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Taxonomic study on *Batrisodellus* Jeannel of China, with discussion on the systematic position of *Batrisodellus callissimus* Nomura & Wang, 1991

(Coleoptera, Staphylinidae, Pselaphinae)

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The genus *Batrisodellus* Jeannel, 1958 is newly recorded from China, and a new species (*B. fengtingae* spec. nov.) from East China is described and illustrated. *Batrisodellus callissimus* Nomura & Wang, 1991 formerly described from South China is transferred to the new genus *Tribasodellus*. The systematic position of the new taxa is discussed. Species of *Batrisodellus* are keyed and listed.

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Introduction

Jeannel (1958) established *Batrisodellus* with the type species *Batrisodes nipponensis* Raffray, 1909. About thirty years later, Tanabe & Nakane (1989) described three species, *B. cerberus*, *B. coprea*, and *B. risor* from Japan, of which *B. risor* was later synonymized by Nomura (2001) with *B. nipponensis*. Nomura (2003) transferred five Japanese species from several related genera to *Batrisodellus*, viz., *Basitrodes laticollis* Jeannel, 1958 (Honshu and Kyusyu, Japan), *Batrisus palpalis* Sharp, 1883 (= *Basitrodes palpalis* (Jeannel, 1958)) (Honshu, Japan), *Basitrodes longulus* Jeannel, 1958 (Honshu, Japan), *Basitrodes cristatus* Jeannel, 1958 (Honshu, Japan), and *Batrisus acuminatus* Sharp, 1883 (= *Batrisodes acuminatus* Raffray, 1911; = *Basitrodes acuminatus* Jeannel, 1958) (Kyushu, Japan). In this paper, *Batrisus punctipennis* Sharp, 1883 described from Hakone, Japan was uncertainly classified into *Basitrodes*, though it should be a member of *Batrisodellus* in the present study. Nomura (2008)

also synonymized another Japanese species *Batrisodes vulgaris* Raffray, 1909 with *B. nipponensis*.

Nomura & Wang (1991) described the only Chinese species, *B. callissimus*, from Liangyan Cave of Guangxi Province. However, the examination of the type specimens of *B. callissimus* revealed that this species does not belong to *Batrisodellus* but represents an undescribed genus of *Tribasodes* genus-group. For this reason, a new genus *Tribasodellus* is erected to hold the species *Batrisodellus callissimus* Nomura & Wang, 1991. Therefore, the representative of the genus *Batrisodellus* eventually become disappeared from Chinese fauna.

In the examination of some pselaphines collected from Zhejiang, East China, we found a species apparently bearing the features of true *Batrisodellus* and being new to science. In the present paper, we would like to describe, illustrate and discuss the systematic positions of the new taxa, provide a key to species and a checklist of the genus *Batrisodellus*.

Material and Methods

Specimens were collected from decaying leaf litter of the forest floor by sifting. They were killed with ethyl acetate and then dried. Dissections were made in 75 % ethanol; material was macerated in hot solution of NaOH for 10–30 minutes when necessary; genitalia and small parts were mounted in Euparal (Chroma Gesellschaft Schmidt, Koengen, Germany) on plastic slides that were placed on the same pin with the specimens. Photos of habitus were taken by a Canon EOS 40D Camera mounted with an MP-E 65 mm Macro Photo Lens; line drawings were made using Adobe Illustrator CS2.

The terminology follows Chandler, 2001. The material treated in the present study is deposited in the Insect Collection of Shanghai Normal University (= SNUC), Shanghai, China and the National Museum of Nature and Science (= NSMT), Tokyo, Japan.

Taxonomy

Batrisodellus fengtingae Yin & Nomura spec. nov.

Figs 1–9

Type locality. East China, Zhejiang Province, Ning'bo City, Tiantongshan Mountain (29°48'09" N 121°47'15" E).

Type material. Holotype: ♂, labelled 'CHINA: ZHEJIANG Prov. / Ning'bo City / Tiantongshan Mt., Baibuling / Ting. FENG coll. / alt. 200–300 m / 25 Apr. 2009' (SNUC).

Description

Male. Length 2.09 mm, exclude abdomen 1.54 mm (Fig. 1). Darkish brown, maxillary palpi, elytra, and legs lighter.

Head length (from anterior margin of clypeus to posterior apex, exclude occiput) 0.44 mm, width (across eyes) 0.45 mm, nearly rectangular, covered with short hair on dorsal surface. Clypeus arcuate on anterior margin. Frons depressed between antennal tubercles. Vertex convex, with pair of vertexal foveae connected by U-shaped sulcus. Eyes large and prominent, composed of more than 50 facets, situated in basal one-third of head length, multifaceted, facets small. Postgenae gradually narrowed. Gular area slightly depressed; gular foveae merge into single pit. Antenna long and elongate, scape large, about 1.5 times as long as wide; pedicel much smaller than scape, subcylindrical; third antennomere smaller than pedicel, longer than wide; fourth transverse, about as wide as third; fifth slightly longer than wide; sixth similar to fourth; seventh similar to fifth; eighth

to tenth each transverse, successively wider and longer; terminal three antennomeres well clubbed (Fig. 2); eleventh biggest, with spine on antebasal margin.

Pronotum as long as and as wide as head, lateral sides smooth; median and pair of lateral longitudinal sulci present; pair of lateral antebasal foveae, pair of inner basolateral foveae, and pair of outer basolateral foveae present.

Elytra (along sutural line) length 0.66 mm, maximal width 0.76 mm, convex dorsally, combined slightly longer than wide, narrowed toward base. Each elytron with three basal foveae; discal stria extends to two-fifths of elytral length.

Legs long, normal in structure. Mesofemur (Fig. 3) with spine near basal one-third on posterior margin. Metatibia (Fig. 4) densely covered with short setae at apical area, with row of long setae at apex.

Abdomen (along midline of visible segments) length 0.55 mm, maximal width (first visible segment, morphologically segment IV) 0.63 mm, with tergite IV largest, discal carinae short, reaching one-third of tergal length; paratergites IV reduced to pair of triangular plate. Fifth to seventh tergites successively shorter and narrower. Tergite VIII (Fig. 5) as long as wide, posterior margin nearly rounded; Sternite IV–VII each transverse, successively shorter and narrower. Sternite VIII (Fig. 6) transverse, with anterior margin strongly projected in middle; posterior margin nearly flattened. Sternite IX absent.

Aedeagus (Figs 7–9) 0.38 mm long, with basal bulb broad, protuberant ventrally at base and basal foramen large; median bilobed at apical half; right lobe shorter than left one, narrowed towards apex; left lobe broad and long, bent ventrally at apex.

Female. Unknown.

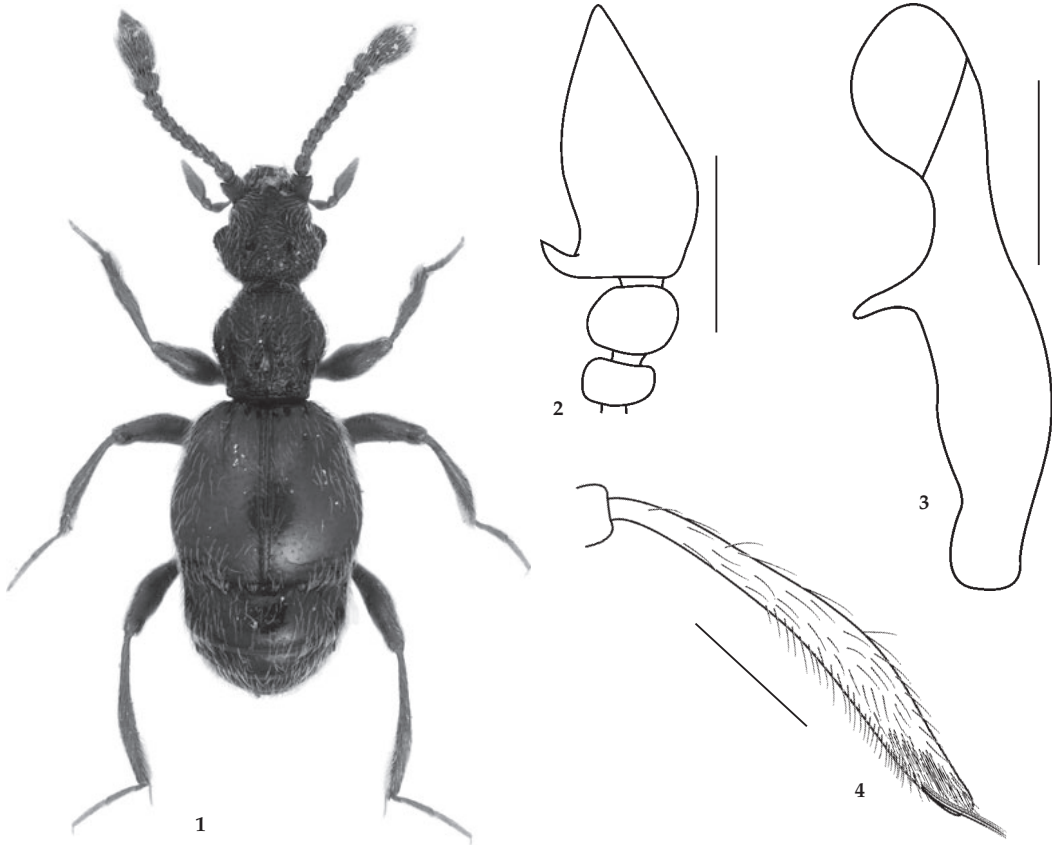
Remarks. The species is similar to its congeners in general aspect, but it can be readily differed by the unique aedeagus with apical half bilobed.

Etymology. The specific name is warmly dedicated to the collector of the type specimen, Ting Feng, for her assistance during this study.

Distribution. East China (Zhejiang Province)

Key to species of genus *Batrisodellus* Jeannel, 1958

1. Pronotum with a median longitudinal sulcus.....2.
- Pronotum without median longitudinal sulcus. *B. cerberus* Tanabe & Nakane, 1989 (Japan: Kyushu)



Figs 1-4. *Batrisodellus fengtingae* spec. nov. 1. dorsal habitus. 2. antennal club. 3. mesotrochanter and mesotibia. 4. metatibia. Scales: 0.2 mm.

- | | |
|---|---|
| <p>2. Aedeagus apparently asymmetrical.....3.
 – Aedeagus almost symmetrical. 8.</p> <p>3. Body large-sized (more than 3.0 mm), 11th antennal segment largest, flattened on both lateral sides; dorsal apophysis of aedeagus with small hook at apex.4.
 – Body middle-sized (less than 3.0 mm), 11th antennal segment largest, nearly cylindrical in basal part; dorsal apophysis of aedeagus without hook at apex. 5.</p> <p>4. Body larger (more than 3.2 mm).....
 <i>B. palpalis</i> (Sharp, 1883) (Japan: Honshu)
 – Body smaller (less than 3.1 mm).....
 <i>B. longulus</i> (Jeannel, 1958) (Japan: Honshu)</p> <p>5. Median lobe of aedeagus simply bifurcated, narrowed apically in these apices.....
 <i>B. fengtingae</i> spec. nov. (China: Zhejiang)</p> | <p>– Median lobe of aedeagus not simply furcated, various shaped at apex..... 6.</p> <p>6. Antennal scape strongly thickened in male.....
 <i>B. laticollis</i> (Jeannel, 1958) (Japan: Kyushu)
 – Antennal scape almost the same between male and female. 7.</p> <p>7. Pronotum slightly longer than wide.
 ...<i>B. punctipennis</i> (Sharp, 1883) (Japan: Honshu)
 – Pronotum wider than long.
 <i>B. cristatus</i> (Jeannel, 1958) (Japan: Honshu)</p> <p>8. Body middle-sized (2.3–2.4 mm); mesofemoral spine very small; aedeagus robust, with median lobe almost truncate at apex.....
 <i>B. nipponensis</i> (Raffray, 1909) (Japan: Honshu?, Kyushu)
 – Body large-sized (more than 2.8 mm); mesofemoral spine large..... 9.</p> |
|---|---|



Figs 5-9. *Batrisodellus fengtingae* spec. nov. 5. eighth tergite. 6. eighth sternite. 7. aedeagus, in lateral view. 8-9. aedeagus, in ventral view. Scales: 0.2 mm.

9. Abdominal segments 5th to 8th almost conical in male, 8th moderately convex on dorsal side; aedeagus short and broadened in apical part, shallowly excavated at apex.
 *B. acuminatus* (Sharp, 1883)
 (Japan: Honshu, Kyushu)
- Abdominal 8th segment projected on dorsal side in male; aedeagus elongate, narrowed in apical part, with median lobe extended and bent ventrally.
 *B. coprea* Tanabe & Nakane, 1989
 (Japan: Honshu)

Checklist of the genus *Batrisodellus* Jeannel

1. *acuminatus* (Sharp, 1883): 307
 Honshu, Kyushu, Japan
Batrisodellus acuminatus Sharp, 1883: 307
Batrisodes acuminatus (Sharp, 1883): Raffray, 1911: 65
Basitrodes acuminatus (Sharp, 1883): Jeannel, 1958: 32
2. *cerberus* Tanabe & Nakane, 1989: 739
 Kyushu, Japan
3. *coprea* Tanabe & Nakane, 1989: 738
 Honshu, Japan
4. *cristatus* (Jeannel, 1958): 32
 Honshu, Japan
Basitrodes cristatus Jeannel, 1958: 32
5. *fengtingae* spec. nov. Zhejiang, China
6. *laticollis* (Jeannel, 1958): 29
 Honshu, Kyushu, Japan
Basitrodes laticollis Jeannel, 1958: 29



10



11

Figs 10–11. *Tribasodellus callissimus* (Nomura & Wang) gen. nov., dorsal habitus. 10. male. 11. female.

7. *longulus* (Jeannel, 1958): 30 Honshu, Japan
Basitrodes longulus Jeannel, 1958: 30
8. *nipponensis* (Raffray, 1909): 23
 Honshu?, Kyushu, Japan
Batrisodes nipponensis Raffray, 1909: 23
Batrisodes vulgaris Raffray, 1909: 24
Batrisodellus risor Tanabe & Nakane, 1989: 735
9. *palpalis* (Sharp, 1883): 306 Honshu, Japan
Batrisus palpalis Sharp, 1883: 306
Basitrodes palpalis (Sharp, 1883): Jeannel, 1958: 29
10. *punctipennis* (Sharp, 1883): 305 Honshu, Japan
Batrisus punctipennis Sharp, 1883: 305
Basitrodes punctipennis (Sharp, 1883): Jeannel, 1958: 31

***Tribasodellus* Nomura & Yin gen. nov.**

Figs 10–11

Type species. *Batrisodellus callissimus* Nomura & Wang, 1991

Type locality. Guangxi Province (South China).

Collecting data of holotype. China: Guangxi Province: Guilin, Cao'yang village, Liangyan Cave, 11 Feb. 1991, Nishikawa et al. leg. (deposited in the Chinese Museum of Karst Geology, Institute of Karst Geology, Guilin, China).

Material examined. Paratypes: 2♂♂, 2♀♀, same collecting data as holotype (preserved in SNUC); 7♂♂, 3♀♀, same locality as holotype (tentatively preserved in NSMT); 2♂♂, 4♀♀, the other caves near the type locality (tentatively preserved in NSMT).

Diagnosis. Body elongate in both sexes (Figs 10–11). Head elongate, nearly oval. Antenna very long, antennomeres each elongate, 9th–11th loosely clubbed in male. Pronotum elongate, with median longitudinal sulcus very shallow, lateral margins not spinose; disc convex; antebasal and basolateral foveae present. Elytra longer than combined width, each elytron with three basal foveae, discal stria weak. Legs normal in structure, extremely elongate; metatrochanter with a protuberance on posterior margin in male. Abdomen with 4th tergite predominantly large; discal carinae very short; paratergites reduced to a pair of lateral

triangular plates; 5th–6th tergites short; 7th broad. Aedeagus asymmetrical, basal bulb and basal foramen large; with a short ventral projection and two apical spines; parameres fused.

Remarks. The original description provided a reliable identification of the species which is newly defined belonging to the new genus *Tribasodellus* (*Tribasodes* genus-group sensu Nomura & Idris, 2003) by metatrochanter with a spine-like protuberance on posterior margin and the structure of the aedeagus. The genus can be readily distinguished from its allies by a combination of the followings: 1) very long antenna in both sexes; 9th–11th antennomeres loosely clubbed and sexually modified in male; 2) pronotum with lateral sides smooth and with a shallow longitudinal depression on the disc; 3) elytra elongate, longer than combined width, each trifoveate near base; 4) legs very long and elongate; male mesotibia with a tiny spine at apex; male metatrochanter with a spine-like protuberance on posterior margin.

Distribution. South China (Guangxi Province)

Etymology. The generic name is derived from an arbitrary rearrangement of *Batrisodellus* Jeannel. Gender masculine.

Acknowledgements

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