

Ambia naumanni sp. n., a New Species of Musotiminae from Yunnan (Lepidoptera, Crambidae)¹

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Abstract. *Ambia naumanni* sp. n. is described from Lijiang (Yunnan, China) and differentiated from related species. The following new combinations are proposed: *Ambia colonialis* (Bremer, 1864) **comb. n.** (described as *Hydrocampa*) and *Ambia locuples* (Butler, 1889) **comb. n.** (described as *Oligostigma*).

1. INTRODUCTION

In the revision of the Palearctic Acentropinae (SPEIDEL 1984), all the species of the Palearctic part of China recognized to belong to this subfamily have been revised. However, one Chinese species – which was found to be undescribed – turned out to be misplaced in the Acentropinae and remained without an identification and name, as it was excluded from the study. It was recognized to belong to another subfamily: Musotiminae.

The Musotiminae were formerly included in the Nymphulinae (= Acentropinae) (e.g. HAMPSON 1897; MUNROE 1972), but separated as an independent subfamily by SPEIDEL (1981), a treatment which is now generally accepted (MUNROE & SOLIS 1999; SOLIS & MAES 2002).

The authors found additional specimens of this musotimine species in the collection of the Alexander Koenig Research Institute and Museum of Zoology (ZFMK) and decided to describe the species as new, a plan which remained unrealised for a long time, because of the problem of the association with a reasonable genus. There is no revision of the subfamily in a world-wide scale, and there are several genera recognised in the subfamily, and a few more can still be found misplaced among other subfamilies. It finally became clear that the species belongs either to *Musotima* Meyrick, 1884 or to *Ambia* Walker, 1859. To our opinion, the present species fits quite well in the latter genus. However, several obviously closely related species from Japan were treated in the genus *Musotima* (YOSHIYASU 1985) and so there remained some uncertainty about its generic position.

Later we found that the figures of the genitalia of the generic type-species *Ambia ptolycusalis* Walker, 1859 by LANGE (1956) are incorrect. They represent a misidentified acentropine species, a member of the genus *Paracymoriza* of the group of *P. eromenalis* (Snellen, 1880) and *parallelalis* Sauber, 1902. Therefore, we here provide a correct figure of the holotype of *Ambia ptoly-*

cusalis and its genitalia from Sarawak, Borneo (Hope Entomological Collections, University Museum, Oxford) (Figs 8, 9). Both figures clearly show that *A. ptolycusalis* represents another species and belongs to an entirely different subfamily. The wrong figure given by LANGE is probably the reason why YOSHIYASU (1985) did not use *Ambia* for any species treated in his revision. To our opinion, *Musotima* has to be synonymized with *Ambia* or at least a part of the species treated under *Musotima* by YOSHIYASU have to be transferred to *Ambia*. We do not propose a formal synonymisation of *Ambia* and *Musotima* here, as the systematics of the subfamily is presently in a process of development and changes: Very recently, two new genera are named and others are new defined in order to establish monophyletic entities (SOLIS et al. 2004; YEN et al. 2004) which will eventually make it necessary to split the genus *Ambia* as well.

Ambia ptolycusalis has a typical spine-like saccular process (see fig. 9) which does not occur in any species of the subfamily Acentropinae and which is not present in LANGE's misidentified figure. It is also found in *Ambia colonialis* (Bremer, 1864) **comb. n.** (described as *Hydrocampa*) and specimens which we associate with the description of *Ambia locuples* (Butler, 1889) **comb. n.** (described as *Oligostigma*). This spined sacculus is also found in other crambid subfamilies, e.g. in the Scopariinae. Therefore, it seems difficult to use this character as an autapomorphy of *Ambia*, especially as apparently closely related species lack this process.

In the present new species, the saccular spine is absent, but there is a conspicuous, angled process to the aedeagus, arising dorsally close to the insertion of the ductus ejaculatorius. We also found this apomorphic character in a species identified as *Ambia locuples* which is, on the other hand, provided with a saccular spine. The furcated aedeagus is a rather rare character in *Ambia* and absent in other Musotiminae, but it is weakly indicated also in the type-species *A. ptolycusalis*. However, generic separation of species with such an unusual

¹ In commemoration of Clas Michael Naumann zu Königsbrück (26.06.1939 – 15.02.2004)



Figs. 1–4:

1. *Ambia naumanni* sp. nov., holotype, male (Lijiang, 8. viii. 1934) (wing span 15 mm).
2. *Ambia naumanni* sp. nov., paratype, male (Lijiang, 13. vi. 1934) (wing span 16 mm).
3. *Ambia thyridialis* (Lederer, 1855), male (Ghazir) (wing span 15 mm).
4. *Ambia naumanni* sp. nov., male paratype, lateral view of head.

aedeagus-structure as found in *Ambia locuples* and the new species seems not advisable. We consider *Ambia thyridialis* (Lederer, 1855) (fig. 3), a species recorded from the Lebanon and Egypt which also has no saccular tooth as a closely related species.

2. DESCRIPTION OF SPECIES

Ambia naumanni Speidel & Stünig, sp. nov. (Fig. 1, 2)

Holotype ♂: “Li-kiang. (China). Provinz Nord-Yuennan. 8. 8. 1934. H. Höne”

Paratypes: Males: dto. 1 ♂ 13. 6. 1934; 1 ♂ 19. 7. 1934; 1 ♂ 2. 8. 1935; 1 ♂ 17. 7. 1934; 1 ♂ 7. 8. 1934; 2 ♂ 3. 8. 1935; 1 ♂ 12. 7. 1934; 1 ♂ 7. 7. 1934, GS-15036

♂-SB; 1 ♂ 17. 7. 1934, GU 137 ♂ SP; 1 ♂ 21. 7. 1934, Prep. 15378 SB and FU 160 SP; 27. 6. 1934, 1 ♀ 24. 6. 1935 with genitalia in glycerol;

Females: 1 ♀ 3. 8. 1935; 1 ♀ 8. 9. 1935; 2 ♀ 3. 7. 1934 with FU 159 SP; 1 ♀ 29. 6. 1934, GU 15063; 1 ♀ 15. 6. 1935; 1 ♀ “Li-kiang ca. 2000 m, Prov. Nord-Yuennan, 26. 6. 1934. H. Höne” with genitalia in glycerol.

Diagnosis (fig. 1, 2).- Head and body: Antenna comparatively stout in the males, pubescent. Labial palpi rather long, upcurved, terminal segment almost reaching base of antennae. Frons smoothly scaled, whitish like the palpi. Thorax and abdomen greyish-brown, mixed with white, abdominal tergites with posterior white transverse bands.

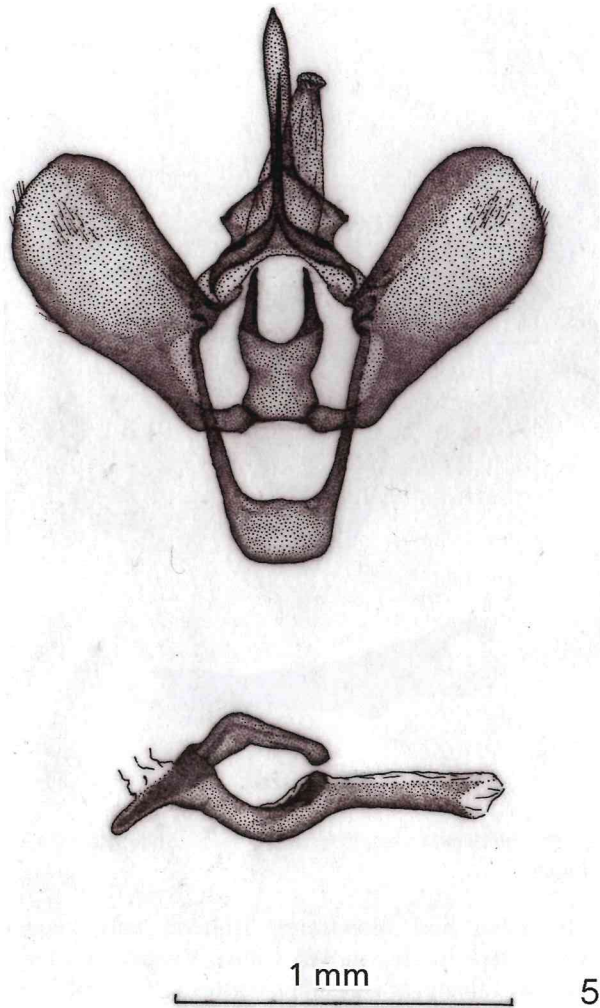


Fig. 5: *Ambia naumanni* sp. nov., male genitalia.

Wings: Wingspan 15-17 mm, forewing length 7,5-8 mm. Wings with termen sinuous as usual in the genus, apices produced. Ground colour yellowish. Transverse fasciae prominent, white, bordered blackish-brown. The basal fascia strongly oblique, broken, the proximal one slightly curved, the distal one outcurved anteriorly and strongly retracted below middle, reaching the inner margin at about one half. The latter fascia is widened to a quadrangular spot at inner margin. Submarginal fascia conspicuous, widening towards tornus. Medial area with a white disco-cellular spot and another larger white spot in the anterior angle of the distal fascia. Marginal area yellow. Hindwing with similar pattern. Proximal fascia wider than in forewing, submarginal fascia strongly widening towards apex, incised at vein M2. Medial area suffused with brownish scales, like in the forewing, with two large white spots at the costal region and a small one at inner margin. Marginal area yellow. The venation (fig. 7) shows no principle difference to the other members of the genus.

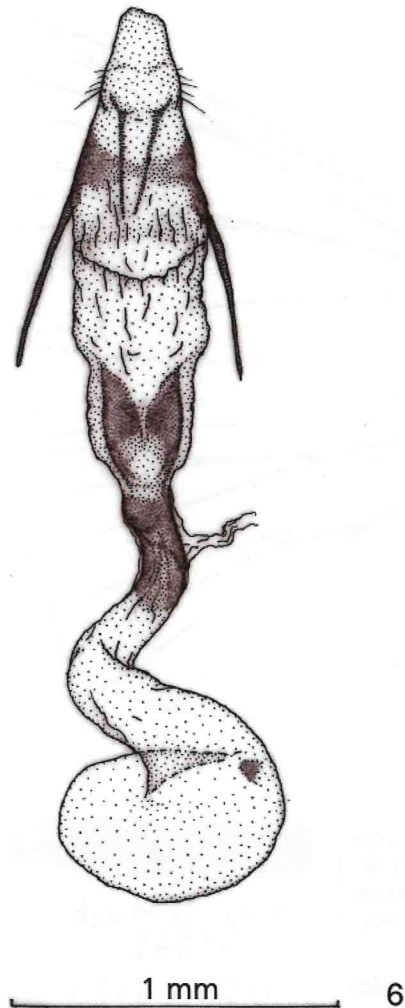


Fig. 6: *Ambia naumanni* sp. nov., female genitalia.

Male genitalia (Fig. 5): Vinculum large, with u-shaped saccus. Tegumen short, uncus with a broadly triangular base, otherwise slender, distinctly flattened dorso-ventrally, curved ventrad, pointed. Gnathos with strong lateral arms, medial process very narrow, slightly curved parallel to the uncus, minutely dentate dorsally, pointed at tip. Juxta large, with two dorsal spines situated laterally at the posterior margin. Valva simple, broadening towards apex, without a saccular spine or other appendages, slightly ciliate. Aedeagus with a slender, sharply bent process, arising just distally to the opening of the ductus ejaculatorius. Shaft of aedeagus strongly incurved beneath this process. A curved appendage originates at the inner side of the sinus.

Female genitalia (Fig. 6): Ovipositor comparatively short, with moderately long apophyses. Ostium wide, with a bilobed sclerotized structure inside. Upper third of the ductus bursae sclerotized, with the ductus seminalis originating in the center of this region. Ductus bursae slightly broadening towards corpus, which is small and with a trace of a signum only.

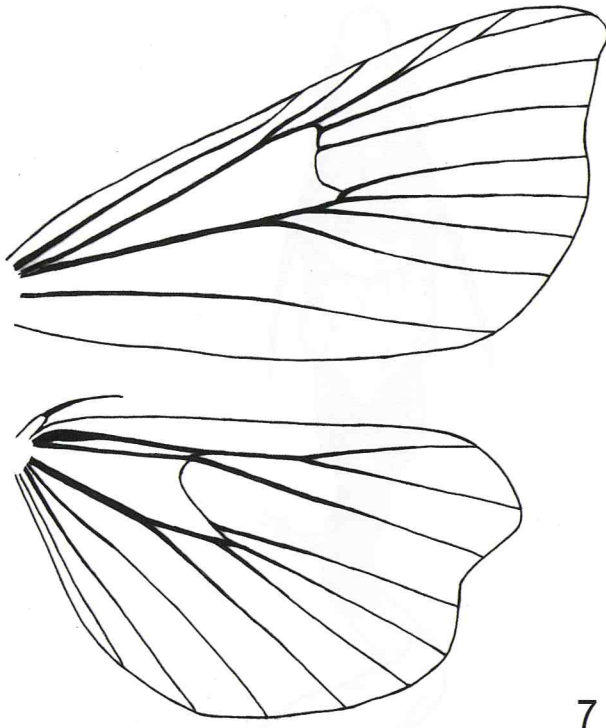


Fig. 7: *Ambia naumannii* sp. nov., wing venation.

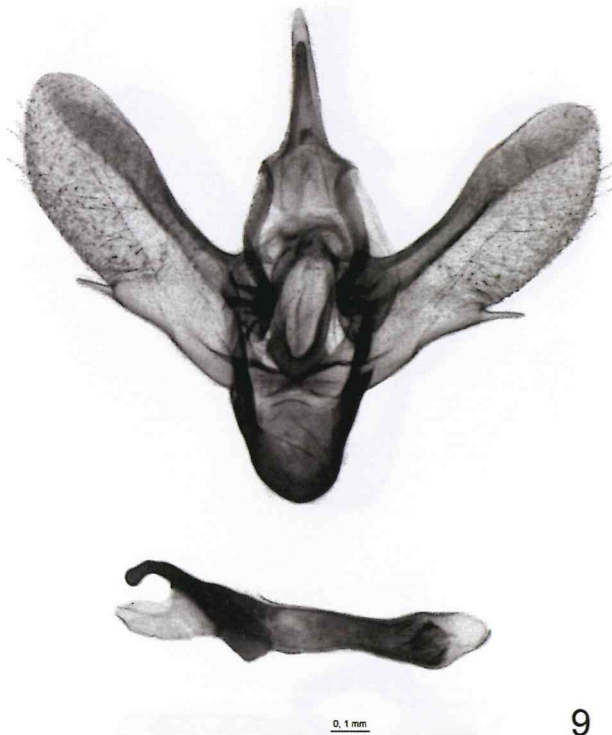


Fig. 9: *Ambia ptolycusalis* Walker, 1859. Male genitalia of holotype.

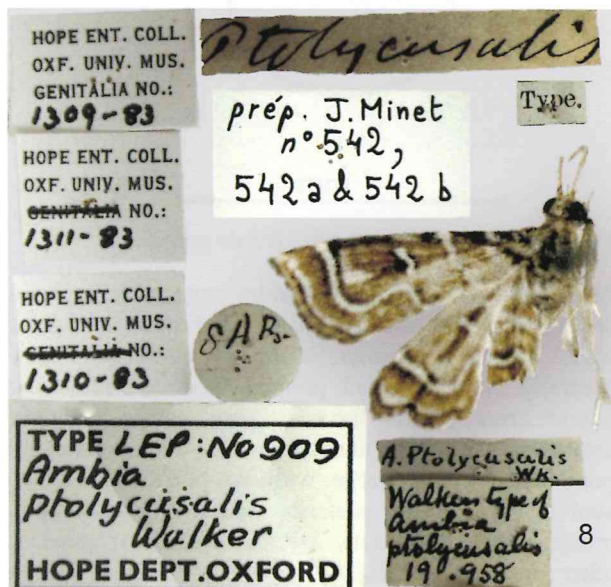


Fig. 8: *Ambia ptolycusalis* Walker, 1859. Holotype with labels (Sarawak, Borneo).

The new species is very similar to the Western Palearctic *Ambia thyridialis* Lederer, which can easily be distinguished by the more brownish ground colour of the wing surface, with yellowish scales only found in the marginal fasciae. *Ambia thyridialis* Lederer is also similar in the male genitalia, lacking the saccular process of the valvae as well, but the aedeagus is completely different.

Distribution and bionomics: Hitherto only known from the type-locality in SW. China, Yunnan, Yueling-shan near Lijiang, at elevations between 2800 and 3500 m. Flight-period from mid of June until beginning of September. First instars and foodplant unknown, but probably fern-feeding, as most of the Musotiminae are.

Acknowledgments and etymology. The new species is named in honour of Prof. Dr. C. M. NAUMANN who improved the situation in the entomological department of our museum considerably during his directorship and facilitated our work in many respects. We are grateful to Prof. Dr. K. Efetof and V. Saenko for the drawings of the genitalia and to D. J. Mann (Hope Entomological Collections, Oxford) for the loan of the type slides of *Ambia ptolycusalis*.

REFERENCES

- LANGE, W. H. (1956): A generic revision of the aquatic moths of North America (Lepidoptera: Pyralidae, Nymphulinae). *Wasmann Journal of Biology* **14**(1): 59-144.
- MUNROE, E. & SOLIS, M. A. (1999): The Pyraloidea. pp. 233-256 in KRISTENSEN, N. P. (ed.): *Lepidoptera, Moths and Butterflies. I. Evolution, Systematics, and Biogeography*. In FISCHER, M. (Ed.): *Handbuch der Zoologie* **4**. Arthropoda: Insecta (35). Berlin, New York, 491 pp.

- SOLIS, M. A. & MAES, K. V. N. (2002): Preliminary phylogenetic analysis of the subfamilies of Crambidae (Pyraloidea Lepidoptera). *Belgian Journal of Entomology* **4**: 53-95.
- SOLIS, M. A., YEN, S.-H. & GOOLSBY, J. H. (2004): Species of *Lygomusotima* new genus and *Neomusotima* Yoshiyasu (Lepidoptera: Crambidae) from Australia and Southeastern Asia feeding on *Lygodium microphyllum* (Schizaeaceae). *Annals of the Entomological Society of America* **97**(1): 64-76.
- SPEIDEL, W. (1981): Die Abgrenzung der Unterfamilie Acentropinae. *Atalanta* **12**: 117-129.
- SPEIDEL, W. (1984): Revision der Acentropinae des paläarktischen Faunengebietes (Lepidoptera, Crambidae). *Neue Entomologische Nachrichten* **12**, 157 pp., including 3 colour plates.
- HAMPSON, G. F. (1897): On the classification of two subfamilies of moths of the family Pyralidae: the Hydrocampinae and Scoparianae. *Transactions of the Entomological Society of London* **1897**: 127-240.
- MUNROE, E., in DOMINICK, R. B., et al. (1972-3): The Moths of America North of Mexico **13. 1**. Pyraloidea (Pyralidae part.). London (E. W. Classey), 304 pp., pl. 1-13 and A-K.
- YEN, S.-H., SOLIS, M. A. & GOOLSBY, J. A. (2004): *Austromusotima*, a new Musotimine genus (Lepidoptera: Crambidae) feeding on Old World Climbing Fern, *Lygodium microphyllum* (Schizaeaceae). *Annals of the Entomological Society of America* **97**(3): 397-410.
- YOSHIYASU, Y. (1985): A systematic study of the Nymphulinae and the Musotiminae of Japan (Lepidoptera: Pyralidae). *Scientific Reports of the Kyoto Prefectural University (Agriculture)* **37**: 1-162.

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