

## A new species of *Euplexidia* HAMPSON, 1896 (Lepidoptera: Noctuidae) from Vietnam

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**Abstract:** A short taxonomic note is given on the genus *Euplexidia* HAMPSON, 1896, including the description of a new species (*Euplexidia zolotuhini* spec. nov.).

### Introduction

The genus *Euplexidia* HAMPSON, 1896 (type species *E. noctuiformis* HAMPSON, 1896) is comprised of 21 known species (originally *Euplexidia thailandica* YOSHIMOTO, 1987 was described as a subspecies of *E. literata* (MOORE, 1882)) including the six new species described by GYULAI, RONKAY, RONKAY & SALDAITIS in 2013. *Euplexidia* spp. have a southeast Asiatic distribution, inhabiting the central and southern provinces of China and throughout the monsoon influenced regions of the Himalaya, from Pakistan to Vietnam, with two endemic species in Taiwan and one in Borneo and one in Sumatra. One member of the genus, *E. angusta* YOSHIMOTO, 1987 (formerly erroneously identified and published as *Euplexidia literata* (MOORE, 1882) (SUGI, 1982), occurs as far north as Japan. Sympatric occurrence in this stenochorous group is known only accidentally (e.g. *E. noctuiformis* – *E. yoshimotoi* GYULAI, RONKAY, RONKAY & SALDAITIS 2013, species pair) (GYULAI, RONKAY, RONKAY & SALDAITIS 2013). The largest species (38-43 mm wingspan) of the genus belong to the *E. noctuiformis* lineage, while the *E. angusta*, *E. literata* (= *E. illiterata* YOSHIMOTO, 1987) (HREBLAY & RONKAY, 1998) and *E. albiguttata* WARREN, 1912 lineages generally consist of rather smaller species. The smallest species (25-36 mm, mostly 28-32 mm) of the genus are the members of the *E. venosa* species group, consisting of *E. venosa* MOORE, 1882 (= *jiriensis* (YOSHIMOTO, 1994) (HREBLAY & RONKAY, 1998)), *E. benescripta* (PROUT, 1928), *E. xueshana* GYULAI, RONKAY, RONKAY & SALDAITIS 2013 and *E. kucerai* GYULAI, RONKAY, RONKAY & SALDAITIS 2013), and the *E. periculosa* group – *E. periculosa* HREBLAY & RONKAY, 1998, *E. actinea* HREBLAY & RONKAY, 1998, *E. youya* GYULAI, RONKAY & SALDAITIS 2011 and *E. zolotuhini* spec. nov., described here. All species within the separate lineages in *Euplexidia* are very similar in their external features, wing pattern and genitalia, with precise determination possible only (e.g. *E. kucerai*) by detailed genitalia studies. Nomenclature used in this study relies upon taxonomical experts and relevant literature (BOURSIN 1964; CHEN 1999; DRAUDT 1950; GYULAI & all. 2011; HAMPSON 1894; HAMPSON 1908; HOLLOWAY 1976; HREBLAY & RONKAY 1999; NYE 1975; POOLE 1989; WARREN 1912; WARREN 1913).

### *Euplexidia zolotuhini* spec. nov.

(Figs 1, 2, 7-10)

#### Type material.

**Holotype:** ♂ (Fig. 1), N. Vietnam, Lang Son Prov., Loc Binh Distr., Mau Son tourist area, 21,51'N, 106,55'E, 1130 m, 19-20. XI. 2012, V. ZOLOTUHIN leg., coll. P. GYULAI (to be deposited in the Hungarian Natural History Museum, Budapest, Hungary); (Slide No. GYP 3794m).

**Paratypes:** 2 males with the same data, deposited in collection A. SALDAITIS, Vilnius, Lithuania; Slide No. GYP 3695 m.

**Diagnosis and description.** Wingspan 29–31 mm. Superficially, the new species resembles all known species of the *E. venosa* (apart from *E. kucerai*) and *E. periculosa* lineages. However, features of the male genitalia - the short, basally broad, distally evenly tapered and arched valva; the shape of the cucullus; and the elongated ventro-lateral sclerotized ribbon of the vesica which consists of minute cornuti, show clearly that *E. zolotuhini* spec. nov. (Figs 1, 2) belongs in the *E. periculosa* group. The forewing pattern is more like that found within the *E. periculosa* lineage rather than in the *E. venosa* group. Reliable identification is possible only by examination of the genitalia, but consideration of the distribution range and locality can

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also be indicative of the species' identity. The shared features of the new species and the allied members of the two lineages are the light brownish forewing ground colour with varying degrees of pinkish or cupreous shading, particularly in the subterminal field; greenish when fresh, but yellowing noctuid maculation, apart from the prominent brown claviform stigma; narrow, variegated brown terminal and costal fields with greenish irroration on fresh specimens; dark brown fine transverse lines including distinct double ante- and postmedial lines; a small, conspicuous black patch in the outer termen of the medial area, bordering from inward a clear small, semilunar or somewhat quadrangular, yellowish or greenish patch, which is characteristic of all but one species of *Euplexidia*, and the brown hindwing with a fine dark brown stigma. Recognizable differences from the closely allied species are as follows: *E. zolotuhini* **spec. nov.** (Figs 1, 2) is somewhat larger than *E. periculosa* (Fig. 3) (30-31 mm, versus 25-29 mm), the postmedial line is less wavy and is especially straighter in the lower segment, the dark patch of the termen is longer and smaller, the claviform stigma larger and the hindwing is a more unicolorous brown without the lighter inner area; from *E. actinea* (Fig. 5), it has a less pointed forewing apex, much larger claviform stigma, less brown suffused forewing, particularly in the terminal area, and a unicolorous brown hindwing without the inner lighter area; from *E. youya* (Fig. 4) it differs in the narrower forewing with less elongate pointed apex, the lack of the pinkish shade in the subterminal area, the much larger claviform stigma and the darker, unicolorous brown hindwing. From the similarly sized but more distant relatives of the *E. venosa* lineage, the new species can be distinguished by the following differences: from *E. venosa* the most striking external difference is in the postmedial line, the lower third of which is outwardly angled but not wavy, the darker, unicolorous brown hindwing; compared with *E. benescripta*, the new species is larger, with conspicuously larger orbicular and reniform stigmata, and more variegated forewing pattern with less brown suffusion; from *E. xueshana*, it differs in the more elongated forewing, the less sinuous postmedial line and the darker, unicolorous brown hindwing. Finally, *E. zolotuhini* **spec. nov.** is most easily distinguished from *E. kucerai*, by the much narrower wings, the yellow coloured orbicular and reniform stigmata, without the intensive dark pinkish, violet irroration of the forewing and much darker, unicolorous brown hindwing. While these external characters are generally enough to distinguish the new species review of the genitalia can easily confirm the identity.

**Male genitalia.** The genitalia of *E. zolotuhini* **spec. nov.** (Figs 7-10) resemble those of its congeners in the *E. periculosa* species group and strictly differs from the externally similar members of the *E. venosa* lineage. The shared features of the new species and the allied members of the *E. periculosa* lineage are the short, basally broad, distally evenly, but less tapered, arched valva and the elongated ventro-lateral sclerotized ribbon with minute cornuti of the vesica. It cannot be confused with the *E. periculosa* (Figs 11, 12) – *E. youya* (Figs 13, 14) species pair because of the different shaped, dorsally much shorter sacculus, the distally narrower valva, the dorsal edge of which is evenly arched and in particular the evenly symmetrical bifurcate cucullus. The aedeagus of *E. zolotuhini* **spec. nov.** (Figs 8, 10) is somewhat longer, the sclerotization of the carina is more extensive than in *E. periculosa* (Fig. 12) of which has a knob-like, shorter carinal extension, the ribbon-like field of the spacious, dorsally recurved vesica consists of rows of tiny cornuti, as opposed to a single row of larger cornuti, as in *E. periculosa*). The shape of the valva (Figs 7, 9) of *E. zolotuhini* **spec. nov.** is more like those of the *E. periculosa* (Fig. 11) – *E. youya* (Fig. 13) species pair than that of *E. actinea* (Fig. 15), which has distally much broader valva but with also somewhat bifurcate cucullus. The juxta of the new species is ventrally more broadly subdeltoid, the sacculus is dorsally much shorter, the valva distally much narrower, and on the dorsal edge evenly arched concave. The fine dense, long setose fields of the sacculus in *E. periculosa* and of the dorsal costa of the valva in *E. actinea* are apparently lacking in *E. zolotuhini* **spec. nov.** In the new species sclerotization of the carina is stronger and the carina extension is longer than in *E. actinea*. It is also worth mentioning that the new species cannot be confused with the externally somewhat similar species of the *E. venosa* lineage, which have distally more elongated, arcuate, slender valva with a pointed or horned apical part, and lack the sclerotized ribbon or cornuti row in the vesica tube.

**Biology and distribution.** Only known from three males, collected at light at Mau Son in far northeastern Vietnam, Lang Son Province. All three specimens were collected during two very foggy nights at the end of November at an altitude of 1100 m. The new species was encountered in an area under strong anthropogenic pressure with little remaining natural vegetation. The locality is dominated by planted secondary species, such as palms, crotones (*Codiaeum*), *Dieffenbachia* and various citrus crops.

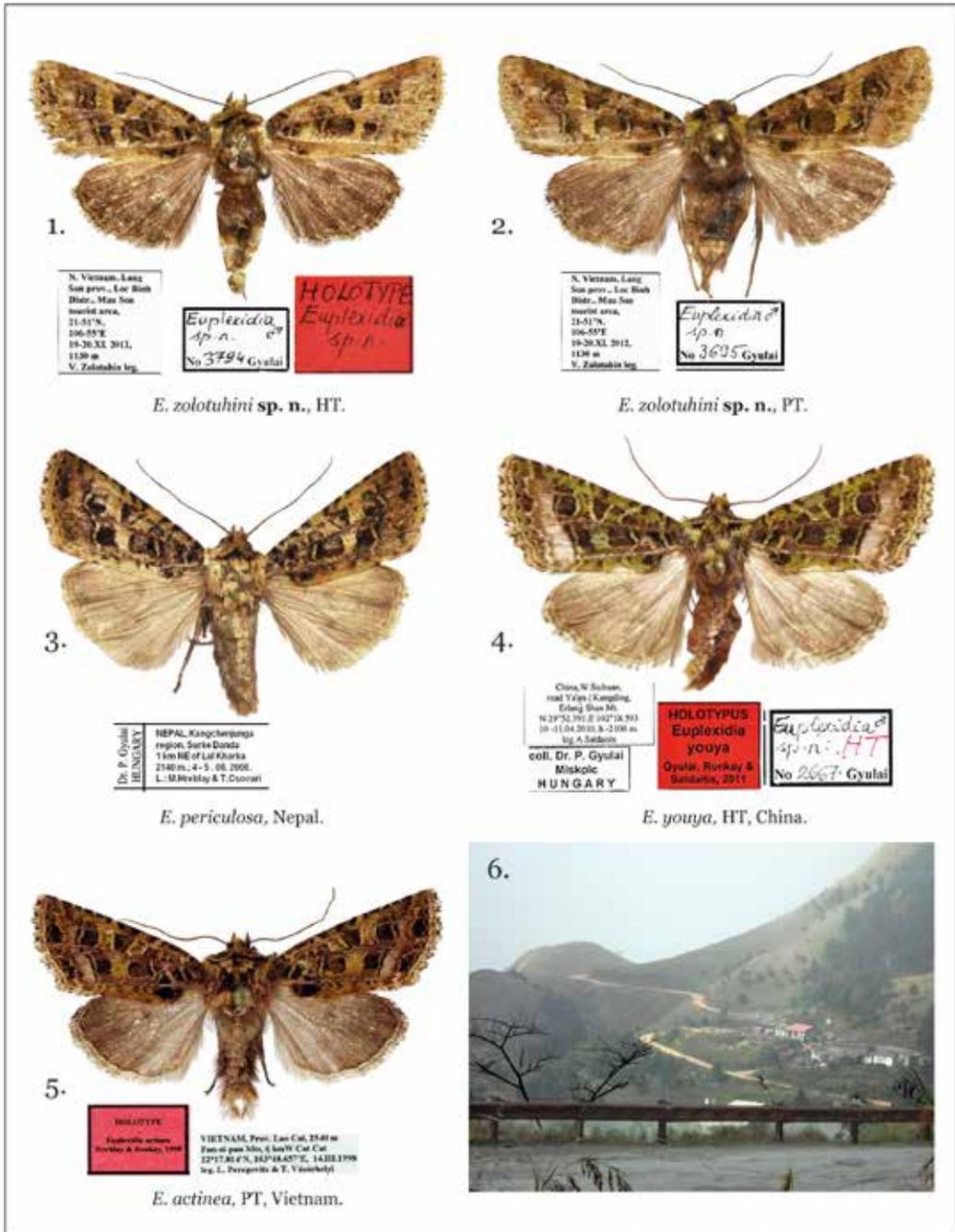
**Etymology.** The new species is named after the prominent Russian lepidopterist, Mr. Vadim ZOLOTUHIN for his contributions to entomology.

## Acknowledgements

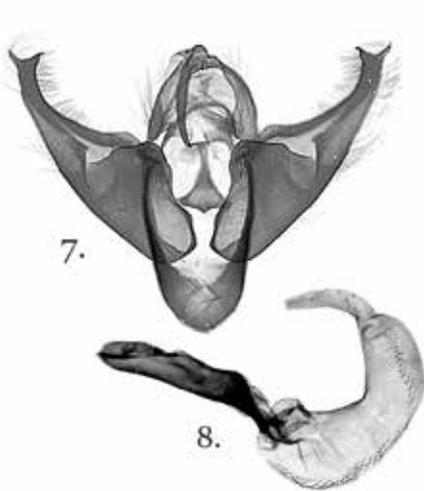
The authors are grateful to Robert BORTH (Milwaukee, United States) for English grammar suggestions, Adrienne GYULAI-GARAI (Miskolc, Hungary) and Tomas ZUBACIKAS (Vilnius, Lithuania) for their photographic assistance and to Jolanta RIMSÄITE (Vilnius, Lithuania) for taxonomy suggestions. We thank Gábor RONKAY (Budapest, Hungary) and László RONKAY (Budapest, Hungary) for their fine images of adult and genitalia of *E. actinea* and Vadim ZOLOTUHIN (Uljanovsk, Russia) for kindly loaning his specimens and providing the illustration of the biotope.

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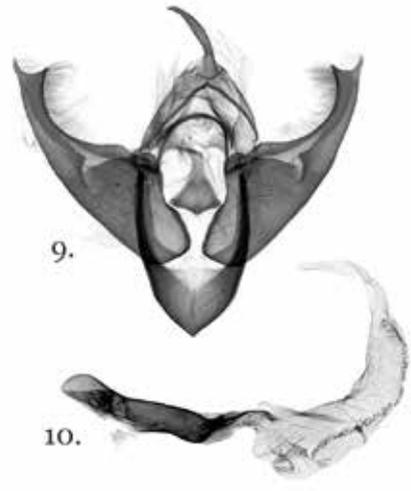
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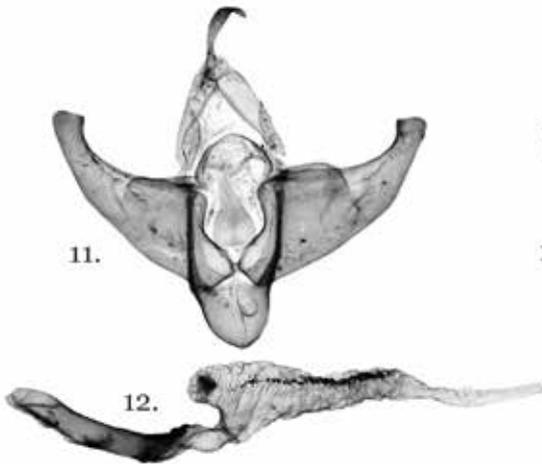
**Figures 1-5.** *Euplexidia* spp. adults. 1. *E. zolotuhini* **spec. nov.**, male, holotype, Vietnam, Lang Son (coll. P. GYULAI, Hung. Nat. Mus.); 2. *E. zolotuhini* **spec. nov.**, male, paratype, Vietnam, Lang Son (coll. A. SALDAITIS); 3. *E. periculosa*, male, Nepal, Kangchenyunga (coll. P. GYULAI); 4. *E. yooya*, holotype, male, China, Sichuan (coll. P. GYULAI, Hung. Nat. Mus.); 5. *E. actinea*, paratype, Vietnam, Lao Cai, (coll. Hung. Nat. Museum); 6. Area under strong anthropogenic pressure – the biotope of *E. zolotuhini* **spec. nov.**, N. Vietnam, Lang Son prov., Loc Binh Distr., Mau Son tourist area (V. ZOLOTUHIN picture).



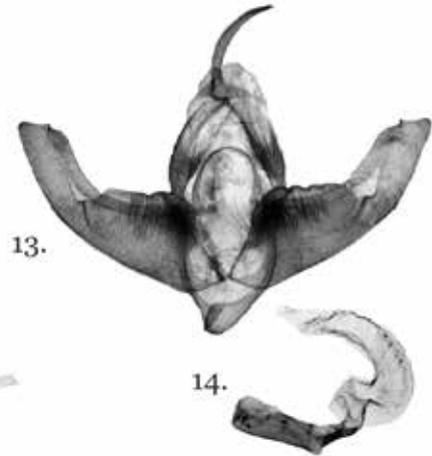
GYP 3794 *E. zolotuhini* sp. n., HT.



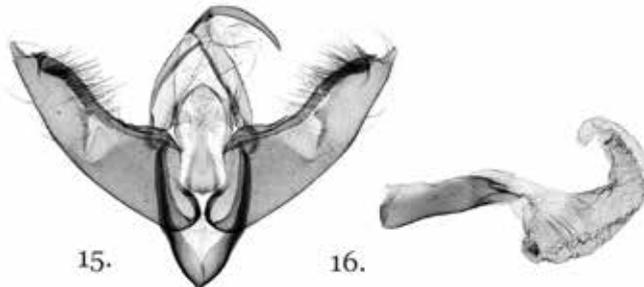
GYP 3695 *E. zolotuhini* sp. n., PT.



GYP 2665 *E. periculosa*, Nepal.



GYP 2667 *E. youya*, HT, China.



RL 6172 *E. actinea*, PT, Vietnam.

**Figures 7–16.** *Euplexidia* spp. males genitalia. 7. *E. zolotuhini* spec. nov., holotype, capsule, Vietnam, Lang Son, slide no. GYP 3794; 8. *E. zolotuhini* spec. nov., holotype, aedeagus, Vietnam, Lang Son, slide no. GYP 3794; 9. *E. zolotuhini* spec. nov., paratype, capsule, Vietnam, Lang Son, slide no. GYP 3695; 10. *E. zolotuhini* spec. nov., paratype, aedeagus, Vietnam, Lang Son, slide no. GYP 3695; 11. *E. periculosa*, capsule, Nepal, Kanchenyunga, slide no. GYP 2665; 12. *E. periculosa*, aedeagus, Nepal, Kanchenyunga, slide no. GYP 2665; 13. *E. youya*, holotype, capsule, China, Sichuan, slide no. GYP 2667; 14. *E. youya*, holotype, aedeagus, China, Sichuan, slide no. GYP 2667; 15. *E. actinea*, paratype, capsule, Vietnam, Lao Cai, slide no. RL 6172; 16. *E. actinea*, paratype, aedeagus, Vietnam, Lao Cai, slide no. RL 6172.

