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Notes on the Genus *Mythimna* (Lepidoptera, Noctuidae) from North Borneo, with Description of A New Species

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Abstract Ten species of the genus *Mythimna* are recorded from North Borneo. Of these, one new species, *Mythimna (Hyphilare) borneana* sp. nov., is described and *Mythimna (Hyphilare) pulchra* (SNELLEN) is recorded from Borneo for the first time.

Key words: Lepidoptera, Noctuidae, *Mythimna*, Borneo, taxonomy.

Introduction

YOSHIMATSU (1994) revised the genus *Mythimna* from Japan and Taiwan with descriptions of sixty-eight species. The generic assignments of this group had been confusing until the revision was published. For example, "European workers have treated *Leucania*, *Aletia* and *Pseudaletia* as synonyms of *Mythimna* OCHSENHEIMER 1816, while workers in other parts of the world have treated these four genera as distinct" (POOLE, 1989). As the generic or subgeneric treatments of this group depend on researchers, concerning the detailed explanation on this problem see YOSHIMATSU (1994). However, in that revision the genus *Mythimna* was clearly defined on the basis of three autapomorphic characters. And the members of the *Leucania*-complex (*Aletia*, *Anapoma*, *Leucania*, *Mythimna*, *Senta* etc.) were integrated into one genus *Mythimna*.

HOLLOWAY (1976) recorded thirteen species of the *Leucania*-complex from Mt. Kinabalu, North Borneo, in which he treated them under four genera. Subsequently HOLLOWAY (1989) revised the genus *Mythimna* from Borneo and recognized seventeen species under four subgenera. Consequently the total number of species of the genus *Mythimna* he recorded from Borneo is nineteen. Other records of the genus *Mythimna* from Borneo are scattered in many literature.

However, following emendations are necessary for the treatments of HOLLOWAY (1976 & 1989). Although HOLLOWAY (1989) recorded *M. radiata* (BREMER) from Borneo, it was a misidentification of *M. moorei* (SWINHOE) as discussed by YOSHIMATSU (1990). HOLLOWAY (1989) mistakenly assigned

M. albicosta (MOORE, 1881) to *M. albicosta* (MOORE, 1882), however, these two species are distinct. And as the latter is a junior homonym of the former, *M. pallidicosta* (HAMPSON, 1894) should be used for the latter (YOSHIMATSU, 1994). HOLLOWAY (1989) misspelled *M. decisissima* (WALKER, 1865) as *M. decisissima*. HOLLOWAY (1989) mentioned that the record of *Aletia franclemonti* CALORA from Borneo by HOLLOWAY (1976) proved to be erroneous, the taxon concerned being new and described as *Mythimna (Aletia) calorai*. As mentioned by YOSHIMATSU (1994), *M. (Aletia) calorai* HOLLOWAY, 1989 is a junior synonym of *M. (Hyphilare) epieixelus* (ROTHSCHILD, 1920).

Based on the gift specimens from Dr. M. ISHII and Dr. Y. ARITA, in this paper ten species of the genus *Mythimna* are reported from North Borneo, of which *M. borneana* sp. nov. is new to science and *M. pulchra* (SNELLEN) is recorded from Borneo for the first time. Three subgenera are treated in this paper, they are *Mythimna*, *Hyphilare* and *Hypopteridia*. The subgenus *Hyphilare* is characterized by tufts of black hair on the male basal abdominal segment. The subgenus *Hypopteridia* is characterized by male median pouch associated with abdominal sternites 1+2 and 3. The subgenus *Mythimna* is only defined by plesiomorphic characters. As YOSHIMATSU (1994) had already treated *M. formosana*, *M. yu*, *M. simillima*, *M. decisissima*, *M. pulchra* and *M. epieixelus*, only their collecting data from North Borneo are given in "Other Specimens Examined" with some notes.

Mythimna (Mythimna) roseilinea (WALKER)

Leucania roseilinea WALKER, 1862, *J. Proc. Linn. Soc. (Zool.)*, 6: 179.

Leucania aspersa SNELLEN, 1880, *Tijdschr. Ent.*, 23: 42.

Leucania homopterana SWINHOE, 1890, *Trans. Ent. Soc. Lond.*, 1890: 219.

Leucania roseilinea: HOLLOWAY, 1976, *Moths Borneo*: 8, fig. 45.

Mythimna (Leucania) roseilinea: HOLLOWAY, 1989, *Malayan Nat. J.*, 42: 91, 92, pl. 2, figs. 112, 113, 121.

Specimen examined: 1 ♀, Kuala Bok, Sarawak, 2. iii. 1969, T. KUNOU et Y. ARITA.

Distribution: Burma, Sundaland and Philippines to New Guinea.

Remarks: This species is closely related to *M. (Mythimna) compta* (MOOLE, 1881) which is known from Japan, Taiwan and India.

Mythimna (Mythimna) nabalua (HOLLOWAY)

Leucania nabalua HOLLOWAY, 1976, *Moths Borneo*: 8, fig. 42, pl. 3: 32.

Mythimna (Leucania) nabalua: HOLLOWAY, 1989, *Malayan Nat. J.*, 42: 92, pl. 2, figs. 11, 25, 116,

117, 122.

Leucania nabalua: POOLE, 1989, Lepid. Cat. (New Series) 118 Noctuidae. Part 2: 583.

Specimen examined: 1♂, Sepilok, Sandakan, Sabah, Borneo, 4. viii. 1985, M. ISHII.

Distribution: Borneo and Philippines.

Remarks: This species is closely related to *M. (Mythimna) simillima* (WALKER, 1862) and *M. (Mythimna) celebensis* (TAMS, 1935).

Mythimna (Hyphilare) borneana sp. nov.

(Figs. 1, 2)

Length of forewing. 16.9 mm.

Male. Frons and vertex fuscous brown. Thorax fuscous brown; tegula dusky brown. Abdomen ochreous, tinged with fuscous and with ventral black hair tufts basally. Forewing fuscous brown, irrorated with fuscous; subbasal line represented by a black spot on costa; antemedial line represented by a faint fuscous line; a white spot at the end of cell, beyond which is fuscous; a fuscous dentate postmedial line; terminal line represented by black spots on interspaces; cilia brown, tinged with fuscous. Underside of forewing ochreous, tinged with rufous brown; a fuscous dentate postmedial line; terminal line represented by black spots on interspaces; cilia rufous brown. Hindwing ochreous with fuscous outer half; the veins fuscous; a fuscous discoidal spot; postmedial line represented by black spots on veins; terminal line represented by black spots on interspaces; cilia ochreous with a brownish transverse band in the middle. Underside of hindwing ochreous white, irrorated with fuscous; a fuscous discoidal spot; postmedial line represented by black spots on veins; terminal line represented by black spots on interspaces; cilia ochreous white with a brownish

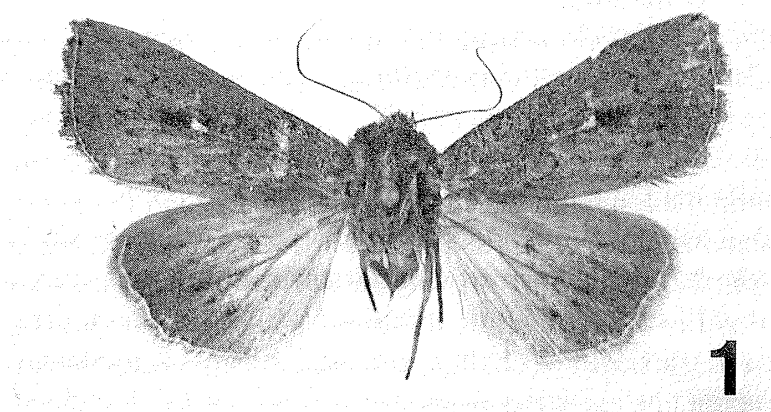


Fig. 1. *Mythimna (Hyphilare) borneana* sp. nov.

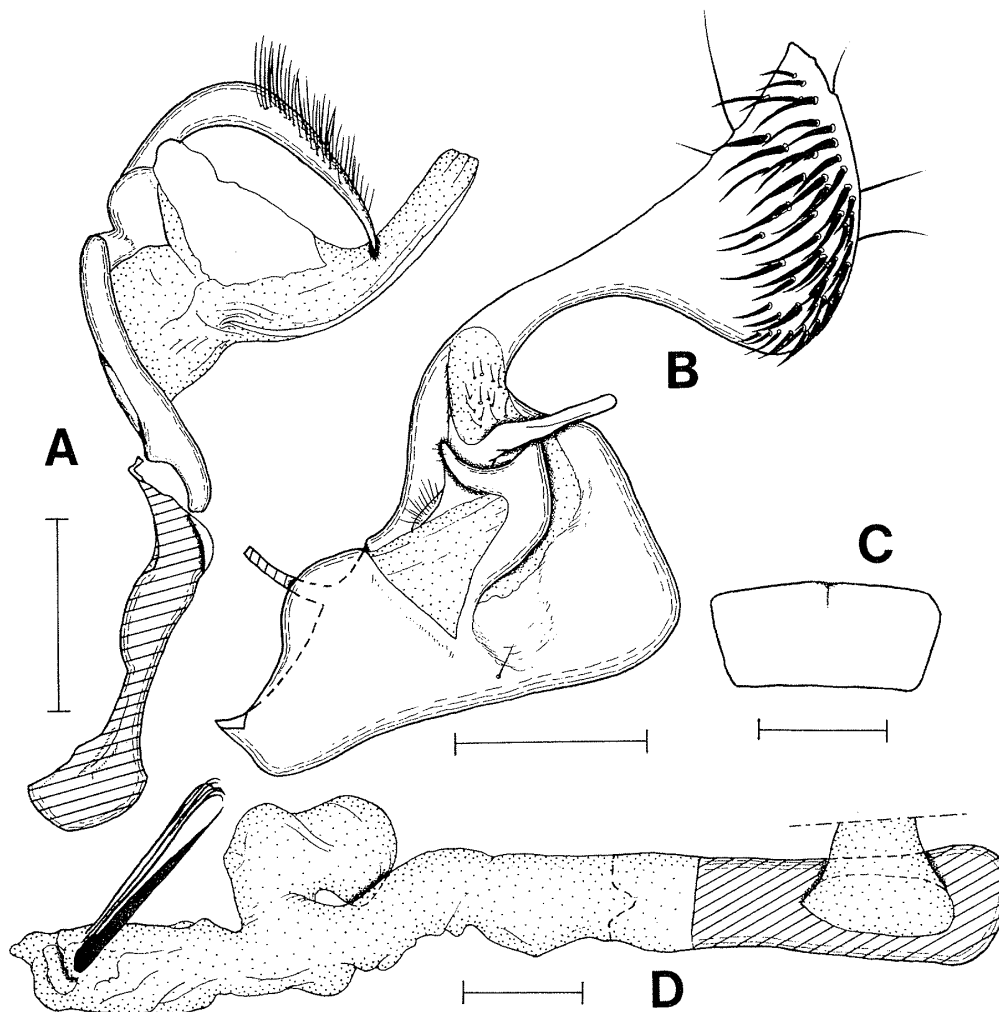


Fig. 2. Male genitalia of *Mythimna (Hyphilare) borneana* sp. nov. A: Ring in lateral view. B: Right valva in inner view. C: Juxta. D: Phallus in dorsal view. Sclae A, B, D. 1 mm; C. 0.5 mm.

transverse band in the middle.

Male genitalia: Tegumen slightly narrow in lateral view; vinculum moderately broad in lateral view, with short dorsal arm; saccus moderately large. Uncus slightly short with hairs on distal half. Valva except cucullus rounded produced ventrally and posteriorly; costa strongly curved; editum small with many hairs; ampulla long and almost straight, and beyond the posterior margin of valvula; sacculus narrow and its dorsal portion rounded; harpe short, dorsal process of harpe short; valvula narrow with narrow membranous area; cucullus moderately broad with many diffused coronal spines, and its basal arm slightly long. Juxta nearly trapezoid. Phallus unmodified; vesica moderately long, about 1.5 times as long as aedeagus when everted, with a tubular diverticulum at the middle, bearing dense spinules on entire surface beginning at the top of

the diverticulum and extending to distal end, and very long spines at distal end.

Holotype: ♂, Sabah, Borneo, 4. ix. 1982.

Type depository: National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution: Sabah, Borneo.

Remarks: This new species is similar to *M. brunneicoccinea* (CALORA, 1966) from Luzon, *M. liebherri* (YOSHIMATSU, 1991) from Luzon, *M. purpurpatagis* (CHANG, 1991) from Taiwan and *M. formosicola* YOSHIMATSU, 1994 from Taiwan. The forewing of this new species is fuscous brown, in contrast with reddish brown of the other species. In male genitalia the cornuti of *M. borneana* and *M. liebherri* are much longer than those of *M. brunneicoccinea*, *M. purpurpatagis* and *M. formosicola*. The length of the largest cornutus at distal end of vesica was measured on *M. borneana* and *M. liebherri*. All eight, male types of *M. liebherri* (see Yoshimatsu, 1991) were examined and the length of the largest cornutus was from 2.3 mm to 2.4 mm. It was 1.9 mm in the holotype of *M. borneana*. Although the male genitalia of *M. borneana* and those of *M. liebherri* are similar, differences can be seen in the length of the largest cornutus as mentioned above, in the shape of juxta and in the shape of cucullus. The juxta of *M. liebherri* is trapezoid and has a long process at the middle, however, in this species it is nearly rectangular and does not have a process.

Mythimna (Hypopteridia) reversa (MOORE)

Aletia reversa MOORE, [1885], 1884–1887, *Lepid. Ceylon*, 3: 6, pl. 144, fig. 6.

Hypopteridia reversa: HOLLOWAY, 1976, *Moths Borneo*: 9, fig. 40.

Mythimna (Aletia) reversa: HOLLOWAY, 1989, *Malayan Nat. J.*, 42: 83, pl. 2, figs. 105, 107.

Specimen examined: 1♂, Sabah, Borneo, 6. ix. 1982.

Distribution: Indian Subregion to New Guinea and Queensland.

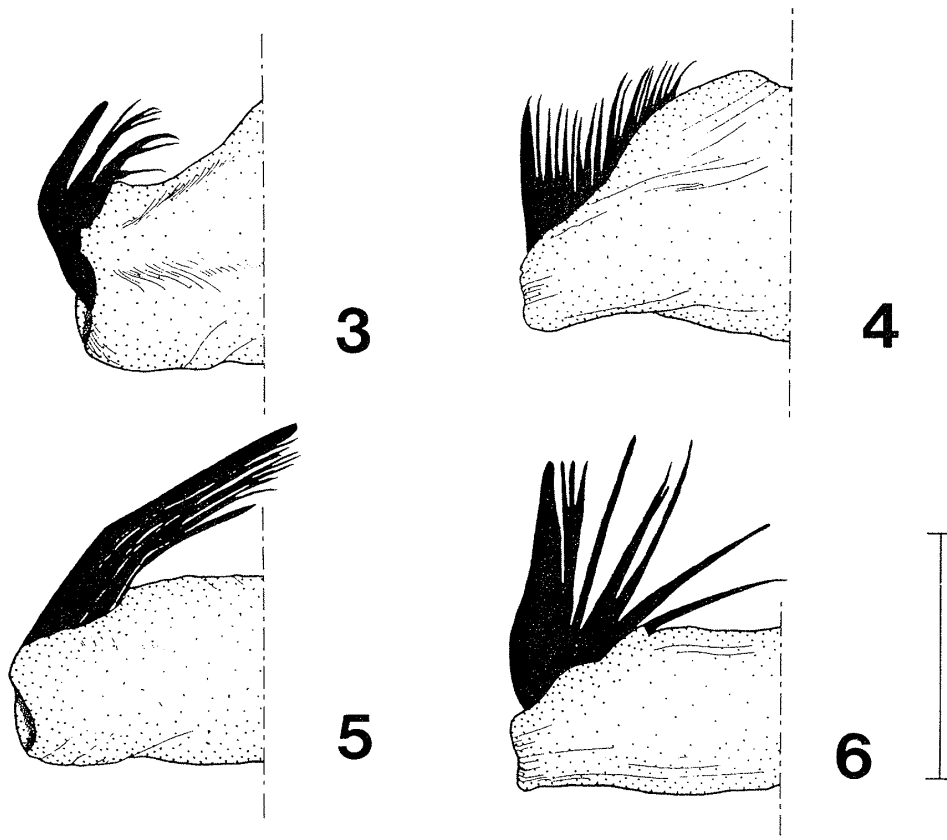
Remarks: YOSHIMATSU (1994) treated the genus *Hypopteridia* as a synonym of the genus *Mythimna* and proposed to treat it as a distinct subgenus of the genus *Mythimna*.

Other Specimens Examined

Mythimna (Mythimna) formosana (BUTLER, 1880): 1♂, Sabah, Borneo, 3. ix. 1982.

Mythimna (Mythimna) yu (GUENÉE, 1852): 1♂, Sabah, Borneo, 8. ix. 1982; 1♀, Sepilok, Sandakan, Sabah, Borneo, 6. viii. 1985, M. ISHII.

Mythimna (Mythimna) simillima (WALKER, 1862): 1♀, Sepilok, Sanda-



Figs. 3–6. Cornuti on distal end of vesica of *Mythimna* spp. 3. *M. decisissima* (WALKER); 4. *M. pulchra* (SNELLEN); 5. *M. epieixelus* (ROTHSCHILD); 6. *M. franclemonti* (CALORA). Scale 1 mm.

kan, Sabah, Borneo, 7. viii. 1985, M. ISHII.

Mythimna (Hyphilare) decisissima (WALKER, 1865): 2♂, Brumas, Tawau, Sabah, Borneo, 18. viii. 1985, M. ISHII; 2♂, same locality, 22. viii. 1985, M. ISHII; 1♀, Sabah, Borneo, 3. ix. 1982; 1♂, Kuala Bok, Sarawak, 4. iii. 1969, T. KUNOU et. Y. ARITA.

Mythimna (Hyphilare) pulchra (SNELLEN, [1886]): 1♂, Sepilok, Sandakan, Sabah, Borneo, 8. viii. 1985, M. ISHII.

Mythimna (Hyphilare) epieixelus (ROTHSCHILD, 1920): 1♂, Sabah, Borneo, without other data.

Remarks: Superficially *M. decisissima*, *M. pulchra* and *M. epieixelus* are similar, however, the shape and number of the cornuti at distal end of vesica are useful to distinguish these species. Although YOSHIMATSU (1994) illustrated their male genitalia with cornuti, the magnification was low power and the angle was not good. Therefore the cornuti of *M. decisissima*, *M. pulchra* and *M. epieixelus* are illustrated again in comparison with *M. franclemonti* (figs. 3–6). HOLLOWAY (1976) wrongly assigned *Aletia franclemonti* CALORA to *M. epieix-*

elus. The cornuti of *M. franclemonti* are represented by a stout spine and slender spines at distal end of vesica. *M. franclemonti* is endemic to the Philippines at present. They are represented by several hooked spines in *M. decisissima* and by many short spines in *M. pulchra*. Among them *M. epieixelus* has longest cornuti.

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