



Description of *Oligophlebia minor* (Lepidoptera: Sesiidae), a New Species of Clearwing Moth from China

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DESCRIPTION OF *OLIGOPHLEBIA MINOR* (LEPIDOPTERA: SESIIDAE), A NEW SPECIES OF CLEARWING MOTH FROM CHINAHAI-MING XU¹, GUO-YI WU², YUTAKA ARITA³ AND MIN WANG^{1,*}¹Department of Entomology, South China Agricultural University, Guangzhou, Guangdong 510642, P. R. China²Dadongshan (Mt.) Management Station, Nanling National Nature Reserve, Guangdong 513400, P. R. China³Zoological Laboratory, Faculty of Agriculture, Meijo University, Tempaku-ku, Nagoya, 468-8502 Japan

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ABSTRACT

A new species of the clearwing moths, *Oligophlebia minor* XU & ARITA **sp. nov.** from Guangxi, South China was described. Photos of adult and male genitalia were provided. The type specimens are deposited in Department of Entomology, South China Agricultural University.

Key Words: clearwing moths, new species, *Oligophlebia*, South China

RESUMEN

Se describe una nueva especie de las polillas de alas claras, *Oligophlebia minor* Xu y Arita, **sp. nov.** de Guangxi, Sur de China. Se proveen fotos de los adultos y de la genitalia masculina. Los especímenes tipo son depositados en el Departamento de Entomología de la Universidad del Sur de China Agrícola.

Palabras Clave: polillas de alas claras, nuevas especies, *Oligophlebia*, Sur de China

The wings of the Lepidopteran family, Sesiidae, have very few scales, which leave the wings transparent; hence they are known as clearwing moths in the world. Also it is well known that the sesiids typically mimic certain Hymenoptera, in that their general appearance is superficially similar to that of a wasp or hornet. The larvae of Sesiidae are typically wood-borers, but some burrow in plant roots; therefore some species are serious pests of fruit trees or timber or other crop plants (Edwards et al. 1999). The contributions to the taxonomy of Chinese Sesiidae before the 1970's mainly depended on some foreign taxonomists, but thereafter 2 native taxonomists, J. K. Yang (Yang & Wang 1989a, 1989b) and Z. G. Xu (Xu & Liu 1992, 1994; Xu 1993; Xu et al. 1997a, 1997b, 1998, 1999a, 1999b), concentrated on the Sesiidae of northern China. Hua (2005) listed 75 species of Sesiidae from China, and a catalog of the family Sesiidae in China was provided by Jin et al. (2008).

The adults of Sesiidae are rarely observed in nature although some species frequent flowers. The chemical identification and synthesis of the Sesiid female pheromones provided a break-

through for the discovery and study of Sesiid species (Edwards et al. 1999).

The genus *Oligophlebia* is a small group in the Sesiidae, and among the 7 known species 2 have been recorded in Palaearctic Region and 5 in the Oriental Region. The *Oligophlebia* of the world were summarized in a catalogue by Pühringer & Kallies (2004).

During surveys of Lepidoptera in southern China, we collected a new species of the genus *Oligophlebia* Hampson, 1893 by pheromone, which is described in the present paper.

MATERIALS AND METHODS

The specimens were collected in Guangxi Mao'ershan National Nature Reserve, Guangxi Province. Photos of adult and male genitalia were taken by a Nikon Coolpix S8000 digital camera. The process for dissection of the genitalia followed Robinson (1976). Types were deposited in the Insect Collection of the Department of Entomology, South China Agricultural University, Guangzhou, China. All the photos were processed with Adobe Photoshop 6.0.



Fig. 1. *Oligophlebia minor* Xu & Arita **sp. nov.**, male, holotype.

RESULTS

OLIGOPHLEBIA MINOR XU & ARITA **SP. NOV.** (FIGS. 1-4)

Diagnosis

The new species is similar to *O. cristata* Le Cerf, 1916 and *O. nigralba* Hampson, 1893, which can be separated by the shape of triangular external transparent area on forewings. The new species is also similar to other species in *Oligophlebia*, but it can be easily separated from others

by the forewings. For example *O. ulmi* (Yang & Wang 1989) has 2 streaks on forewings, *O. amal-leuta* Meyrick, 1919 has 6 streaks on forewings, *O. subapicalis* Hampson, 1919 has 4 white points on forewings, *O. episcopopa* (Meyrick 1926) has a large ochreous-hyaline posterior blotch crossed by 3 veins on forewings, while the new species has 3 streaks on forewings. The new species is also separated from *O. micra* (Gorbunov 1988) by hindwing venation.

Description

Male (Fig. 1). Alar expanse 13.0 mm; fore wing 5.5 mm; antenna 3.0 mm; body length 5.0 mm. Head: antenna filiform, black; vertex black; frons with silver sheen scales; occipital fringe dorsally black, laterally white; labial palpus short and white; proboscis long. Thorax: black; patagia black; tegula black; metapleuron posterior with long hair-like black scales. Leg: fore coxa black; fore femur covered with black scales; fore tibia with black hair-like scales; fore tarsus light yellow with fourth and fifth tarsomere black; mid coxa and mid femur covered with black scales; mid tibia covered with black hair-like scales, with a pair of distal spur covered with black hair-like scales; on mid tarsus, first and second tarsomere with black hair-like scales; third and fourth tarsomere light yellow; fifth tarsomere black; hind coxa and hind femur covered with black scales; hind tibia with black hair-like scales, with a pair of mid spurs, with a pair of distal spurs covered with black hair-like scales; hind tarsus mainly light yellow, longer than hind tibia, with first tar-



Figs. 2-4. *Oligophlebia minor* Xu & Arita **sp. nov.**, (holotype) male genitalia. 2. Valva. 3. Aedeagus. 4. Tegumen-uncus complex.

somere brown and fifth tarsomere black. Abdomen: black; sternite basally and 7th segment with white band; anal tuft yellow. Fore wing: black; external transparent area divided into 3 cells; apical area mixed with yellow scales; cilia grey. Hind wing: transparent; discal spot undeveloped; veins black; cilia grey.

Male genitalia (Figs. 2-4): Uncus and tegument broad, oblong; gnathos undeveloped; valva triangular; dorsal half and distal field with long hair-like setae; medial field with short strong setae; sacculus densely covered with strong short setae; saccus longer than vinculum, basally round; aedeagus elongate; coecum penis ventrally sclerotized, dorsally membranous; vesica long, covered with numerous minute tile-shape cornuti.

Female: unknown.

Host Plant

Unknown.

Habitat and Bionomics

The type specimens were collected in early Aug 2007 and 2008 at the edge of the secondary forest of Mt. Mao'ershan.

Material Examined

HOLOTYPE: ♂, CHINA, Guangxi, Guilin, Mao'ershan, 800 m, 12-VIII-2008, collected by WU Guoyi, deposited in Department of Entomology, South China Agricultural University; **PARATYPE:** ♂, same locality as the holotype, 8-VIII-2007, collected by Mamoru Owada.

Distribution

At present only known from the type locality.

Etymology

The specific name is derived from Latin, *minor* means tiny, referring to the tiny body of the species.

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REFERENCES CITED

- EDWARDS, E. D., GENTILI, P., HORAK, M., AND ET AL. 1999. The Cossoid/Sesioid Assemblage, chapter 11, *In* N. P. Kristensen [ed.], *Lepidoptera, Moths and Butterflies vol. 1: Evolution, Systematics, and Biogeography*. Handbuch der Zoologie. Eine Naturgeschichte der Stämme des Tierreiches/Handbook of Zoology. A Natural History of the phyla of the Animal Kingdom. Band/Vol. IV Arthropoda: Insecta Teilband/Pt. 35: 491 pp. Walter de Gruyter, Berlin, New York.
- GORBUNOV, O. 1988. A new species and genus of the clearwing moths (Lepidoptera, Sesiidae) of the subfamily Tinthiinae from the Primorsky Kray (Far East). *Biologiyevskie Nauki* 7, 45-47. In Russian with English summary.
- HAMPSON, G. F. 1919. A classification of Aegeriadae of the Oriental and Ethiopian regions. *Novit. Zool.* 26, 46-119.
- HUA, L. Z. 2005. List of Chinese Insects, vol. III. Sun Yat-sen Univ. Press, Guangzhou, China, pp 595.
- JIN, Q., WANG, S. X., AND LI, H. H. 2008. Catalogue of the family Sesiidae in China (Lepidoptera: Sesiidae). *Shilap Revta. Lepid.* 36(144): 507-526.
- LE CERF, F. 1916. Explication des planches. *In* C. Oberthür [ed.], *Etudes de Lepidopterologie Comparée* 12(1): 7-14, pls. 373-381.
- PÜHRINGER, F., AND KALLIES, A. 2004. Provisional checklist of the Sesiidae of the world (Lepidoptera, Ditrysia). *Mitt. Entomol. ArbGemein. Salzkammergut* 3: 1-85.
- ROBINSON, G. S. 1976. The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. *Entomol. Gaz.* 27: 127-132.
- XU, Z. G., AND LIU, Y. Q. 1992. Lepidoptera: Microlepidoptera. pp. 666-755 *In* J. Peng and Q. Liu [eds.], *Iconography of forest insects in Hunan, China*. Hunan Sci. Technol. Press, Changsha. In Chinese.
- XU, Z. G. 1993. Notes of a new species *Cissuwora huoshanensis* Xu (Lepidoptera, Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 2(1): 7-9. In Chinese with English summary.
- XU, Z. G., AND LIU, Y. Q. 1993. Four new species and two new records of the subfamily Tinthiinae from China (Lepidoptera: Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 2(2): 1-5. In Chinese with English summary.
- XU, Z. G., JIN, T., AND LIU, X. L. 1994. A summary and a new species of the genus *Scasiba* (Lepidoptera, Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 3(4): 1-5. In Chinese with English summary.
- XU, Z. G., JIN, T., AND LIU, X. L. 1997a. A new clearwing moth on the Hippophae tree from Qinghai, China (Lepidoptera: Sesiidae). *Holar. Lepid.* 4(2): 77-79.
- XU, Z. G., JIN, T., AND LIU, X. L. 1997b. A new clearwing borer on sassafras tree from Jiangxi and Hunan, China (Lep. Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 6(4): 1-3. In Chinese with English summary.
- XU, Z. G., JIN, T., AND LIU, X. L. 1998. Two *Bembecia* clearwing moths from northwest China (Lepidoptera: Sesiidae). *Holar. Lepid.* 5(2): 63-64.
- XU, Z. G., JIN, T., AND LIU, X. L. 1999a. A new and six recorded clearwing moths from Ningxia (Lepidoptera: Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 8(1): 7-10. In Chinese with English summary.
- XU, Z. G., JIN, T., AND LIU, X. L. 1999b. Description of a new species of the genus *Sphecosesia* Hampson, 1910, from Jiangxi (Lep.: Sesiidae). *Acta Agric. Boreali-occidentalis Sinica* 8(2): 3-5. In Chinese with English summary.
- YANG, J. K., AND WANG, Y. 1989a. Four new species of the genus *Synanthedon* (Lepidoptera: Sesiidae). *Zool. Res.* 10(2): 133-138. In Chinese with English summary.
- YANG, J. K., AND WANG, Y. 1989b. A new genus and six species of clear-wings damaging forest and fruit tree. *Forest Res.* 2(3): 229-238. In Chinese.