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# Review of *Homaloxestis* Meyrick (Lepidoptera, Lecithoceridae) of the Philippine Islands, with descriptions of two new species

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## Abstract

The six species of *Homaloxestis* Meyrick recorded from the Philippine Islands are reviewed: *H. aganacma* Diakonoff, *H. alopecopa* Meyrick, *H. cholopis* (Meyrick), *H. luzonensis* **sp. nov.**, *H. plocamandra* (Meyrick), and *H. quadralis* **sp. nov.** *Homaloxestis plocamandra* (Meyrick), formerly known from continental southeastern Asia, is newly recorded from the Philippines. A key to the species is provided, along with photographs of the adults and genitalia of the two new and one newly recorded species.

**Key words:** Taxonomy, systematics, new species, *Homaloxestis*, Lecithoceridae, Lepidoptera, Philippines

## Introduction

The genus *Homaloxestis* Meyrick, 1910 (Lecithoceridae: Lecithocerinae) is restricted to the Oriental Region with few exceptions: *H. briantiella* (Turati) occurs in Europe, and *H. hemigastra* Meyrick and *H. subpallida* Meyrick are found in Africa. Building on the foundation of early workers (Turati, 1879; Snellen, 1903; Meyrick, 1906, 1907, 1910, 1918, 1926, 1929, 1932; Diakonoff, 1968; and Gozmány, 1973, 1978), Wu & Liu (1992) and Wu (1994, 1997) described three species from China; Park (1999) described a species from Taiwan; Wu & Park (1999) described two species from Sri Lanka; and Park (2004) described five species from Thailand, bringing to 41 the total number species in the genus.

In the Philippines, *H. alopecopa* Meyrick, 1929 was described from Mindanao, and *H. aganacma* Diakonoff, 1968, based on a single female, and *H. surrepta* Diakonoff, 1968, based on a single male, were described from Luzon. *H. surrepta* was synonymized with *H. cholopis* (Meyrick) by Gozmany (1978), and *H. aganacma* Diakonoff and *H. alopecopa* Meyrick are known only from their holotypes. In this paper, two new species, *H. luzonensis*, **sp. nov.**, and *H. quadralis*, **sp. nov.**, are described and *H. plocamandra* Meyrick is newly reported from the Philippines. No additional specimens of *H. cholopis*, *H. aganacma*, or *H. alopecopa* were discovered during the course of this study.

*Homaloxestis* is characterized by the forewing usually (but not always) bearing a pale orange or whitish band along the costa contrasting with the ground color; veins $M_2$, $M_3$, $CuA_1$, and $CuA_2$ separate at the base; a pair of extremely long rods with extensible hair-pencils at their apex on the 7$^{th}$ segment; and male genitalia with irregularly concave ventral margin bearing numerous short spines.

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## Materials and methods

Specimens examined in this study are from collections made in the 1960s by the staff of the Zoological Museum, University of Copenhagen (ZMUC), Denmark; W. Mey's collections made in 1997–1999 and deposited in the Museum für Naturkunde, Hummbold-Universität, Berlin (ZMHB), Germany; and collections examined by A. Diakonoff deposited in the U. S. National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM), U.S.A. Types of the new species are deposited in ZMUC or ZMHB.


**FIGURE 1.** Map of the collecting localities for the subfamily Lecithocerinae in the Philippines (A: Viscaya; B: Mt. Zambales; C: Roosevelt Nat. Park, Dinalupihan; D: Mt. Makiling; E: Mantalingajan; F: Iloilo, Panay; G: Mt. Apo).

## Systematic accounts

### Genus *Homaloxestis* Meyrick, 1910: 440.

Type species: *H. endocoma* Meyrick, 1910: 440. Type locality (TL): S. India

### Key to the species of *Homaloxestis* Meyrick in the Philippines

1. Head and tegula with cream white scales laterally, contrasting with brown ground color; forewing with a white band along the costa contrasting with ground color ..... 2
- Head and tegula dark brown, with concolorous scales laterally; forewing without white band along costa ..... 3
2. Wingspan less than 16 mm; fringe of forewing cream white to pale grayish orange..... *quadralis*
- Wingspan greater than 17 mm; fringe of forewing yellowish brown..... *luzonensis*
3. Hind tibia with long, rough hairlike scales dorsally..... *plocamandra*
- Hind tibia with scales unmodified dorsally ..... 4
4. Female genitalia with numerous conical spines in ductus bursae ..... *cholopis*
- Female genitalia without conical spines in ductus bursae..... *aganacma*

### *1. Homaloxestis aganacma* Diakonoff, 1968

*Homaloxestis aganacma* Diakonoff, 1968: 129. Type locality (TL): Luzon, Philippines. Type in USNM.

**Diagnosis.** Wingspan 13 mm. This species was described from a single female from Luzon. The female genitalia are similar to those of *H. luzonensis* but can be distinguished from the latter by the elongate, rhomboid signum.

*Female genitalia*. See Diakonoff (1968: fig. 188); antrum cup-shaped, broader distally, weakly sclerotized. Signum rhomboid, elongate, uniformly spinulate on surface.

**Material examined.** 1♀ (holotype), Luzon, Mt. Makiling (Baker), gen. prep. no. USNM-89993. Type in USNM.

**Distribution.** Philippines (Luzon).

**Remarks.** No additional specimens of *H. aganacma* Diakonoff have been recorded, despite the fact that many specimens were collected in the vicinity of its type locality.

### *2. Homaloxestis alopecopa* Meyrick, 1929

*Homaloxestis alopecopa* Meyrick, 1929: 518. TL: Mindanao, Philippines. Type in BMNH.

**Remarks.** This species was described from Mindanao, Philippines, based on a single female (1?, Mt. Apo, 6500 ft, May); no additional specimens have been recorded. Moreover, the abdomen of the holotype is missing, so the female genitalia are known. Consequently, it is nearly impossible to diagnose this species because it is superficially similar to other congeners.

### *3. Homaloxestis cholopis* (Meyrick, 1906)

*Lecithocera cholopis* Meyrick, 1906: 149. TL: Koni, Burma. Type in BMNH.
*Homaloxestis cholopis*: Clarke, 1965: 88; Gozmány, 1973: 415; 1978: 67; Wu, 1997: 146; Park 1999: 240.

*Homaloxestis lophophora* Janse, 1954, 5: 341 TL: Pretoria. Deposition of type unknown. Synonymized by Gozmány (1978).
*Homaloxestis surrepta* Diakonoff, 1968: 130, synonymized by Gozmány (1978). TL: Philippines. Type in USNM.

**Diagnosis.** Wingspan 14.5–16.0 mm. The species is superficially similar to *H. baibaraensis* Park, 1999, but the apex of the forewing is more acute and the hindwing is more grayish. The male genitalia are similar to those of *xylotripta* Meyrick and *australis* Park, but can be distinguished by the shape of the valva with a nearly straight costa.

*Male genitalia*. See Clarke (1965: pl. 44, figs. 1a–b), Gozmány (1978: pl. 18, fig. 9), and Park (1999: figs. 25, 25a–b). Valva with costa nearly straight, no acute process on ventral margin medially.
*Female genitalia*. See Gozmány (1978: pl. 59, fig. 9) and Park (1999: fig. 52). Antrum short, nearly quadrate. Ductus bursae broadened medially, with many conical spines internally. Signum rhomboid with median groove.

**Material examined.** 1♂, Mt. Apo, Mindanao (erroneously cited as Luzon in the original description), 8.V.1945 (J. G. Franclemont), gen. prep. no. USNM-8996 Diakonoff. Type in USNM.

**Distribution**. Philippines, Taiwan, China, Myanmar, Nepal, India, Java, SW Africa.

**Remarks.** This species has a wide geographic distribution from eastern Asia to southwestern Africa. Diakonoff (1968) described *H. surrepta* Diakonoff from the Philippines, but it was latter synonymized with *H. cholopis* (Meyrick) by Gozmány (1978). See Diakonoff (1968: fig. 187) for an illustration of the male genitalia. No additional specimens from the Philippines were found during this study.

***4. Homaloxestis luzonensis* sp. nov.**
(Figs. 2, 5, 5a, 8)

**Type.** HOLOTYPE ♀, Luzon, Mt. Bald, Malico, Santa Fe, N. Viscaya, 1150 m, 11–13.XI.1997 (Mey, Ebert & Nuss), gen. prep. No. CIS-5043. PARATYPES: 2♀, same data as the holotype; 1♂, Luzon, Mt. Zambales, Coto, 150 m, 9–10.XI.1998 (Mey & Spidiel), gen. prep. no. CIS-5226. Types in ZMHB.

**Diagnosis.** This new species is superficially similar to *H. quadralis* but differs in being larger, having the fringe of the forewing grayish brown instead of creamy white, and having a narrower whitish band along the costal margin.

**Description.** Female (Fig. 2). Wingspan 17–18 mm. Head yellowish brown, with pale orange scales laterally. Tegula yellowish brown medially, pale orange laterally, much broader than that of *cholopis*. Antenna pale orange, without annulations on flagellum. Labial palpus long; second segment much slenderer than that of *cholopis*; third segment longer than second, dark fuscous ventrally. Thorax yellowish brown. Forewing ground color yellowish brown; costa with pale orange band along margin; discal spot absent; apex acute; termen slightly sinuate; fringe with paler basal line and broad yellowish brown subbasal band, then paler outwardly. Venation similar to that of *cholopis*. Hindwing grayish orange; apex acute; fringe concolorous with ground color.

*Male genitalia* (Figs. 5, 5a). Gnathos strongly curved. Valva broad, with a median process on ventral margin; distal part semi-ovate, with small spines along outer margin. Aedeagus bent, with 7–8 conical denticles medially. Seventh segment with oblique lateral ribs and a tubular concavity in the middle of the sternite; paired extension of rod internally, as long as three segments combined, bearing long extensible hair-pencil at apex, about 1.5 times length of rod.

*Female genitalia* (Fig. 8). Eighth sternite deeply emarginate medially. Antrum cup-shaped, rather short, weakly sclerotized. Ductus bursae slightly longer than corpus bursae; ductus seminalis arising from near middle. Corpus bursae ovate; signum rhomboid, with transverse dentate median groove.


**FIGURES 2–4.** Adults of *Homaloxestis*. 2. *H. luzonensis*, holotype; 3. *H. plocamandra*; 4, *H. quadralis*, holotype.

**Distribution.** Philippines (Luzon).

**Etymology.** The species name is derived from the island of Luzon where the type locality situated.

**Remarks.** The female specimen is designated as the holotype because the male is in poor condition and its genitalia partly damaged.

### 5. *Homaloxestis plocamandra* (Meyrick, 1907)

(Figs. 3, 6, 6a–b, 9)

*Lecithocera plocamandra* Meyrick, 1907: 737. TL: Sikkim, India. Type in BMNH.
*Homaloxestis plocamandra*; Clarke, 1965: 95; Gozmány, 1973: 414, 1978: 72; Park, 2004: 40.

**Diagnosis.** Wingspan 14–16 mm (Fig. 3). This species can be distinguished from its congeners by the following: antenna shiny creamy white, upper surface of forewing without pale orange band along costa, mesopleura with a long hair-pencil, and dorsal edge of the hind tibia with long hairlike scales in the male. The species is very similar to *H. grabia* Wu & Park, described from Sri Lanka, but *H. grabia* (Fig. 6c) can be distinguished by the longer hair-pencils on the mesopleura and a sharply pointed median process on ventral margin of valva.

*Male genitalia* (Figs. 6, 6a–b). Also see Clarke (1965: pl. 47, figs. 3a–b). Basal lobes of uncus rather broad, roundly concave on caudal margin. Gnathos moderate. Valva slender; costa gently concave; distal half densely setose; ventral margin strongly sinuate with short spines along margin, with protrusion at lower corner. Juxta small, concave medially, with expansions latero-caudally, truncated at apices. Aedeagus as long as valva, narrowed towards apex; apex pointed on dorsal surface; cornuti consisting of a row of 7–10 larger denticles, a series of smaller ones, and numerous spicules.

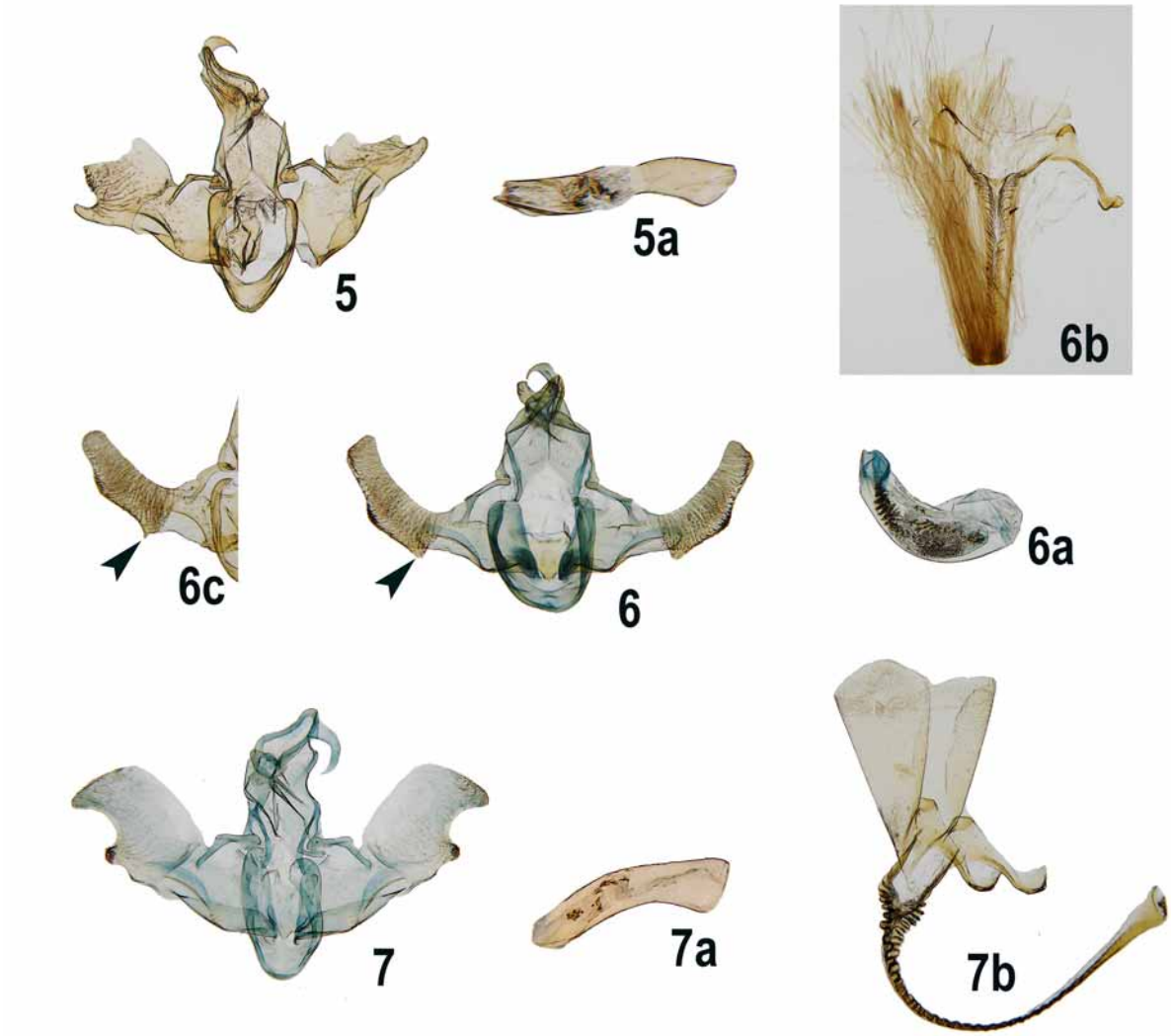
*Female genitalia* (Fig. 9). Antrum small, cup-shaped, as wide as ductus bursae. Ductus bursae broadly inflated at middle, with many conical spines. Signum rhomboid, with a grove centrally.

**Material examined.** 5♀, 1♂, Luzon, Dinalupihan, Roosevelt Nat. Park, 9.V.1999 (Mey & Ebert), gen. slide no. CIS- 5021, 5041; 1♀, Luzon, Banquet, 19–21.XI.1997(Mey, Ebert & Nuss), gen. prep. no. CIS-5269; 1♀, Luzon, Coto, Mt. Zambales, 150 m, 9–10.XI.1998 (Mey & Spiedel); 1♂, same locality, 5–7.XI.1998 (Mey & Spiedel); 2♂, same locality, 110 m, 5–6.V.1999 (May & Ebert), gen. prep. No. CIS-5266; 7♀, Panay,

Iloilo San Bernadine, 400 m, 12.IV.1995 (Mey), gen. prep. no. CIS-5264; 2♀, Mindanao, Calimintao, 8–10.III.1994 (Mey), gen. prep. no. CIS- 5267.

**Distribution.** Philippines (new record), Thailand, Nepal, northern India.

**Remarks.** We were surprised to find *H. plocamandra* Meyrick in the Philippines; it previously was known from northern India, Nepal, and Thailand (Gozmany, 1978; Park, 2004) but not from China or Taiwan, which are considerably closer to the Philippines.




**FIGURES 5–7.** Male genitalia of *Homaloxestis*. 5, *H. luzonensis* sp. nov., paratype, gen. prep. no. CIS-5226; 5a, ditto, aedeagus; 6, *H. plocamandra* (Meyrick); 6a, ditto, aedeagus; 6b, ditto, a long rod in the 7th segment with an extensile hair-pencils; 6c, *H. grabia* Wu et Park, left valva; 7, *H. quadralis* sp. nov., holotype, gen. prep. no. CIS-5027; 7a, ditto, aedeagus; 7b, ditto, rod in the 7th segment.

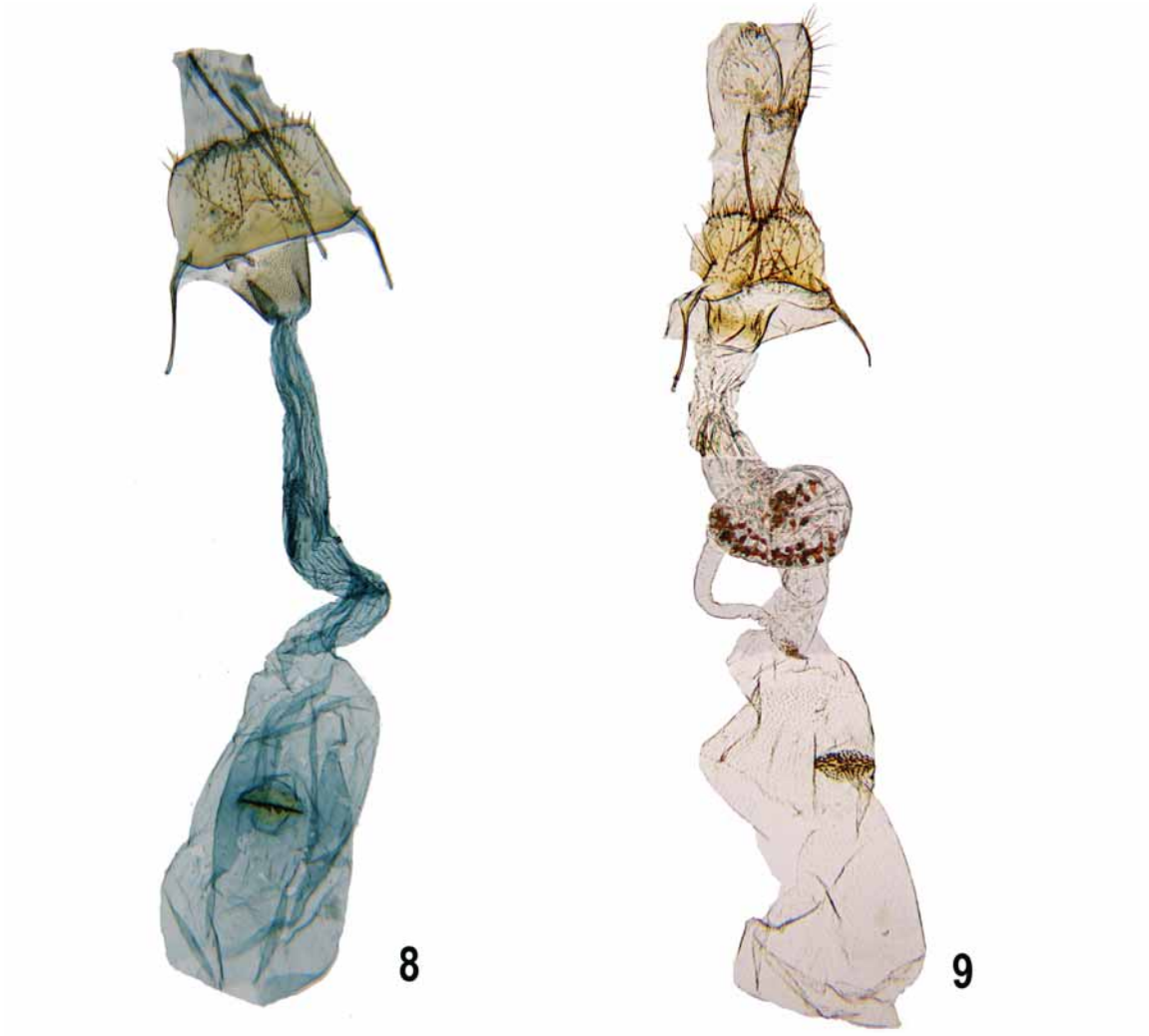
**6. *Homaloxestis quadralis* sp. nov.**
(Figs. 4, 7, 7a–b)

**Type.** HOLOTYPE ♂, Palawan, Pinigisan, Mantalingajan, 600 m, 4.IX.1961, Noona dan Exp. 61–62, mercury vapor light trap, gen. prep. no. CIS-5027. PARATYPES: 1♂, same data as holotype, gen. prep. no. CIS-5227; 1♂, same locality, 10.XI.1961, gen. prep. no. CIS-5270; 1♂, same locality, 1150 m, 18.IX.1961, gen.prep. no. CIS-5228. Types in ZMUC.

**Diagnosis.** Superficially, *H. quadralis* is similar to *H. myeloxestis*; it can be distinguished from the latter by the antenna without distinct annulations, the 2nd segment of labial palpus more slender, and the fringe of the

forewing creamy white. The male genitalia are also similar to those of *H. xylotripta* in the quadrate valva with a nearly straight costa. In other species the costa is convex medially, the ventral margin strongly concave beyond the apex, and the median process poorly developed.

**Description.** Male (Fig. 4). Wingspan 15–16 mm. Head brownish to dark brown, with creamy white scales laterally. Antenna creamy white to pale orange, without annulations on flagellum. Second segment of labial palpus thickened as in other species, more or less slender without rough scales dorso-apically. Thorax brown to dark brown. Tegula brownish to dark brown medially, with creamy white scales laterally. Forewing ground color brownish to dark brown; costa with a broad creamy white band along margin dorsally; discal spot absent; apex acute; termen slightly sinuate; fringe creamy white to pale grayish orange. Venation with $R_3$ stalked at 2/5; $R_4$ and $R_5$ stalked beyond 4/5; $M_3$ at half distance between $M_3$ and $CuA_1$ at base. Hindwing pale gray; apex acute; fringe gray with pale grayish orange basal line.




**FIGURES 8–9.** Female genitalia of *Homaloxestis*. 8, *H. luzonensis* sp. nov., holotype, gen. prep. no. CIS-5043; 9. *H. plocamandra* (Meyrick), gen. prep. no. CIS-5269.

*Male genitalia* (Figs. 7, 7a–b). Basal lobes of uncus short. Gnathos large, strongly curved. Distal part of valva subquadrate with nearly straight costa; incision near base shallow; ventral margin strongly concave beyond apex, followed by a small protrusion bearing spiniform setae, median process poorly developed, not sharply pointed. Juxta shield-shaped; caudal margin deeply concave. Aedeagus bent, narrowed toward apex; dorsal surface slightly pointed apically; cornuti a group of less than 6–7 conic denticles and a group of smaller ones beyond basal two-thirds. Seventh and eighth sternites modified; seventh sternite with oblique lateral ribs

and tubular concavity in the middle of sternite, with a long rod which extends to sixth segment; long extensible hair-pencils at apex, as long as combined length of 3–8$^{th}$ segments.

*Female genitalia*. Unknown.

**Distribution.** Philippines (Palawan).

**Etymology.** The specific name is derived from the Latin *quadra* (= rectangular), referring to the shape of the distal part of the valva.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