

New records of Ceratocanthinae (Coleoptera Scarabaeoidea Hybosoridae) from Arunachal Pradesh (India) with description of a new species of *Pterorthochaetes* Gestro, 1898

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ABSTRACT

In order to publish data to be included in the forthcoming new edition of the Catalogue of Palaearctic Coleoptera, *Madrasostes feae* (Gestro, 1898) and *Pterorthochaetes dembickyi* n. sp. (Coleoptera Scarabaeoidea Hybosoridae Ceratocanthinae) are recorded from Arunachal Pradesh (India).

KEY WORDS

Palaearctic region; *Pterorthochaetes*; *Madrasostes*; new species.

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INTRODUCTION

After the publication of new data on Palaearctic Ceratocanthinae (Coleoptera, Scarabaeoidea, Hybosoridae) (Ballerio, 2014) to be included in the forthcoming second edition of the Catalogue of Palaearctic Coleoptera by Löbl and Smetana, some new data on Ceratocanthinae from Arunachal Pradesh (an Indian region belonging to the Palaearctic region) were obtained by examining unidentified material kept in ZFMK collection. The purpose of this note is therefore to describe a new species of *Pterorthochaetes* Gestro, 1898 and to provide new faunistic data on *Madrasostes feae* (Gestro, 1898) based on the aforementioned new Indian material.

Poggi (2010) demonstrated that the correct date of publication of the names contained in Gestro's revision of Asian Ceratocanthinae (which includes also *Pterorthochaetes* and *M. feae*) is 1898 and not 1899, as previously reported.

MATERIAL AND METHODS

I refer to Ballerio (2013) and references therein

quoted for methods and terminological conventions.

Habitus photographs were taken with a Canon Eos D5 MII with a macro objective MP 65 mm, all photos were then mounted with the Zerene Stacker software and cleaned and unmasked using a photo processing software.

ABBREVIATIONS. EL: maximum elytral length; EW: maximum total elytral width; HL: maximum head length; HW: maximum head width; L: length; PL: maximum pronotal length at middle; PW: maximum pronotal width at middle; W: width; ZFMK: Zoologische Forschungsmuseum Alexander Koenig collection, Bonn, Germany.

RESULTS

Madrasostes feae (Gestro, 1898) (Fig. 1)

EXAMINED MATERIAL. 1 male and 1 female (ZFMK): NE India, Assam-Arunachal border, Bhalukpong, 150 m, 27°00'48"N 92°39'08"E, L. Dembický leg., 1–8.V.2012.

REMARKS. First record for Arunachal Pradesh. *Madrasostes feae* was previously known from Nepal, NE India (Uttarakhand, Meghalaya and Sikkim), Myanmar, Thailand and Kampuchea (Ballerio, 2014).

***Pterorthochaetes dembickyi* n. sp.**

EXAMINED MATERIAL. Holotypus, male, in coll. ZFMK: NE India, Arunachal Pr., Etalin vicinity, 700 m, 28°36'56"N 95°53'21"E, L. Dembický leg., 12–25.V.2012. Allotypus in ZFMK, same data as holotypus.

DESCRIPTION OF HOLOTYPE (Figs. 3–6). HL: 0.9 mm; HW: 1.8 mm; PL: 1.6 mm; PW: 2.9 mm; EL: 3.3 mm; EW: 2.9 mm. Large sized *Pterorthochaetes*, surface shiny, setose; volant. Dorsum black, setation yellowish-brown, sternum reddish-brown, antennae and tarsi reddish-brown. Head: subpentagonal, wider than long, fore margin finely serrated, tip acute, interocular distance about 10 times the maximum width of dorsal ocular area, dorsal ocular area large, dorsal sculpturing of head distally made of very coarse and deep transverse wrinkles and proximally of impressed small dense mixed comma-shaped and horseshoe-shaped punctures centrifugally oriented, each one having a pore in the internal side, bearing an erect simple short seta.

Pronotum: wider than long (W/L ratio= 1.8), fore angles normally shaped, pronotal lateral margins fringed with a row of short simple setae, spaced out by an interval about their length or longer, disc of pronotum covered by dense impressed ocellate transverse small punctures larger at sides of disc and becoming horseshoe-shaped large punctures, with opening outwards, towards pronotal base and sides, each puncture with a pore in the middle bearing a gently clavate medium sized erect seta; punctation relatively dense, the distance between punctures being subequal to their diameter on disc and inferior to their diameter at sides.

Scutellum: punctures transversely horseshoe-shaped, sparse, thick and coarse. Elytra: shape oval, longer than wide (W/L ratio= 0.8); elytral surface covered by dense punctation, made of medium sized impressed horseshoe-shaped punctures with opening directed outwards, horseshoe branches short, punctures spaced out by an interval larger than their diameter, horseshoe-shaped punctures

mixed with a few simple shallow small punctures irregularly distributed. Each horseshoe-shaped puncture containing a pore bearing a gently clavate long erect seta.

Male genitalia: spiculum gastrale as in figure 11, parameres asymmetrical, as in figures 7–9, internal sac with an elongate narrow sclerite, as in figure 10.

VARIABILITY. Allotypus: overall morphology as in the description of holotypus. Sexual dimorphism as in all other *Pterorthochaetes*. Bursal sclerites slightly asymmetrical, with a dorsal sharp projection and shaped as in figure 12.

COMPARATIVE NOTES. *Pterorthochaetes dembickyi* n. sp. is mainly characterized by the shape of bursal sclerites, shape of parameres and of the sclerites of internal sac of aedeagus, which isolate the new species from all other known *Pterorthochaetes*. As regards outer morphology, the size, the setation of pronotal margins and the punctation pattern of elytra and pronotum allow us to place this new species near *P. septemtrionalis* Ballerio, 1999 and *P. yunnanensis* Ballerio, 2014.

The new species can be easily distinguished from *P. septemtrionalis* because the latter has much denser and larger elytral punctation, elytral horseshoe-shaped punctures have branches longer and the opening is directed mainly backwards (and not outwards as in the new species), while differences from *P. yunnanensis* are subtler, consisting in the shape and density of simple elytral punctures: in *P. yunnanensis* they are much more impressed and denser than in *P. dembickyi* n. sp., also horseshoe-shaped punctures are slightly denser and larger in *P. yunnanensis*. The strong differences in the shape of bursal sclerites and, for *P. septemtrionalis* and *P. dembickyi* n. sp., in the shape of parameres and of sclerites of internal sac of aedeagus (in *P. yunnanensis* the male is unknown) do not allow any confusion between the new species and *P. septemtrionalis* and *P. yunnanensis*.

ETYMOLOGY. Noun in the genitive case. Dedicated to Luboš Dembický, who collected the type series.

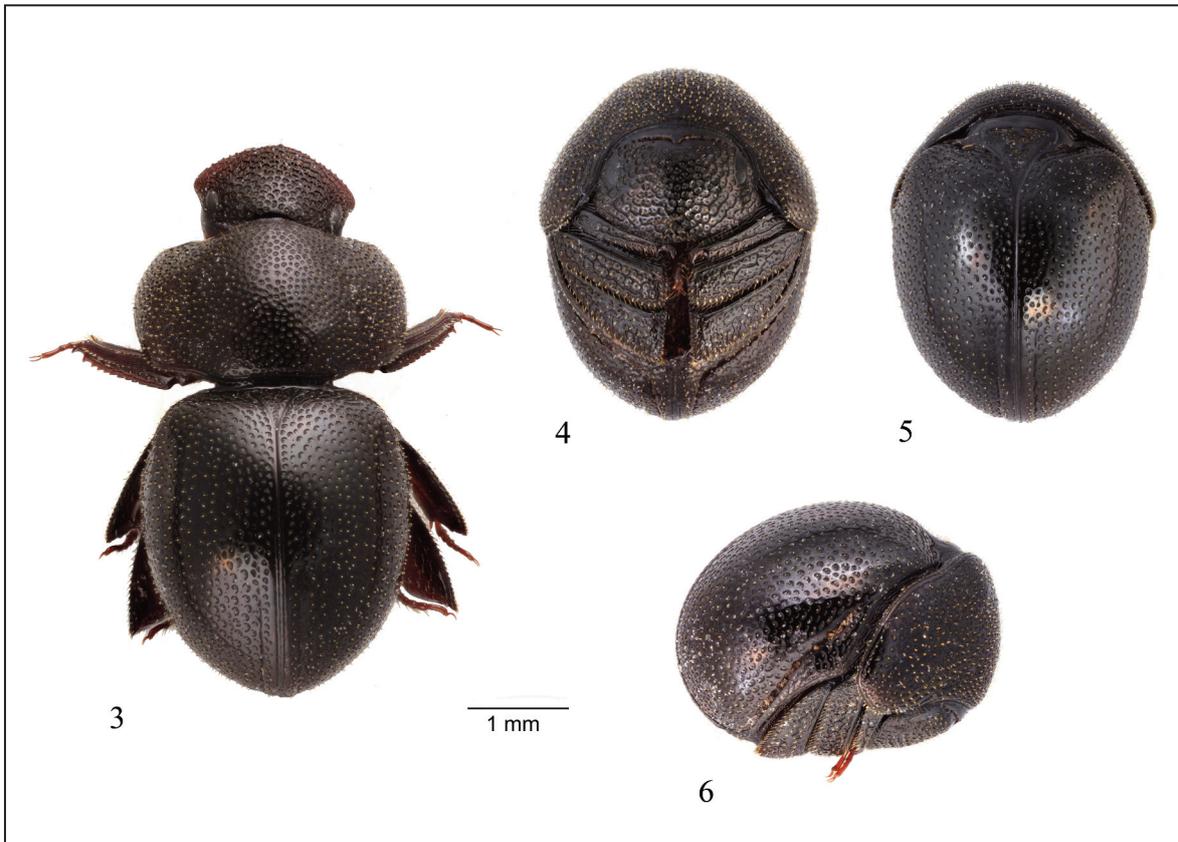
DISTRIBUTION AND HABITAT. Known only from the type locality in NE India (Fig. 2). The type series was collected under the bark of dead trees (L. Dembický, pers. comm.), in a montane broadleaf



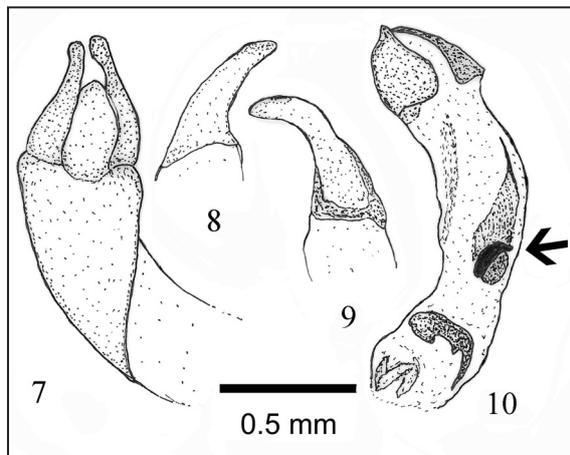
Figure 1. *Madrasostes feae*, specimen from Bhalukpong, habitus in dorsal view.



Figure 2. *Pterorthochaetes dembickyi* n. sp., type locality (photo by L. Dembický, 2012).



Figures 3–6. *Pterorthochaetes dembickyi* n. sp., holotypus. Fig. 3: extended, dorsal view. Fig. 4: enrolled, ventral view. Fig. 5: enrolled, dorsal view. Fig. 6: enrolled, lateral view.



Figures 7–10. *Pterorthochaetes dembickyi* n. sp., holotypus, parameres. Fig. 7. Dorsal view, Fig. 8. Lateral view. Fig. 9. Lateral view. Fig. 10. Internal sac (arrow indicates the elongate sclerite).



Figure 11. *Pterorthochaetes dembickyi* n. sp., spiculum gastrale of holotypus. Figure 12. *Pterorthochaetes dembickyi* n. sp., bursal sclerites of allotypus (arrows indicate the dorsal sharp projection).

forest near Etalin (Mishmi Hills), an area belonging to the Eastern Himalayan broadleaf forests ecoregion (Wikramanayake et al., 2002).

REMARKS. I examined other four females of *Pterorthochaetes* (ZMFK) from the type locality, which have bursal sclerites somewhat similar to the ones of *P. dembickyi* n. sp., although with dorsal projections stronger, blunter and longer. The outer morphology is quite different, the length is shorter (about 1 mm shorter), elytral horseshoe-shaped punctures are larger and pronotum has larger horseshoe-shaped punctures at the sides, with opening wider, and a few wrinkles near fore angles. Based on what we know about intraspecific morphological variation in the genus *Pterorthochaetes*, it is more likely that those females represent a distinct new species rather than an extreme variation of *P. dembickyi* n. sp. Because of this I excluded those females from the type series.

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