

Description of the female of *Hadennia kima* HOLLOWAY, 2008 (Lepidoptera: Erebidae, Herminiinae)

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Abstract

The hitherto unknown female of *Hadennia kima* HOLLOWAY, 2008 is described. New data are added to the bionomics of the species and the variation of the male genitalia. With eight figures.

Zusammenfassung

Das bisher unbekannte Weibchen von *Hadennia kima* HOLLOWAY, 2008 wird beschrieben. Neue Daten werden zur Ökologie der Art und zu den Variationen der männlichen Genitalien hinzugefügt. Mit acht Abbildungen.

Key words: Oriental Region, Sumatra, Borneo, submontane rainforest, cornuti, appendix bursae.

Introduction

The genus *Hadennia*, erected by MOORE (1885), is a diverse group, distributed mainly in the Oriental Region, with some species extending to the Pacific coasts of the Palearctic Region. The species, *H. kima* was described by HOLLOWAY (2008), who assessed its generic placement as doubtful, due to the highly atypical male genitalia, as the clasping apparatus lacks the spherical structure between bases of valvae, and bears a large costal process. The aim of this publication is to give the description of the hitherto unknown female of this species which may clarify the taxonomic relegation of the species.

Materials and Methods

The examined specimens belong to a huge material collected by the late Dr E.W. Diehl. They were incorporated into the collection of the Heterocera Sumatrana Society but, later on, these specimens were donated to the Hungarian Natural History Museum, Budapest (HNHM).

Genital dissection was made from dry, pinned and mounted specimens, via the conventional method (i.e. maceration in KOH solution). Permanent slides were prepared, the chitinous structures were stained with eosine and mounted in Euparal.

The slides were digitised with a Nikon Super Coolscan 5000 scanner, and the adults were photographed with an Olympus B 101 camera. The program Adobe Photoshop CS2 was used for adjusting the images.

Systematic part

Hadennia kima HOLLOWAY, 2008

"Hadennia" kima HOLLOWAY, 2008: Malayan Nature Journal 60 (1–4): p. 96, fig. 233, pl. 3.

Holotype: male, Sarawak: Gunung Mulu Nat. Park, R.G.S. Exped. 1977-8 (J.D. HOLLOWAY *et al.*), Site 13, February, Camp 2, Mulu, 50 m, 401464, mixed dipterocarp forest, BM noctuid slide 19393; deposited in coll. BMNH, London.

Material examined: Indonesia, Sumatra, coll. HNHM: 1 f: Prapat HW 3, 1983.V.15-28, leg. Dr. Diehl; 1 f: same locality but 30.XI.1982; 1 f: same locality but VIII.1982, slide No. TB1125f; 1 f: Prapat HW 2, 12.IX.[19]85, leg. Dr. Diehl; 2 m: Aek Tarum, Gunung Malayu, 1983.VIII.15, leg. Dr. Diehl, slide No. TB1126m; 1 m: Dolok Merangir, [without date], leg. Dr. Diehl; 1 m: Sindar Raya, 17.8.1979, Schintlmeister leg.; 1 m: Dairi-E, 22.8.[19]81, leg. Dr. Diehl, slide No. TB1341m; 1 m: Dairi, 1980.VII.16., leg. Dr. Diehl; 1 m: Sitahoan, 3./4.10.1981, leg. Dr. Diehl; 1 m: same locality but 3.12.1981; 2 m: Prapat HW 2, Toba Lake vic., 1050 m, 19.IX.1985, leg. Dr. Diehl; 1 m: Prapat HW 3, 1050 m, 18-23.XI.1981., leg. Schintlmeister; 1 m: same locality but 25.6.1984, leg. Dr. Diehl; 1 m: same locality but 28.9.1984; 1 m: same locality but 18.X.1982; 1 m: same locality but 30.X.1982; 1 m: same locality but 1983.II.28-III.9.

Description of the female

External appearance (Figs. 1, 2, 4). Wingspan 33–40 mm, length of forewing 16.5–20 mm. Antennae filiform, with cilia and setae arising from the ventral quarter of each segment; setae 1.5 times longer than, cilia half as long as the diameter of flagellum. Labial palps moderately long; 3rd segment straight, narrow, slightly shorter than 2nd, directed upwards at obtuse angle; 2nd segment hardly curved upwards, directed forward. Body rusty brown, abdomen slightly lighter and more greyish than the concolorous head and thorax. Wings with characteristic pattern. Forewing: basal half light brownish grey, with some reddish shade and slight bluish tinge; antemedial line straight, perpendicular to dorsum, dark rusty red in colour; medial line parallel with antemedial, very narrow, disappearing below cell; postmedial line varying from straight and slant to slightly curved in shape, its colour like that of antemedial; subterminal line narrow, light bluish grey, arising from apex, making a huge protrusion towards termen between veins M2 and Cu1; terminal line dark grey, zig-zagging; area between postmedial and subterminal lines dark rusty red; terminal area and fringe light bluish grey; orbicular stigma tiny, dark brown; discal stigma very narrow, dark rusty red, lunular. Hindwing: ground-colour light brownish grey, with some reddish shade; markings present between tornus and vein M2, postmedial line straight, dark rusty red, bordered by concolorous trapezoidal fields; termen and fringe light bluish grey, with zig-zagging dark grey terminal line. Underside of wings brown with whitish fragmented transverse lines.

The sexes are similar in pattern and size (males: wingspan 31.5–38 mm, length of forewing 15.5–19 mm) but cilia and setae of antenna are shorter in female than in male. On the wings the black markings of male (Fig. 3) are replaced by dark rusty red in female.

Genitalia (Fig. 7): Apophyses short, like in most *Hadennia* species. Sternum A8 bilobed; sinus broad and deep. Sterigma a smooth, transverse narrow trapezoidal plate. Ductus bursae moderately long and broad. Corpus bursae small, globular, densely covered with tiny grains, mid third section bordered by narrow, transverse, sparsely scobinate bands. A small, narrow cervix at posterior third of corpus bursae.

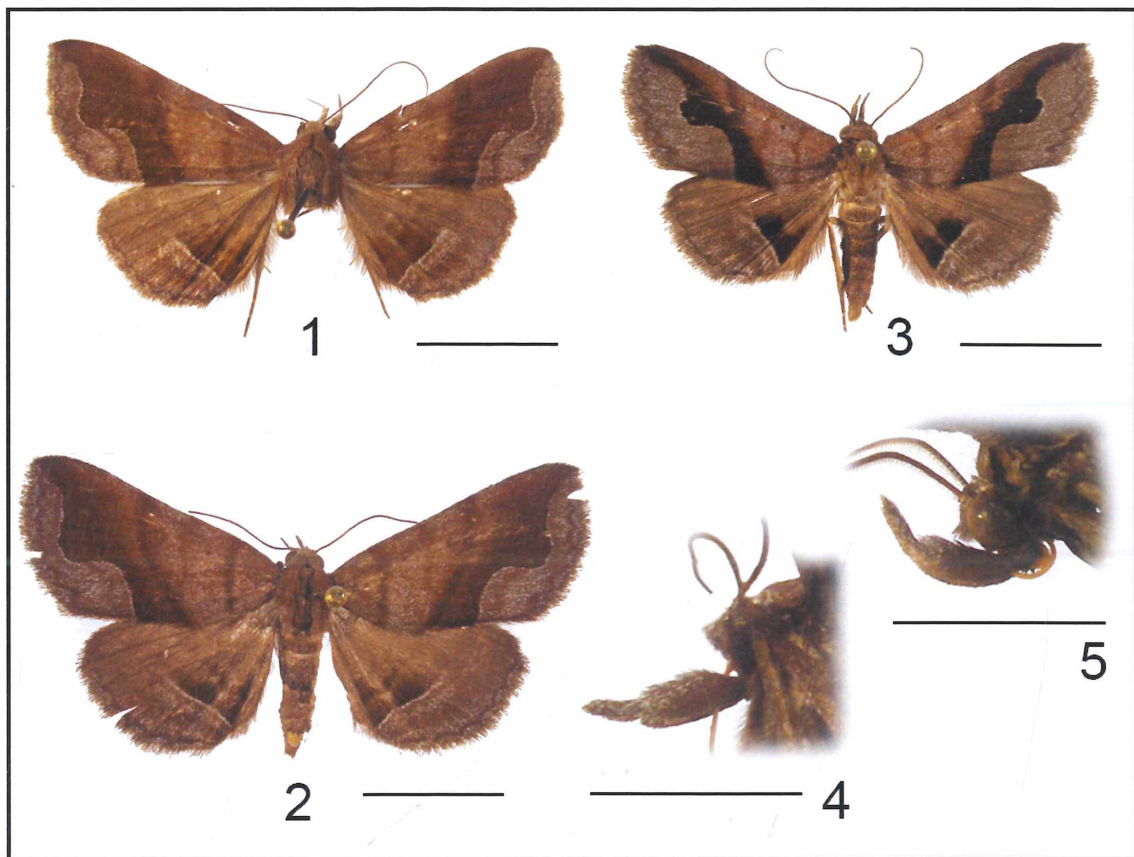


Fig. 1: *Hadennia kimae* HOLLOWAY, 2008 imago, female (Sumatra, Prapat, HW 3; TB1125f). **Fig. 2:** *Hadennia kimae* HOLLOWAY, 2008 imago, female (Sumatra, Prapat, HW 3). **Fig. 3:** *Hadennia kimae* HOLLOWAY, 2008 imago, male (Sumatra, Aek Tarum, Gunung Malayu); scale bars to Figs. 1–3: 10 mm (Figs. 1–3 are to scale). **Fig. 4:** labial palps of *Hadennia kimae* HOLLOWAY, 2008 female; **Fig. 5:** labial palps of *Hadennia kimae* HOLLOWAY, 2008 male; scale bars to Figs. 4–5: 5 mm (Figs. 4 and 5 are to scale).

Appendix present: smooth, arising from anterior tip of corpus bursae, built by a broad tubular and a narrow, ovoid sac-like part. The ductus bursae and the corpus bursae match well in shape to the aedeagus and the vesica, respectively. In addition, the cornuti can be encompassed by the appendix.

Diagnosis

The female genitalia are similar in overall structure and proportion to those of *H. subapicibrunnea* HOLLOWAY, 1976 but the corpus bursae is scobinate and bears an appendix, while in the latter species the whole bursa is smooth and lacks the appendix. *Hadennia incompleta* (PROUT, 1928) has an ovoid appendix at the anterior tip of corpus bursae, moreover, its corpus bursae is partially densely scobinate; although the very broad ductus bursae and the lack of the tubular part of the appendix are dissimilar to *H. kimae*.

Distribution

Borneo, Sumatra (new for this area), Singapore (LEONG 2009), Thailand (KONONENKO & PINRATANA 2013).

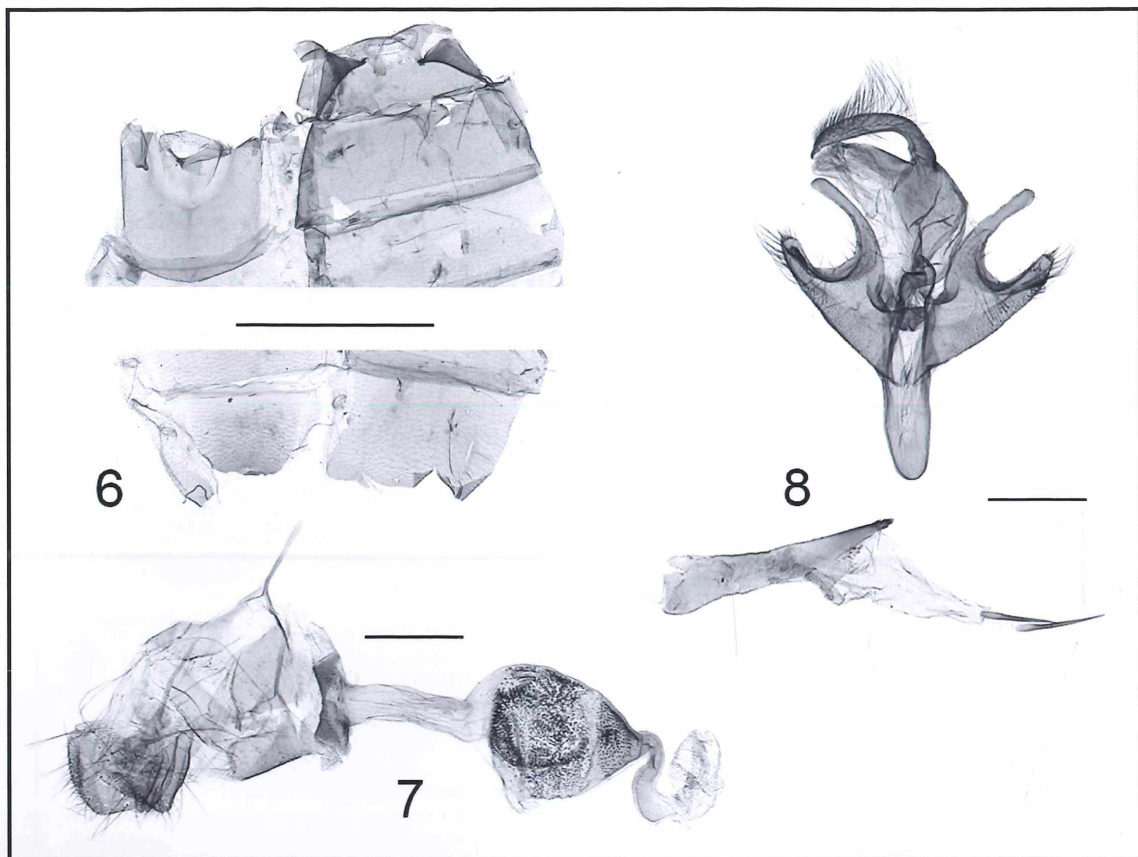


Fig. 6: first and last abdominal segments of *Hadennia kimaе* HOLLOWAY, 2008 (TB1125f). **Fig. 7:** female genitalia of *Hadennia kimaе* HOLLOWAY, 2008 (TB1125f). **Fig. 8:** male genitalia of *Hadennia kimaе* HOLLOWAY, 2008 (TB1126m); scale bars to Figs. 6–8: 1 mm.

Comments

Several specimens were collected at 1050 m above sea level in Sumatra, this altitude is colonised by submontane rainforest according to RHIND (2010). Thus, the upper limit of altitude and the habitat spectrum of the species are extended.

Considering the male genitalia HOLLOWAY (2008) states that the vesica holds two cornuti with unequal length. It is worth to note that a Sumatran specimen figured here (Fig. 8) has equally long cornuti while the cornuti of another specimen have unequal length. Holloway's figure shows rounded or rather truncate tips of cornuti, while those of the Sumatran specimens are very pointed. Apparently the cornuti of Holloway's slide are damaged.

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