

# One new species in the genus *Eremobelba* (Acari: Oribatida: Eremobelbidae) from China

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**Abstract:** One new species in the genus *Eremobelba* Berlese, 1908, extracted from soil, is described from Liaoning Province, China: *Eremobelba eharai* sp. nov. The new species is similar to *E. japonica* Aoki, 1959 but differs from the latter by the following. This new species is yellow and covered by shallow ornamentation, while *E. japonica* is brown and covered by strong ornamentation. The new species epimeral chaetotaxy is 2-1-3-3, epimeral setae are simple or bear long branches, while in *E. japonica* the epimeral chaetotaxy is 2-1-3-2 and all epimeral setae bearing long branches. The new species length of prodorsal setae is  $in < ro < le$ , while in *E. japonica* the length of the prodorsal setae is  $le < ro < in$ . In this new species, ventral setae show different types, simple or bearing 2–4 long branches at the basis, while in *E. japonica* the ventral setae are all simple.

**Key words:** soil mite; taxonomy; key

中国沙足甲螨属一新种（蜱螨亚纲：甲螨亚目：沙足甲螨科）

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**摘要：**记述沙足甲螨属 1 新种：江原沙足甲螨 *Eremobelba eharai* sp. nov.。该新种与日本沙足甲螨 *E. japonica* Aoki, 1959 近似，但可从如下特征相区别：新种体表黄色，纹饰较浅，基节板毛式为 2-1-3-3，由岐状毛和单纯毛组成，前背板毛长度为  $in < ro < le$ ，腹板毛由 3–5 分叉的岐状毛和单纯毛组成；而后者体表褐色，纹饰较浓重，基节板毛式为 2-1-3-2，均为岐状毛，前背板毛长度为  $le < ro < in$ ，腹板毛均为单纯毛。

**关键词：**螨；分类；检索表

## Introduction

*Eremobelba* Berlese, 1908 is one of the six genera belonging to the family Eremobelbidae J. Balogh, 1961 which includes five other genera: *Berndbella* Mahunka, 1985; *Fenestrella* Mahunka, 1987; *Pseuderemulus* J. Balogh et Mahunka, 1968; *Reteremuloides* Mahunka, 1989 and *Reteremulus* J. Balogh et Mahunka, 1966. Species of *Eremobelba* are plentiful in forest soil or humus. These mites are sensitive to environmental variation and can be indicators of environmental quality. These mites also play an important role in the degradation of organic

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matter, the formation of soil, and are most important in forest and agricultural ecological systematic research. So far, about 25 species of this genus have been described from different regions worldwide. Four species (*E. curtisetata* Wen, 1996, *E. japonica* Aoki, 1959, *E. truncate* Wen, 1996 and *E. yunnanensis* Aoki and Yamamoto, 2000) have been described from China (Wen 1988, 1996; Aoki & Yamamoto 2000). In this paper, one species of *Eremobelba* from China is described as new to science.

## Material and methods

Specimens of this new species were collected from soil (0–20 cm in summer and 0–10 cm in autumn) using a Tullgren apparatus. Adult specimens were preserved in 70% ethanol in the field as soon as collected. For morphological observation, some of the ethanol preserved specimens were mounted on slides with Hoyer's medium. Morphological observations and measurements were made using an Olympus BH-2 microscope. All type specimens are deposited in the Department of Entomology, College of Plant Protection, Shenyang Agricultural University, Liaoning Province, China. The taxonomy follows J. Balogh (1992). All measurements are given in micrometres ( $\mu\text{m}$ ).

Systematics. The specimens of *Eremobelba* are usually yellow or brown in colour, and 400–700 in length, although some small species are 300 in length. They have a prodorsum triangle with a pair of well developed interbothridial tubercles. The sensillus is long and curved backward. Dorsosejugal suture is straight. Surface of the notogaster has a polygonal pattern consisting of roundish ornamentation. 11 pairs of notogastral setae are flagellate and vary in length. There are 6 pairs of genital setae and 2 pairs of anal setae. Pedotecta 1 and 2 are large. Some epimeral setae have long branches at the basis.

## Taxonomy

### Key to species of the genus *Eremobelba* from China

1. Some ventral setae bearing long branches.....*Eremobelba eharai* sp. nov.
- All ventral setae smooth..... 2
2. Length of prodorsal setae in  $< \text{ro}$ ,  $\text{le}$ .....*E. curtisetata* Wen
- Length of prodorsal setae in  $> \text{ro}$ ,  $\text{le}$  ..... 3
3. All epimeral setae branched..... *E. japonica* Aoki
- Some epimeral setae branched ..... 4
4. Body length 508–560, width 312–358; epimeral setae 4c branched..... *E. truncate* Wen
- Body length 448–504, width 248–264; epimeral setae 4c smooth.....*E. yunnanensis* Aoki and Yamamoto

### *Eremobelba eharai* sp. nov. (Figs. 1–6)

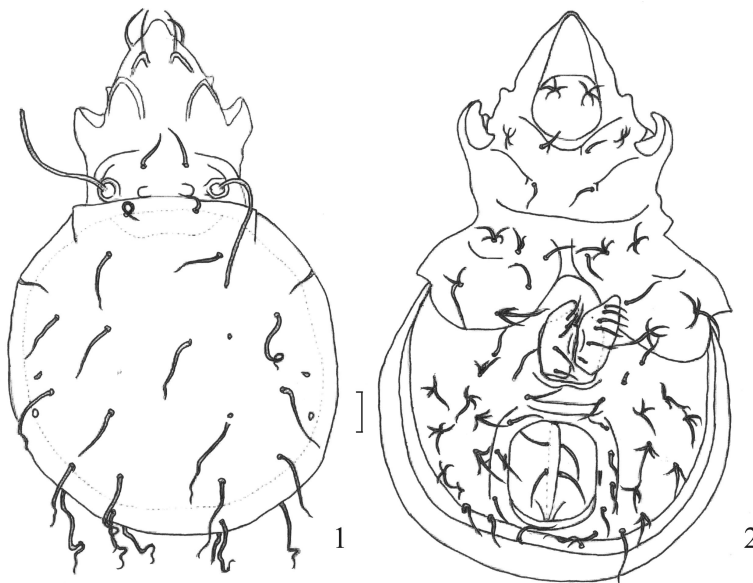
Measurements. Idiosoma length 632 (632–640); prodorsum length 227 (226–232), width 235 (235–240); notogaster length 405 (404–411), width 405 (403–410).

Prodorsum (Fig. 1). Triangle yellow, with small roundish ornamentation. Rostrum conical, 1 pair of rostral setae (ro) length 57 (57–58), setiform and smooth. 1 pair of lamellar setae (le) length 59 (59–61), setiform and smooth, arising on small tubercles, behind the small tubercles with 1 pair of bigger tubercles. 1 pair of interlamellar setae (in) length 54 (53–54), setiform

and smooth. Bothridium developed, sensillus long and smooth, length 208 (208–210). Behind interlamellar setae with 1 pair of well developed tubercles basally, directed laterally.

Notogaster (Fig. 1). Dorsosejugal suture straight, notogaster round and yellow, with plenty of roundish ornamentation. 11 pairs of notogastral setae smooth, the first pair of notogastral setae setiform and short, length 35 (32–35), much shorter than the other pairs of notogastral flagellate setae (112–114). 1 pair of median lyrifissures (*im*) located out of the linkline of setae *la* and *lm*. 1 pair of opisthonotal gland openings (*gla*) located posterolateral of setae *la*.

Venter (Fig. 2). Yellow and with small roundish particles. 1 pair of hypostomal setae bearing 4 long branches at their base. Epimeral chaetotaxy 2-1-3-3, the setae show different types, setae *1a*, *2a*, *3a* and *4a* simple and setiform, other epimeral setae bearing 2–4 long branches at their base. Genital shield length 89 (88–94), width 54 (54–56), with 6 pairs of simple setae. Anal shield length 127 (126–130), width 100 (98–102), with 2 pairs of simple setae, 1 pair of adanal lyrifissures (*iad*) length 19 (19–20), located out of median of anal shield. 16–17 pairs of ventral setae show different types, 3 pairs of adgenital setae and 3 pairs of adanal setae simple and setiform, length 41 (40–42), 3 pairs of ventral setae in posteromarginal position simple and setiform, length 65 (64–66), other 7–8 pairs of ventral setae bearing 2–4 long branches at their base.



Figures 1, 2. *Eremobelba eharai* sp. nov. 1. Dorsum; 2. Venter. Scale bar = 50  $\mu$ m.

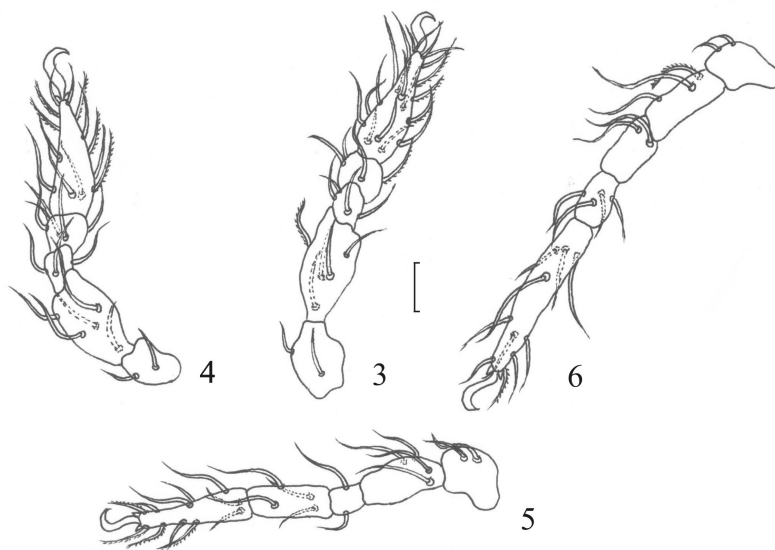
Legs (Figs. 3–6). All legs monodactylous. Leg chaetotaxy: I (2-5-4-4-20), II (2-5-4-5-13), III (2-4-2-4-11), IV (1-3-2-4-10). Length of legs: IV (441) > III (368) > I (359) > II (336).

**Holotype.** ♀, **China**, Liaoning, from soil, Shoushan Mountain, Xingcheng City, 40°38'N, 120°45'E, IX-2007, coll. Wanpeng CHEN & Wentao YAN. **Paratypes.** 2♀, from soil, Laotudingzi Natural Preserve, Huanren County, 41°28'N, 125°33'E, Benxi City, Liaoning, IX-2006, coll. Wanpeng CHEN & Hengming ZHANG; 7♀, from soil, Shenyang City, 41°08'N, 123°38'E, Liaoning, IX-2007, coll. Wanpeng CHEN.

**Etymology.** This new species is named in honor of Dr. Ehara Akimi, a famous acarologist

in Japan.

Remarks. This new species is similar to *E. japonica* Aoki, 1959 but differs from the latter by the following. This new species is yellow and covered by shallow ornamentation, while *E. japonica* is brown and covered by strong ornamentation. The new species epimeral chaetotaxy is 2-1-3-3, epimeral setae are simple or bear long branches, while in *E. japonica* the epimeral chaetotaxy is 2-1-3-2 and all epimeral setae bearing long branches. The new species length of prodorsal setae is  $in < ro < le$ , while in *E. japonica* the length of the prodorsal setae is  $le < ro < in$ . In this new species, ventral setae show different types, simple or bearing 2–4 long branches at the basis, while in *E. japonica* the ventral setae are all simple.



Figures 3–6. *Eremobelba eharai* sp. nov. 3. Leg I; 4. Leg II; 5. Leg III; 6. Leg IV. Scale bar = 50  $\mu$ m.

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