



Two New Species of the Genus *Protolychnis* Meyrick (Lepidoptera, Lecithoceridae, Torodorinae) from Tanzania

Park KT^{1*} and Yu TU²

¹108-508, Semteo Village, Irwon-ro, Gangnam-gu, Seoul, Korea

²Department of Plant Medicine, Chungbuk National University, Cheongju, Korea

*Corresponding author: Kyu-Tek Park, Semteo Village, Irwon-ro, Gangnam-gu, Korea, Email: ktpark02@gmail.com

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Abstract

Genus *Protolychnis* Meyrick, 1925 of the family Lecithoceridae in Tanzania is reviewed, with descriptions of two new species of the genus (*P. circuliella* Park, sp. nov. and *P. amaniensis* Park, sp. nov.). Males of *P. morogoroensis*, which was described based on a single female, were found and the male genitalia are described here for the first time. Images of adults and the genitalia of the new species are provided, and also illustration of the male genitalia of *P. morogoroensis* is given.

Keywords: Lecithoceridae; New species; Afrotropical fauna; Taxonomy

Introduction

Tanzania is one of the Sub-Equatorial Afrotropic countries located in the east of the central Africa. The fauna of family Lecithoceridae in Tanzania has been very poorly explored. Among more than 200 known species of the Lecithoceridae in the Afrotropical Region, only 18 species (six species of the subfamily Lecithocerinae and 12 species of the subfamily Torodorinae) have been reported from Tanzania [1-12].

The genus *Protolychnis* Meyrick, 1925 comprises 12 known species: nine species from Afrotropical Region, two species from Australia, and one species from China. In Tanzania, three species of *Protolychnis* Meyrick have been known: *P. maculata*, *P. morogorrrnsis* Park & Koo, 2021 and *P. tangaensis* Park, 2022 [8,9,12]. The genus is defined by the forewing with R_3 short-stalked with R_{4+5} , CuA_1 and CuA_2 shortly stalked, and the hind wing with M_2 coincident to M_3 . The male genitalia are very similar to those of the Oriental genus, *Antiochtha* Meyrick, 1905, but the forewing venation of *Protolychnis* Meyrick differs by the presence of M_2 in the forewing.

In the present study, two new species of *Protolychnis* Meyrick, 1925 (*P. circuliella* Park, sp. nov. and *P. amaniensis* Park, sp. nov.) are described from Tanzania.

Material and Methods

The present study is based on material collected from Tanzania by Leif Arvik, Natural History Museum, University of Oslo (NHMO), Norway, in 1990 & 1991 and by D. Agassiz, UK in 2000 and 2001. For the description, the wingspan was measured from the apex of the left wing to the apex of the right wing. The types of the new species are deposited in NHMO or in the Natural History Museum, London (NHMUK), London, UK.

Taxonomic Accounts

Genus *Protolychnis* Meyrick, 1925

Type species: *Lecithocera maculate* Walsingham, 1881: 276 [12]. Type locality: S. Africa.

***Protolychnis circuliella* Park, sp. nov.**

A731-F4F1A95A1089 (Figures 1).

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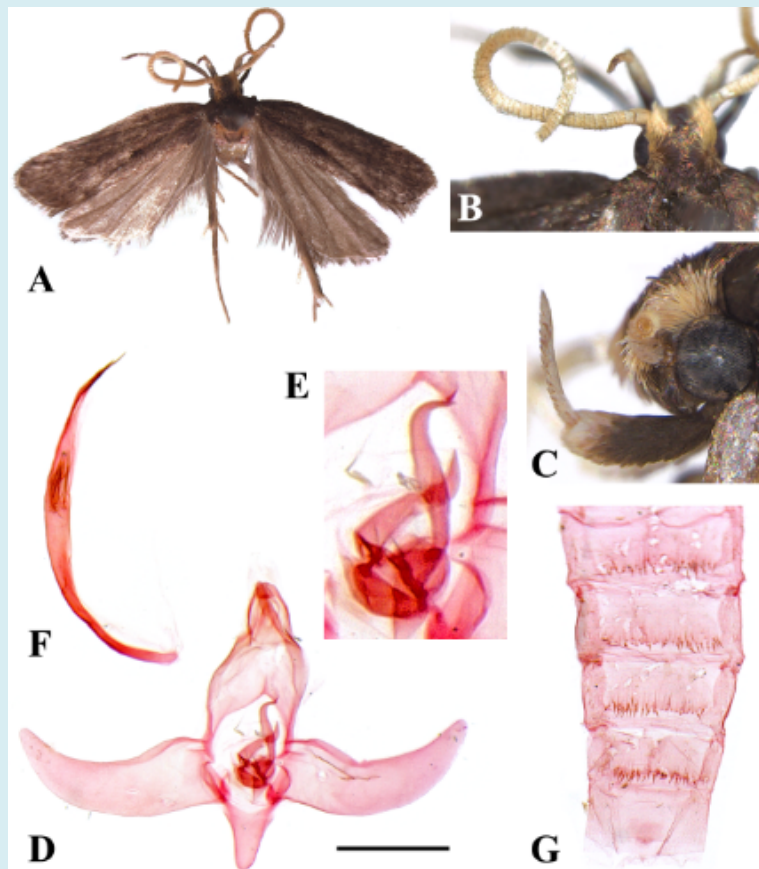


Figure 1: *Protolychnis circuliella* Park, sp. nov.: A, male, holotype (slide no. CIS-7569); B, head, dorsal view; C, labial palpus; D, male genitalia, slide no. CIS-7569 (holotype); E, focusing juxta; F, aedeagus; G, abdomen. Scale bar: 0.5 mm.

Type of specimen: Holotype: male, Tanzania, Tanga, Amani, E. Usambaras, Sigi River, 2000 m, 15 viii 2000, DJL Agassiz, gen. slide no. CIS-7569.

Diagnosis: The new species is superficially similar to *P. tangaensis* Park, 2022 which was described from the same locality of the latter, but it can be distinguished by the male genitalia: uncus less elongated, not exceeded the basal plate of gnathos (exceeded the basal plate of gnathos in *P. tangaensis*); valva less elongated, shorter; caudal processes of juxta slender, shorter, asymmetrical with different lengths; aedeagus narrowed in basal 1/3 with a bundle of cornuted medially (narrowed in basal 1/6, without cornutus in *P. tangaensis*). The species is also similar to *P. ocullela* Park & Koo, 2021 which was described from Kenya, but it is much smaller in size (via. wingspan 14.0 mm), forewing lacking orange-white discocellular spot, and the male genitalia are also differentiated by the larger caudal processes of the juxta.

Description: Male (Figures 1A-C). Wingspan 11.0 mm.

Head: Vertex dark brown with orange-white erect scales laterally. Antenna thick, orange white, shorter than forewing length. Labial palpus slightly upturned; 2nd segment thickened, covered with dark brown scales in basal 3/4, yellowish white beyond on outer surface; 3rd segment strongly upturned nearly same length as 2nd segment, yellowish white speckling with brown scales ventrally.

Thorax: Dark brown dorsally, Forewing slightly dilated distally; ground color dark brown uniformly, with a small, wedge-shaped costal patch at 3/4 of costa; no distinct discal spots; costa slightly arched at basal 1/4, then nearly straight; apex more or less rounded; termed oblique, slightly concave; fringe concolorous with narrow yellowish-white basal line; venation with M_2 present, CuA_1 and CuA_2 short-stalked. Hindwing broader than forewing, grey, with M_2 absent.

Abdomen: Spinous zones well-developed on upper surface, spines densely arranged in a row along posterior margin.

Male Genitalia (Figures 1D-F): Uncus elongate, nearly parallel sided beyond middle, with round apex. Gnathos

basal plate more or less ovate with rounded apex; median process small, slender, with sharply pointed apex. Valva with expansion basally on costa elongate; cucullus elongated, narrowed toward apex, upturned; costa concave, heavily sclerotized along margin, with sharply produced apex, ventral margin gently arched. Juxta rather small; caudal processes, slender, twisted pre-apically, symmetrical, with sharply pointed apex, extending to half of tegumen with longer; Vinculum with elongated saccal zone. Aedeagus very slender, much longer than valva+cucullus, narrowed in basal 1/3, broadened medially, then narrowed to apex, with a row of long hairs in apical 1/5; cornuti consisting of a bundle of

short, broom-like setae medially.

Distribution: Tanzania (Tanga).

Etymology: The species name is derived from the Latin, -circuli (= circular), referring to the circular aedeagus of the male genitalia.

• ***Protolychnis amaniensis* Park, sp. nov.**

LSID: urn: lsid: zoobank.org: act: 988E3E98-4864-4190-A74C-2953A65C65EC (Figure 2).

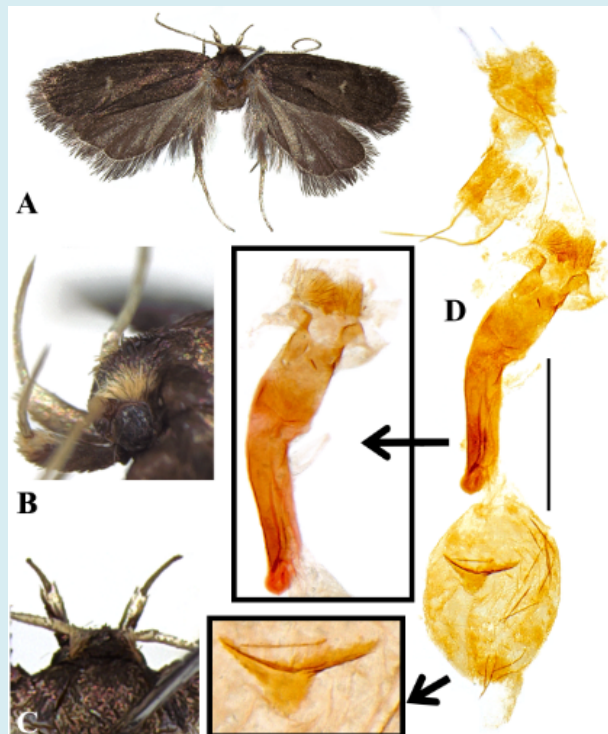


Figure 2: *Protolychnis amaniensis* Park, sp. nov.: A, female, holotype; B, head with labial palpi; C, head, dorsal view; D, female genitalia, slide no. CIS-7579 (holotype). Scale bar: 1 mm.

Type specimen: Holotype: female, Tanzania, Tanga, Amani (5°6'2"S 38°39'10"E), 1500 ft, 25 iv 2001, DJL Agassiz, gen. slide no. CIS-7579.

Diagnosis: The new species is similar to *P. maculata* Walsingham, 1881 which was described from S. Africa and also known in Tanzania, but it can be distinguished from the latter: forewing with rounded black discal spot and small yellowish-white reniform stigma, lacking codtal patch, whereas in *P. maculata*, forewing with yellowish-white discal spot and larger, elliptical spot near end of cell; with small wedge-shaped orange-white costal patch beyond 3/4 of costa. The female genitalia can also be distinguished by the ostium bursae more deeply concave, as in U-shape;

conjunction between antrum and ductus bursae not well defined, connected with heavily sclerotized ductus bursae, about 2/3 the width of antrum (ductus bursae sclerotized in distal half, narrow in *P. maculata*). The new species can be distinguished from *Protolychnis circuliella* Park, sp. nov. by the larger size (via. Wingspan 11 mm of *P. circuliella*); the antenna not thickened as much as the latter; the forewing without wedge-shaped costal patch, with large, black discal spot and orange-white reniform stigma, apex rounded; and termen convex.

Description: Female (Figures 2A-C). Wingspan 14.0 mm. Head: frons dark brown; vertex dark brown, with orange-white erect scales laterally. Antenna with elongated scape,

yellowish white all around; flagellum yellowish white throughout. Labial palpus strongly upturned; 2nd segment thickened, dark brown in basal 3/4, orange white beyond; 3rd segment slender, strongly upturned, yellowish white entirely, sharply pointed apically, longer than 2nd segment.

Thorax: Tegula and thorax fuscous yellowish brown dorsally, Forewing broadened, nearly parallel-sided; ground color fuscous yellowish brown uniformly, with black discal spot at middle, small, yellowish white reniform stigma near end of cell; costa arched at basal 1/4, nearly straight medially; apex rounded; termen convex; fringe concolorous with ground color. Hindwing broader than forewing, brownish grey.

Abdomen: Spinous zones well-developed on upper surface, spines densely arranged in a row along posterior margin.

Female genitalia: (Figure 2D): Eighth sternite deeply emarginated medially on posterior margin. Apophyses anterior long, slightly shorter than apophyses posteriores.

Ostium bursae deeply concaved into U-shape, with well-developed latero-caudal processes. Antrum long, tube-like, heavily sclerotized, about 2/5 the length of ductus bursae, slightly narrowed distally, no clearly defined conjunction between antrum and ductus bursae; ductus bursae heavily sclerotized, tube-like, in posterior 4/5, shortly membranous and twisted between sclerotized portion of ductus bursae and corpus bursae. Corpus bursae ovate; signum crescent, wider than the half width of corpus bursae, with a semi ovate, weakly sclerotized plate anteriorly.

Distribution: Tanzania (Tanga).

Etymology: This species name is derived from the type locality, Amani, Tanga Distr. in Tanzania.

***Protolychnis morogoroensis* Park & Koo, 2021**

Protolychnis morogoroensis Park & Koo, 2021: 366 [8]. TL: Tanzania, Morogoro Distr. (Figure 3).

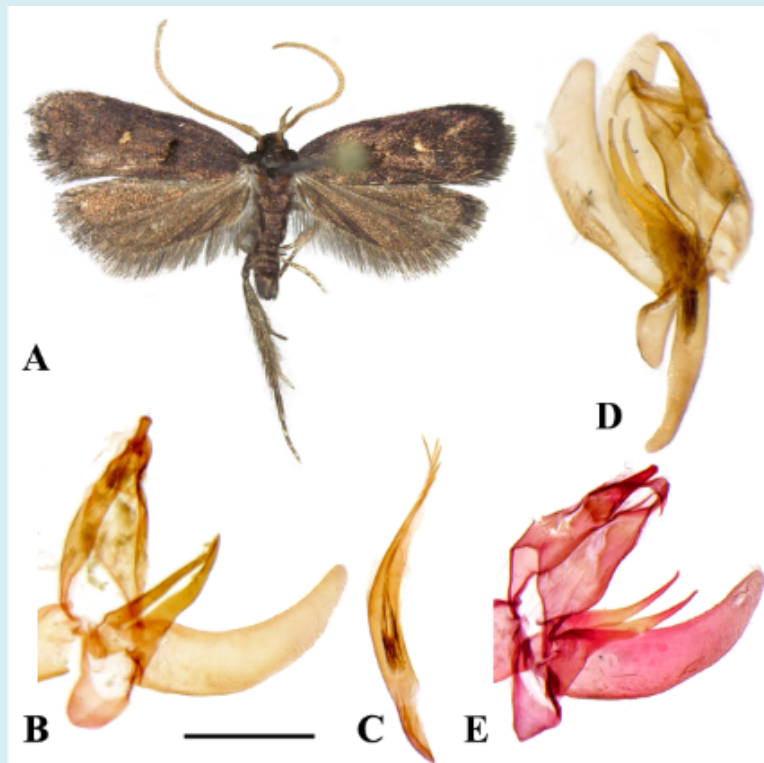


Figure 3: *Protolychnis morogoroensis* Park & Koo, 2021; A, male, B, male genitalia, slide no. CIS-7571; C, aedeagus; D, lateral view of slide no. CIS-7574; E, male genitalia of slide no. CIS-7572. Scale bar: 0.5 mm.

Diagnosis: Wingspan 16 mm. The male genitalia differ from those of *P. petiliella* Park, 2020 which was described from Uganda, by the semi-ovate saccus (narrowed in *P. petiliella*) and the shorter basal part of aedeagus (about half the length of aedeagus in *P. petiliella*). The female genitalia are also similar to those of *P. petiliella* but can be distinguished by the shorter antrum, membranous ductus bursae whereas in *P.*

petiliella it is sclerotized.

Male genitalia (Figures 3B-E): Uncus elongate, nearly parallel sided with sharply produced apex. Gnathos small, about half the length of uncus. Valva elongated, narrower toward apex; costa gently concave, with more or less rounded apex; ventral margin gently arched. Juxta with long, symmetrical

processes, pointed apically, reaching to base of uncus. Saccus semi-ovate. Aedeagus slender, as long as valva; basal part about 1/3 of the total length, broadened beyond and tapered toward apex, with a row of long spines in apical 1/5; apex sharply pointed; cornuti consisting of series of broom-like setae near middle.

Female genitalia: See Park & Koo (2021, Figures D-F) [9].

Material examined. 1m#, Tanzania, Morogoro Distr. & Town, Kihonda 550 m, 22 v 1992, leg. L. Aarvik, gen. slide CIS-7571; 1m#, Morogoro 1000 ft, 6 viii 2000, DJL Agassiz, gen. slide CIS-7574.; 2m#, Arumeru Usa River 1170 m, 2 & 11 ix 1991, leg. L. Aarvik, gen. slide CIS-7572; 1m#, same locality, 9 viii 1991, leg. L. Aarvik, gen. slide CIS-7577; 1m#, same locality, 11 ix 1991, leg. L. Aarvik.

Distribution: Tanzania (Morogoro).

Remarks: *Protolychnis morogoroensis* Park & Koo, 2021 was described based on a single female which was collected in Morogoro Distr. A male specimen from the same locality of the holotype was collected and there is no doubt that it is conspecific to *P. morogoroensis*. An additional specimen collected from near the type locality and three more from Arumeru Usa River were also conspecific. The male genitalia are described and illustrated.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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