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### A new species of *Micardia* Butler, 1878 (Lepidoptera, Noctuidae, Eustrotiinae) from China

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The genus *Micardia* Butler, 1878 was described based on *M. argentata* (the type species; Fig. 1) and *M. pulchra*, both from Japan; in the same paper, Butler transferred a species described from India, *Leucania pulcherrima* Moore, 1867 to *Micardia*. Hampson (1990) considered *Micardia* a synonym of *Eustrotia*. However, its generic status was revised by Warren (1913) and retained by subsequent authors (Ueda 1984). There are at present 13 species recognized within *Micardia* (Table 1), of which, *M. quadrilinea* Scriba 1921 was described from Japan on the basis of female specimens and without high-quality illustrations, and subsequently treated as of uncertain status by Chen & Xue (2012). The remaining species are as follows: *M. simplicissima* Berio 1973 was described from Myanmar based on 2 females. *M. munda* Leech, 1900, was described from Western China (Sichuan, according to Chen & Xue 2012). Chen (1999) extended the range of *M. pulcherrima* to include China, and Chen & Xue (2012) subsequently reviewed *Micardia* from China, describing three new species, *M. pallens*, *M. distincta* and *M. minuta*. Four species have been described from Madagascar, *M. argentoidea* and *M. terracottoides* by Berio (1954), and *M. ikoly* and *M. itremo* by Viette (1982). Because they are geographically separated so widely from their congeners in Asia, Chen & Xue (2012) considered their generic placement in need of confirmation. Moreover, the distribution of *M. pulchra* Butler was extended to Russia (Kurile Island) by synonymizing it with *M. pulchrargentea* Bryk, 1942 (Kononenko 2005). In this paper we report a new species, *Micardia yixingensis*, sp. nov. from Jiangsu, China. The contribution brings the total number of the species in the genus to 14.

Specimens in this study were sampled by light trap in Bamboo groves. Photos of upper and under sides of male and female were taken by a Nikon D750. For genitalic preparations, abdomens were detached from the body, as close as possible to the basal region of the abdomen, cleared using a 10% sodium hydroxide (NaOH) solution at 80°C for about 20 minutes, and transferred to distilled water to flush excess NaOH. Each abdomen was mounted on a depression slide with 85% ethanol for examination.



FIGURE 1. *Micardia argentata* Butler, 1878. A, female; B, collection label.

Images of genitalic characters were taken with a Nikon Eclipse 80i microscope and Nis-Element D® software (v. 3.22.14). A series of images at different focal distances were stacked using Zerene Stacker® (v. 1.02), rendered and arranged using Adobe Photoshop®.

Terminology for wing venation follows that of Comstock (1918) and Scoble (1992); external and genitalic terminology follow Nichols (1989), Klots (1970) and Chen (1999).

Type specimens are deposited in the Insect Museum of Nanjing Agricultural University, China.

***Micardia yixingensis* sp. nov. (Fig. 2–3)**

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**Diagnosis.** The new species shows similarities to *M. argentata* in forewing pattern (Fig. 1). Both species have a large white stripe covering most of area of discal cell on each forewing, by which they can easily be separated from other congeners. However, the stripe in the new species is larger and connects with the oblique brown line that issues from the apex of the forewing and extends to the midpoint of the inner margin, whereas in *M. argentata* the stripe is relatively small and separated from the oblique line. The male genitalia of both species are also similar, but: (1) the apex of each valva is subacute in the new species, rather than slightly swollen as in *M. argentata*; (2) the harpe in caudal view is acute in the new species, rather than blunt in *M. argentata*; (3) the juxta in caudal view is swollen in its lower 1/3 in the new species, whereas the two lateral margins are parallel in *M. argentata*.

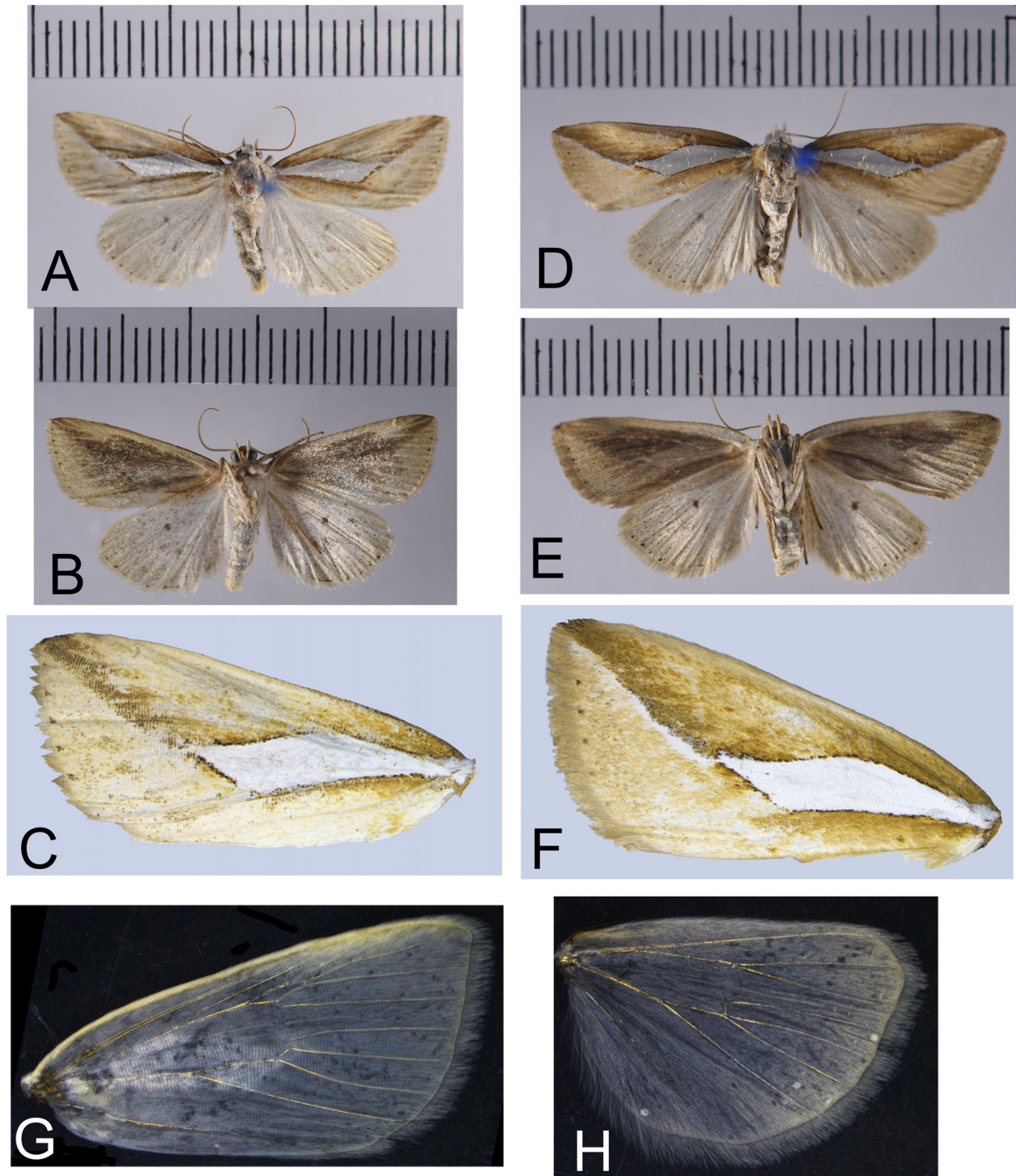
**Description.** Wingspan 30 mm in male, 34 mm in female. Body (in pinned specimens) fuscous.

**Head.** Frons silver; antennae brown; labial palpi white basally and dark brown distally, each club-shaped with apex acute.

**Thorax.** White dorsally, fuscous laterally and ventrally. Legs fuscous, but tarsi dark brown. Venation typical of genus, except each forewing with stalk of  $R_3$  and  $R_4$  of same length as areole, and each hindwing with  $M_3$  and  $CuA_1$  forked basally. Forewings of male each with upperside yellowish brown to light brown, with a large subrectangular white stripe bordered with black scales, an oblique brown line issuing from apex and extending to the outer margin of aforementioned stripe; antemedial and median lines diffuse, broken at subrectangular white stripe; reniform spot expressed as a diffuse pale patch; postmedial line expressed as yellowish brown spots, arranged in an arched row outside the subrectangular white stripe; subterminal line light brown, oblique, broken at oblique line and veins; terminal line distinct with black scaling. Underside with faint oblique line corresponding to that on the upperside, overall dark brown with costal area and outer area light brown; terminal lines with dark gray spots between veins. Hind wings fuscous, each with upper- and undersides bearing dark brown spots at the end of the discal cell, and with terminal lines expressed as gray spots between the veins. Female as for male, but antemedial, median, postmedial lines less well expressed; terminal lines expressed as small dots, black above, lighter downwards, broken at veins; oblique line bordered with white line below; reniform spot expressed as a pale white patch.

**TABLE 1.** Species of *Micardia* and their distributions

Species	Distributions
<i>M. argentata</i> Butler, 1878	China (Zhejiang, Jiangxi (Kiukiang =Jiujiang)); Japan; Korea.
<i>M. argentoidea</i> Berio, 1954	Madagascar.
<i>M. distincta</i> Chen & Xue, 2012	China (Sichuan).
<i>M. ikoly</i> Viette, 1982	Madagascar.
<i>M. itremo</i> Viette, 1982	Madagascar.
<i>M. minuta</i> Chen & Xue, 2012	China (Yunnan).
<i>M. munda</i> Leech, 1900	China (Sichuan, Chongqing); Myanmar.
<i>M. pallens</i> Chen & Xue, 2012	China (Hubei).
<i>M. pulcherrima</i> (Moore, 1867)	Bhutan; China (Tibet); India (“Sikhim”).
<i>M. pulchra</i> Butler, 1878	Ceylon; Japan; Korea; Russia (Kurile Island).
<i>M. quadrilinea</i> Scriba, 1921	Japan.
<i>M. simplicissima</i> Berio, 1973	Myanmar.
<i>M. terracottoides</i> Berio, 1954	Madagascar.
<i>M. yixingensis</i> sp. nov.	China (Jiangsu).



**FIGURE 2.** Adults of *Micardia yixingensis* sp. nov. A–C: male, holotype: A, habitus, upperside; B, habitus, underside; C, left forewing, upperside; D–F: female, paratype: D, habitus, upperside; E, habitus, underside; F, left forewing, upperside; G–H, female, paratype: wing venations: G, right forewing; H, right hind wing.

**Abdomen.** White dorsally, fuscous ventrally.

**Male genitalia.** Uncus slender, curved downwards, distal half densely setose, tip subacute. Tegumen irregular in lateral view, with anterior margin sinuate; peniculus strongly produced ventrad, heavily setose; vinculum slightly longer than tegumen in lateral view, saccus short and small. Juxta in lateral view subrectangular, with base narrow; in caudal view, subquadrate, with upper portion slightly narrower than lower portion. Valvae symmetric generally, in lateral view each with large base and then progressively narrowed subacute apex, curved upwards; in caudal view each with distal

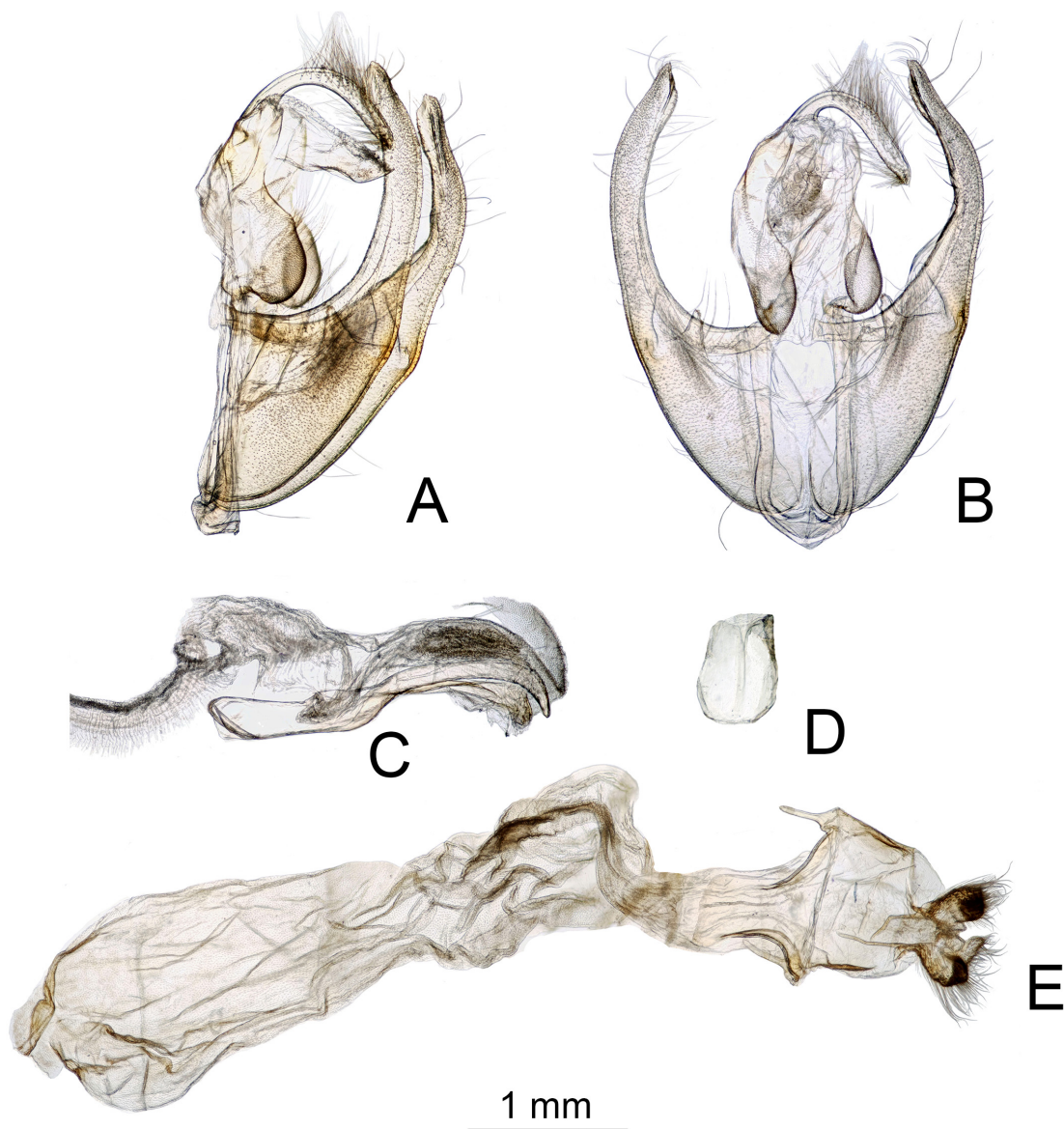
half curved mesad, with inner side depressed; costa strongly sclerotized; harpe acutely triangular, setose. Aedeagus sclerotized ventrally, in lateral view distal half curved upwards with apex curved downwards; ductus ejaculatorius arising from basal 1/3 of aedeagus.

**Female genitalia.** Anal papillae setose, in lateral view subtriangular with outer margin straight; anterior apophyses shorter and thicker than posterior apophyses; lamella antevaginalis somewhat trapezoidal, ductus bursae lightly sclerotized and striate, dotted with granules; corpus bursae cylindrical, about 2× length of ductus bursae, with base slightly bulged, about 2–3× width of ductus bursae, posteriorly with accessory bursa connected.

**Materials examined.** Holotype male, China, Jiangsu Province, Yixing city, Zhangzhu town, Bamboo groves of Shengzhuang village, 31.214°N, 119.708°E, 9 May, 2017, by light trap, collected by Zhaowen Liang. Paratype 1 female, same collection data as the holotype.

**Distribution.** China (Jiangsu).

**Etymology.** The new species is named after the city of Yixing, Jiangsu province, where the types were collected.



**FIGURE 3.** External genitalia of *Micardia yixingensis* sp. nov. A–D: male genitalia; A, lateral; B, caudal; C, aedeagus, lateral; D, juxta, caudal; E, female genitalia, ventral.

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