Denisia	29	215-222	17.07.2010

Malickyella gen. nov. – a new moth genus in the family Crambidae (Lepidoptera, Pyraloidea) from South-East Asia[1]

W. MEY & W. SPEIDEL

A b s t r a c t : The genus *Malickyella* gen. nov. is established to accommodate the *Eoophyla lobophoralis* group which was placed in Acentropinae. The new genus is placed in Pyraustinae, Spilomelini. The sister genus cannot be yet determined among the many Spilomelini genera. Diagnostic characters, including male and female genitalia, are presented. The range of the genus extends from India to Sundaland and the Philippines. The included species are listed and a new species, *M. brunnea* sp. nov. is described from the Philippines. The wing venation and the genitalia of the male are illustrated. The new species is similar to *M. lobophoralis* (HAMPSON, 1896), comb. nov.

K e y w o r d s : Acentropinae, Pyraustinae, Spilomelini, *Malickyella* gen. nov., *Malickyella brunnea* sp. nov., taxonomy, South East Asia, Philippines.

Introduction

The majority of aquatic Lepidoptera belong to the pyraloid subfamily Acentropinae (Pyraloidea: Crambidae). Their larvae are either semi-terrestrial or fully adapted to aquatic life. The group is distributed world-wide with a diversity centre in the rain-forests of the Oriental Region. The largest genus is *Eoophyla* SNELLEN, 1900 with more than 100 described species (MEY & SPEIDEL 2008). The included species are currently divided into a number of species groups based on external characters. The *lobophoralis* - group was felt to not fit well into the generic concept, and was placed at the end of the genus in the catalogue of the Oriental species (SPEIDEL & MEY 1999). The new Philippine species was excluded from our studies then, as it was already recognized not to belong to Acentropinae. Recently, David AGASSIZ (pers. com.) dissected males of this group and realised, that they cannot be included in *Eoophyla* nor in Acentropinae in general. Males lack a well developed gnathos in the genitalia. In addition, the typical eyespots on the hindwing margins of both sexes are absent, and the legs are of normal length and not elongated as is typical for the genus.

The purpose of the present paper is to exclude the *lobophoralis* group from *Eoophyla* and to transfer it to the correct position. Closer examination of the species revealed that they exhibit characters which are diagnostic for the tribe Spilomelini within the subfamily Pyraustinae. Spilomelini is a very large and heterogeneous taxon with a world-wide distribution. After examining possible Old World candidates we were unable to find a suitable genus for inclusion of the *lobophoralis* group. It is not possible to indicate yet a certain sister genus as the vast group of mainly tropical Spilomelini is basically unrevised. Concerning external

[1] This paper is dedicated to Prof. Dr. Hans Malicky on the occasion of his 75th birthday.

characters, including wing venation, some species in the genus *Ambia* Walker, 1859, were found to be similar in appearance, probable close relatives: *A. albomaculalis* Hampson 1897 (West Africa), or *A. decoralis* (SNELLEN 1901) (Sundaland). However, *Ambia* is a genus currently placed in the subfamily Musotiminae which differs from Pyraustinae in the presence of a well developed gnathos in the male genitalia (like Acentropinae). Perhaps, the genus *Musotima* MEYRICK can even be regarded as a synonym of *Ambia* WALKER, 1851 (SPEIDEL & STÜNING 2005). Interestingly, species of the *lobophoralis* group were originally described in *Ambia* too. If *A. albomaculalis* and *A. decoralis* in fact turn out to be related to the *lobophoralis* group, they will have to be excluded from their current generic placement as well. In the absence of an available genus that could accommodate the *lobophoralis* group we decided to establish a new genus for them.

It is a pleasure for us to name the new genus after Hans Malicky, the renowned Trichoptera specialist who has a focus on the South-East Asian fauna - the region to which the new genus belongs.

Results

A b b r e v i a t i o n s : BMNH – Natural History Museum, London (formerly Bristish Museum, Natural History); MFN - Museum für Naturkunde, Berlin

Malickyella gen. nov.

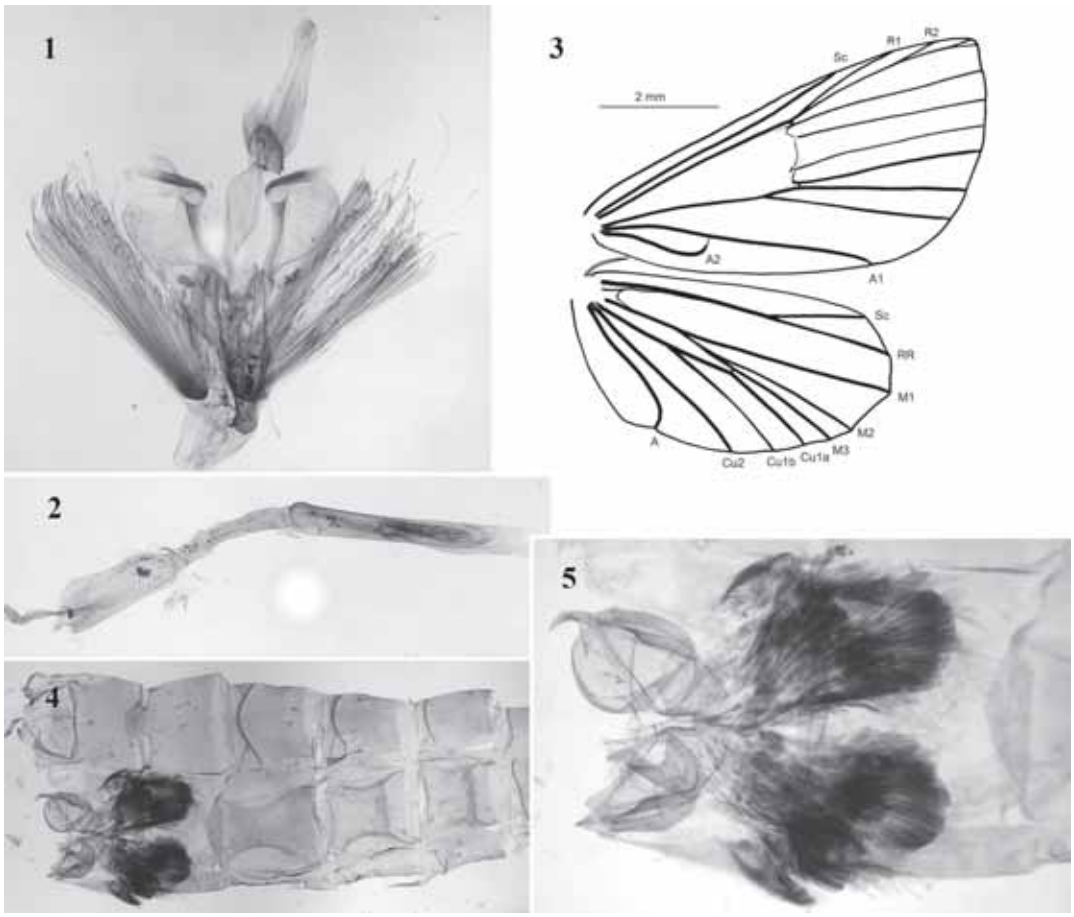
Type-species of the genus: *Ambia lobophoralis* HAMPSON, 1896: p. 207, by present designation.

Gender: feminine.

D i a g n o s i s : Length of forewing 7-10 mm. Head with erect scales on vertex, frons smooth-scaled, ocelli present, chaetosema absent, eyes hemispherical; proboscis large, with brown band on each galea half; labial palps ascending and slightly recurved, basal segment with short ventral tuft, second segment from broad basis becoming slender toward tip, third segment a short rod; scapes simple, narrowed at bases; cilia of antennae 1.0 of shaft in males, pubescent on ventral side in females; epiphysis present, spurs 0.2.4.; males with large corema on inner side of hind tibia (Fig. 10) and on ventral side of second sternum (Figs 4-5, 8); upper- and underside of males with specialised hairs and scales (Fig. 14); male genitalia with a bundle of recurved spines on dorsal apex of valvae and a paired corema on pregenital membrane (Figs 1 and 6); female genitalia with small signum in corpus bursae, consisting of tiny spines (Fig. 9).

D i s t r i b u t i o n (Fig. 15): The range of the genus is typically south-east Asian, extending from Assam in the West to Sundaland and the Philippines in the East. Records from Myanmar, Laos and Cambodia are absent. There are also no data from Java. The northern limits of the range are uncertain.

B i o l o g y : The life histories of the species are unknown (ROBINSON et al. 1994). According to the listed localities they are all inhabitants of Lowland Rainforests.



Figs 1-5: *Malickyella brunnea* sp. nov.; (**1**) male genitalia; (**2**) aedagus; (**3**) wing venation; (**4**) male abdomen, ventral side; (**5**) close up of sternum II with paired corema.

Included species:

Malickyella iriusalis (WALKER, 1859) [*Oligostigma* ?] comb. nov.

Examined material: 1♀, **Indonesia**, Sumatra, Bukittinggi, Lembah Anal, 700 m, January 1976; 1♂, Jambi-Sumatra, 28 km SW Sarolangun, 2°30'N; 102°38'E, lowland native forest, 200 m, 5.XI.1981, leg. A. Schintlmeister; 1♀, Sumatra Utara, Aek Tarum, 200 m, 7.-8.1.1995, leg. A. Kallies (Coll. Speidel); 2♂♂, **Brunei**, Rampayoh Road, lowland, 26.-29.9.1997; 1♀, **Malaysia**, Sabah, Gunung Moukobo, 116°56'E 5°48'N, (all in BMNH).

The species lacks the corema on the male hind tibia. The wing pattern resembles *Ambia decoralis*, but the head and antennae are typical for *Malickyella* gen. nov.

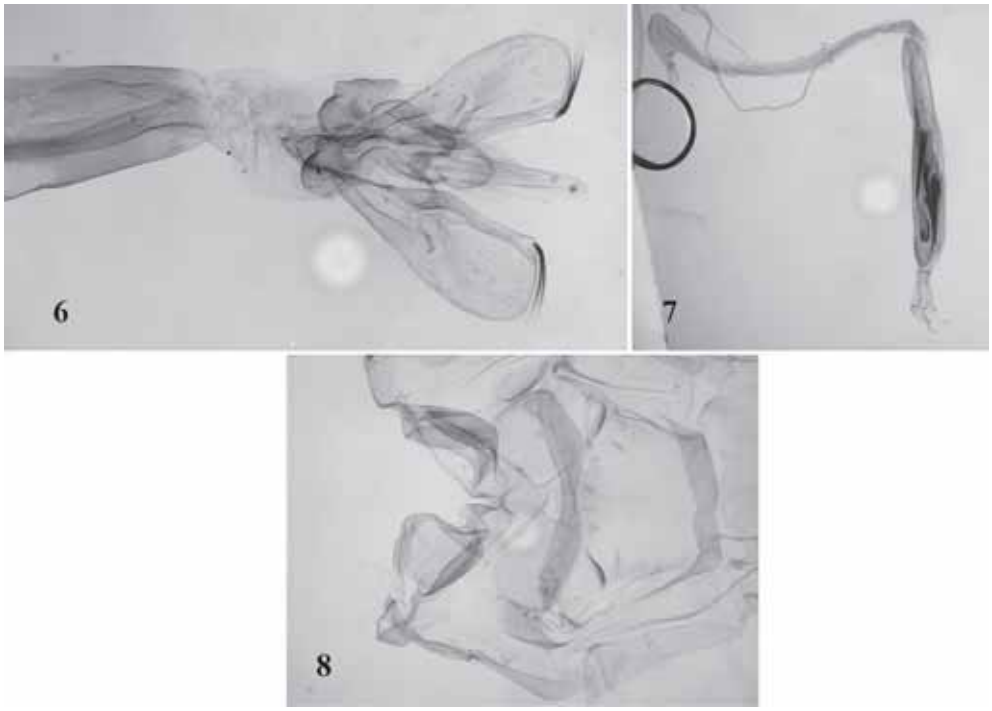
Malickyella lobophoralis (HAMPSON, 1896) [*Ambia*] comb. nov. (Figs 9-10, 12, 14)

Examined material: 1♂, **India**, Ober Assam, [18]88 Hartert, coll. Staudinger (MFN); 3♂♂, India, Naga Hills, VI-IX, 1889, leg. W. Doherty (BMNH); 1♂, **Thailand**, Cumphon, 5 km S Phato, lowland forest, 155 m, 6.7.2008, leg. S. Naumann (MFN); 1♀, Thailand, Uthai Thani district, Khao Nang Rum, 400 m, 6.-8.7.1986, leg. M.G. Allen (BMNH); 2♂♂, 1♀, **Vietnam**, Nghe An Province, Pu Mat National Park, Son village, 130 m, 18°49'N, 104°58'E, leg. V. Zolotuhin, ♀ genitalia slide Mey 20/10 (MFN); 1♂, **Indonesia**, N. Sumatra, Sumatera Utara, Pematang Siantar, Sungei Kopas II, 250 m, 16.11.1996 lux, leg. E.W. Diehl (Coll. Speidel); 1♂, **Malaysia**, Sabah, Mt. Kinabalu, Park Headquarter, 1600 m, 10.-13.11.2006, at light, leg. W. Mey & K. Ebert (MFN); 1♀, Sabah, Crocker Range, 5°45'N, 116°19'E (BMNH); 1♂, Malaysia, Sarawak, Mt. Mulu National Park, Camp 2, Feb.1978, leg. J. Holloway (BMNH); 1♂, **Brunei**, Ulu Temburong, 14.-16.7.1991 (BMNH); 1♂, **Philippines**, Leyte, Lake Danao, 650 m, 14.-17.4.1997, leg. W. Mey & W. Speidel (MFN); 1♀, Luzon, Benguet, Palali, 2000 ft., 22.12.1912, leg. A.E. Wilemann (BMNH).

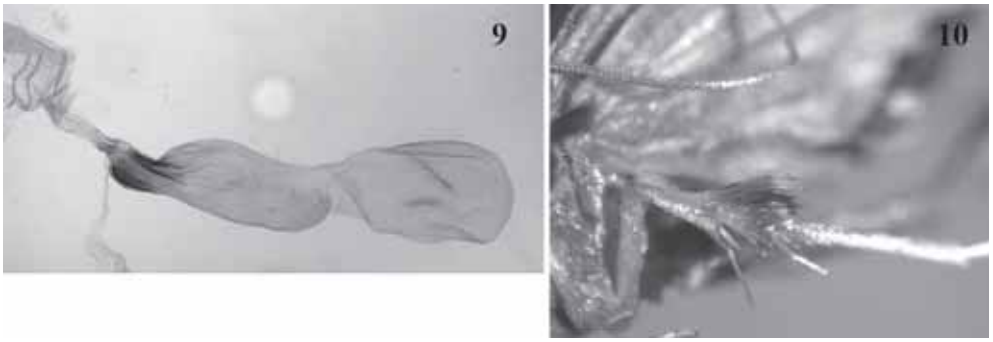
The species has the largest distribution of all congeners in South East Asia. The specimens from the Philippines differ somewhat in wing pattern from continental and Sundaland individuals.

Malickyella tigridalis (HAMPSON, 1897) [*Ambia*] comb. nov. (Figs 6-8, 13)

Examined material: 1♂, **Thailand**, Cumphon, 5 km S Phato, lowland forest, 155 m, 6.7.2008, leg. S. Naumann (MFN); 1♂, **Indonesia**, Central Kalimantan, upper river Kahayan, Tewah, 150 km N of Palangkaraya, 23.1.1996, at light, leg. A. Kallies (Coll. Speidel); 1♂, West-**Malaysia**, Padang, Rengas (BMNH); 4♂♂, Malaysia, Sabah, Danum Valley Field Centre, Sungai Segama, 50 m, at light, 15.-17.8.2005, leg. W. Mey & K. Ebert (MFN); 1♂, same locality, 21.-22.11.2006, leg. W. Mey & K. Ebert (MFN). 1♂, Malaysia, Sabah, Tawau Hills National Park, 18.-21.8.2005, Sungai Gelas, 300 m, at light, leg. W. Mey (MFN); 1♂, Malaysia, Sarawak, Mt. Mulu National Park, Camp 1, 150 m, 11.2.1978, leg. J. Holloway (BMNH); 1♂, **Brunei**, Ulu Temburong, 14.-16.7.1991 (BMNH).



Figs 6-8: *Malickyella tigridalis* HAMPSON; (**6**) male genitalia; (**7**) aedeagus; (**8**) sternum II with coremal lobes (androconial scales removed).



Figs 9-10: *M. lobophoralis;* (**9**) female genitalia; (**10**) hind tibia of male with corema.

Malickyella brunnea sp. nov. (Figs 1- 5, 11)

H o l o t y p e : ♂, **Philippines**, Luzon,Quezon Forest National Park, 250 m, 14°01'N, 122°11'E, primary forest, 8.-10.10.1988, leg. K. Cerny & A. Schintlmeister, genitalia slide Mey 19/10 (MFN)

Forewing length 9 mm, wing span 22 mm (Fig. 11). Head cream-white, smooth-scaled on frons, rough scaled on vertex and protruding anteriorly between antennal bases, yellow-brown, erect scales on hind-margin; chaetosema absent, ocelli present. Maxillary palpi small and flat, labial palpi upturned, attaining beyond base of scape, white, with basal segment tufted with brown scales ventrally, middle segment with brown base, terminal segment short and flattened. Proboscis large, entirely scaled basally and lined with brown along galea halves. Distance between eyes on frons shorter than eye diameter. Scape short, without pecten and without basal projection, flagellomeres cylindrical, scaled dorsally and densely ciliated laterally and ventrally, cilia 1.0 of shaft, each flagellomere with two annuli of yellow-brown scales. Thorax with patagia brown, tegulae white. Coxa of forelegs brown, femur slightly longer with a brown ring in apical half, tibia 0.3 of femur with brown epiphysis, tarsi uniformly cream-yellow. Mid-legs cream-yellow, brown patches before articulations, 2 terminal spurs on tibia. Hind-legs with grey-brown corema with short androconial scales on tibia, terminal spurs brown, medial spurs cream-yellow, shifted to lateral side of corema, first tarsal segment somewhat enlarged by dense hairs.

Fore- and hind-wings with brown ground-colour, pattern white and yellow, base of R with black spot. Wing coupling in male with single frenulum and erect scales at underside of Cu 2, no hamus. Underside of hindwings with different types of hair-like scales, a patch of brown scales in costal region, anal field with somewhat enlarged and rolled margin covered by long hairs, underside of media. Hind-wings with indistinct marginal spots, wing venation in Fig. 3.

Abdomen white, praecinctorium large and brown, underside of sternum II a pair of short lobes carrying a tuft of short, grey-brown scales.

Male genitalia (Figs 1-2): Pregenital membrane with a pair of pouches each bearing a dense tuft of long androconial hairs, many of them with a knob-like tip; vinculum a small ribbon, with a short saccus; tegumen small, rounded apically without an uncus-like structure but with numerous hairs; gnathos absent; anal tube long with a narrow subscaphium; valvae longer than tegumen and vinculum, costal margin produced apically into a short lobe bearing a bundle of brown bristles directed ventrad, apex of valvae evenly rounded, inner side with an oblique crest running from valval apophysis to ventral margin, and a short, basal lobulus; juxta plate-

like and short; transtilla present; aedeagus tubular, dorsal side membranous, as long as valva, bulbus ejaculatorius arising at the dorsal side of the base, vesica with numerous small, flattened spines.

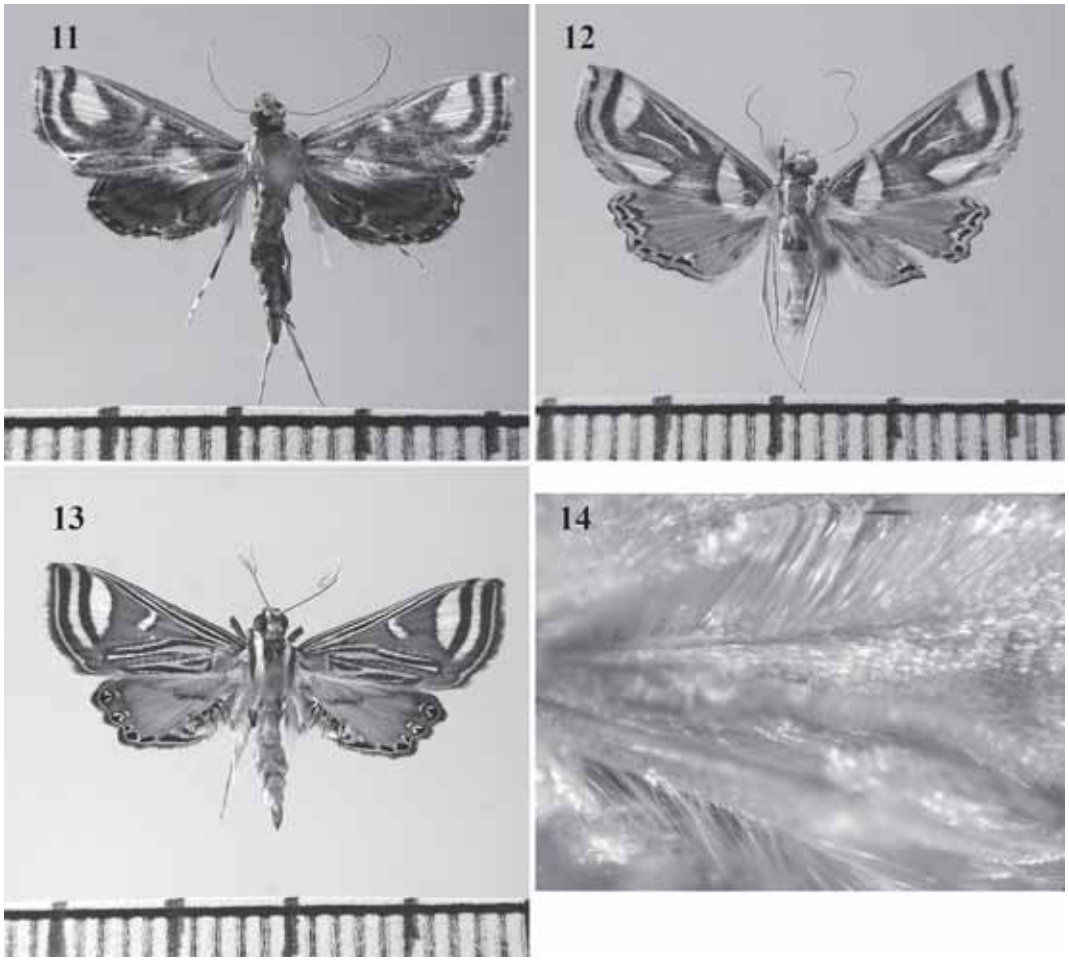
D e r i v a t i o n o m i s : The specific epithet “brunnea” (Latin: brown) refers to the brown ground colour of the wings.

D i s c u s s i o n : The brown appearance of the moth is the distinguishing feature of the new species in comparison with the yellow-orange coloured wings of its congeners. The forewing pattern resembles that of *M. lobophoralis* by displaying white patches in the basal half.

Excluded species:

***Eoophyla palleuca* (HAMPSON, 1906) [*Oligostigma*]**

SPEIDEL & MEY (1999) list the species as member of the lobophoralis group. The species is only known from the holotype collected on Mt. Kinabalu in North Borneo. The wing pattern differs from all other species of the new genus. We were not able to examine the species and to corroborate a new placement. The species is therefore provisionally retained in the genus *Eoophyla* as “incertae sedis”.



Figs 11-14: Males of *Malickyella* spp.; (**11**) *M. brunnea* sp. nov.; (**12**) *M. lobophoralis*; (**13**) *M. tigridalis*; (**14**) specialised hair-comb on Cu2 of hind wing underside of *M. lobophoralis*.

Fig. 15: Distribution of *Malickyella* gen. nov. (light grey) in South-East Asia based on data from the BMNH, London, and MFN, Berlin, collections, and from the collection of W. Speidel.

Acknowledgements

We wish to express our thanks to David AGASSIZ and Koen MAES for interesting discussions on the subject. Field work in Malaysia, Borneo was supported by the Deutsche Forschungsgemeinschaft (Me 1085/3-3).

Zusammenfassung

Die Gattung *Malickyella* gen. nov. wird für die *Eoophyla lobophoralis* Gruppe errichtet, die zu den Acentropinae gerechnet wurde. Die neue Gattung gehört zu den Pyraustinae, Spilomelini. Die Schwestergattung konnte bisher unter den vielen Spilomelini Gattungen noch nicht ermittelt werden. Diagnostische Merkmale, einschließlich männlicher und weiblicher Genitalien, werden dargestellt. Die Verbreitung der Gattung erstreckt sich von Indien bis zum Sundaland und den Philippinen. Die zugehörigen Arten werden aufgeführt und eine neue Art, *M. brunnea* sp. nov., wird von den Philippinen beschrieben. Ihr Flügelgeäder und die männlichen Genitalien werden abgebildet. Die neue Art ist *M. lobophoralis* (HAMPSON, 1896), comb. nov. ähnlich.

References

HAMPSON, Sir G.F. (1896): The fauna of British India including Ceylon and Burma. — Moths, Vol. IV, Taylor & Francis, London, 594 pp.

LANGE, W. H. (1956): A generic revision of the aquatic moths of North America (Lepidoptera, Pyralidae: Nymphulinae) — *The Wasmann Journal of Biology* **14** (1): 59-144.

MEY, W. & SPEIDEL, W. (2008): Global diversity of aquatic moths (Lepidoptera) in freshwater. — *Hydrobiologia* **595**: 521-528.

ROBINSON, G.S., TUCK, K.R. & SHAFFER, M. (1994): A field guide to the smaller moths of South-East Asia. — Malaysian Nature Society, Kuala Lumpur, 309 pp.

SPEIDEL, W. & W. MEY, 1999: Catalogue of the Oriental Acentropinae (Lepidoptera, Crambidae). — *Tijdschrift voor Entomologie* **142**: 125-142.

SPEIDEL, W. & D. STÜNING, 2005: *Ambia naumanni* sp. n., a new species of Musotiminae from Yunnan (Lepidoptera, Crambidae). — *Bonner zoologische Beiträge* **53** (2004): 221–225.

Authors' addresses:

Wolfram MEY
Museum für Naturkunde
Leibniz Institut für Biodiversität und Evolutionsforschung an der Humboldt Universität
Invalidenstr. 43
D-10115 Berlin, Germany
E-mail: Wolfram.Mey@mfu-berlin.de

Wolfgang SPEIDEL
Museum Witt
Tengstraße 33
D-80796 München
E-mail: speidel@witt-thomas.com