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Article

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Revision of the family Metarbelidae (Lepidoptera) of the Oriental Region. VI. Genus *Tearbela* Yakovlev & Zolotuhin gen. nov. from the Bangladesh and *Marcopoloia dea* (Swinhoe, 1890) comb. nov.

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Abstract
In the sixth part of the revision of the Asian Metarbelidae we describe a new monotypic genus, *Tearbela* Yakovlev & Zolotuhin, **gen. nov.** (type species, by original designation: *Arbela theivora* Hampson, 1910). *Tearbela theivora* (Hampson, 1910) **comb. nov.** and *Marcopoloia dea* (Swinhoe, 1890) **comb. nov.** are established and redescribed.

Key words: biodiversity, Cossoidea, Asia, Paleotropics, Metarbelidae, taxonomy, new genera, new species.

Introduction

Arbela theivora Hampson, 1910 was described on the specimens collected on tea plants and mango by C.B. Antram, entomologist of the Indian Tea Association (Hampson 1910). Examining the morphology of *A. theivora* males, we found an apomorphic feature which made it necessary to isolate a new genus.

Arbela ? dea Swinhoe, 1890 was described on a unique specimen from Rangoon with a note: "A very curios little insect; allied to nothing I know of. Undoubtedly of the family Cossidæ, of an undescribed genus near *Arbela*, which I leave to be described when more specimens are forthcoming" (Swinhoe 1890). Examining the holotype genitalia, we established the affiliation of this little studied species to the genus *Marcopoloia* Yakovlev & Zolotuhin, 2021 (type species, by original designation – *Arbela discipuncta* Wileman, 1915), previously described by us.

Material and methods

The materials for the study were the adult Metarbelidae specimens deposited in the National Museum of Natural History (NHMUK). The male and female genitalia were mounted in euparal on slides following

Lafontaine and Mikkola (1987) and examined with an Olympus SZX16 microscope. The images were taken with the digital camera CMOS 20.7 megapixels and processed using Corel Photo-Paint 2017 software.

Taxonomical part

Tearbela Yakovlev & Zolotuhin gen. nov.

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Type species (designated here) *Arbela theivora* Hampson, 1910.

Description. **Male**. Size small, length of fore wing 8.5–9 mm. Antenna bipectinate, setae 2.5-3 times longer than antenna rod diameter. Body gracile. Abdomen apically with bundle of long scales. Fore wing wide, dark-brown, almost without pattern. Hind wing dark-brown. Fringe dark-brown, unicolorous.

Genitalia. Uncus thick, of medium length, bi-lobed, with crescent notch apically; gnathos arms wide, short, lamellar; subscaphium long, funnel-like, strongly sclerotized; valve short, costal edge semicircular, saccular edge strongly sclerotized, with rectangular harpe; juxta robust, lamellar, with two small parallel longitudinal sclerites, saccus not expressed, phallus shorter than valve, thin, strongly curved, with small cuneal hooks on abdominal edge.

Female. Length of fore wing 10–11 mm. Antenna simple, not pectinate. Body gracile. Abdomen with bundle of long scales apically. Fore wing wide, dark-brown, almost without pattern. Hind wing dark-brown. Fringe dark-brown, unicolorous. Genitalia not examined.

Diagnosis. The apomorphic feature of the new genus is the rectangular harpe on the saccular edge of the valve. The new genus is most close to two Metarbelidae genera: *Orgyarbela* Yakovlev & Zolotuhin, 2020 (type species – *Arbela millemaculata* Hampson, 1897, by original designation) and *Micrarbela* Yakovlev & Zolotuhin, 2021 (type species – *Arbela minima* Hampson, 1910, by original designation) (Yakovlev & Zolotuhin 2020, 2021a). From them it clearly differs in the male genital structure:
- from *Orgyarbela* – in the longer, elongated uncus, and in the rectangular harpe on the saccular edge of the valve;
- from *Micrarbela* – in the clearly expressed notch on the uncus apically.

Composition. Monotypic genus.

Distribution. Northern Bangladesh.

Biology. “Bores in the bark of Tea and smaller branches of the Mango…” (Hampson 1910).

Etymology. The new genus is named after one of its feed plants – the tea.

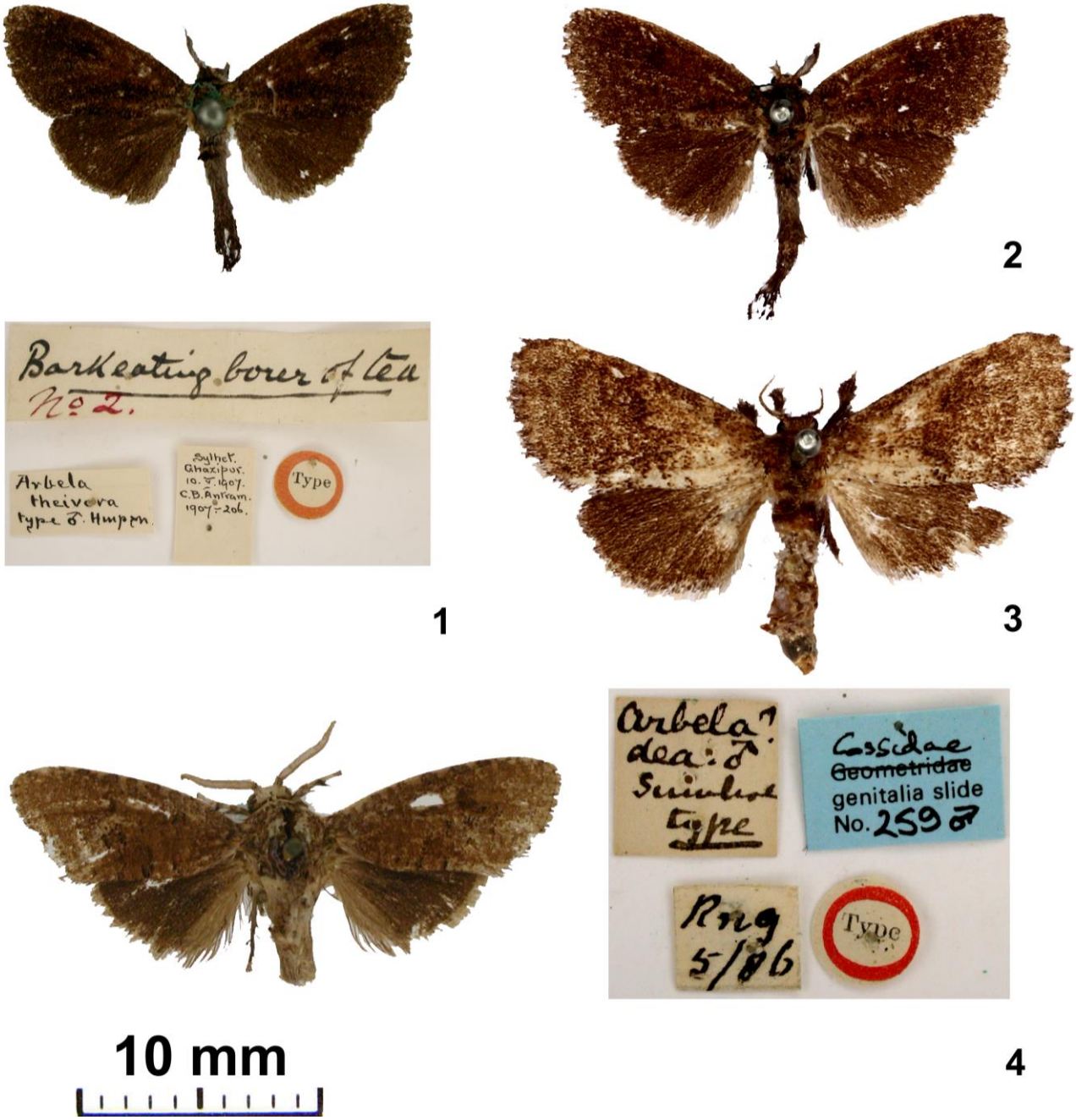
Tearbela theivora (Hampson, 1910) comb. nov.

Figs 1–4, 6

Arbela theivora Hampson, 1910, Journ. Bombay Society 20: 97.
Type locality: Assam, Sylhet, Gazipur [Bangladesh, 23°59′ N / 90°22′ E].
Type material. Holotype (male) in NHMUK, examined.

Material examined. Holotype, male, Sylhet, Gazipur, 10.v.1907, C.B. Antram, 1907-206. Bark eating borer of tea. #2 (NHMUK). Paratypes, 1 male, 2 females, same locality, 6.v.1907, 10.v.1907, 14.v.1907 (NHMUK, individual numbers NHMUK: 012832502 and 012832513, slide NHMUK: 010315533).

Redescription. Male fore wing with poorly expressed darkened portion discally; female fore wing with poorly expressed pattern of strokes postdiscally and submarginally.



Figures 1–4. **Adult specimens of Metarbelidae (NHMUK)**: 1. *Tearbela theivora*, male, holotype; 2. *T. theivora*, male, paratype (individual number 012832502); 3. *T. theivora*, female, paratype (individual number 012832513); 4. *Marcopoloia dea*, male, holotype.

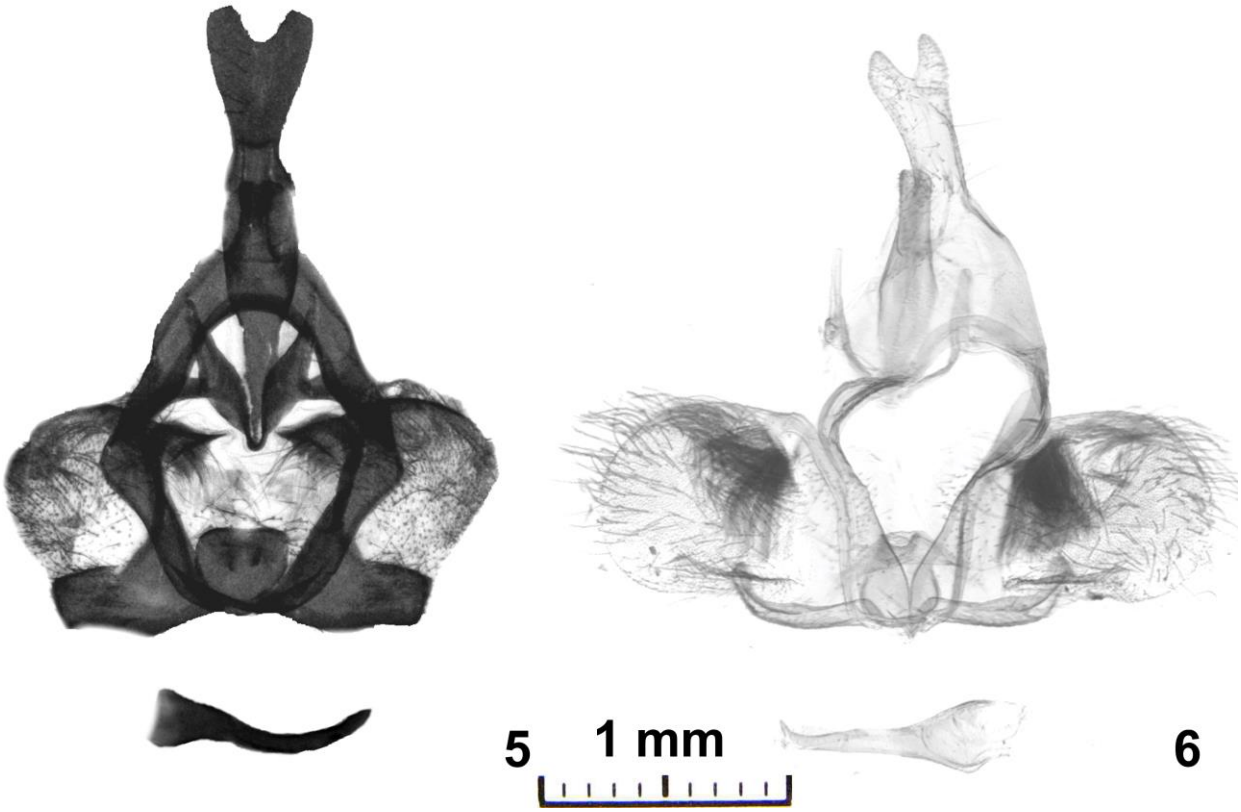
***Marcopoloia dea* (Swinhoe, 1890) comb. n.**
Figs 5, 7

Arbela ? dea Swinhoe, 1890, Trans. ent. Soc. London, 1890: 199.
Type locality: Rangoon [Myanmar].
Type material. Holotype (male) in NHMUK, examined.

Material examined. Holotype, male, Rng[Rangoon], 5/[18]86 (NHMUK, slide Cossidae # 259).

Redescription. Male. Length of fore wing 10 mm. Antenna bipectinate, setae 2.5–3 times longer than antenna rod diameter. Body gracile. Fore wing brown, with poorly expressed pattern of black strokes postdiscally and submarginally, border very thin, black. Fringe light-brown, unicolorous. Hind wing dark-brown with light-brown anal edge. Fringe light-brown, unicolorous.

Genitalia. Uncus long, with parallel lateral sides, slightly extended apically, with triangle notch on apex; gnathos arms thin; subscaphium spindle-like, elongated; valve semicircular, saccular edge strongly sclerotized, lamellar, small mastoid harpe and fold-shaped harpe on saccular third of inner surface of valve; juxta wide, lamellar; saccus reduced; phallus shorter than valve, almost straight, basally swollen, apically narrowing, hooky cornutus closer to apex.



Figures 5–6. **Male genitalia of Metarbelidae**: 6. *T. theivora*, paratype (slide NHMUK: 010315533); 7. *Marcopoloia dea*, holotype (slide Cossidae # 259).

Female unknown.

Diagnosis. Judging from the characteristic features of the male genitalia, namely – the poorly extended uncus and the strongly swollen basal end of the phallus, the species belongs to the genus, recently described by us – *Marcopoloia* Yakovlev & Zolotuhin, 2021, which leads to the establishment of a new combination: *Marcopoloia dea* (Swinhoe, 1890) **comb. n.** Currently, the genus includes 6 species, distributed in south-eastern Asia (Yakovlev & Zolotuhin, 2021b). Externally, *M. dea* is most close to *M. leloi* Yakovlev & Zolotuhin, 2021 (type locality: C. Vietnam, Gia Lai Prov., Kon Ka Kinh NP), from which it differs in the slightly extended apex of the uncus and in the less expressed harpe on the saccular edge of the valve.

Distribution. Myanmar.

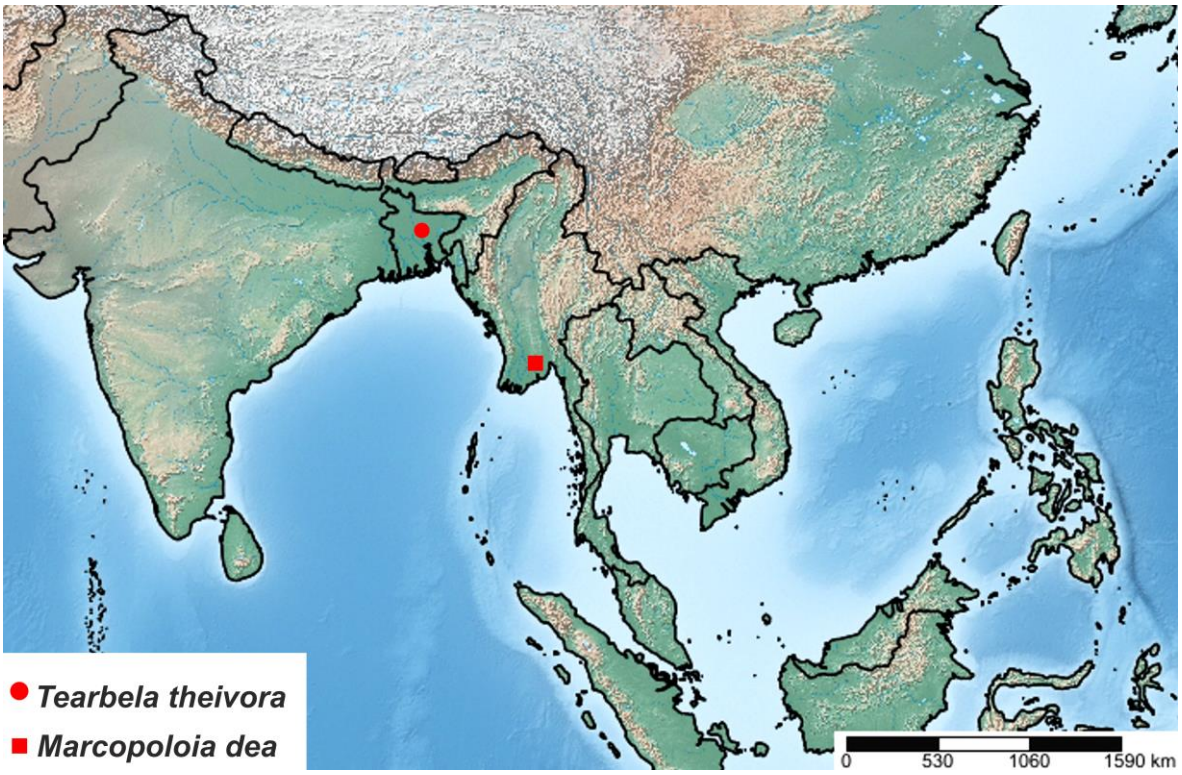


Figure 7. Distributional map of *Tearbela theivora* and *Marcopoloia dea*.

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