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# A NEW SPECIES OF *ALLOASTEROPETES* KISHIDA & MACHIJIMA, 1994 FROM BHUTAN (LEPIDOPTERA, NOCTUIDAE, AGARISTINAE)

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**Abstract:** A new species of *Alloasteropetes, A. bhutanissa* **sp. n.** is described**.** Illustrations of the male and female genitalia of the new species and its closely relatives are provided. A diagnostic comparison is made with *Alloasteropetes parallela* (Sugi, 1996).

**Key words:** Lepidoptera, Noctuidae, Agaristinae, new species, Himalaya, Bhutan

## INTRODUCTION

*Alloasteropetes* Kishida & Machijima, 1994 is a genus of the subfamily *Agaristinae* distributed in Himalayas, continental China, Taiwan and Vietnam. This small genus has been continuously studied and enriched with descriptions of new species over the past three decades (KISHIDA & MACHIJIMA 1994, OWADA et al. 2003, 2006, OWADA & WU 2024, OWADA et al. 2011) and with transferring of the type species of *Spectronissa* Sugi, 1996. It includes five species, together with the newly discovered taxon; these five species can be tentatively arranged into two groups based on certain features of the male genitalia. The members of the *olivacea* species-group are *A. olivacea* Kishida & Machijima, 1994, *A. guangdongensis* Owada, Kishida & Wang, 2006 and *A. paradisea* Kishida & Owada, 2003, while the *parallela* species-group includes *A. parallela* (Sugi, 1996) and *A. bhutanissa* **sp. n**. Present paper contains the description of a new species which can be provisionally attributed to the *A. parallela* group.

**Abbreviations:** GR = collection of Gábor Ronkay; RL = slide made by László Ronkay; OP = genitalia slide prepared by/collection of Oleg Pekarsky (Budapest, Hungary).

## SYSTEMATIC PART

### *Alloasteropetes bhutanissa* sp. n.

(Figs 1, 2)

**Type material. Holotype:** Male (Fig. 1), Bhutan, Trongsa, Chendebji, 27°30'N 90°18'E 2500 m, 22.X.2009, leg. K. Richelgas, slide OP10353m (coll. O. Pekarsky).

**Paratypes:** 4♀, same data as Holotype, slide OP10354f (coll. O. Pekarsky).

**Etymology**. The species name refers to the country name where it was collected.

**Diagnosis.** Externally the new species resembles *A. olivacea* (Figs 5, 6) and *A. guangdongensis* (OWADA et al. 2006: Fig. 1) but the genital structures of *A. bhutanissa* are considerably different from those of the two externally similar species, displaying the closest relationship with *A. parallela* (Figs 3, 4). *Alloasteropetes bhutanissa* **sp. n.** (Figs 1, 2) can be distinguished externally from *A. olivacea*, *A. guangdongensis* by its delicate beige brown ground colour of the forewings, the more acutely angled postmedial and subterminal crosslines, the more unicolorous and more diffuse pale stripes and crossline and the broader and unicolorous submarginal area and fringes; the larger and more rounded hindwing discal spot and the shorter dark marginal area which does not extend towards the inner edge of the wing. The new species is easily separable from the related *A. parallela* by its narrower and more acutely pointed forewing, the complete absence of the double antemedial crossline, the much more simple postmedial and subterminal lines and the reduced pale stripes below and outwards the cell of the wing; the hindwing discal spot is similarly marked in the two species but the marginal dark field is remarkably shorter in *A. bhutanissa* than in *A. parallela*.

In the male genitalia (Fig. 9), it differs from its sister species by the more curved uncus, the subtriangular juxta, the distally tapering, more elongated valvae with shortly triangular, ventrally curved cucullus, the much longer sacculus, the small, rather triangle-shaped basal plate of clasper, the much larger, robust aedeagus with densely serrate-dentate carinal plates, the presence of a characteristic tapering sclerotized and dentate plate in the posterior area of the vesica (an autapomorphy of the species), and the thickly tubular, long terminal tube. In *A. parallela* (Fig. 10) the uncus is less S-shaped curved, the juxta is rhomboidal with fine apical cleft, the valvae are distally widened, the sacculus is shorter, the basal plate of clasper is wide, continuing in a broad and slightly S-shaped, finely tipped erect process, the cucullus is small, with truncated apex and the ventral, rounded triangular valval lobe is positioned subapically. The aedeagus of *A. parallela* is small, narrow, rather S-shaped, with sclerotised carinal plate, the vesica is short, narrowly tubular, entirely membranous. The clasping apparatuses of *A. olivacea* (Fig. 11), *A. guangdongensis* (OWADA et al. 2006: Fig. 4) and *A. paradisea* (Fig. 12) are strikingly different from that of *A. bhutanissa*, and are characterized by broad, strongly bilobate valvae due to the prominent saccular extensions. The variably broadly falciform cuculli and the long and thin, straight or finely curved erect part of clasper.

Female genitalia of the new species are the largest and longest organ among the genus; it can be characterised by the broad antrum, the proximally tapering,

rather funnel-like ductus bursae, and the long, sacculiform corpus bursae (Fig. 13). In *A. parallela* (Fig. 14) and *A. olivacea* (Fig. 15), the entire organs are considerable smaller and shorter, having smaller, narrower antrum and ductus bursae while in *A. paradisea* (Fig. 16) the antrum is smaller and infundibuliform, the ductus bursae is longer and medially broadened, characteristically S-shaped, and the corpus bursae is elliptical-ovoid.

**Description** (Figs 1, 2). External morphology. Wingspan 41–43 mm. Male antennae ciliate. Head, collar and mesothorax beige; thorax olive-green/grey/brown; tegulae and metathoracic tufts red-brown; abdomen yellowish-brown with brown patches of dorsal crest. Forewing elongated, narrow, costa straight, apex finely pointed; outer margin rounded, more oblique in lower part. Ground colour beige-brown with olive-green and brown areas; wing pattern well-developed, typical for the genus, characterized by dominance of the longitudinal lines and streaks but the antemedial crossline is fully reduced and the postmedial and subterminal crosslines are incomplete. Hindwing bright yellow with wide, dark brown outer band being abruptly ended at cubital veins, tornal area completely yellow; discal spot large, rounded, black; cilia yellow.

**Male genitalia** (Fig. 4). Uncus short, curved at base, flattened distally, its tip hooked, finely pointed; tegumen slender, longer than vinculum; vinculum narrowly U-shaped; juxta subtriangular; transtilla broad, partly sclerotised. Valva elongated, gradually tapering toward small, triangular, arched cucullus; costal margin almost straight, ventral margin concave subapically; clasper represented by its small, triangular basal plate only. Aedeagus robust, rather short, moderately curved, caecum thin, subcarinal area thickened, carinal plates densely dentate-scobinate. Vesica membranous, its main chamber small, cylindrical, narrowing posteriorly with tapering sclerotized, dentate plate bordering long, evenly wide, membranous distal tube.

**Female genitalia** (Fig. 13). Ovipositor large, moderately broad, cylindrical anteriorly, with tapering posterior part, papillae anales hairy with short, thin setae; apophyses anteriores straight, thin, long, apophyses posteriores straight, shorter and thicker than anterior ones. Antrum large, wide, moderately sclerotized; ductus bursae large, wrinkled, tapering towards appendix bursae; corpus bursae sacculiform, membranous.

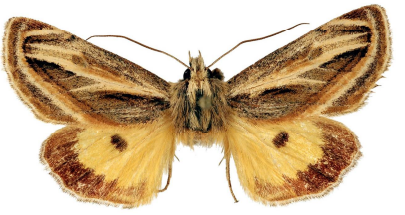
**Distribution.** The new species known only from its type locality in central part of Bhutan.

1 *A. bhutanissa* **sp. n.** ♂, HT, Bhutan, OP10353m, 41 mm

2 *A. bhutanissa* sp. n. ♀, PT, Bhutan, OP10354f, 43 mm

3 *A. parallela*. ♂, China, Shaanxi, OP5949m, 41 mm

4 *A. parallela* ♀, China, Shaanxi, RL7406f, 46 mm



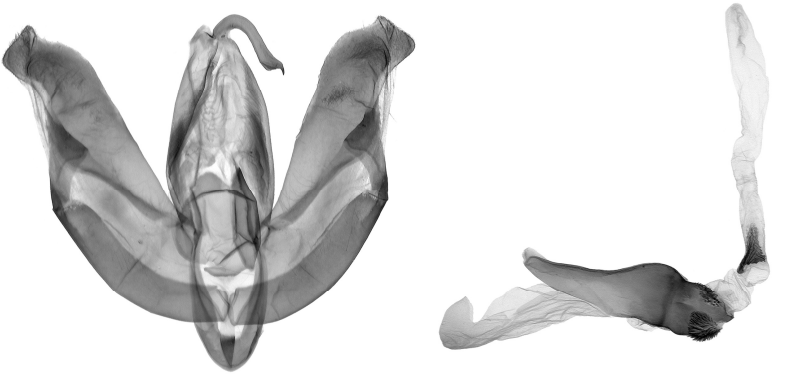
5 *A. olivacea* ♂, Taiwan, Ilan, RL7452m, 36 mm

6 *A. olivacea* ♀, Taiwan, Fushan, RL7404f, 38 mm

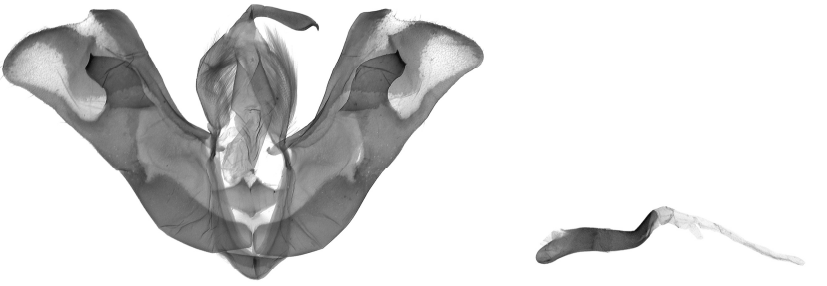
7 *A. paradisea* ♂, China, Guangxi, OP5950m, 40 mm

8 *A. paradisea* ♀, China, Fujian, OP5951f, 42 mm

**Figures 1–8**. *Alloasteropetes* spp, adults. **1)** *A. bhutanissa* **sp. n.**, male, HT, Bhutan, Trongsa (OP); **2)** *A. bhutanissa* **sp. n.**, female, PT, Bhutan, Trongsa (OP); **3)** *A. parallela*, male, China, Shaanxi (GR); **4)** *A. parallela*, female, China, Shaanxi (GR); **5)** *A. olivacea*, male, Taiwan (coll. & photo GR); **6)** *A. olivacea*, female, Taiwan (coll. & photo GR); **7)** *A. paradisea*, male, China, Guangxi (GR); **8)** *A. paradisea*, female, China, Fujian (GR).

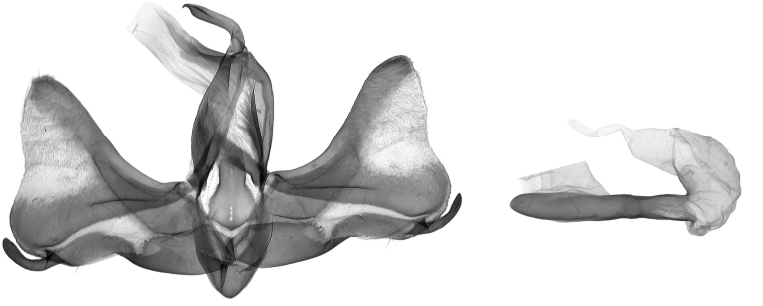


9 *A. bhutanissa* **sp. n.**, HT, Bhutan, OP10353m



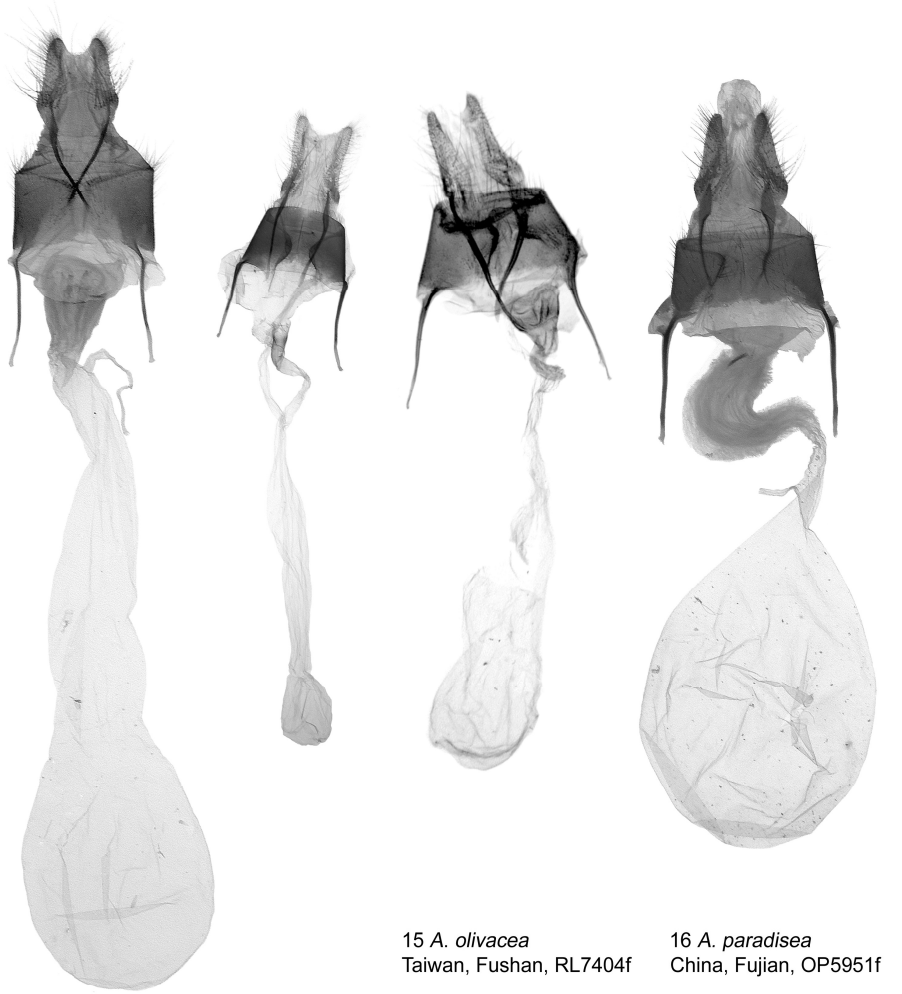
10 *A. parallela*, China, Shaanxi, OP5949m

11 *A. olivacea*, Taiwan, Ilan, RL7452m



12 *A. paradisea*, China, Guangxi, OP5950m

**Figures 9–12**. *Alloasteropetes* spp, male genitalia. **9)** *A. bhutanissa* **sp. n.**, HT, Bhutan, Trongsa (OP); **10)** *A. parallela*, China, Shaanxi (GR); **11)** *A. olivacea*, Taiwan (GR); **12)** *A. paradisea*, China, Guangxi (GR).



13 *A. bhutanissa* **sp. n.**, PT, Bhutan, OP10354f

14 *A. parallela* China, Shaanxi, RL7406f

15 *A. olivacea* Taiwan, Fushan, RL7404f

16 *A. paradisea* China, Fujian, OP5951f

**Figures 13–16.** *Alloasteropetes* spp, female genitalia. **13)** *A. bhutanissa* **sp. n.**, PT, Bhutan (OP); **14)** *A. parallela*, China, Shaanxi (GR); **15)** *A. olivacea*, Taiwan (GR); **16)** *A. paradisea*, China, Fujian (GR).

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