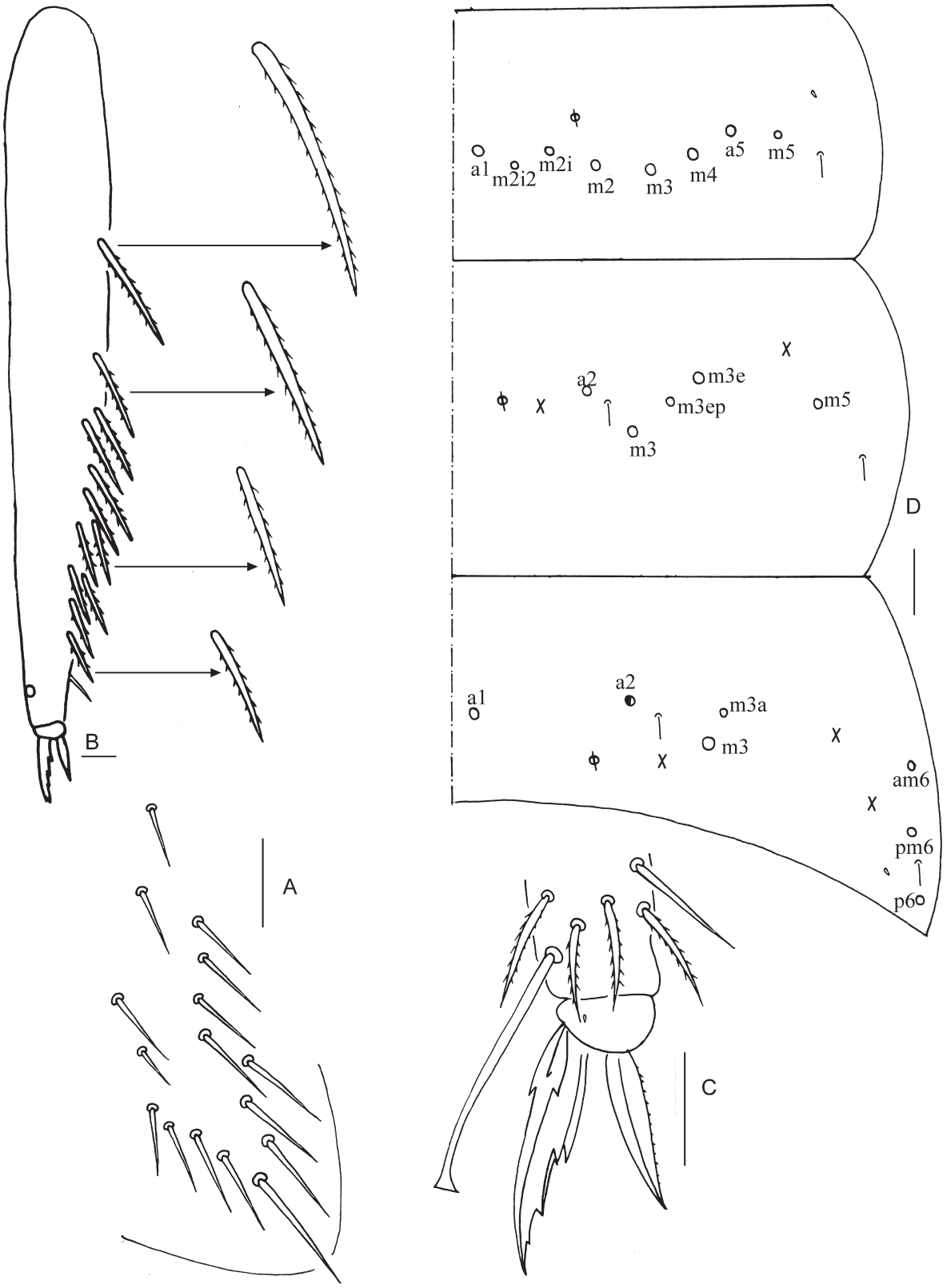


Fig. 18. *Entomobrya jordanai* sp. nov. **A**. Trochanteral organ (posterior side, paratype, NTU slide 1295-8). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, holotype, NTU slide 1295-7). **C**. Hind foot complex (lateral view, paratype, NTU slide 1295-8). **D**. Chaetotaxy of Abd. I–III (right side, holotype, NTU slide 1295-7; paratype, NTU slide 1295-9). Scale bars: 20 μm.

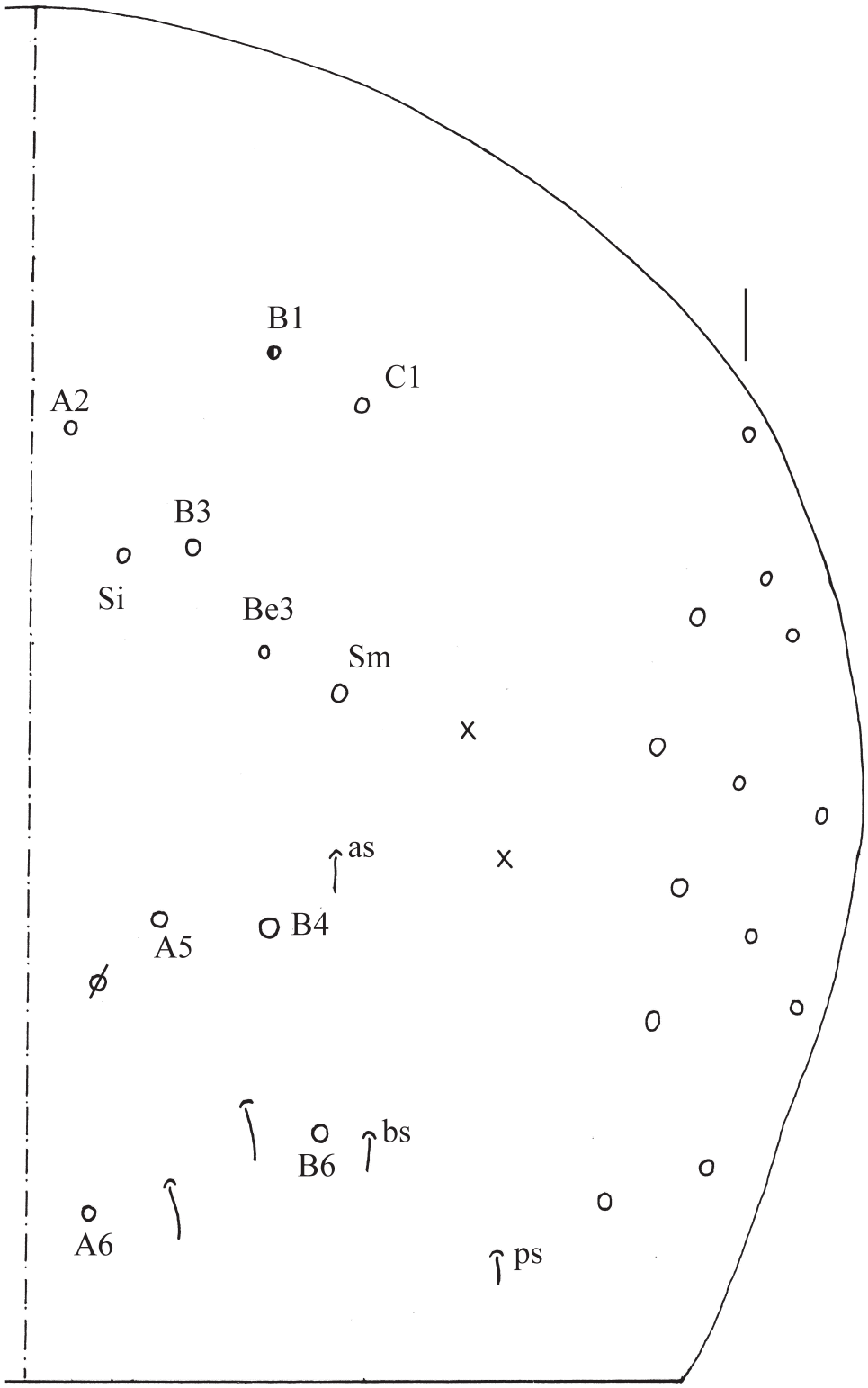


Fig. 19. *Entomobrya jordanai* sp. nov., chaetotaxy of Abd. IV (right side, holotype, NTU slide 1295-7; paratype, NTU slide 1295-8). Scale bar: 20 µm.

Table 5. Main differences between the new and similar species of *Entomobrya* Rondani, 1861.

Characters	*E. jordanai* sp. nov.	*E. handschini*	*E. longisticta*	*E. quinquelineata*
Projections on labral papilla	3–4	1	?	0
Antennnal mac on head	7–8	5	5	4–5
Mac in Mm area of Th. II	0	4	?	2
Central mac on Abd. II	4	7–9	7	4
Mac a3 on Abd. III	absent	present	present	present
Mac m3a on Abd. III	present	present	absent	absent
Central mac on Abd. IV on each side	10–11	13–19	7	10–12

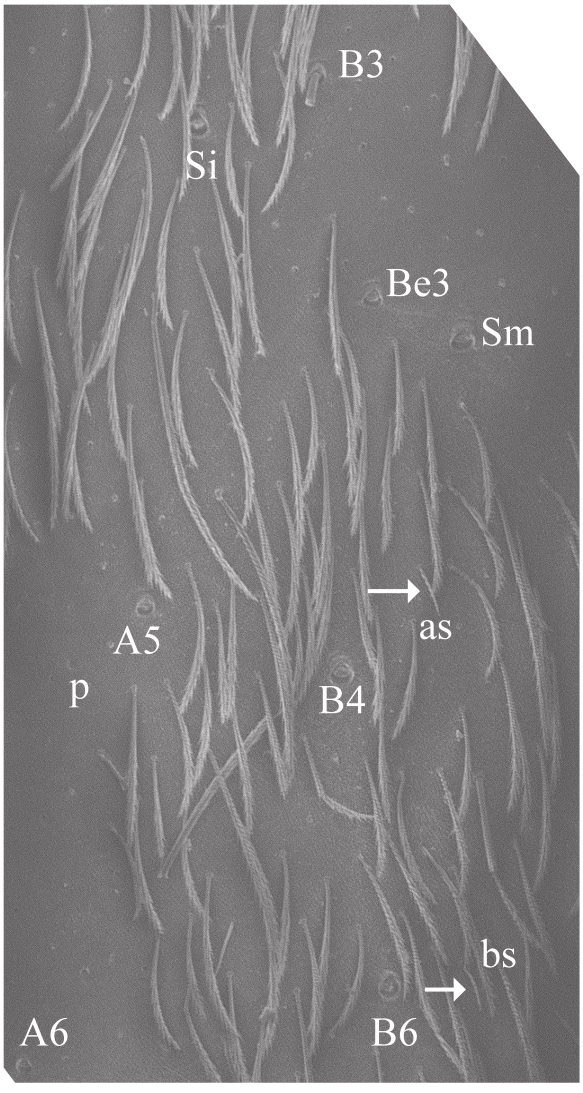


Fig. 20. *Entomobrya jordanai* sp. nov., SEM photomicrograph of Abd. IV (partially right side). Abbreviations: as = anterosubmedial normal sens; bs = the normal sens behind the as; p = pseudopore. Scale bar: 20 μm.

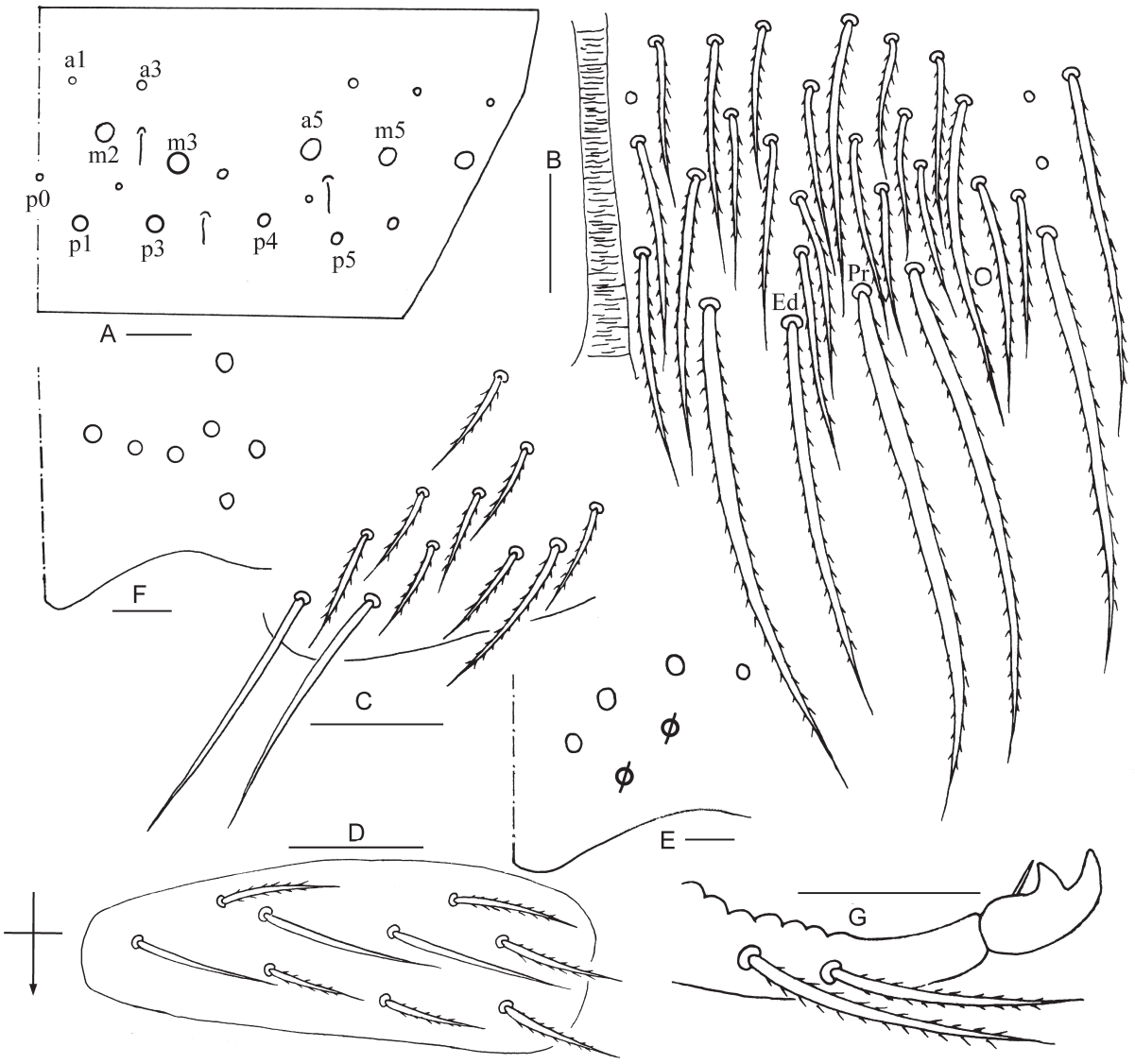


Fig. 21. *Entomobrya jordanai* sp. nov. **A**. Chaetotaxy of Abd. V (right side, holotype, NTU slide 1295-7). **B**. Anterior face of ventral tube (paratype, NTU slide 1295-9). **C**. Posterior face of ventral tube, partially (paratype, NTU slide 1295-8). **D**. Lateral flap of ventral tube (paratype, NTU slide 1295-8). **E**. Manubrial plaque (dorsal view, paratype, NTU slide 1295-8). **F**. Ventro-apical part of manubrium (paratype, NTU slide 1295-8). **G**. Distal part of dens and mucro (lateral view, paratype, NTU slide 1295-9). Scale bars: 20 μm.

Entomobrya rikazeensis sp. nov.
urn:lsid:zoobank.org:act:0C3FAD4B-9251-4D01-A523-E0A95B322214
Figs 1–2, 22–28, Tables 1–2, 6, 9

Diagnosis

Each segment of dorsal trunk with narrow transverse brown stripe posteriorly; interocular chaetae as p, q, r, s, t mes; Th. II without Mm mac; Abd. I–IV with 6–7, 4, 3, 7 mac centrally, respectively.

Etymology

The name is composed of the locality name Rikaze plus the Latin suffix "-*ensis*", meaning 'pertaining or originating' and referring to its type locality, Rikaze City.

Type material

Holotype

CHINA • ♀ on slide; Xizang Autonomous Region, Rikaze City, Sangzhuzi District, Renmin Park; 29°18′10″ N, 88°53′36″ E; 3845.2 m a.s.l.; 12 Aug. 2023; Y.T. Ma leg.; sample number 1297; NTU slide no. 1297-6A.

Paratypes

CHINA • 6 ♀♀ on slides; same data as for holotype; NTU slides 1297-6B, 1297-10, 1297-11, 1297-15, 1297-16, 1297-17.

Description

Measurement. Body (head + trunk) length up to 2.17 mm.

Colour. Ground colour pale yellow; eye patches dark blue, brown stripe present between eyepatches; Ant. II–IV and tibiotarsi with brown pigment; each segment of dorsal trunk with narrow transverse brown stripe posteriorly and Th. II–III with a narrow longitudinal brown stripe laterally, Abd. I–IV with scattered brown pigment laterally (Fig. 22A–B).

Head. Antenna not annulated, 2.04–2.40 and 0.41–0.47 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/1.50–2.40/1.40–2.00/1.60–2.80. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb unilobed (Fig. 23A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 23B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with five antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), usually seven sutural (S0, S2–5, S4i, S5i, S'0 sometimes present) mac, one post-sutural mac (Ps2) and mes (Ps5), four posterior mac in Gr. II (Fig. 23C–D). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 2–3 minute projections (Fig. 23E). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 23F). Lateral process (l. p.) of labial palp E finger-shaped with tip reaching or exceeding apex of papilla E (Fig. 23G). Labial base with MREL1L2, all ciliate, R 0.41–0.74 length of M (Fig. 23H).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 3, 3 (Figs 24A, 25D, 26, 28A). Th. II without Mm mac, with two Ms (m4, m4i), 24–28 posterior mac. Th. III with 24–29 mac (Fig. 24A). Coxal chaetal formula as 3/6 (anterior), 3 (posterior)/6 (Fig. 24B–D). Trochanteral organ with 10–17 smooth chaetae (Fig. 25A). Tibiotarsus without smooth or appressed chaetae and with 7–10 slightly stout chaetae almost arranged in two rows ventrally (Fig. 25B). Tenent hair clavate, 1.03–1.10 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.46–0.59 distance from base of inner edge of unguis, distal

unpaired inner teeth at 0.67–0.75 and 0.84–0.89 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 25C).

Abdomen. Range of Abd. IV length 3.50–5.70 times as long as dorsal axial length of Abd. III. Abd. I with 6–7 (a1a, m2–4, m2i, m4p always present, a1 and a5 rarely present) mac. Abd. II with four (a2, m3, m3e, m3ep) central, one (m5) lateral mac. Abd. III with three (a2, a3, m3) central, three (am6, pm6, p6) lateral mac (Fig. 25D). Abd. IV with 5–8 elongate sens, three normal sens (as, bs, ps), seven (Si, Sm, A5, A6, B3, B4, B6) central and 13 lateral mac (Figs 26–27). Abd. V with three sens (Fig. 28A). Anterior face of ventral tube with 21–30 ciliate chaetae in different sizes, line connecting Pr and Ed mac oblique to median furrow (Fig. 28B); posterior face with two apical smooth chaetae (Fig. 28C); each lateral flap with 1–2 smooth and 6–7 ciliate chaetae (Fig. 28D). Manubrial plate dorsally with four ciliate mac and



Fig. 22. *Entomobrya rikazeensis* sp. nov., habitus. **A**. Paratype, lateral view (NTU slide 1297-17). **B**. Paratype, dorsal view (NTU slide 1297-15). Scale bars: 500 µm.

two pseudopores (Fig. 28E); ventrally with 8–9 ciliate chaetae of each side (Fig. 28F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens slightly longer than mucro in length (Fig. 28G).

Habitat

Found in litter, mainly composed of leaves of *Salix babylonica* and *Populus szechuanica* var. *tibetica* Schneider.

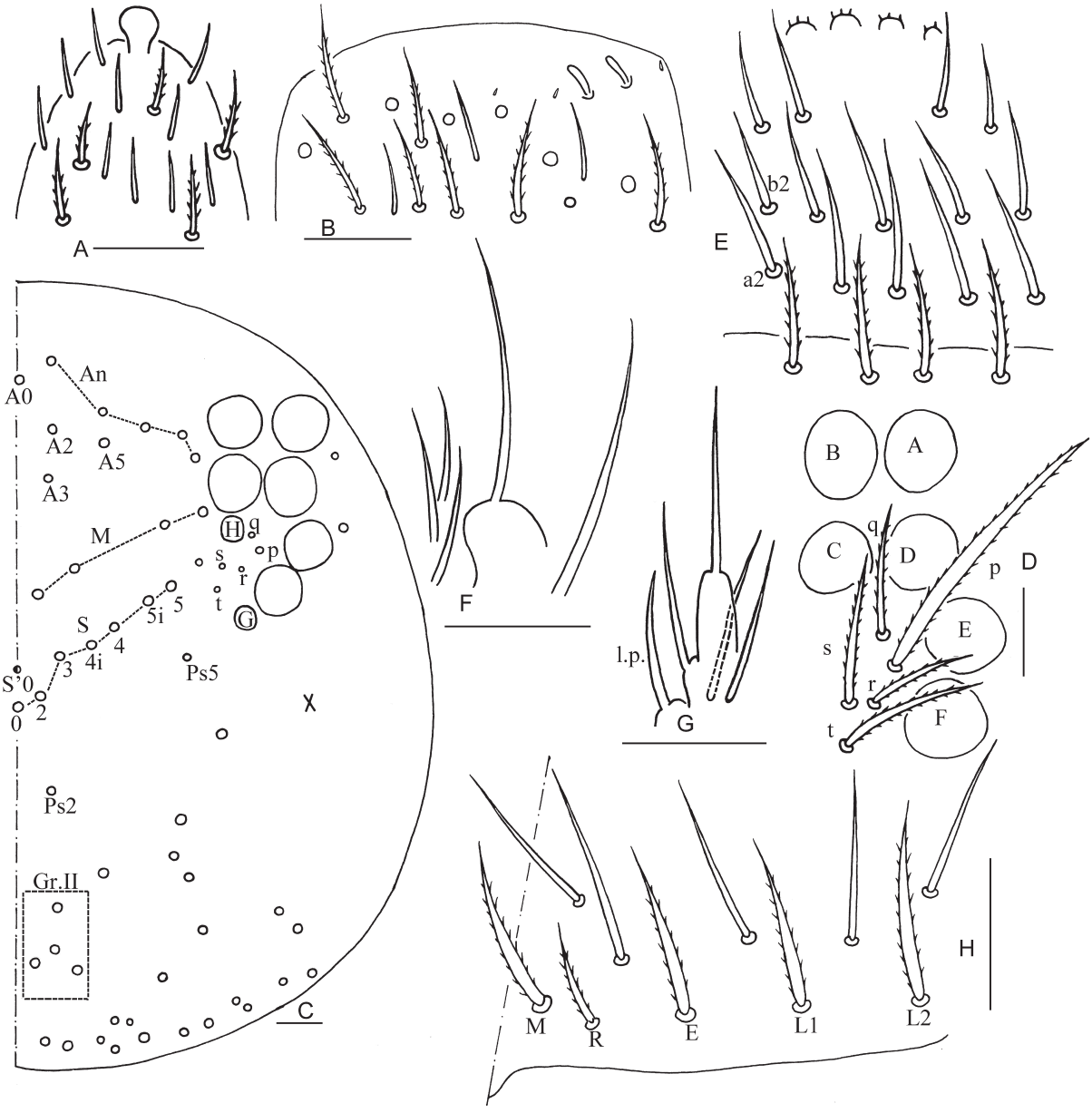


Fig. 23. *Entomobrya rikazeensis* sp. nov. **A**. Apex of Ant. IV (dorsal view, holotype, NTU slide 1297-6A). **B**. Distal Ant. III (dorsal view, holotype, NTU slide 1297-6A). **C**. Head in dorsal view (right side, paratypes, NTU slides 1297-10 and 1297-15). **D**. Interocular chaetae (paratype, NTU slide 1297-6B). **E**. Prelabral and labral chaetotaxy (dorsal view, paratype, NTU slide 1297-10). **F**. Maxillary palp and outer lobe (right side, holotype, NTU slide 1297-6A). **G**. Labial palp (left side, holotype, NTU slide 1297-6A). **H**. Labial chaetotaxy (right side, holotype, NTU slide 1297-6A). Scale bars: 20 μm.

Remarks

We asked Dr Rafael Jordana for his opinion on the new species because of its similarity to the Tibetan species *E. chungseensis* (Baquero & Jordana, 2008) and the Indian species *E. mehtai* Baquero & Jordana, 2014 (Baquero *et al*. 2014) in colour pattern, and he confirmed that it was a new species for the differences in the chaetotaxy of Abd. II–IV (Table 6).

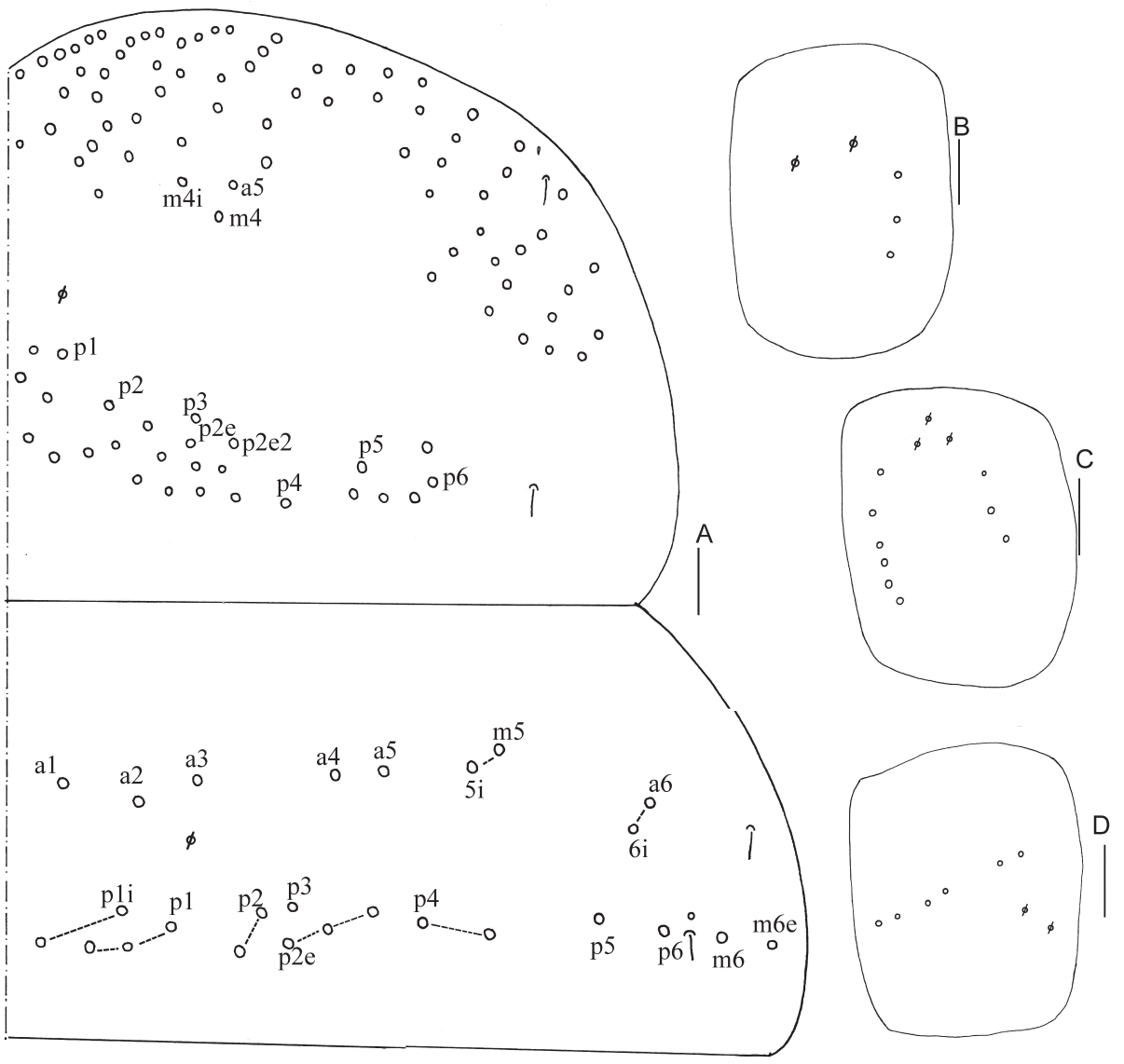


Fig. 24. *Entomobrya rikazeensis* sp. nov. **A**. Chaetotaxy of Th. II−III (right side, holotype, NTU slide 1297-6A; paratype, NTU slide 1297-16). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, holotype, NTU slide 1297-6A; paratype, NTU slide 1297-6B). Scale bars: 20 μm.

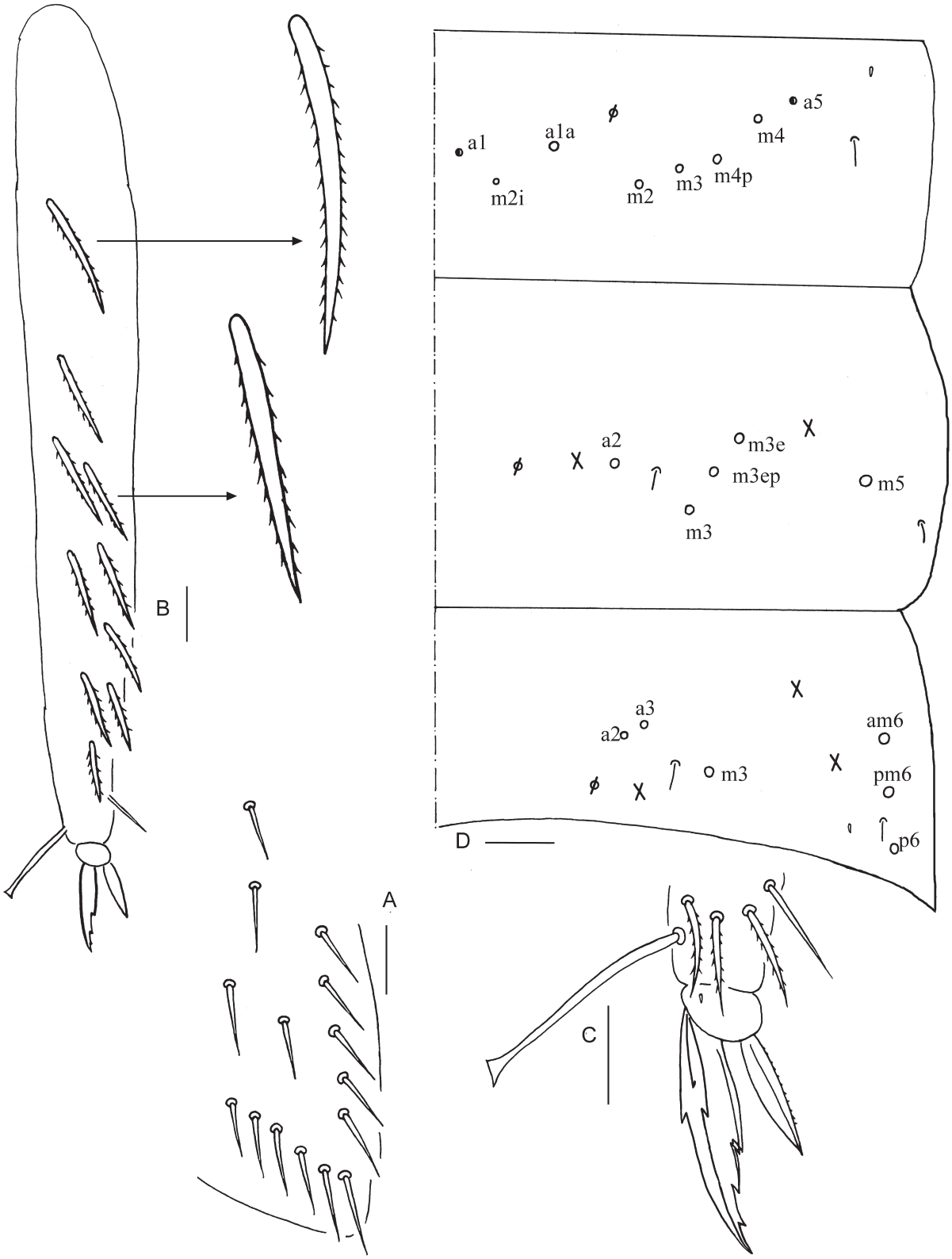


Fig. 25. *Entomobrya rikazeensis* sp. nov. **A**. Trochanteral organ (posterior side, paratype, NTU slide 1297-10). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, paratype, NTU slide 1297-10). **C**. Hind foot complex (lateral view, paratype, NTU slide 1297-6B). **D**. Chaetotaxy of Abd. I−III (right side, paratypes, NTU slides 1297-10 and 1297-17). Scale bars: 20 μm.

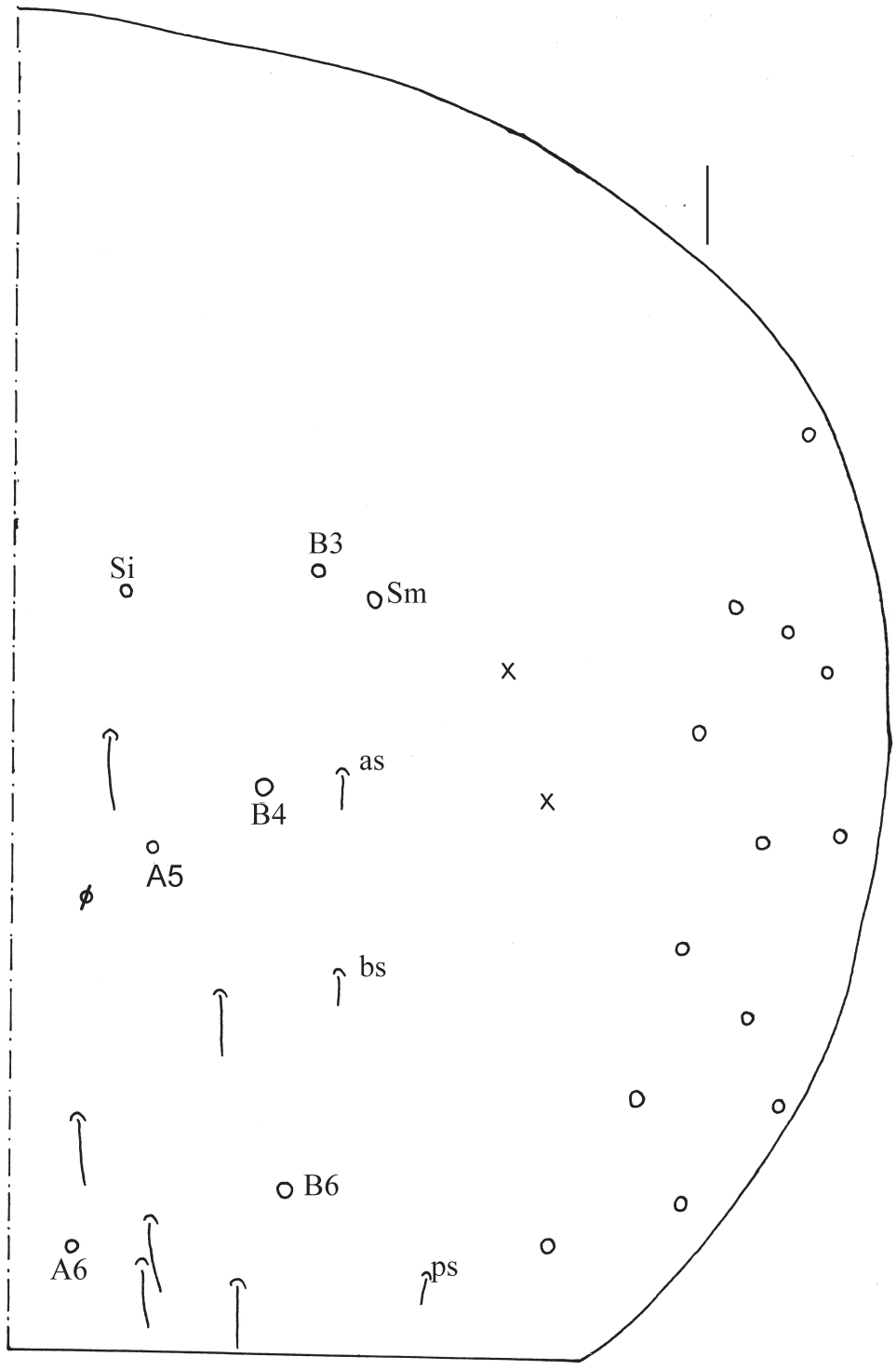


Fig. 26. *Entomobrya rikazeensis* sp. nov., chaetotaxy of Abd. IV (right side, paratype, NTU slide 1297-10). Scale bar: 20 µm.

Table 6. Main differences between the new and similar species of *Entomobrya* Rondani, 1861.

Characters	*E. rikazeensis* sp. nov.	*E. chungseensis*	*E. mehtai*
Mac on Abd. I	6–7	4	unknown
Central mac on Abd. II	4	3	4
Central mac on Abd. III	3	2	3
Central mac on Abd. IV on each side	7	7	13
External lamella of unguiculus	slightly serrate	unknown	smooth

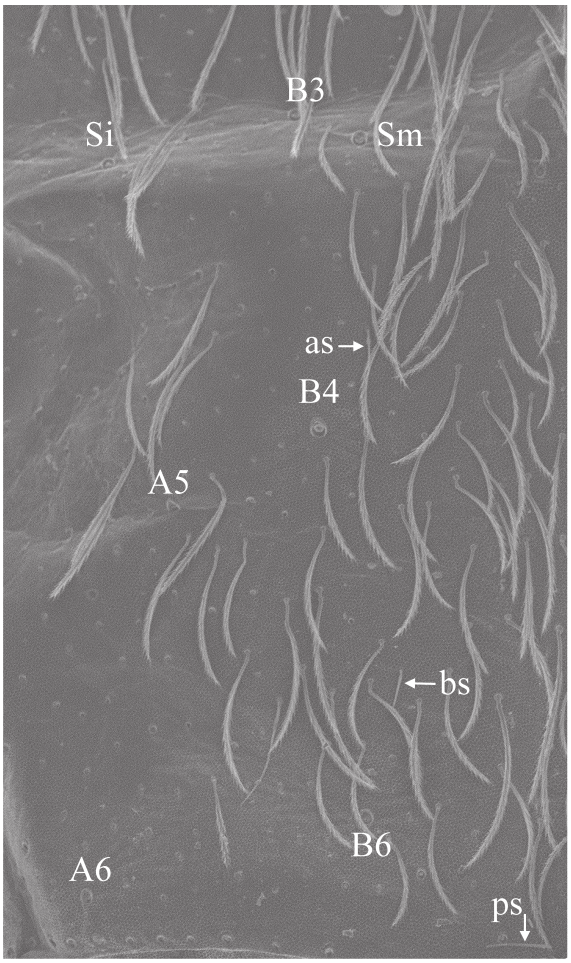


Fig. 27. *Entomobrya rikazeensis* sp. nov., SEM photomicrograph of Abd. IV (partially right side). Scale bar: 20 μm.

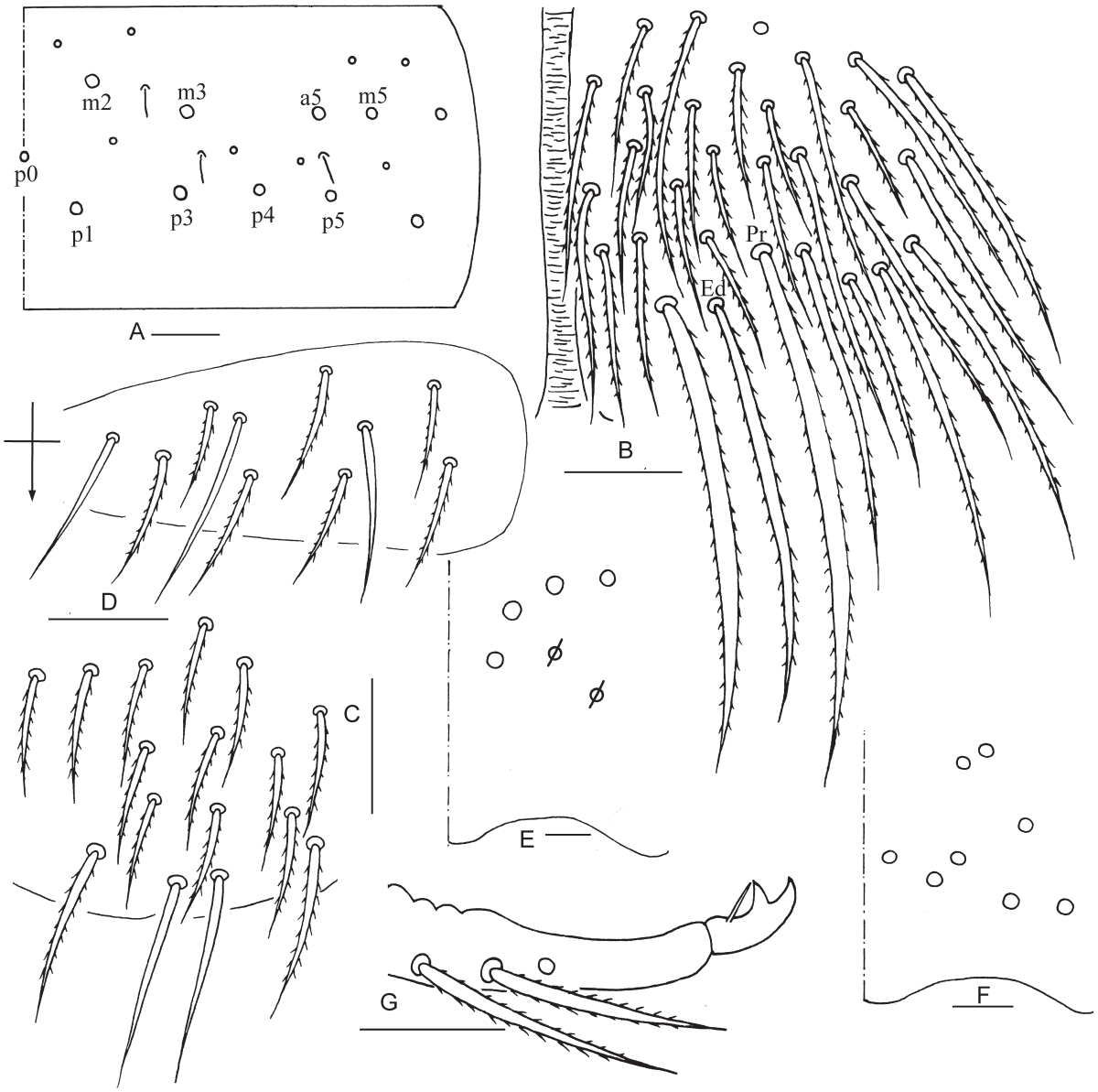


Fig. 28. *Entomobrya rikazeensis* sp. nov. **A**. Chaetotaxy of Abd. V (right side, paratype, NTU slide 1297-11). **B**. Anterior face of ventral tube (paratype, NTU slide 1297-11). **C**. Posterior face of ventral tube (paratype, NTU slide 1297-10). **D**. Lateral flap of ventral tube (paratype, NTU slide 1297-15). **E**. Manubrial plaque (dorsal view, holotype, NTU slide 1297-6A). **F**. Ventro-apical part of manubrium (holotype, NTU slide 1297-6A). **G**. Distal part of dens and mucro (lateral view, paratype, NTU slide 1297-6B). Scale bars: 20 μm.

Entomobrya similis sp. nov.
urn:lsid:zoobank.org:act:E172F2C0-89E3-4731-B486-96DBCE45C69A
Figs 1–2, 29–34, Tables 1–2, 7, 9

Diagnosis

Each segment of dorsal trunk with transverse narrow brown stripe posteriorly and longitudinal brown stripe laterally, Abd. I–IV and manubrium with scattered brown pigment, ventral side with scattered brown pigment; interocular chaetae as p, q, r, s, t mes; Th. II without Mm mac; Abd. I–IV with 5, 4, 3, 7 mac centrally, respectively.

Etymology

The Latin adjective word '*similis*', meaning 'similar', refers to its similarity with *E. nigriventris* Stach, 1930.

Type material

Holotype

CHINA • ♀ on slide; Xizang Autonomous Region, Rikaze City, Sangzhuzi District, Renmin Park; 29°18′10″ N, 88°53′36″ E; 3845.2 m a.s.l.; 12 Aug. 2023; Y.T. Ma leg.; sample number 1297; NTU slide 1297-4.

Paratypes

CHINA • 1 ♀ on slide; same data as for holotype; NTU slide 1297-14 • 4 ♀♀ on slides; Xizang Autonomous Region, Linzhi City, Bayi District, grove beside No. 956 Hospital of the Army; 29°39′59″ N, 94°21′40″ E; 3000.0 m a.s.l.; 7 Aug. 2023; Y.T. Ma leg.; sample number 1291; NTU slides 1291-1, 1291-2, 1291-3, 1291-4.

Description

Measurement. Body (head + trunk) length up to 1.97 mm.

Colour. Ground colour pale yellow; eye patches dark blue, scattered brown pigment present on head laterally; antennae and legs brown; each segment of dorsal trunk with narrow transverse brown stripe posteriorly and longitudinal brown stripe laterally; Th. II–Abd. IV and manubrium with scattered brown pigment, ventral side with scattered brown pigment (Fig. 29A–C).

Head. Antenna not annulated, 2.20–2.50 and 0.48–0.61 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/1.50–2.00/1.50–2.10/1.80–2.67. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb unilobed (Fig. 30A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 30B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with five antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), usually seven sutural (S0, S2–5, S4i, S5i) mac, one post-sutural mac (Ps2) and mes (Ps5), 3–4 posterior mac in Gr. II (Fig. 30C). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 3–4 minute projections (Fig. 30D). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 30E). Lateral process (l. p.) of labial palp E finger-shaped with tip almost reaching apex of papilla E (Fig. 30F). Labial base with MREL1L2, all ciliate, R 0.52–0.61 length of M (Fig. 30G).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 3, 3 (Figs 31A, 32D, 33, 34A). Th. II without Mm mac, with one Ms (m4), 16–29 posterior mac. Th. III with 17–26 mac (Fig. 31A). Coxal chaetal formula as 3/6 (anterior), 4 (posterior)/6 (Fig. 31B–D). Trochanteral organ



Fig. 29. *Entomobrya similis* sp. nov., habitus. **A**. Paratype, lateral view (NTU slide 1297-13). **B**. Paratype, dorsal view (NTU slide 1297-5). **C**. Holotype, ventral view (NTU slide 1274-4). Scale bars: 500 µm.

with 20–25 smooth chaetae (Fig. 32A). Tibiotarsus without smooth or appressed chaetae and with 9–10 slightly stout chaetae almost arranged in two rows ventrally (Fig. 32B). Tenent hair clavate, 1.04–1.14 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.54–0.56 distance from base of inner edge of unguis, distal unpaired inner teeth at 0.72–0.73 and 0.81–0.89 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 32C).

Abdomen. Range of Abd. IV length 3.50–6.71 times as long as dorsal axial length of Abd. III. Abd. I usually with five (m2–4, m2i, m4p always present, a5 rarely present) mac. Abd. II with four (a2, m3, m3e, m3ep) central, one (m5) lateral mac. Abd. III with three (a2, a3, m3) central, three (am6, pm6, p6)

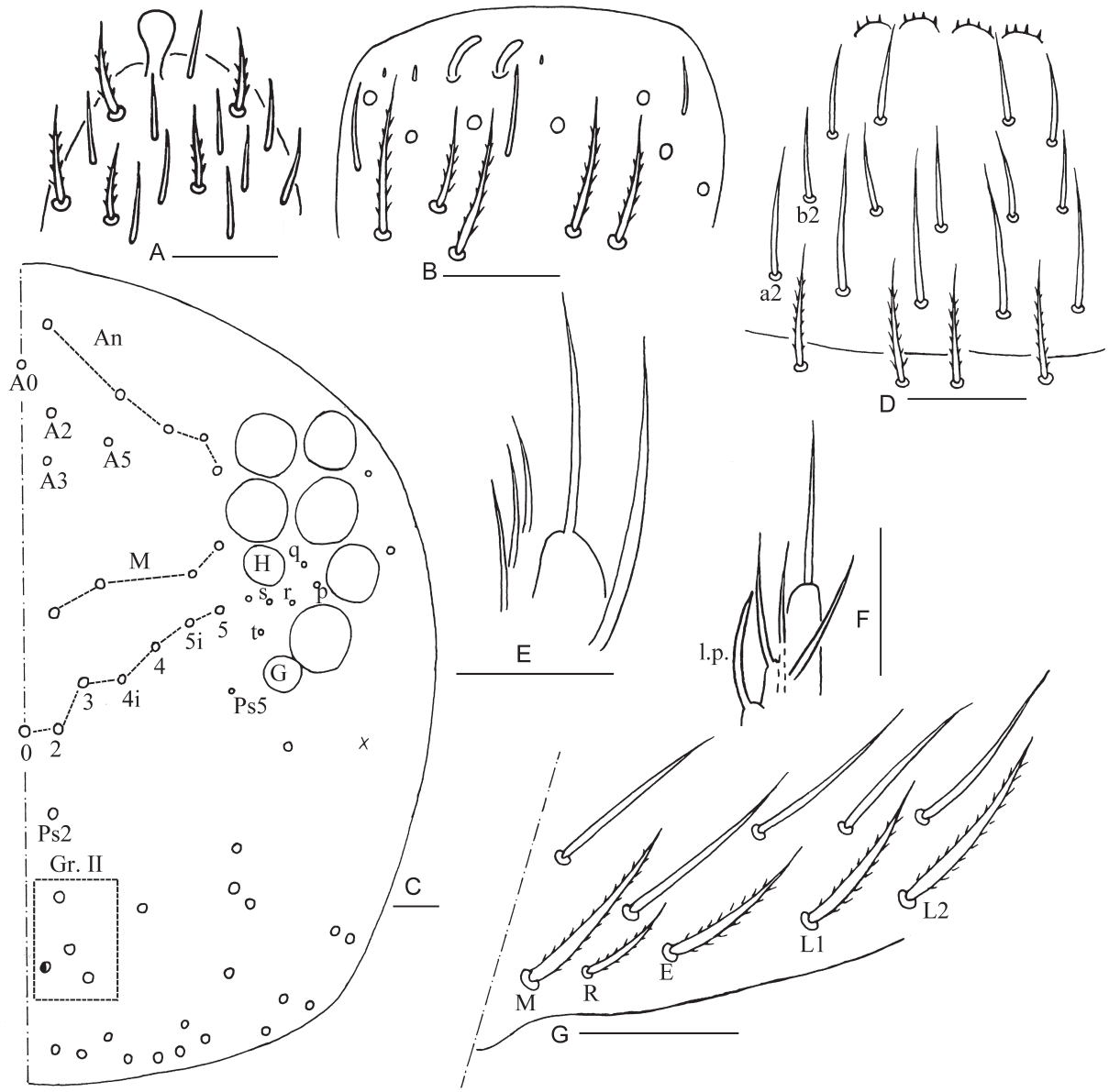


Fig. 30. *Entomobrya similis* sp. nov. **A**. Apex of Ant. IV (dorsal view, holotype, NTU slide 1297-4). **B**. Distal Ant. III (dorsal view, holotype, NTU slide 1297-4). **C**. Head in dorsal view (right side, paratypes, NTU slides 1291-2 and 1291-3). **D**. Prelabral and labral chaetotaxy (dorsal view, holotype, NTU slide 1297-4). **E**. Maxillary palp and outer lobe (right side, paratype, NTU slide 1291-2). **F**. Labial palp (left side, holotype, NTU slide 1297-4). **G**. Labial chaetotaxy (right side, holotype, NTU slide 1297-4). Scale bars: 20 μm.

lateral mac (Fig. 32D). Abd. IV with 3–6 elongate sens, three normal sens (as, bs, ps), seven (Si, Sm, A5, A6, B3, B4, B6) central and 13–17 lateral mac (Fig. 33). Abd. V with three sens (Fig. 34A). Anterior face of ventral tube with 25 ciliate chaetae in different sizes, line connecting Pr and Ed mac oblique to median furrow (Fig. 34B); posterior face with two apical smooth chaetae (Fig. 34C); each lateral flap with three smooth and 3–6 ciliate chaetae (Fig. 34D). Manubrial plate dorsally with 5–13 ciliate mac and 1–2 pseudopores (Fig. 34E); ventrally with 9–10 ciliate chaetae of each side (Fig. 34F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens slightly longer than mucro in length (Fig. 34G).

Habitat

Found in litter, mainly composed of leaves of *Salix babylonica* and *Populus szechuanica* var. *tibetica.*

Remarks

The new species is characterised by its brown ventral body and is similar to *E. nigriventris* (Winkler *et al*. 2023) in colour pattern, but the differences, listed in Table 7, are great. It is very similar to *E. rikazeensis* sp. nov. in chaetotaxy of the head and body, but their colour pattern and the *COI* sequence show they are different species.

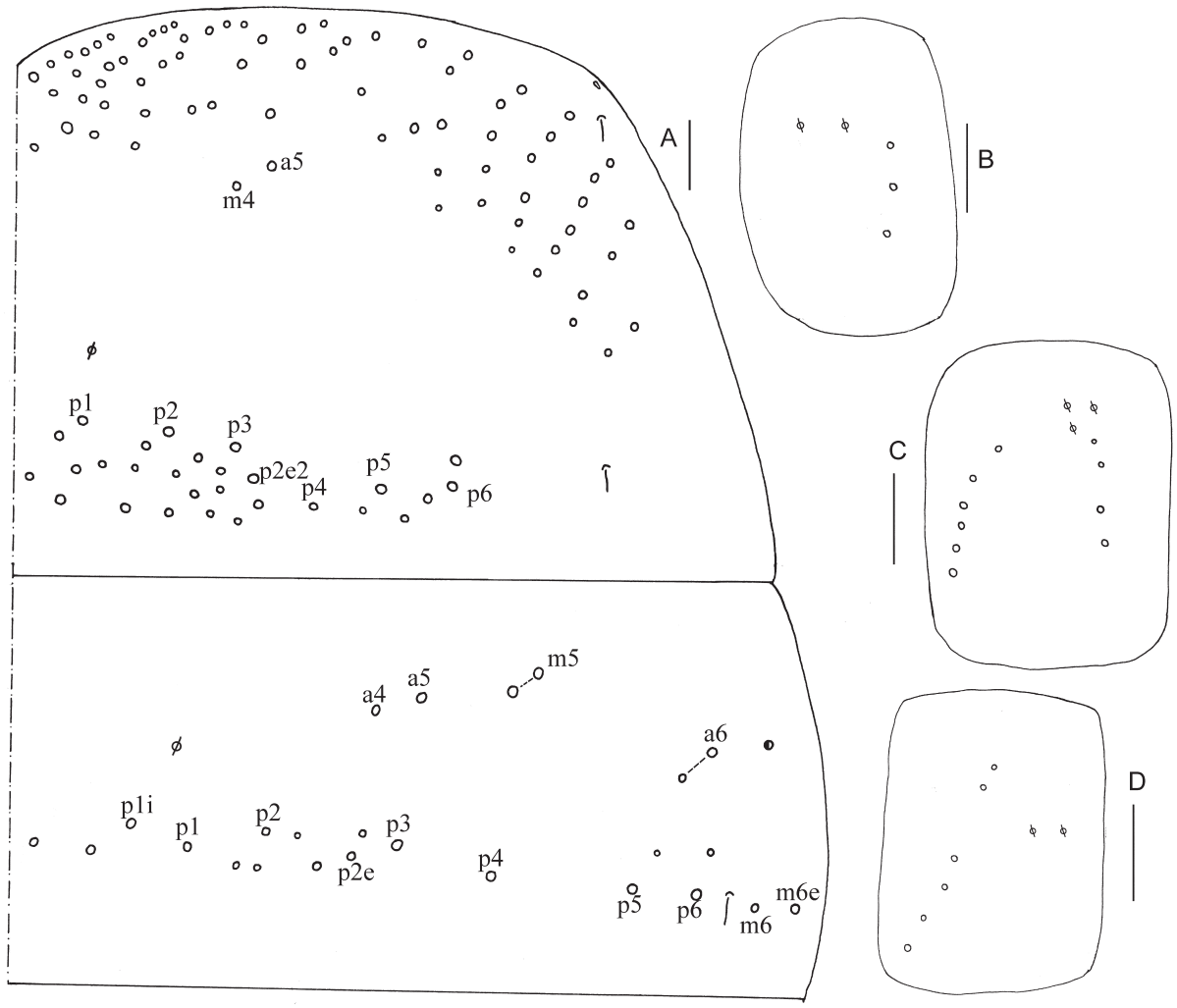


Fig. 31. *Entomobrya similis* sp. nov. **A**. Chaetotaxy of Th. II−III (right side, holotype, NTU slide 1297-4). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, paratype, NTU slide 1291-1). Scale bars: 20 μm.

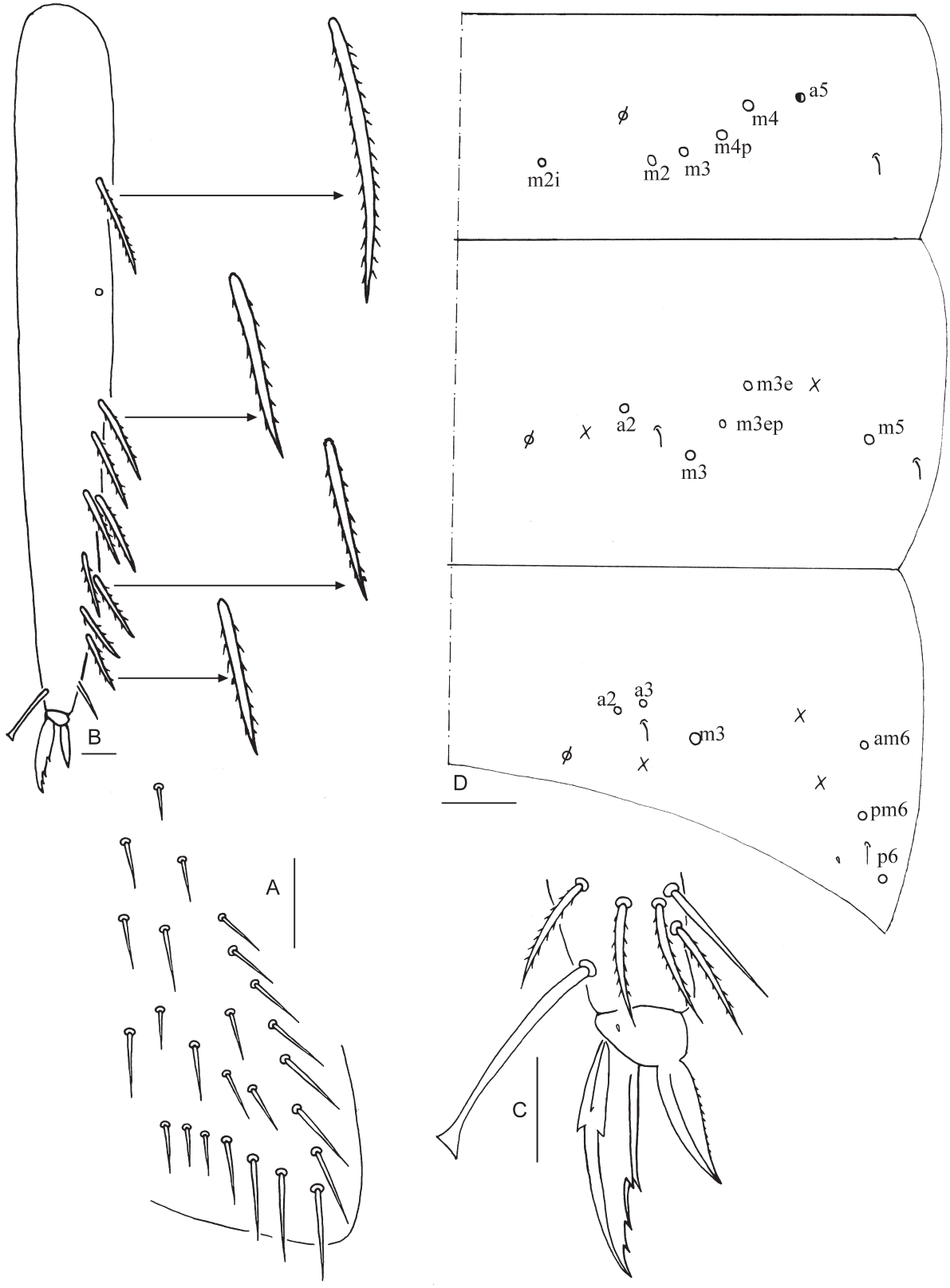


Fig. 32. *Entomobrya similis* sp. nov. **A**. Trochanteral organ (posterior side, holotype, NTU slide 1297-4). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, paratype, NTU slide 1291-1). **C**. Hind foot complex (lateral view, holotype, NTU slide 1297-4). **D**. Chaetotaxy of Abd. I–III (right side, paratype, NTU slide 1291-1). Scale bars: 20 μm.

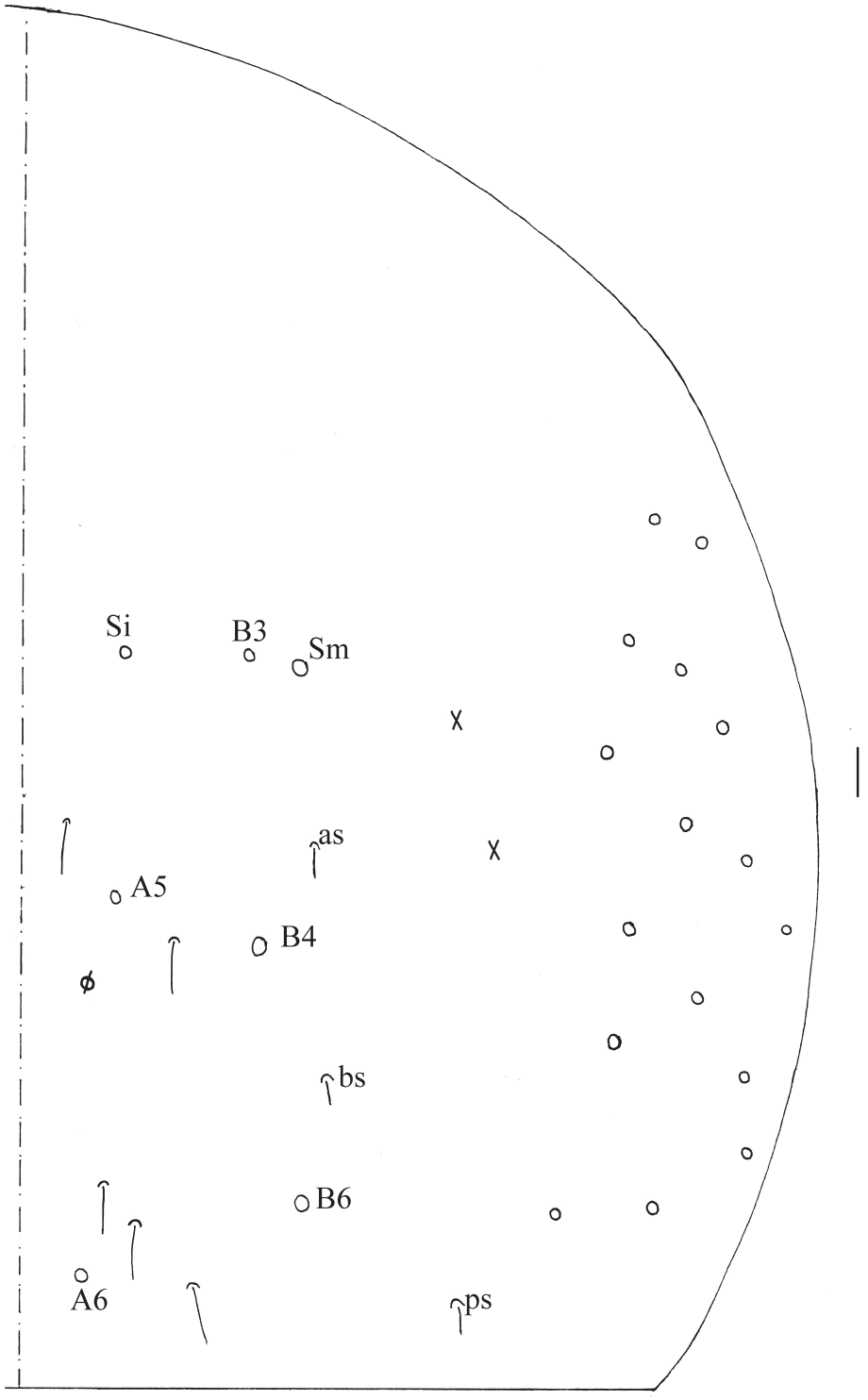


Fig. 33. *Entomobrya similis* sp. nov., chaetotaxy of Abd. IV (right side, holotype, NTU slide 1297-4). Scale bar: 20 μm.

Table 7. Main differences between the new and similar species.

Characters	*E. similis* sp. nov.	*E. rikazeensis* sp. nov.	*E. nigriventris*
Antennal mac on head	5	5	6
Projection on labral papilla	3–4	2–3	1
Mac in Mm area of Th. II	0	0	4
Mac in Ms area of Th. II	1	2	3
Mac a1, a2 and a3 on Th. III	all absent	all present	a1 absent, a2 & a3 present
Central mac on Abd. II	4	4	7–9
Central mac on Abd. III	3	3	4
Central mac on Abd. IV on each side	7	7	12–18

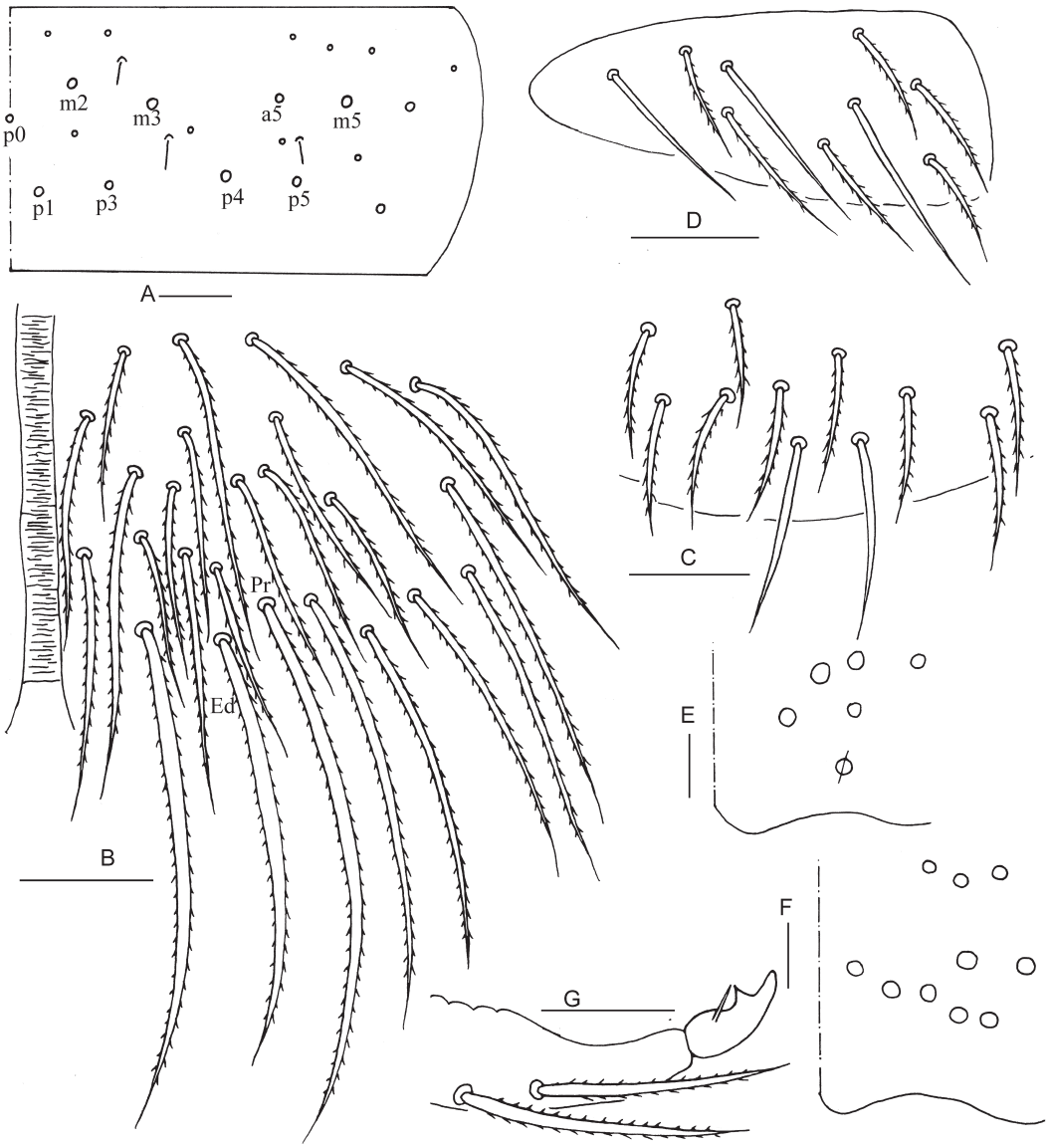


Fig. 34. *Entomobrya similis* sp. nov. **A**. Chaetotaxy of Abd. V (right side, paratype, NTU slide 1297-14). **B**. Anterior face of ventral tube (paratype, NTU slide 1291-1). **C**. Posterior face of ventral tube (paratype, NTU slide 1291-2). **D**. Lateral flap of ventral tube (holotype, NTU slide 1297-4). **E**. Manubrial plaque (dorsal view, holotype, NTU slide 1297-4). **F**. Ventro-apical part of manubrium (holotype, NTU slide 1297-4). **G**. Distal part of dens and mucro (lateral view, holotype, NTU slide 1297-4). Scale bars: 20 μm.

Entomobrya unostrigata Stach, 1930 new record to China
Figs 1, 35–40, Tables 8–9

Diagnosis

Th. II–Ant. IV with irregular brown stripe laterally and longitudinal narrow brown stripe centrally; interocular chaetae as p, q, r, s, t mes; Th. II with one Mm and two Ms mac; Abd. I–IV with 8–10, 5–7, 2, 18–22 mac centrally, respectively.

Material examined

CHINA • 3 ♀♀ on slides; Xizang Autonomous Region, Lasa City, Duilongdeqing District, Chinese Culture Park; 29°37′50″ N, 91°04′36″ E; 3636.5 m a.s.l.; 10 Aug. 2023; Y.T. Ma leg.; sample number 1294; NTU slides 1294-1, 1294-2, 1294-3.

Description

Measurement. Body (head + trunk) length up to 2.50 mm.

Colour. Ground colour pale yellow; eye patches dark blue; antenna brown pigmented; Th. II–Ant. IV with irregular brown stripe laterally and longitudinal narrow brown stripe centrally (Fig. 35A–C).

Head. Antenna not annulated, 2.80–3.40 and 0.46–0.64 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/2.10–2.50/1.90–2.50/2.70–4.29. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb bilobed (Fig. 36A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 36B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with five antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), eight sutural (S0–5, S4i, S5i) mac, one post-sutural mac (Ps2) and mes (Ps5), 5–7 posterior mac in Gr. II (Fig. 36C). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 2–3 minute projections (Fig. 36D). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 36E). Lateral process (l. p.) of labial palp E finger-shaped with tip not reaching apex of papilla E (Fig. 36F). Labial base with MREL1L2, all ciliate, R 0.57–0.73 length of M (Fig. 36G).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 2, 3 (Figs 37A, 38D, 39, 40A). Th. II with one (m2) Mm and two Ms (m4, m4i), 26–29 posterior mac. Th. III with 32–37 mac (Fig. 37A). Coxal chaetal formula as 2/5 (anterior), 4 (posterior)/6 (Fig. 37B–D). Trochanteral organ with 19–21 smooth chaetae (Fig. 38A). Tibiotarsus without smooth or appressed chaetae and with 14–16 slightly stout chaetae almost arranged in two rows ventrally (Fig. 38B). Tenent hair clavate, 1.05–1.16 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.44–0.46 distance from base of inner edge of unguis, distal unpaired inner teeth at 0.69–0.73 and 0.85–0.88 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 38C).

Abdomen. Range of Abd. IV length 3.42–5.33 times as long as dorsal axial length of Abd. III. Abd. I with 8–10 (a2–3, a5, m2–5, m4p, m2i and m4i sometimes absent) mac. Abd. II with 5–7 (a2, a3, m3, m3ea, m3ep, m3e and m3ei sometimes absent) central, one (m5) lateral mac. Abd. III with two (a1, m3) central, five (am6, pm6, p6, m7, p7) lateral mac (Fig. 38D). Abd. IV with 8–9 elongate sens, two normal sens (as, ps), 18–22 central and 20–21 lateral mac on each side (Fig. 39). Abd. V with three sens (Fig. 40A). Anterior face of ventral tube with 3+3 large and 26–29 small ciliate chaetae, line connecting Pr and Ed mac oblique to median furrow (Fig. 40B); posterior face with two apical smooth chaetae besides 8–16 ciliate chaetae of different sizes (Fig. 40C); each lateral flap with 3 smooth and 6–9 ciliate chaetae



Fig. 35. *Entomobrya unostrigata* Stach, 1930, habitus. **A**. Lateral view (NTU slide 1294-1). **B**. Dorsal view (NTU slide 1294-1). **C**. Lateral view (top, NTU slide 1294-2) and dorsal view (bottom, NTU slide 1294-3). Scale bars: 500 μm.

(Fig. 40D). Manubrial plate dorsally with three ciliate mac and two pseudopores (Fig. 40E); ventrally with 9–10 ciliate chaetae of each side (Fig. 40F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth and subapical tooth smaller than apical tooth; distal smooth section of dens slightly longer in length than mucro (Fig. 40G).

Habitat

Found in litter, mainly composed of leaves of *Salix babylonica.*

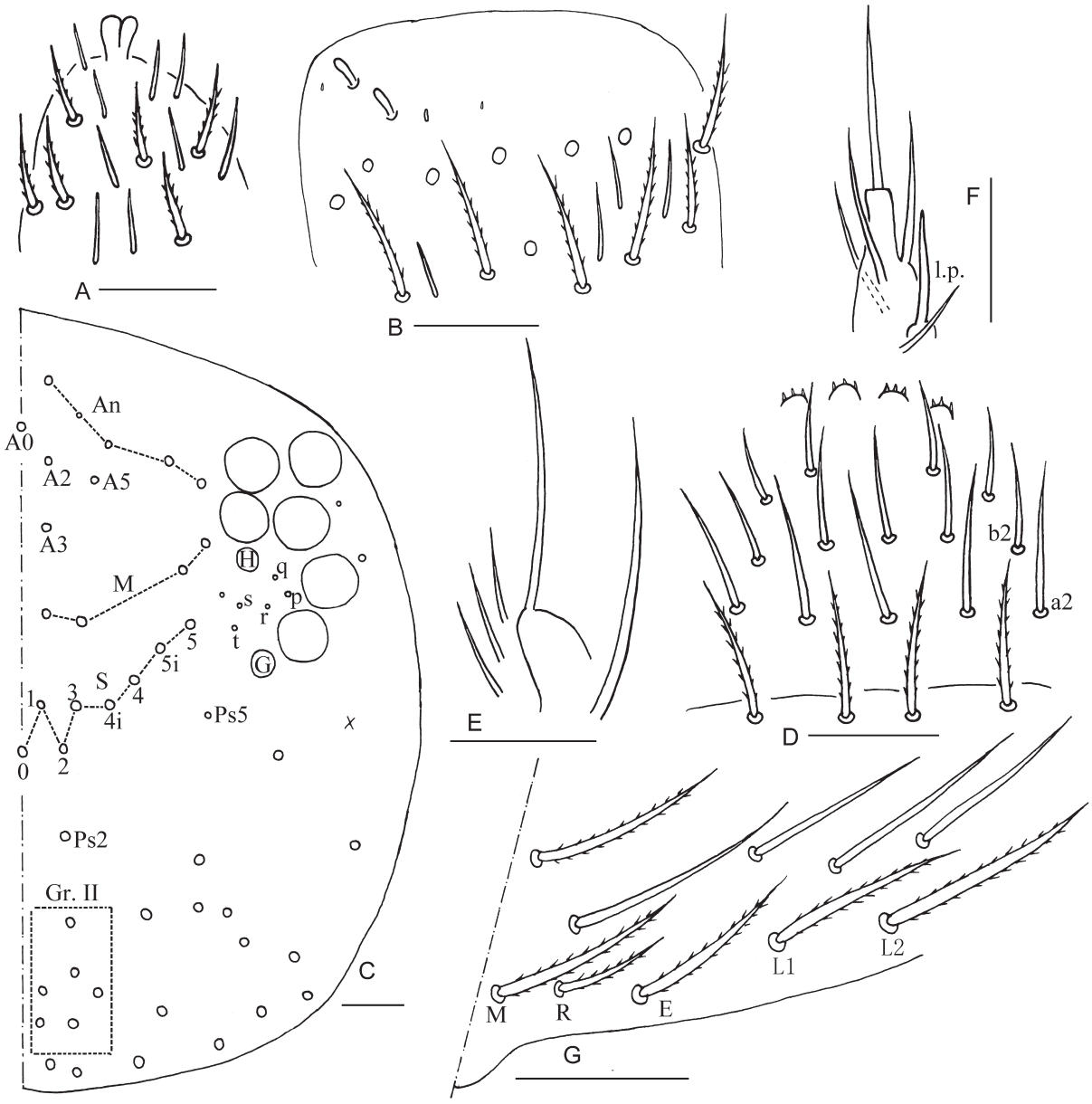


Fig. 36. *Entomobrya unostrigata* Stach, 1930. **A**. Apex of Ant. IV (dorsal view, NTU slide 1294-1). **B**. Distal Ant. III (dorsal view, NTU slide 1294-2). **C**. Head in dorsal view (NTU slide 1294-1). **D**. Prelabral and labral chaetotaxy (dorsal view, NTU slide 1294-2). **E**. Maxillary palp and outer lobe (right side, NTU slide 1294-3). **F**. Labial palp (right side, NTU slide 1294-2). **G**. Labial chaetotaxy (right side, NTU slide 1294-2). Scale bars: 20 μm.

Remarks

The species is characterised by the colour pattern, the chaetotaxy of Abd. II–III and a smaller subapical tooth of the mucro. It is widespread in the world, including Spain (Stach 1930; Baquero & Jordana 2018), Italy (Simon 1965), France (Renaud *et al*. 2004), Bulgaria (Tsonev & Kazandzhieva 1991), Hungary (Winkler *et al*. 2023), North America (Christiansen 1956; Katz *et al*. 2015), Australia (Greenslade 1995). It is a new record of the species in China and our description agrees well with the previous descriptions except for some differences which may be caused by geographical variation (Katz *et al*. 2015; Baquero & Jordana 2018; Winkler *et al*. 2023) (Table 8).

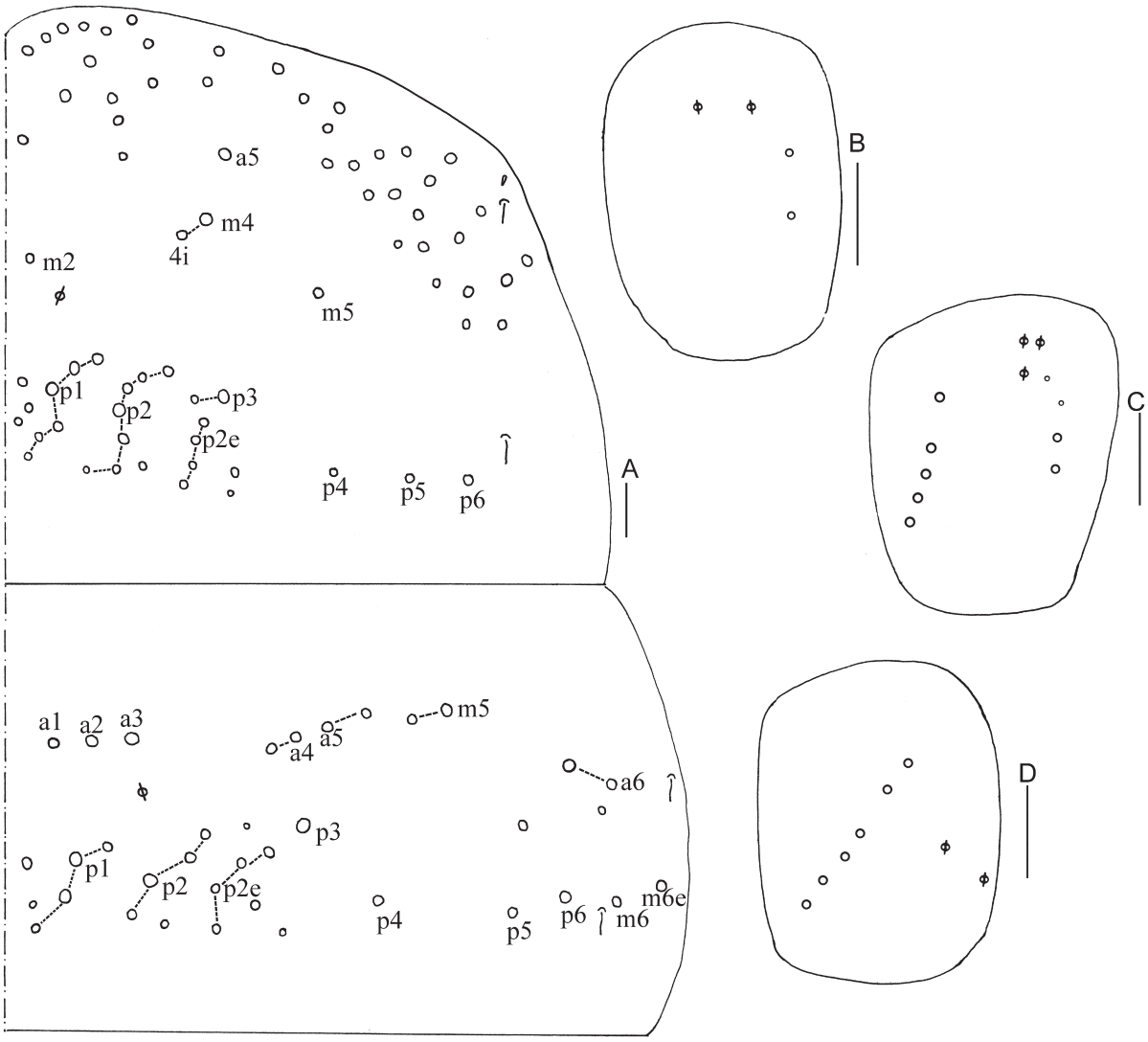


Fig. 37. *Entomobrya unostrigata* Stach, 1930. **A**. Chaetotaxy of Th. II−III (right side, NTU slide 1294-3). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, NTU slide 1294-1). Scale bars: 20 μm.

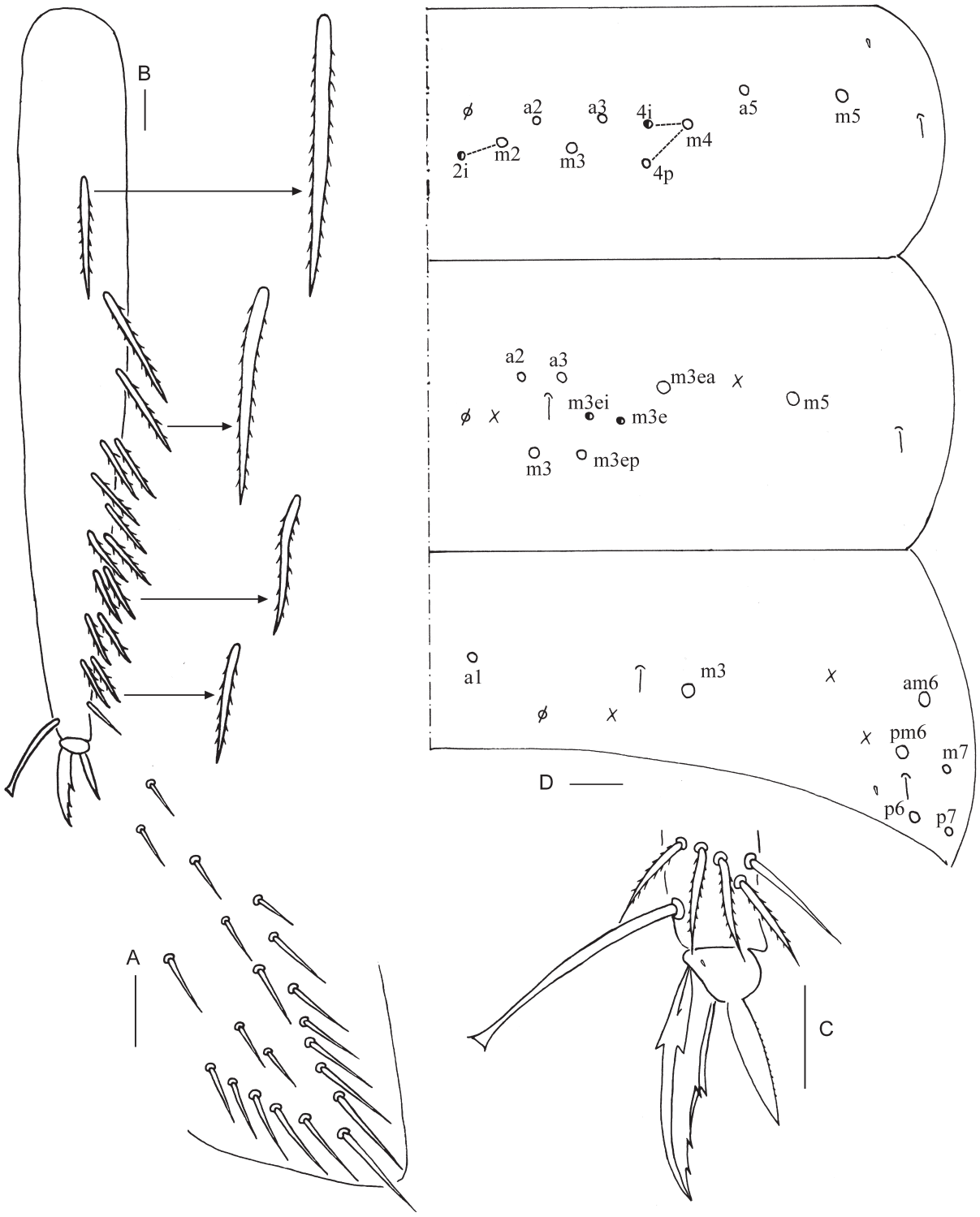


Fig. 38. *Entomobrya unostrigata* Stach, 1930. **A**. Trochanteral organ (posterior side, NTU slide 1294-2). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, NTU slide 1294-2). **C**. Hind foot complex (lateral view, NTU slide 1294-1). **D**. Chaetotaxy of Abd. I–III (right side, NTU slides 1294-2 and 1294-3). Scale bars: 20 μm.

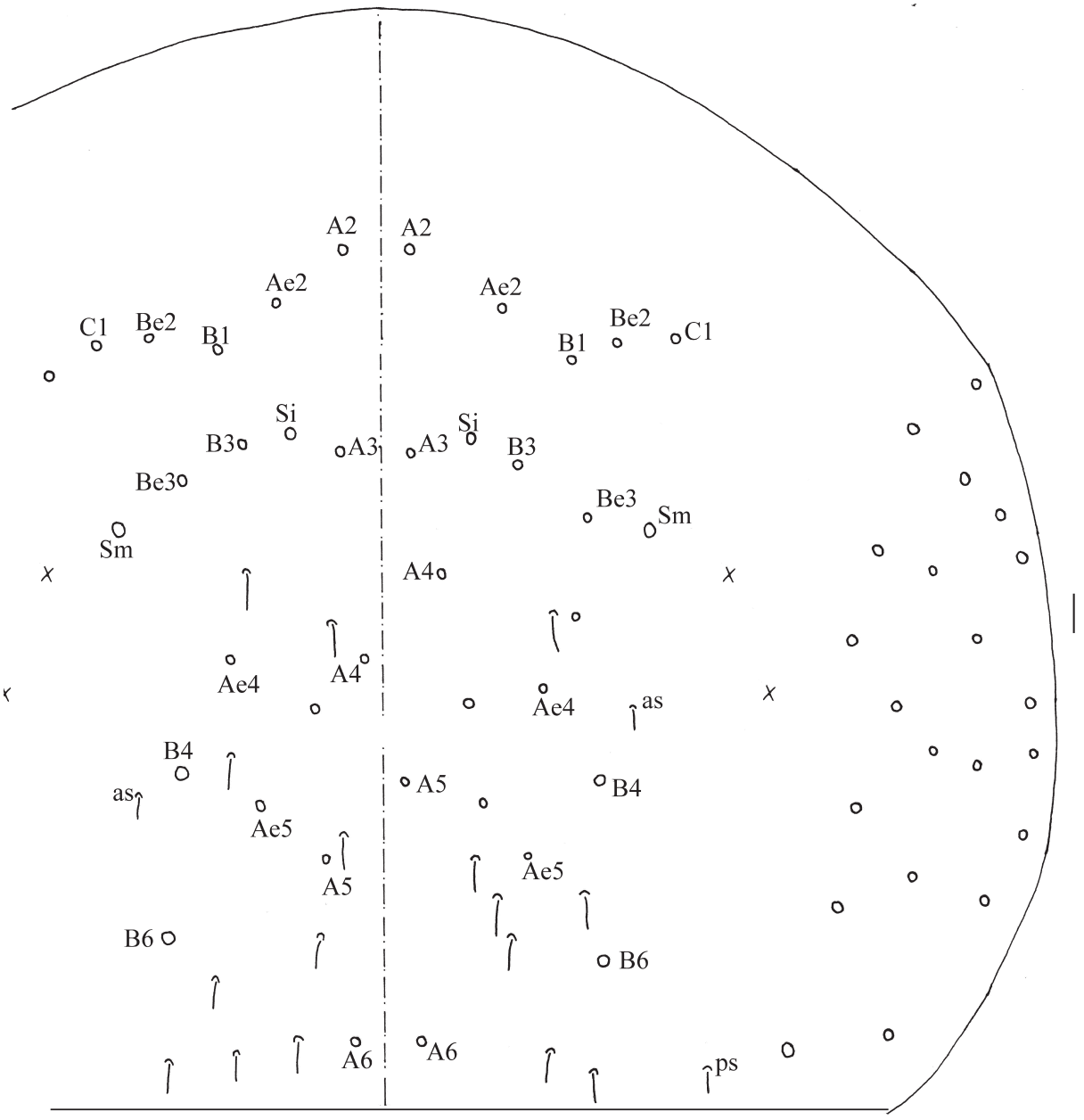


Fig. 39. *Entomobrya unostrigata* Stach, 1930, chaetotaxy of Abd. IV (right side and partially left side, NTU slide 1294-3). Scale bar: 20 μm.

Table 8. The differences of *E. unostrigata* Stach, 1930 between specimens of different localities.

Characters	China	U.S.A.[1]	Spain[2]	Hungary[3]
Projections of labral papillae	2–3	2	1–3	1–3
Outer lamella of unguiculus	serrate	not known	smooth	smooth or serrate

Based on [1] Katz *et al*. (2015); [2] Baquero & Jordana (2018); [3] Winkler *et al*. (2023).

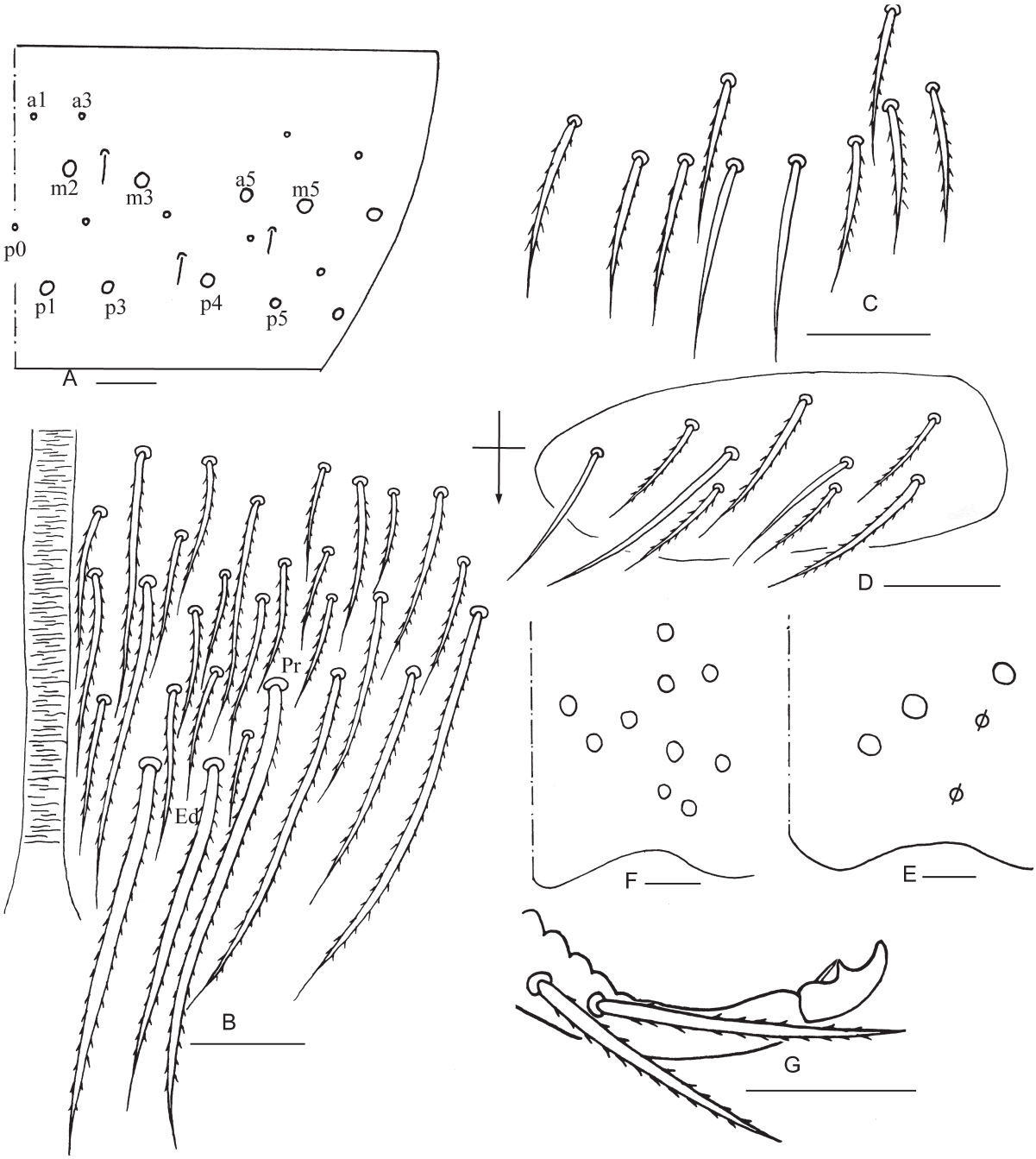


Fig. 40. *Entomobrya unostrigata* Stach, 1930. **A**. Chaetotaxy of Abd. V (right side, NTU slide 1294-3). **B**. Anterior face of ventral tube (NTU slide 1294-3). **C**. Posterior face of ventral tube (NTU slide 1294-2). **D**. Lateral flap of ventral tube (NTU slide 1294-3). **E**. Manubrial plaque (dorsal view, NTU slide 1294-2). **F**. Ventro-apical part of manubrium (NTU slide 1294-2). **G**. Distal part of dens and mucro (lateral view, NTU slide 1294-2). Scale bars: 20 μm.

Entomobrya retingensis Baquero & Jordana, 2008
Figs 1, 41–47, Table 9

Diagnosis

Each segment of dorsal trunk with brown pigment arranged in irregular patterns; interocular chaetae as p, q, r, s, t mes; Th. II without Mm mac; Abd. I–IV with 12–15, 8–9, 3, 12–14 mac centrally, respectively.

Material examined

CHINA • 6 ♀♀ on slides; Xizang Autonomous Region, Lasa City, Chengguan District, Bronze Ox Park; 29°39′15″ N, 91°06′06″ E; 3656.3 m a.s.l.; 10 Aug. 2023; Y.T. Ma leg.; sample number 1295; NTU slides 1295-1, 1295-2A, 1295-2B, 1295-3, 1295-4A, 1295-4B.

Description

Measurement. Body (head + trunk) length up to 2.27 m.

Colour. Ground colour pale yellow; brown stripe present around anterior and lateral part of head and brown stripe in 'V' pattern on middle part of dorsal head; antennae and legs with scattered brown pigment; each segment of trunk with brown pigment arranged in irregular patterns (Fig. 41A–C).

Head. Antenna not annulated, 2.40–2.83 and 0.50–0.66 times as long as head and body, respectively. Ratio of Ant. I–IV as 1.00/2.50–2.80/2.40–2.67/2.28–3.00. Distal part of Ant. IV with many sensory chaetae and normal ciliate chaetae, apical bulb bilobed (Fig. 42A). Ant. III sense organ with two rods, three short guard sensilla (Fig. 42B). Eyes 8+8, G and H smaller than others, interocular chaetae as p, q, r, s, t mes. Dorsal chaetotaxy of head with 6 (7) antennal (An) mac, four anterior (A0, A2, A3, A5), four median (M1–4), eight sutural (S0, S2–6, S4i, S5i, S'0 sometimes absent) mac, one post-sutural mac (Ps2) and mes (Ps5), 5–10 posterior mac in Gr. II (Fig. 42C). Prelabral and labral chaetae as 4/5, 5, 4, prelabral chaetae ciliate and other smooth, a2 and b2 slightly shorter than middle ones, labral papillae with 3–5 minute projections (Fig. 42D). Basal chaeta on maxillary outer lobe slightly thicker than apical one; sublobal plate with three smooth chaetae-like processes (Fig. 42E). Lateral process (l. p.) of labial palp E finger-shaped with tip almost reaching apex of papilla E (Fig. 42F). Labial base with MREL1L2, all ciliate, R 0.58–0.63 length of M (Fig. 42G).

Thorax. Tergal ms formula on Th. II–Abd. V as 1, 0/1, 0, 1, 0, 0, sens as 2, 2/1, 2, 2, 3, 3 (Figs 43A, 44D, 46, 47A). Th. II without Mm and Ms mac, 16–29 posterior mac and m5 present. Th. III with 31–38 (48) mac, a2 rarely present (Fig. 43A). Coxal chaetal formula as 2/6–7 (anterior), 4–6 (posterior)/6 (Fig. 43B–D). Trochanteral organ with 21–31 smooth chaetae (Fig. 44A). Tibiotarsus without smooth or appressed chaetae and with 7–12 slightly stout chaetae almost arranged in two rows ventrally (Fig. 44B). Tenent hair clavate, 0.95–1.06 times as long as length of inner edge of unguis; unguis with pair of laterobasal outer teeth and four inner teeth, basal paired inner teeth located at 0.47–0.50 distance from base of inner edge of unguis, distal unpaired inner teeth at 0.68–0.74 and 0.85–0.88 distance from base, respectively; unguiculus lanceolate, outer edge slightly serrate (Fig. 44C).

Abdomen. Range of Abd. IV length 6.00–7.86 times as long as dorsal axial length of Abd. III. Abd. I with 12–15 (a1, a1a, a3, a5, m2–5, m2i, m2i2, m4i, m4p usually present, a1ae, a3e and a6 rarely present) mac. Abd. II with 8–9 (a2, a3, m3, m3e, m3ea, m3ep, m3eai, m3ei, m3eai2 often absent) central, one (m5) lateral mac. Abd. III with three (a2, a3, m3) central, three (am6, pm6, p6) lateral mac (Figs 44D, 45A–B). Abd. IV with 5–9 elongate sens, three normal sens (as, bs, ps), 12–14 (rarely 15) central and 20–23 lateral mac on each side (Fig. 46). Abd. V with three sens (Fig. 47A). Anterior face of ventral tube with 36–46 ciliate chaetae in different sizes, line connecting Pr and Ed mac oblique to median furrow (Fig. 47B); posterior face with 28–37 ciliate chaetae and two apical smooth chaetae (Fig. 47C); each



Fig. 41. *Entomobrya retingensis* Baquero & Jordana, 2008. **A–C**. Habitus (A = dorsal view, NTU slide 1295-3; B = lateral view, NTU slide 1295-4A; C = latero-dorsal view, NTU slide 1295-1). Scale bars: 500 µm.

lateral flap with three smooth and 6–7 ciliate chaetae (Fig. 47D). Manubrial plate dorsally with 6–13 ciliate mac and two pseudopores (Fig. 47E); ventrally with 15–18 ciliate chaetae of each side (Fig. 47F). Mucro bidentate; tip of basal spine reaching apex of subapical tooth; distal smooth section of dens slightly longer than mucro in length (Fig. 47G).

Habitat

Found in litter, mainly composed of leaves of *Platycladus orientalis*, *Salix babylonica*, *Juniperus chinensis* and *Buxus megistophylla*.

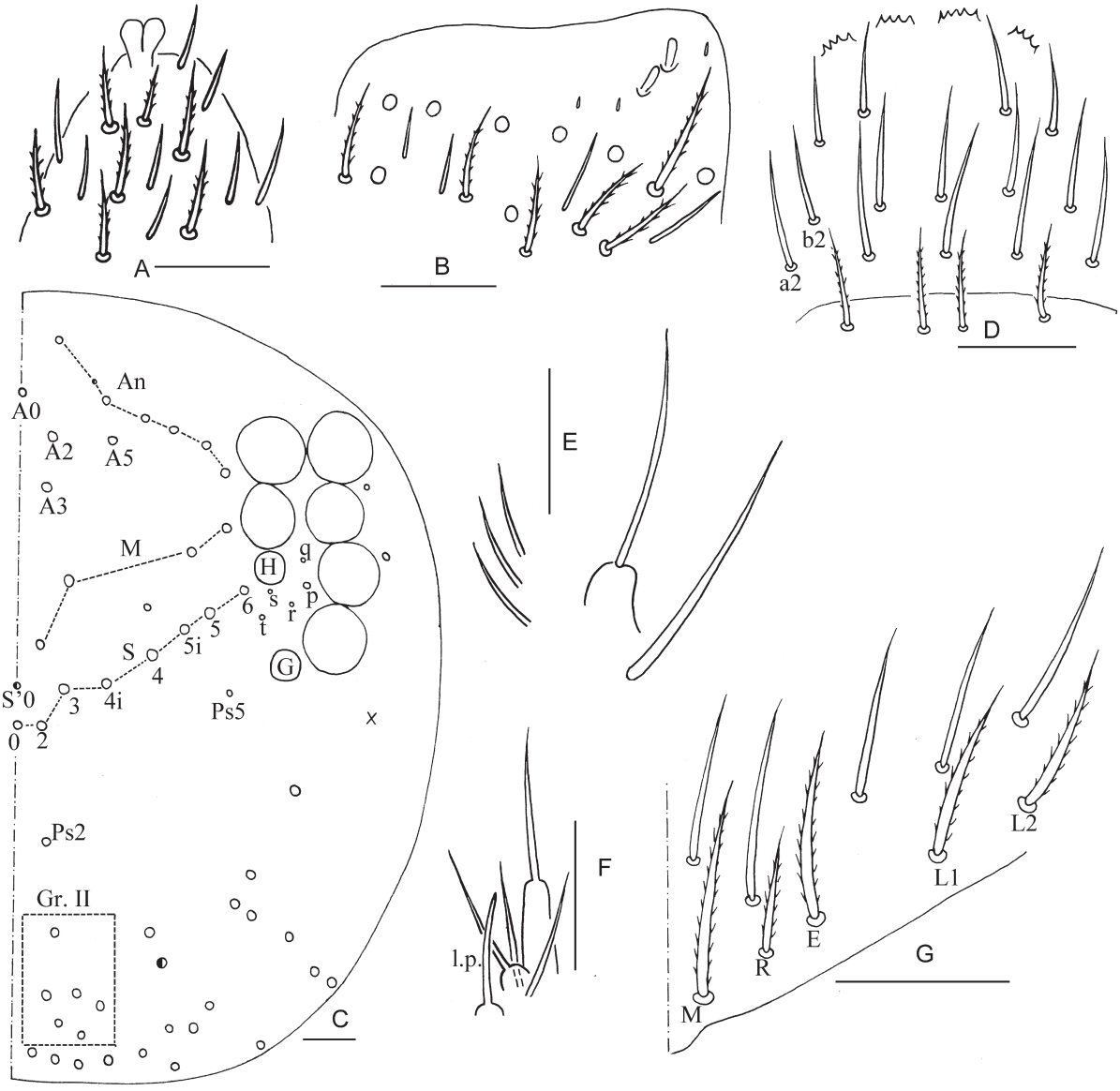


Fig. 42. *Entomobrya retingensis* Baquero & Jordana, 2008. **A**. Apex of Ant. IV (dorsal view, NTU slide 1295-2A). **B**. Distal Ant. III (dorsal view, NTU slide 1295-4B). **C**. Head in dorsal view (NTU slides 1295-3, 1295-4A and 1295-4B). **D**. Prelabral and labral chaetotaxy (dorsal view, NTU slide 1295-3). **E**. Maxillary palp and outer lobe (right side, NTU slide 1295-2A). **F**. Labial palp (left side, NTU slide 1295-4A). **G**. Labial chaetotaxy (right side, NTU slide 1295-2A). Scale bars: 20 μm.

Remarks

The species was originally described from Tibet (Baquero & Jordana 2008) and has a characteristic colouration. Our description agrees well with Baquero & Jordana's, except that m5 mac on Th. II is present in the former and absent in the latter.

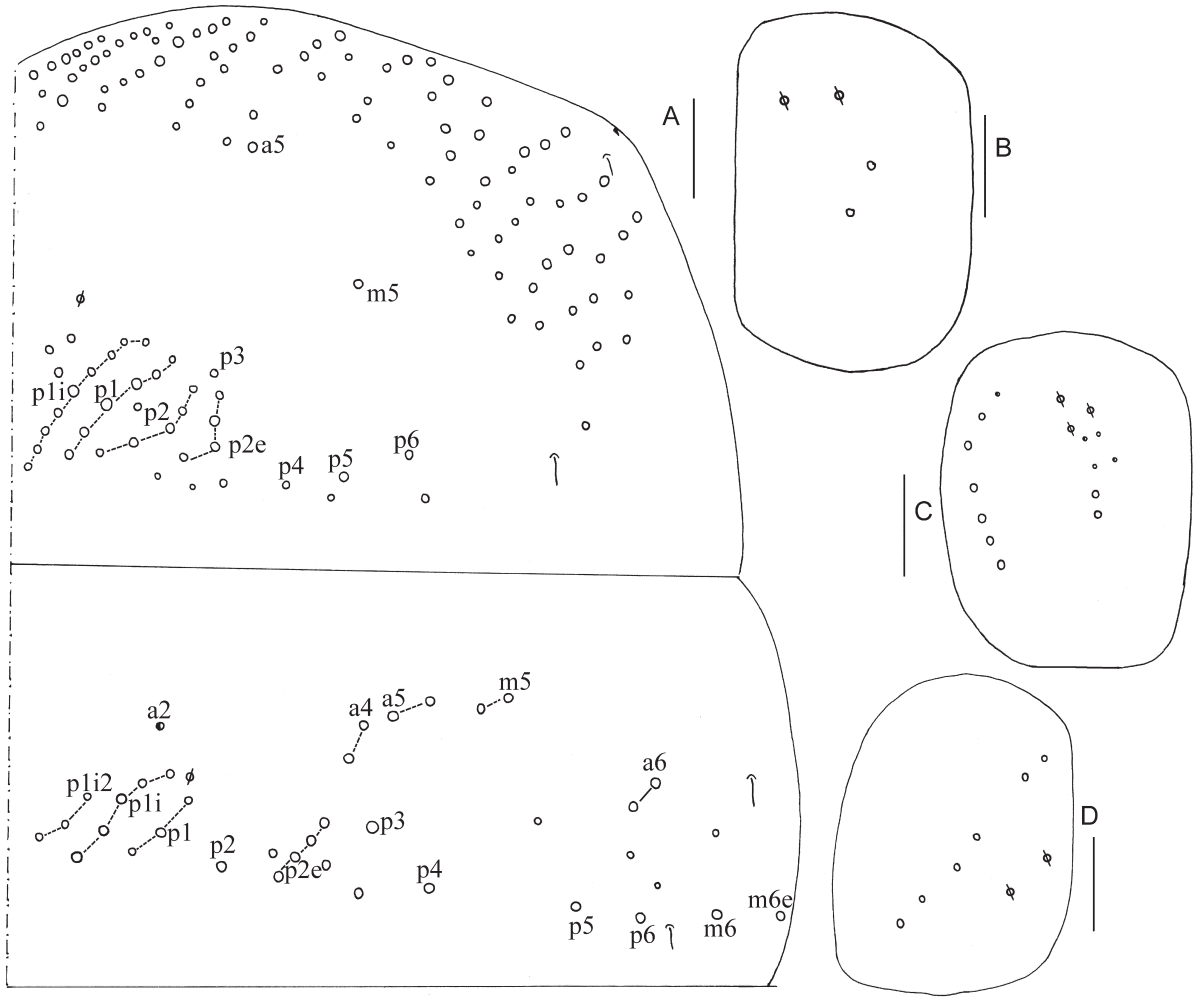


Fig. 43. *Entomobrya retingensis* Baquero & Jordana, 2008. **A**. Chaetotaxy of Th. II−III (right side, NTU slides 1295-3 and 1295-4A). **B–D**. Coxal chaetotaxy of fore, middle, and hind legs, repectively (outer views, NTU slide 1295-2B). Scale bars: 20 μm.

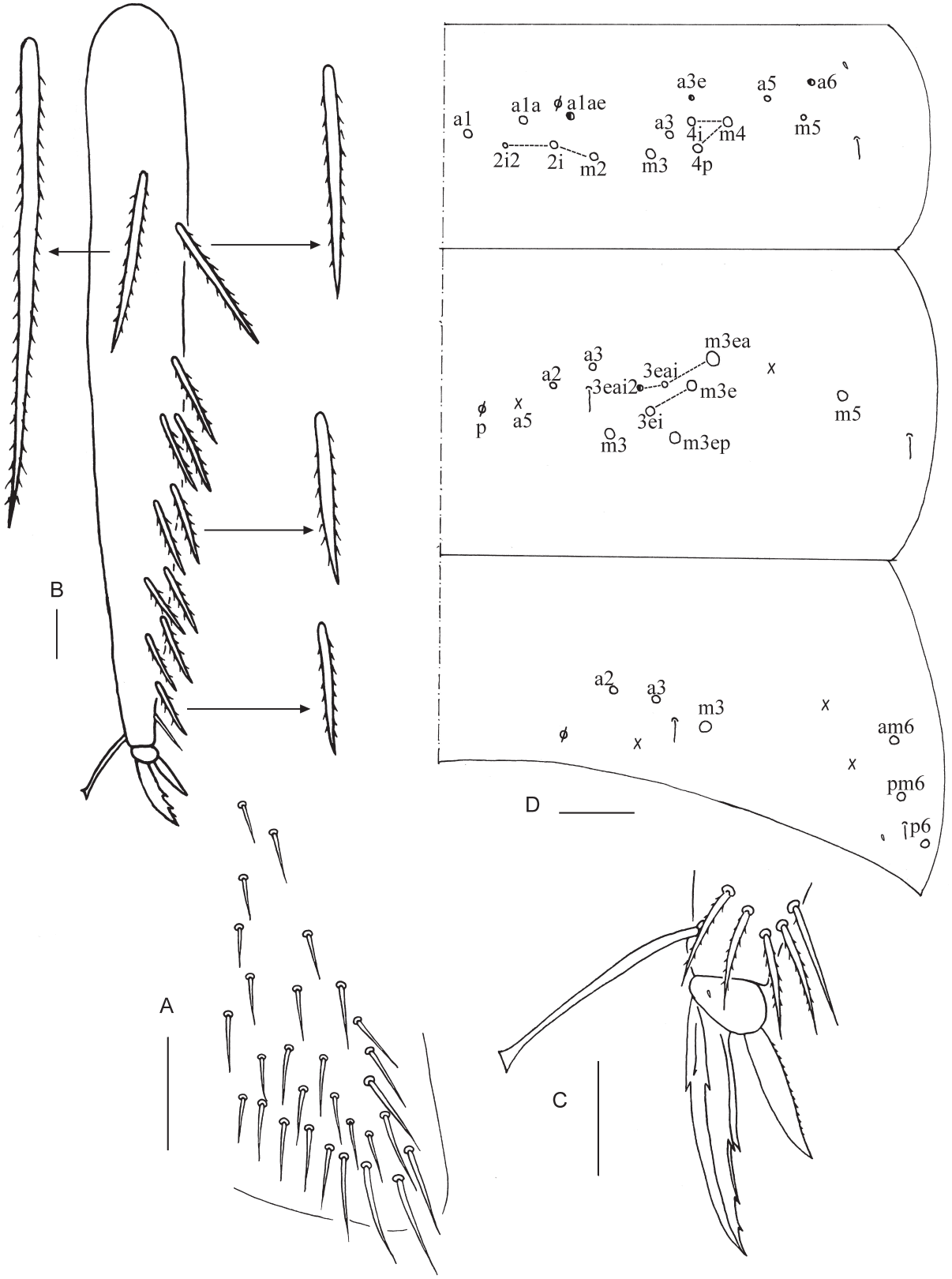


Fig. 44. *Entomobrya retingensis* Baquero & Jordana, 2008. **A**. Trochanteral organ (posterior side, NTU slide 1295-2A). **B**. Hind tibiotarsus, showing slightly stout chaetae (lateral view, NTU slide 1295-2A). **C**. Hind foot complex (lateral view, NTU slide 1295-1). **D**. Chaetotaxy of Abd. I–III (right side, NTU slides 1295-1, 1295-2A and 1295-3). Scale bars: 20 μm.

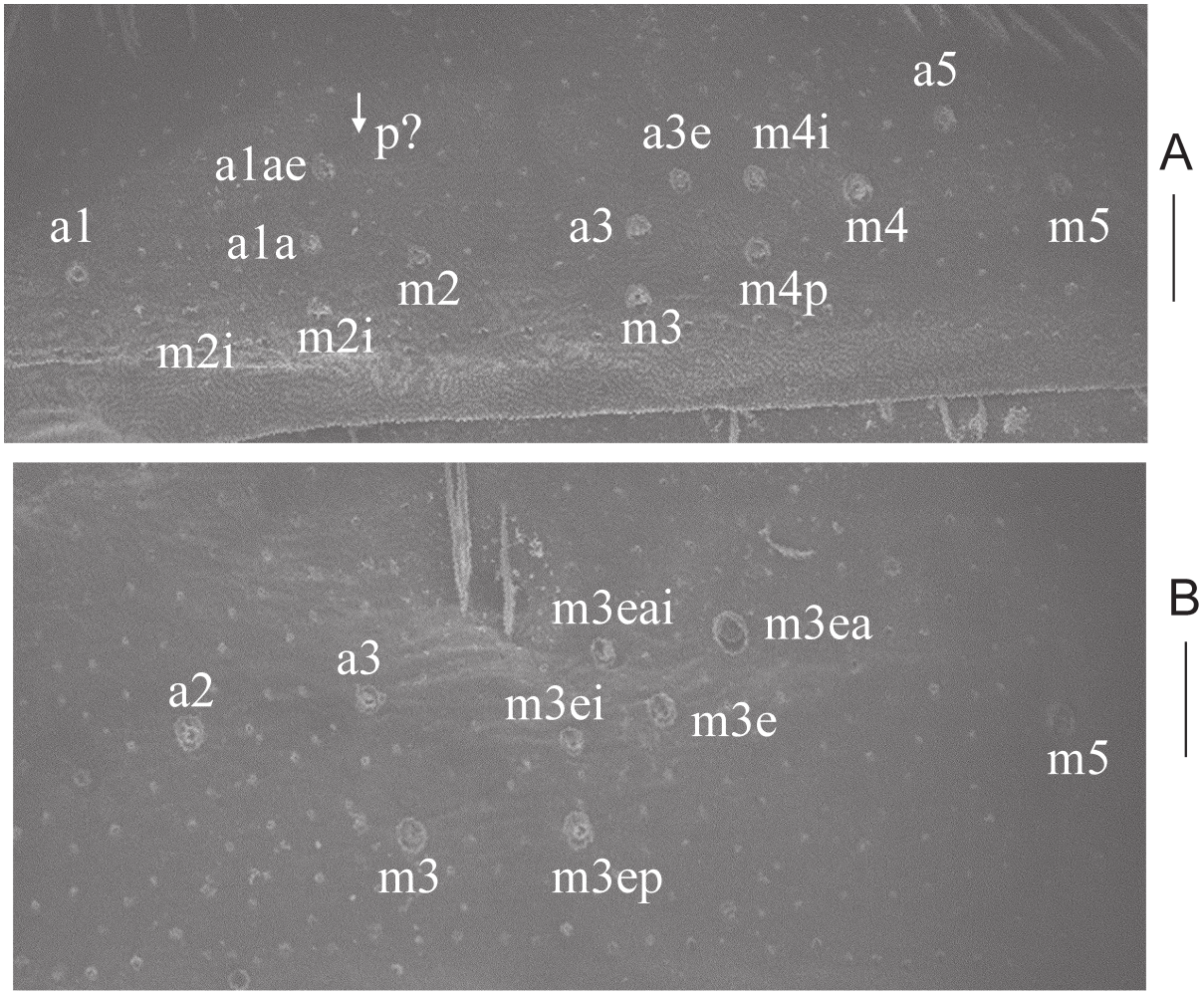


Fig. 45. *Entomobrya retingensis* Baquero & Jordana, 2008. **A**. SEM photomicrograph of Abd. I. **B**. SEM photomicrograph of Abd. II. Scale bars: 20 μm.

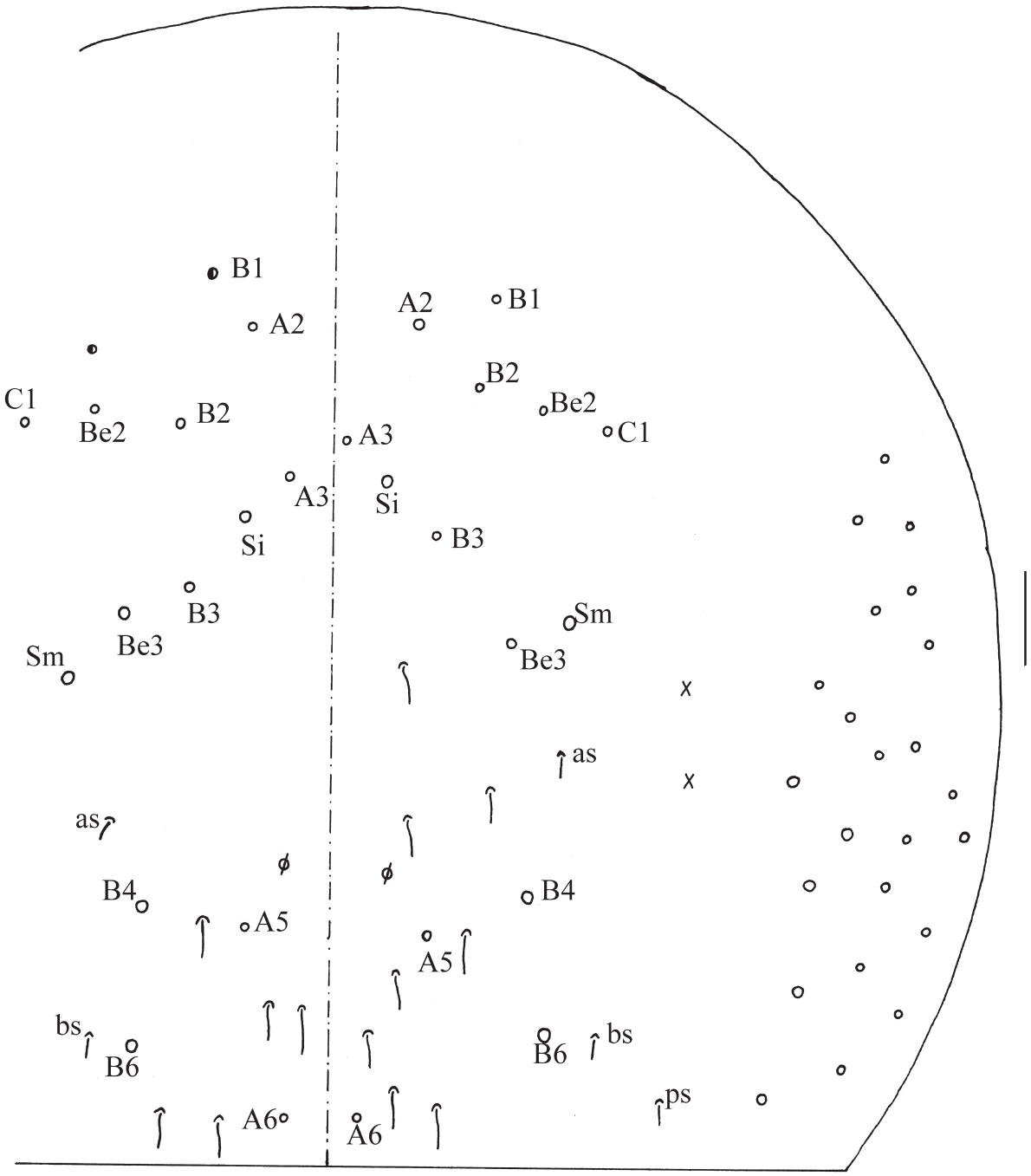


Fig. 46. *Entomobrya retingensis* Baquero & Jordana, 2008. Chaetotaxy of Abd. IV (right side and partially left side, NTU slides 1295-1, 1295-4A and 1295-4B). Scale bar: 20 μm.

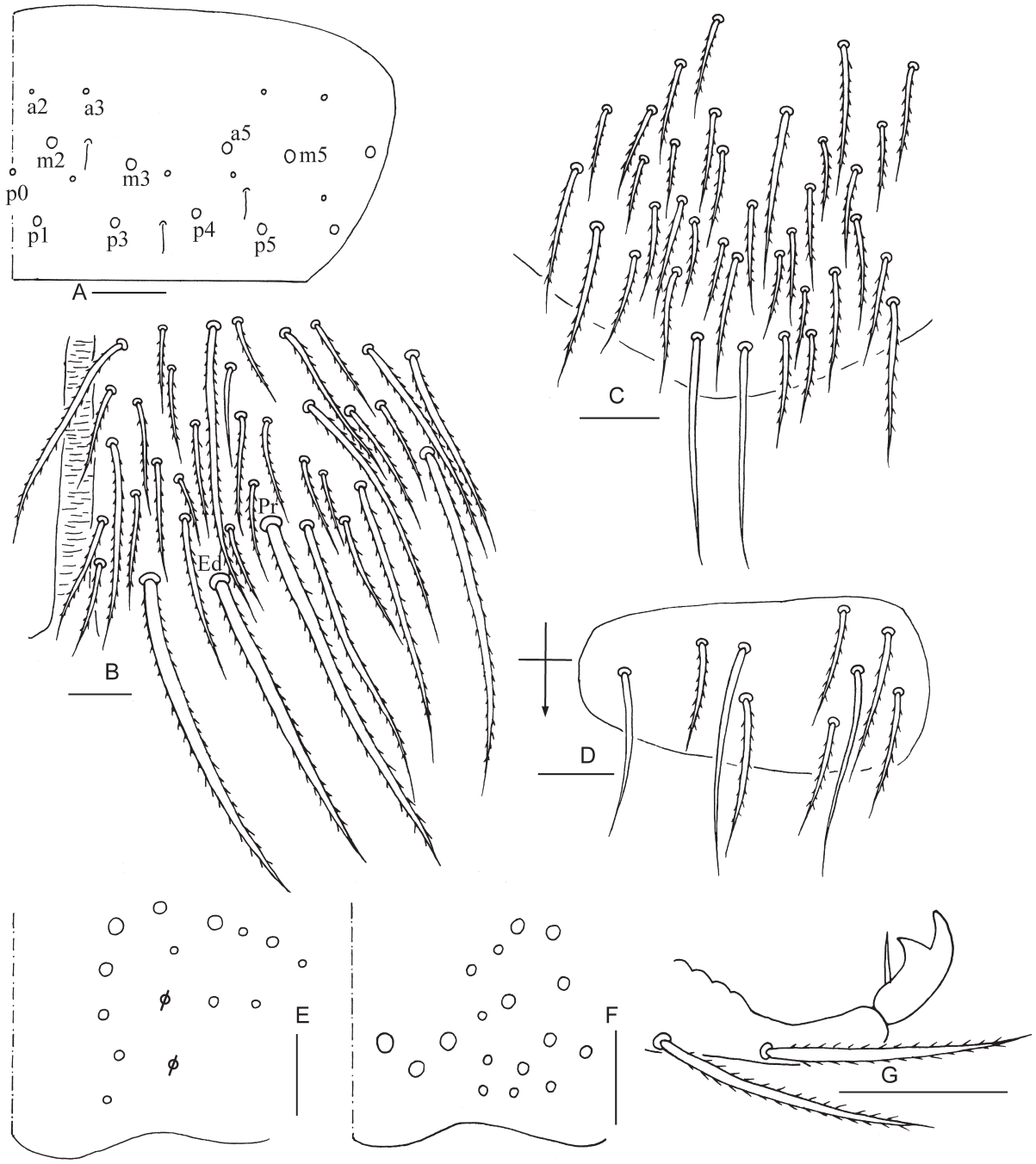


Fig. 47. *Entomobrya retingensis* Baquero & Jordana, 2008. **A**. Chaetotaxy of Abd. V (right side, NTU slide 1295-2A). **B**. Anterior face of ventral tube (NTU slide 1295-3). **C**. Posterior face of ventral tube (NTU slide 1295-3). **D**. Lateral flap of ventral tube (NTU slide 1295-3). **E**. Manubrial plaque (dorsal view, NTU slide 1295-4A). **F**. Ventro-apical part of manubrium (NTU slide 1295-4A). **G**. Distal part of dens and mucro (lateral view, NTU slide 1295-2A). Scale bars: 20 μm.

Table 9 (continued on next page). The dorsal chaetotaxy of every specimen of all the species described in the present paper.

Species	Species number	Head			Th. II		Th. III	Central Abd. II	Abd. III		Abd. IV		
		An	S1	S'0	Mm	posterior			central	lateral	central	lateral	normal sens
E. guanshanensis sp. nov.	1321-1	4	+	–	5	38	42, 43	6	3	4	7	19	2
	1321-2	4	+	–	4, 5	45	45, 47	6	3	4	7	18	2
	1321-31	4	+	–	4	42, 47	44	6	3	4	7	18	2
	1321-32	4	+	–	5	44	45, 46	6	3	4	7	16	?
	1321-33	4	+	–	4	38	43, 46	6	3	4	7	17	2
E. baqueroi sp. nov.	1293-3A	5	–	–	0	22	30	5	3	3	7	14	3
	1293-3B	5	–	–	0	19	25	5	3	3	7	14	3
	1297-8	5	–	–	0	23	28	5	3	3	7	15	3
E. jordanai sp. nov.	1295-7	7	–	–	0	18	21	4	4	3	10, 11	13	3
	1295-8	7	–	–	0	19, 20	21	4	4	3	10	13	3
	1295-9	8	–	–	0	18, 19	22	4	3, 4	3	?	13	3
E. rikazeensis sp. nov.	1297-6A	5	–	–	0	27	26	4	3	3	7	13	3
	1297-6B	?	–	–	0	?	24	4	3	3	7	14	3
	1297-10	5	–	–	0	26	27	4	3	3	7	13	3
	1297-11	5	–	–	0	28	26	4	3	3	7	11	3
	1297-15	5	–	+	0	24	29	4	3	3	7	15	3
	1297-16	5	–	+	0	24, 26	26	4	3	3	7	13	3
	1297-17	5	–	+	0	25	25	4	3	3	7	12	3
E. similis sp. nov.	1291-1	5	–	–	0	16	19	4	3	3	7	13, 14	?
	1291-2	5	–	–	0	17	17	4	3	3	7	?	?
	1291-3	5	–	–	0	20	20	4	3	3	7	15	?
	1291-4	5	–	–	0	19, 20	20	4	3	3	7	14	3
	1297-4	5	–	–	0	23, 26	24	4	3	3	7	16	3
	1297-14	5	–	–	0	18	21	4	3	3	7	14	3

Table 9 (continued). The dorsal chaetotaxy of every specimen of all the species described in the present paper.

Species	Species number	Head			Th. II		Th. III	Central Abd. II	Abd. III		Abd. IV		
		An	S1	S'0	Mm	posterior			central	lateral	central	lateral	normal sens
E. unostrigata	1294-1	5	+	–	1	26, 29	33	5, 6	2	5	22	20	2
	1294-2	5	+	–	1	26	32	5	2	5	20	20, 21	2
	1294-3	5	+	–	1	29	37	6, 7	2	5	18	21	2
E. retingensis	1295-1	6, 7	–	–	0	29	35	8	3	3	13, 14	20	?
	1295-2A	6	–	+	0	29, 32	32, 35	8	3	3	13	23	3
	1295-2B	6	–	+	0	31	35	8	3	3	13	23	3
	1295-3	6, 7	–	–	0	37	38	9	3	3	12	21	3
	1295-4A	6	–	–	0	37	48	8	3	3	13, 14	23	3
	1295-4B	6	–	+	0	34	31	8, 9	3	3	15	22, 23	3

Dorsal chaetotaxy of every specimen of all the species described in the present paper

The dorsal chaetotaxy is very important in the taxonomy of Collembola and the chaetotaxy of every specimen of all the species described in the present paper is listed in Table 9.

Key to the Chinese species of Entomobrya Rondani, 1861

1. Body yellowish without obvious patches or stripes except eyepatches 2
– Body uniformly blue or with obvious patches or stripes 3

2. Central Abd. III with five mac ..... ***E. dingi*** Ma & Shi, 2018
– Central Abd. III with three mac ..... ***E. huangi*** Chen & Ma, 1998

3. Body uniformly blue ..... ***E. proxima*** Folsom, 1924
– Body with obvious patches or stripes 4

4. Longitudinal stripe from Th. II to Abd. III–IV present along dorsal midline 5
– Longitudinal stripe from Th. II to Abd. III–IV absent along dorsal midline 10

5. Medio-medial area of Th. II without mac 6
– Medio-medial area of Th. II with 1–5 mac 7

6. Central Abd. II with six mac ..... ***E. karlstetterae*** Baquero & Jordana, 2008
– Central Abd. II with four mac ..... ***E. jordanai*** sp. nov.

7. Central Abd. III with three mac 8
– Central Abd. III with two mac 9

8. Pair of stripes present on Th. II–Abd. IV dorso-laterally ..... ***E. koreana*** Yosii, 1965
– Pair of stripes absent on Th. II–Abd. IV dorso-laterally ..... ***E. tristriata*** Chang, Pan & Ma, 2020

9. Central Abd. IV with 10 mac ..... ***E. sibirica*** Stach, 1963
– Central Abd. IV with 18–22 mac ..... ***E. unostrigata*** Stach, 1930

10. Abd. III with transverse stripe 11
– Abd. III without transverse stripe 25

11. Th. III with transverse stripe 12
– Th. III without transverse stripe 23

12. Almost whole part of Th. II pigmented ..... ***E. dorsosignata*** Stach, 1964
– Th. II not pigmented entirely 13

13. Th. II without narrow stripe posteriorly 14
– Th. II with narrow stripe posteriorly 17

14. Anterior margin of Th. II without stripe ..... ***E. guanshanensis*** sp. nov.
– Anterior margin of Th. II with stripe 15

15. Pair of narrow stripes present dorso-laterally from Th. III to Abd. II ..... ***E. pekinensis*** Stach, 1963
– Such pair of stripes not present 16

16. Narrow stripe present on Abd. II posteriorly ..... ***E. vigintiseta*** Lee & Park, 1984
– Abd. II without stripe ..... ***E. imitabilis*** Stach, 1963

17. Abd. I & II without stripes posteriorly ..... ***E. corticalis*** (Nicolet, 1842)
– Abd. I & II with stripes posteriorly 18

18. Ventral part of body brown pigmented ..... ***E. similis*** sp. nov.
– Ventral part of body not pigmented 19

19. Medio-medial area of Th. II with two mac 20
– Medio-medial area of Th. II without mac 21

20. Central Abd. II & III with three and two mac, respectively ..... ***E. marginata*** (Tullberg, 1871)
– Central Abd. II & III with four mac centrally, respectively ..... ***E. multifasciata*** (Tullberg, 1871)

21. Central Abd. IV with nine mac . ..... ***E. mieheorum*** Baquero & Jordana, 2008
– Central Abd. IV with seven mac 22

22. Central Abd. III with two mac ..... ***E. chungseensis*** Baquero & Jordana, 2008
– Central Abd. III three with mac ..... ***E. rikazeensis*** sp. nov.

23. Abd. II with wide transverse stripe ..... ***E. indica*** (Baijal, 1955)
– Abd. II without wide transverse stripe 24

24. Central Abd. IV with five mac ..... ***E. aino*** (Matsumura in Matsumura & Uchida, 1931)
– Central Abd. IV with seven mac ..... ***E. pulcherrima*** Yosii, 1942

25. Pair of stripes present on Th. II–Abd. III dorso-laterally 26
– Pair of stripes absent on Th. II–Abd. III dorso-laterally 29

26. Medio-medial area of Th. II without mac 27
– Medio-medial area of Th. II with 4–9 mac 28

27. Central Abd. IV with seven mac ..... ***E. baqueroi*** sp. nov.
– Central Abd. IV with 10 mac ..... ***E. fjellbergi*** Baquero & Jordana, 2008

28. Central Abd. IV with eight mac ..... ***E. shaanxiensis*** Jing & Ma, 2023
– Central Abd. IV with 24–29 mac ..... ***E. polychaeta*** Ma & Shi, 2018

29. Longitudinal stripe present along midline of Th. II 30
– Longitudinal stripe absent along midline of Th. II 31

30. Medio-medial area of Th. II without mac ..... ***E. retingensis*** Baquero & Jordana, 2008
– Medio-medial area of Th. II with four mac ..... ***E. leviseta*** Ma & Shi, 2018

31. Pair of patches absent on Abd. IV anteriorly ..... ***E. cheni*** Baquero, Arbea & Jordana, 2010
– Pair of patches present on Abd. IV anteriorly ..... ***E. hortensis*** Stach, 1963

Discussion

Among the 32 Chinese species of *Entomobrya*, 12 are reported from Tibet: *E. baqueroi* sp. nov., *E. chungensis*, *E. fjellbergi*, *E. huangi*, *E. indica*, *E. jordanai* sp. nov., *E. karlstetterae*, *E. mieheorum*,

E. retingensis, *E. rikazeensis* sp. nov., *E. similis* sp. nov. and *E. unostrigata*. Except *E. indica*, whose chaetotaxy is unknown because of its poor description originally, and *E. unostrigata*, which is a cosmopolitan species, all the other Tibetan species have two specific characters in the chaetotaxy: there is no Mm mac on Th. II or S1 mac on the head. However, 1–9 Mm mac and the S1 mac are usually present in the other Chinese species except the Tibetan ones.

Funding

This research was funded by the National Natural Sciences Foundation of China (32070403).

Data availability

The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Author contribution

Conceptualization, methodology, investigation: YM; drawings: LH, HZ. SEM: LH, HZ; writing: LH, YM. All authors have read and agreed to the published version of the manuscript.

Conflicts of interest

The authors have declared that no interests exist.

Acknowledgement

We thank Dr Enrique Baquero and Dr Rafael Jordana from the University of Navarra, Spain, who gave us much help in the present study. This study was supported by the National Natural Science Foundation of China (32370403).

References

Baijal H.N. 1955. Entomological survey of the Himalayas Part XI.–On five new species of Collembola. *Agra University Journal of Research (Science)* 4: 531–538.

Baquero E. & Jordana R. 2008. Five new species of *Entomobrya Rondani*, 1861 (Collembola, Entomobryidae) from sacred forests of *Juniperus tibetica* near Lhasa (NW China). *Soil Organisms* 80 (1): 1–18.

Baquero E. & Jordana R. 2018. *Entomobrya* (Collembola, Entomobryidae) for the Canary Islands. *Zootaxa* 4461 (2): 151–195. https://doi.org/10.11646/zootaxa.4461.2.1

Baquero E., Arbea J. & Jordana R. 2010. A new species of *Entomobrya* from China (Collembola, Entomobryidae). *Soil organisms* 82 (3): 277–284.

Baquero E., Jordana R. & Mandal G. 2013. Redescription of Baijal's *Entomobrya* species from Indian Himalayan Region (Collembola, Entomobryidae). *Soil Organisms* 85 (3): 171–180.

Baquero E., Mandal G. & Jordana R. 2014. Singular fauna of Entomobryidae (Collembola) from "Land of Passes" in the Himalayas, India. *Florida Entomologist* 97 (4): 1554–1587. https://doi.org/10.1653/024.097.0430

Bellinger P.F., Christiansen K.A. & Janssens F. 1996–2024. Checklist of the Collembola of the World. Available from http://www.collembola.org [accessed 8 Jan. 2026].

Börner C. 1901. Zur Kenntnis der Apterygoten-Fauna von Bremen und der Nachbardistrikte. Beitrag zu einer Apterygoten-Fauna Mitteleuropas. *Abhandlungen des Naturwissenschaftlichen Vereins zu Bremen* 17: 1–140. https://doi.org/10.5962/bhl.part.18332

Börner C. 1909. Japan's Collembolenfauna. (Vorläufige Mitteilung). *Sitzungsberichte der Gesellschaft naturforschender Freunde zu Berlin* 2: 99–135.

Börner C. 1913. Die Familien der Collembolen. *Zoologischer Anzeiger* 41: 315–322.

Brown J.M. 1932. Report on the Collembola collected by the Oxford University Expedition to Hudson Strait, 1931. *Annals and Magazine of Natural History* 10 (58): 330–340. https://doi.org/10.1080/00222933208673581

Büker E.D. 1939. Springtails (Collembola) of the St. Louis Area. *Transactions of the Academy of Science of Saint Louis* 30: 1–30.

Chang Y., Pan Z.X. & Ma Y.T. 2020. A new species of *Entomobrya* (Collembola: Entomobryidae) from the Northeast China and first record of *Entomobryoides sotoadamesi*. *Zootaxa* 4731 (3): 335–346. https://doi.org/10.11646/zootaxa.4731.3.3

Chen J.X. & Christiansen K.A. 1993. The genus *Sinella* with special reference to *Sinella s. s.* (Collembola: Entomobryidae) of China. *Oriental Insects* 27: 1–54. https://doi.org/10.1080/00305316.1993.10432236

Chen J.X. & Ma Y.T. 1998. A new *Entomobrya* species (Collembola: Entomobryidae) from China. *Entomotaxonomia* 20 (4): 235–238.

Christiansen K. 1956. A recently introduced species of Collembolan. *Entomological News* 67 (5): 129–130.

Christiansen K. 1990. Insecta: Collembola. *In*: Dindal D.L. (ed.) *Soil Biology Guide*: 965–995. John Wiley & Sons, New York, Chichester, etc.

Feng Z.J., Cai G.Q. & Zheng C.L. 1986. *Tibetan Mammals*. Science Press, Beijing.

Folsom J.W. 1924. East Indian Collembola. *Bulletin of the Museum of Comparative Zoology* 65: 505–517.

Gisin H. 1964. European Collembola.VII. *Revue suisse de Zoologie* 71 (4): 649–678.

Greenslade P. 1995. A review of the biology, taxonomy and pest status of *Entomobrya unostrigata* (Collembola: Entomobryidae), an introduced species of agricultural land in Australia. *Polskie Pismo Entomologiczne* 64: 245–259.

Greenslade P., Stevens M.I., Torricelli G. & D'Haese C.A. 2011. An ancient Antarctic endemic genus restored: morphological and molecular support for *Gomphiocephalu hodgsoni* (Collembola: Hypogastruridae). *Systematic Entomology* 36: 223–240. https://doi.org/10.1111/j.1365-3113.2010.00553.x

Jing M.D. & Ma Y.T. 2023. Three new species of Entomobryidae (Collembola, Entomobryoidea) from China. *ZooKeys* 1167: 293–315. https://doi.org/10.3897/zookeys.1167.104090

Jordana R. 2012. Capbryinae and Entomobryini. *In*: Dunger W. & Burkhardt U. (eds) Synopses on Palearctic Collembola. *Soil Organisms* 84 (1): 1–390.

Jordana R. & Baquero E. 2005. A proposal of characters for taxonomic identification of *Entomobrya* species (Collembola, Entomobryomorpha), with description of a new species. *Abhandlungen und Berichte des Naturkundemuseums Goerlitz* 76 (2): 117–134.

Katz A.D., Giordano R. & Soto-Adames F. 2015. Taxonomic review and phylogenetic analysis of fifteen North American *Entomobrya* (Collembola, Entomobryidae), including four new species. *Zookeys* 525: 1–75. https://doi.org/10.3897/zookeys.525.6020

Kimura M. 1980. A simple method for estimating evolutionary rates of base substitution through comparative studies of nucleotide-sequences. *Journal of Molecular Evolution* 16: 111–120. https://doi.org/10.1007/BF01731581

Lee B.H. & Park K.H. 1984. Some Entomobryidae including six new species and one new record of cave form (Collembola) from Korea. *Korean journal of Zoology* 27 (3): 177–188.

Lee B.H. & Park K.H. 1992. Collembola from North Korea, II. Entomobryidae and Tomoceridae. *Folia Entomologica Hungarica Rovartani Közlemények* LIII: 93–111.

Lubbock J. 1873. *Monograph of the Collembola and Thysanura*. Ray Society, London. https://doi.org/10.5962/bhl.title.11583

Ma Y.T. & Shi S.D. 2018. Three new species of *Entomobrya* (Collembola: Entomobryidae) from China. *European Journal of Taxonomy* 419: 1–21. https://doi.org/10.5852/ejt.2018.419

Mari-Mutt J.A. 1979. A revision of the genus *Dicranocentrus* Schött (Insecta: Collembola: Entomobryidae). *Agricultural Experiment Station Bulletin* 259: 1–79.

Mari-Mutt J.A. 1986. Puerto Rican species of *Lepidocyrtus* and *Pseudosinella* (Collembola: Entomobryidae). *Caribbean Journal of Science* 22 (1–2): 1–48.

Matsumura R. 1931. Collembola. *In*: Matsumura R. & Ishida M. (eds) *6000 Illustrated Insects of Japan-Empire*: 1489–1497. The Toko Shoin, Tokyo.

Nicolet H. 1842. Recherches pour servir á l'histoire des Podurelles. *Nouveaux Mémoires de La Société helvétique des Sciences naturelles* 6 (3): 1–88.

Renaud A., Poinsot-Balaguer N., Cortet J. & Petit J.L. 2004. Influence of four soil maintenance practices on Collembola communities in a Mediterranean vineyard. *Pedobiologia* 48 (5–6): 623–630. https://doi.org/10.1016/j.pedobi.2004.07.002

Rondani C. 1861. *Entomobrya* pro *Degeeria* Nic. *Dipterologiae Italicae Prodromi* 4: 1–40.

Schäffer C. 1896. Die Collembolen der Umgebung von Hamburg und benachtbaren Gebiete. *Mittheilungen aus dem Naturhistorischen Museum* 13: 147–216.

Simon H.R. 1965. Zur Collembolenfauna Italiens (Apterygota). *Entomologische Zeitschrift* 75: 6–9.

Stach J. 1930. Apterygoten aus dem nördlichen und östlichen Spanien. *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft* 42 (1): 1–83.

Stach J. 1963. *The Apterygotan Fauna of Poland in Relation to the World-fauna of this Group of Insects. Tribe: Entomobryini*. Polska Akademia Nauk, Kraków.

Stach J. 1964. Materials to the knowledge of Chinese collembolan fauna. *Acta Zoologica Cracoviensia* 9: 1–26.

Szeptycki A. 1973. North Korean Collembola. I. The genus *Homidia* Börner 1906 (Entomobryidae). *Acta Zoologica Cracoviensia* 31: 23–40.

Szeptycki A. 1979. *Morpho-systematic Studies on Collembola. IV. Chaetotaxy of the Entomobryidae and its Phylogenetical Significance*. Polska Akademia Nauk, Kraków.

Tamura K., Peterson D., Peterson N., Stecher G., Nei M. & Kumar S. 2011. MEGA5: Molecular evolutionary genetics analysis using maximum likelihood, evolutionary distance, and maximum parsimony methods. *Molecular Biology and Evolution* 28: 2731–2739. https://doi.org/10.1093/molbev/msr121

Tshelnokov V.G. 1987. New species of *Entomobrya* Rondani (Collembola, Entomobryidae) from the Northeastern USSR. *Entomologicheskoe Obozrenie* 66 (1): 96–101.

Tömösvary O. 1882. Adatok Hazánk Thysanure-Faunájához. *A Mathematikai és Természettudományi Osztályok Közlönye* 18: 119–130.

Tsonev I.K. & Kazandzhieva R.V. 1991. New Collembole species (Insecta, Collembola) for the Bulgarian fauna. *Acta Zoologica Bulgarica* 41: 80–84.

Tullberg T. 1871. Förteckning öfver Svenska Podurider. *Öfversigt af Kongliga Vetenskaps-Akademiens förhandlingar* 28: 143–155.

Winkler D., Sternallski J., Ónodi G., Szigeti N., Florián N. & Dányi L. 2023. Investigation on the true identity of *Entomobrya nigriventris* Stach, 1929 (Collembola, Entomobryidae) with the description of a new species. *ZooKeys* 1185: 321–353. https://doi.org/10.3897/zookeys.1185.112279

Wu Z.Y. 1983. *Flora of Xizang.* Science Press, Beijing.

Ye M.L., Huang C.W., Yu D.Y., Sun X., Godeiro N.N., Jiang J.G., Li Z.H., Luan Y.X., Wu D.H. & Zhang F. 2025. The first checklist of the Collembola of China in the 21st century. *Zoological Systematics* 50 (1): 1–94. https://doi.org/10.11865/zs.2025101

Yosii R. 1942. Japanische Entomohryinen (Ins., Collemb.). *Archiv für Naturgeschichte* 10 (4): 476–495.

Yosii R. 1965. On some Collembola of Japan and adjacent countries. *Contributions from the Biological Laboratory Kyoto University* 19: 1–71.

Yosii R. & Lee C.E. 1963. On some Collembola of Korea, with notes on the genus *Ptenothrix*. *Contributions from the Biological Laboratory Kyoto University* 15: 1–37.

Yu D.Y., Ding Y.H. & Ma Y.T. 2017. Revision of *Tomocerus similis* Chen & Ma, with discussion of the *kinoshitai* complex and the distal tibiotarsal chaetae in Tomocerinae (Collembola, Tomoceridae). *Zootaxa* 4268 (3): 395–410. https://doi.org/10.11646/zootaxa.4268.3.5

Zhang F. & Deharveng L. 2015. Systematic revision of Entomobryidae (Collembola) by integrating molecular and new morphological evidence. *Zoologica Scripta* 44 (3): 298–311. https://doi.org/10.1111/zsc.12100

Zhang F., Sun D.D., Yu D.Y. & Wang B.X. 2015. Molecular phylogeny supports S-chaetae as a key character better than jumping organs and body scales in classification of Entomobryoidea (Collembola). *Scientific Reports* 5: 1–12. https://doi.org/10.1038/srep12471

Zhang F., Bellini B.C. & Soto-Adames F.N. 2019. New insight into the systematics of Entomobryoidea (Collembola: Entomobryomorpha): first instar chaetotaxy, homology and classification. *Zoological Systematics* 44 (4): 249–278. https://doi.org/10.11865/zs.201926

Zhang Y.T., Yu D.Y., Zhang H.H., Li C., Jiang Y.T., Zhang F., Hu F. & Liu M.Q. 2025. Diversification of Alpine soil animals corroborates uplifts and environmental changes of Qinghai-Tibetan Plateau and Himalayas: insights from molecular phylogeny and cryptic diversity of the *Isotoma quadridentata* complex (Collembola: Isotomidae). *Zoologica Scripta* 54 (6): 913–923. https://doi.org/10.1111/zsc.70004

Zhang Z.S. 2025. Preface: Diversity of Yintiaoling Nature Reserve, II. *Zootaxa* 5652 (1): 5–6. https://doi.org/10.11646/zootaxa.5652.1.3

Zhou R. & Ma Y.T. 2023. New records and two new species of Entomobryinae (Collembola: Entomobryidae) from China. *Oriental Insects* 57 (3): 756–784.
https://doi.org/10.1080/00305316.2022.2123056

The members of the *EJT* consortium are: Muséum national d'Histoire naturelle, Paris, France; Royal Museum for Central Africa, Tervuren, Belgium; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Meise Botanic Garden, Meise, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands; Museo Nacional de Ciencias Naturales-CSIC, Madrid, Spain; Leibniz Institute for the Analysis of Biodiversity Change, Bonn – Hamburg, Germany; National Museum of the Czech Republic, Prague, Czech Republic; The Steinhardt Museum of Natural History, Tel Aviv, Israel.