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K. T. Park

Abstract

Three species of the genus *Torodora* Meyrick, 1894; *T. silvatica* Park, sp. n., *T. angustia* Park, sp. n., and *T. phuruensis* Park, sp. n., are described, based on the specimens collected in Thailand during 1981-1987.

KEY WORDS: Lepidoptera, Lecithoceridae, *Torodora*, new species, Thailand

Tres nuevas especies de *Torodora* Meyrick, 1894 de Tailandia (Lepidoptera: Lecithoceridae)

Resumen

Se describen tres especies del género *Torodora* Meyrick, 1894; *T. silvatica* Park, sp. n., *T. angustia* Park, sp. n., y *T. phuruensis* Park, sp. n., basadas sobre especímenes recogidos en Tailandia durante 1981-1987.

PALABRAS CLAVE: Lepidoptera, Lecithoceridae, *Torodora*, nuevas especies, Tailandia

Introduction

The genus *Torodora* Meyrick, 1894 which is one of the Oriental genus of Lecithoceridae, with a few exception, comprises more than 100 species. After works by the early workers before 1930' and GOZMÁNY (1978), 23 species described from China by WU & LIU (1992, 1994) and WU (1997), three species from Sri Lanka by WU & PARK (1999), two species from Taiwan by PARK & HEPPNER (2000), 15 species from Thailand by PARK (2002), and three additional species from Taiwan PARK (2003a, b). Consequently 103 species are known in the world. Based on specimens collected in Thailand by Japanese workers (H. Kuroko, S. Moriuti, T. Saito, Y. Arita, and Y. Yoshiyasu) from 1981 to 1987 and preserved in the collection of the University of Osaka Prefecture, Japan, author found three additional species of the genus and described them as new here in this paper.

Description

Torodora silvatica Park, sp. n. (Figs. 1, 4, 4a)

Holotype ♂, Phangnga, Nam Tok Lam Pee, ca. 300 m, 16-X-1985 (Kuroko, Moriuti, Saito Arita leg.), gen. prep. no. 4975. Paratypes: 2 ♂♂, Nakhon Nayok, Khao Yai, ca. 800 m, 11-19-XI-1985 (Kuroko, Moriuti, Saito and Arita leg.), gen. prep. no. 4738; 1 ♂, Ranong, Na Kha, 250 m, 15-X-1985 (Kuroko, Moriuti, Saito and Arita leg.).

Description: Male. Wingspan, 15.0-18.0 mm. Head silvery white to pale orange on frons and vertex. Thorax and tegula brownish orange. Antenna with elongated basal joint, shiny pale orange;

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flagellum concolorous, rather shiny with weak annulations. Labial palpus strongly upturned; 2nd segment long, thickened, pale brownish orange, speckled with fuscous scales on outer surface, paler on inner surface; 3rd segment as long as 2nd. Forewing pale brownish orange, shiny; dark fuscous subbasal fascia on costa; discal spot invisible and a reniform stigma near of cell; postmedian band poorly developed; costa slightly convex at 1/4 and then nearly straight; apex somewhat acute; termen concave beyond apex; fringe brownish orange with pale orange basal line. Venation: R_3 stalked with R_{4+5} at basal 1/6; R_4 and R_5 stalked beyond 2/3; M_1 and M_2 almost parallel; M_3 and CuA_{1+2} on a common stalk; CuA_1 and CuA_2 stalked beyond middle. Hindwing pale brownish gray, with large reniform stigmata at end of cell; apex obtuse; termen slightly sinuate; fringe long, pale orange at basal 1/3 of hind margin; M_3 and CuA_1 stalked before middle, with infraspecific variation. Female is unknown.

Male genitalia (Figs. 4, 4a): Uncus slender, slightly clavate; apex round. Gnathos broad at base, strongly bent beyond 3/5. Valva very similar to that of *T. parotidosa* Wu, but less angled at basal 1/5 of costa; ventral margin gently convex at basal 2/5; distal part shorter with strong setae on inner surface; apex obtuse; outer margin slightly oblique. Juxta shield-shaped, with small digitate lateral lobes; caudal margin nearly straight. Aedeagus shorter than valva with 2-4 needle-shaped cornuti, a conic one near base, and a spinous row in middle.

Diagnosis: The shape of forewing is somewhat similar to that of the proceeding species, but the ground colour is shiny greyish orange without distinct markings on the upper surface. The male genitalia are similar to those of *T. parotidosa* Wu, but the distal part of the valva is shorter and lateral lobes of the juxta much smaller than those of the latter.

Distribution: Thailand.

Etymology: The specific name is derived from Latin, "*silva*" (= woods).

Remarks: The venation of forewing differs from that of the type species, having M_3 and CuA_{1+2} on a common stalk, as well as that of *Thubana* Walker. However, it is no doubt that its male genital character is related to the genus *Torodora*.

***Torodora angustia* Park, sp. n. (Figs. 2, 5, 5a)**

Holotype ♂, Nakhon Nayok Prov., Khao Yai Nat. Park, ca. 70 m, 29-IX-194, 6-X-1984 (Karsholt, Lomboldt and Nielson leg.), gen. prep. no. 5249. Paratype: 3 ♂♂, same data as the holotype.

Description: Wingspan, 13.5-14.5 mm. Head brown with whitish erect scales laterally. Tegula and thorax brown. Basal joint of antenna silvery white dorsally and dark brown laterally; flagella silvery white with dark brown annulations throughout. Labial palpus strongly upturned; 2nd segment more or less slender, brownish or dark brownish on outer surface, whitish on inner surface; 3rd segment longer than 2nd, dark brown on ventral and dorsal surface. Forewing elongate; costa almost straight, clothed with brownish scales throughout; apex sharply produced, with a large blackish spot apically bordered with silvery white scales on inner margin; few blackish dots along costa preapically; termen strongly concave beyond apex, margined with black scales; fringe concolorous, with whitish tips, middle part dark brown preapically; R_3 stalked R_{4+5} before middle; R_4 and R_5 beyond middle; R_5 to termen; M_2 close to M_3 at base; CuA_1 and CuA_2 stalked near base. Hindwing pale greyish orange; apex acute with blackish dots along margin, strongly oblique; fringe concolorous; M_2 present, close to $M_3 + CuA_1$ at base; M_3 and CuA_1 stalked beyond basal 1/3. Hindtibia with brownish yellow rough scales above and whitish scales at apex; tarsi clothed with broad white band and blackish band alternately. Mid-tibia with whitish scales above, with three brown bands.

Male genitalia (Figs. 5, 5a): Uncus broadly expanded distally. Gnathos moderate. Valva very long, broad at base and attenuated towards apex, especially slender beyond 2/3; apex more or less acute; costa strongly bent at 2/3 dorsally; sacculus broadly developed and connected to weakly sclerotized distal part of valva. Juxta quadrate, with short thumb-like processes laterally at distal 2/3 on ventral surface, without lateral lobes; slightly concave on distal margin. Aedeagus globular at base, slightly bent at basal 1/4, thence narrowed to apex; apex somewhat pointed; with a bundle of long needle-like cornuti.

THREE NEW SPECIES OF *TORODORA* MEYRICK, 1894 FROM THAILAND

Diagnosis: The shape and colour pattern of the forewing are similar to those of *T. parthenopsis*, but the male genital structure differs from the latter by the extremely elongate valva.

Distribution: Thailand.

Etymology: The specific name is derived from Latin, *angustus* (= narrow), referring to the narrow forewing.

***Torodora phuruaensis* Park, sp. n.** (Figs. 3, 6, 6a, 7)

Holotype ♂, Loei, Phu Rua, 800 m, 15-19-VIII-1987 (Moriuti, Saito, Arita, & Yoshiyasu), gen. prep. no. 4899. Paratype, 2 ♂, 1 ♀, same data as the holotype, gen. prep. no. 5248.

Description: Wingspan, 15.0-16.0 mm. Head dark brown, with pale orange erect scales laterally. Thorax and tegula dark brown. Antenna with elongate basal joint, shiny white on upper surface, dark fuscous on anterior and posterior surfaces; flagellum shiny white dorsally with dark brown annulations on anterior surface. Labial palpus strongly upturned; 2nd segment fuscous at basal 2/3 and brownish at apical 1/3 on outer surface; 3rd segment slender, slightly longer than 2nd, dark fuscous ventrally. Forewing with dark fuscous subbasal zone bordered by yellowish white, followed by almost straight antemedian line; antemedian line followed by brownish area, with a large, round dark fuscous discal stigma at end of cell; a small, triangular yellowish costal patch on costa at 4/5 connected to postmedian line; postmedian line thin, S-shaped; apex obtuse; termen concave beyond M_1 and then concave between veins; fringe pale brownish orange. Venation: R_3 stalked with R_{4+5} near middle; R_4 and R_5 stalked beyond 3/4; R_5 to termen; M_1 and M_2 almost parallel; M_3 free; CuA_1 and CuA_2 stalked at middle. Hindwing pale brownish orange; apex acute; termen strongly sinuate; M_3 and CuA_1 stalked near base; fringe concolorous. Hindtibia covered with strong brownish setae.

Male genitalia (Figs. 6, 6a): Uncus slender; apex bent downwardly. Gnathos triangularly broadened, with sharply pointed apex. Valva extremely broad at basal half and narrowed from beyond 2/3, with sharply pointed apex at lower corner; costa expanded anteriorly at basal 1/3. Juxta with nearly straight caudal margin; latero-caudal corner slightly produced in triangle. Aedeagus extremely large, stout; longer than the total length of genitalia; with heavily sclerotized, triangular plate with pointed apex apically; cornuti consist of a long, heavily sclerotized spatulate plate with caudal margin serrated, and few additional slender plates attached.

Female genitalia (Fig. 7): Eighth sternite roundly emarginated at middle. Ostium bursae with a heavily sclerotized transverse plate. Antrum heavily sclerotized, funnel-shaped. Ductus bursae very long, coiled, with numerous conic spines beyond antrum. Corpus bursae ovate; signum elliptical, large plate with densely spinous on surface.

Diagnosis: This species is superficially similar to *T. arcifera* Meyrick or *T. fuscobasalis* Park, but the male genital structure has quite different structure from them, with an extremely broad valva.

Remarks: The male genital structure has somewhat unusual shape from ordinary members of the genus, but the wing venation well agree to that of *Torodora*.

Etymology: The specific name is derived from the collecting locality of the holotype, "Phu Rua".

Discussion

Torodora Meyrick, 1894 belonging to the subfamily Torodorinae is one of the large genus, comprising more than 100 species. The genus is very close to the genus *Thubana* Walker in the superficial characteristics. The genus *Thubana* is differentiated from *Torodora* by the yellowish triangular costal patch of the forewing with few exceptions and the forewing venation with M_3 and $CuA_1 + CuA_2$ on a common stalk. Even the vein R_5 of the forewing in the type species of *Thubana* Walker, 1864 is absent, it is often presented in many species (Park, 2003). The forewing venation of the new species, *T. silvatica* Park, sp. n. well agree to that of *Thubana*, with M_3 and CuA_{1+2} on a common stalk, however, it is no doubt that it belongs to *Torodora* due to the similarity of its male genital character. Moreover, in few case, the male genital character is not separable each other. From these, the

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relationship between two genera should be studied and clarified in a further study with a DNA analysis based on molecular works.

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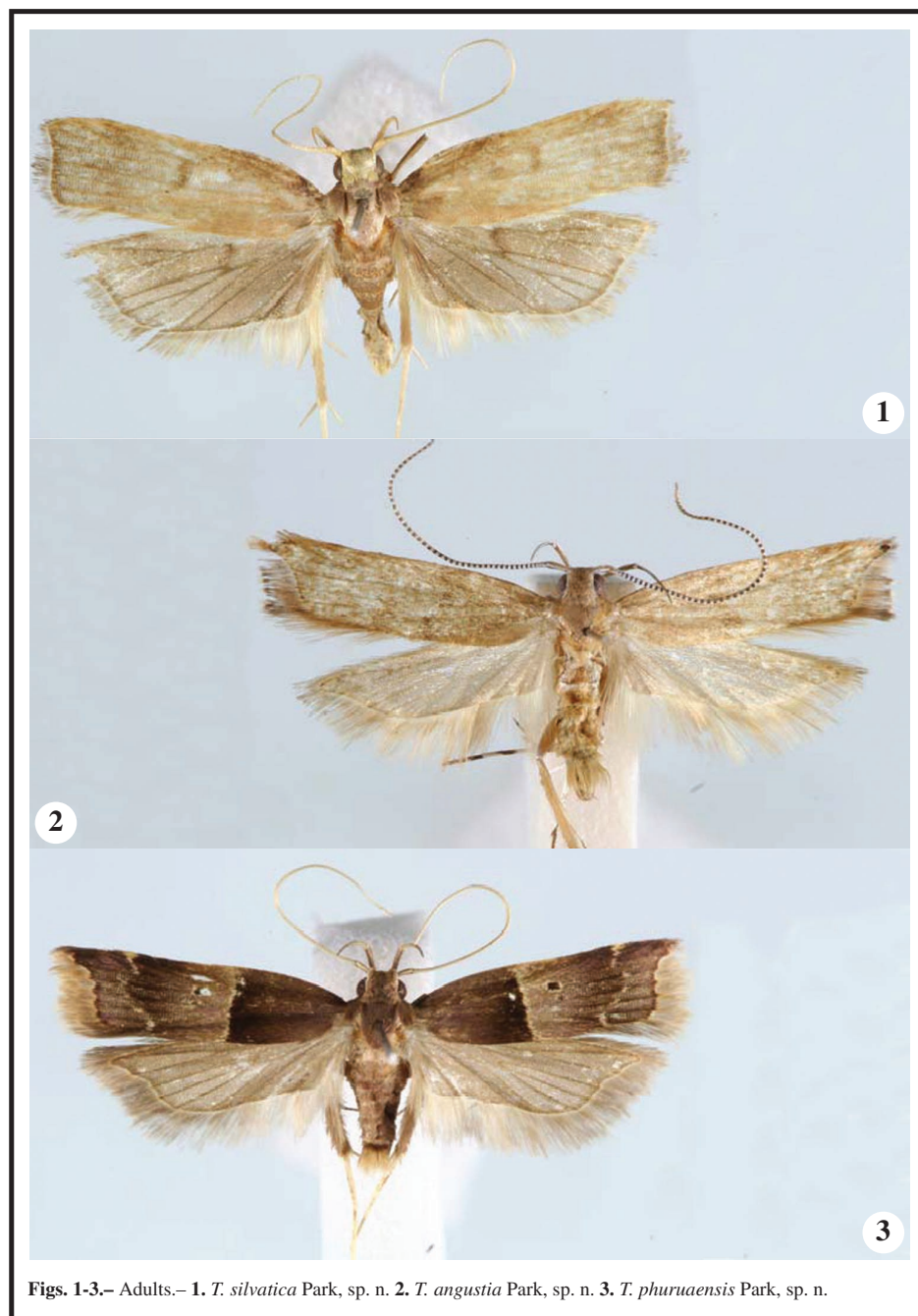
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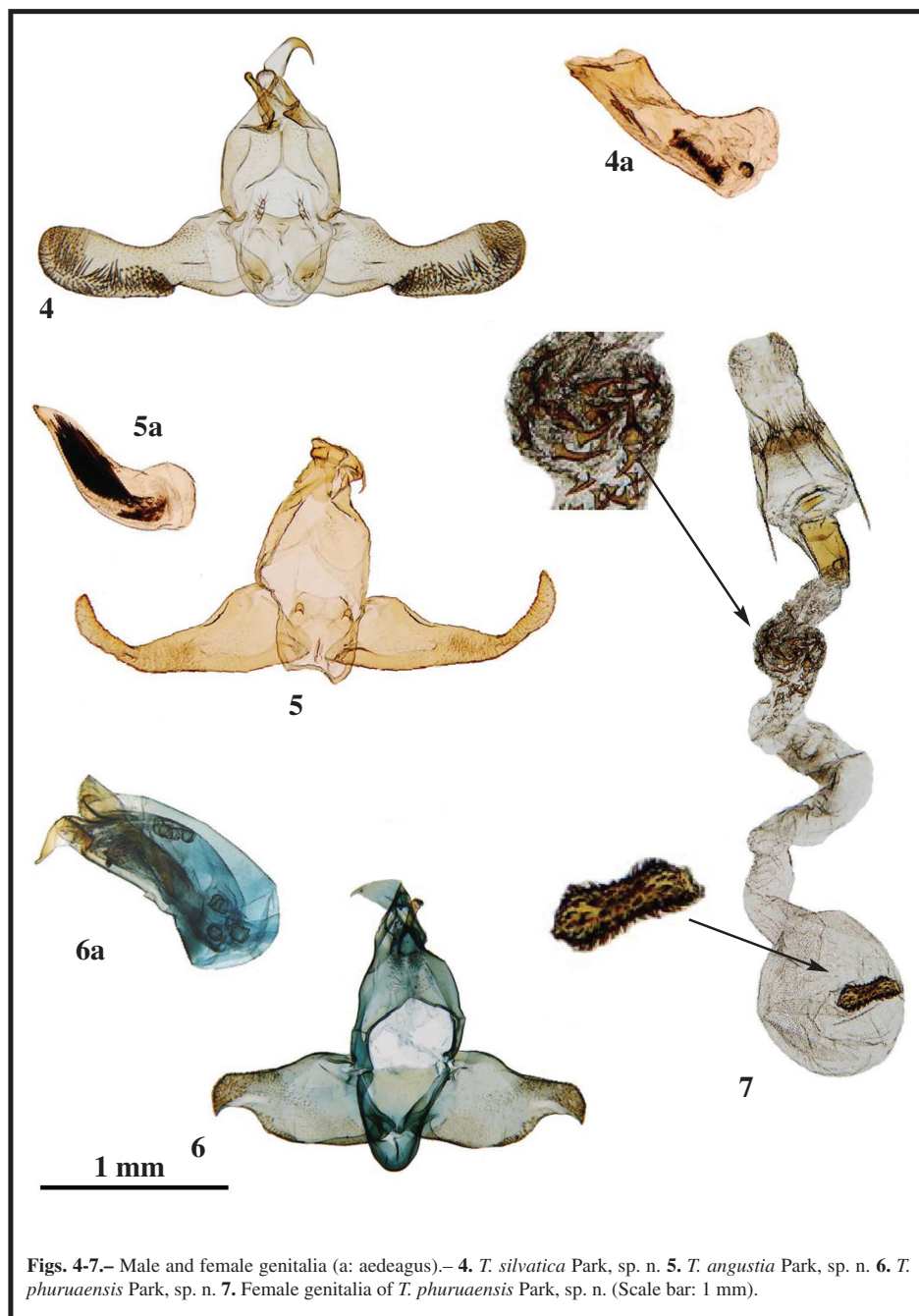
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THREE NEW SPECIES OF *TORODORA* MEYRICK, 1894 FROM THAILAND



K. T. PARK



Figs. 4-7.— Male and female genitalia (a: aedeagus).— **4.** *T. silvatica* Park, sp. n. **5.** *T. angustia* Park, sp. n. **6.** *T. phuruaensis* Park, sp. n. **7.** Female genitalia of *T. phuruaensis* Park, sp. n. (Scale bar: 1 mm).

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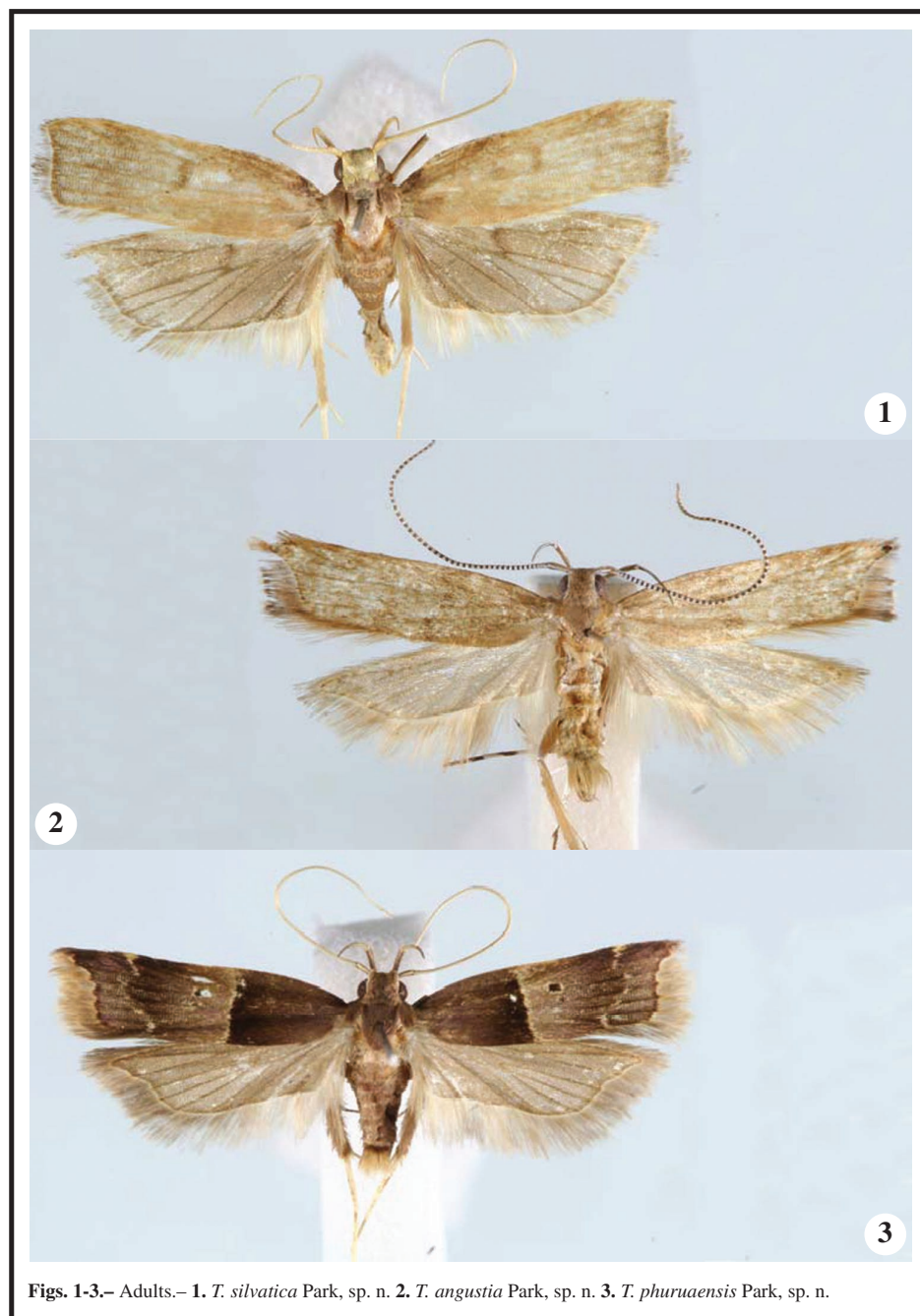
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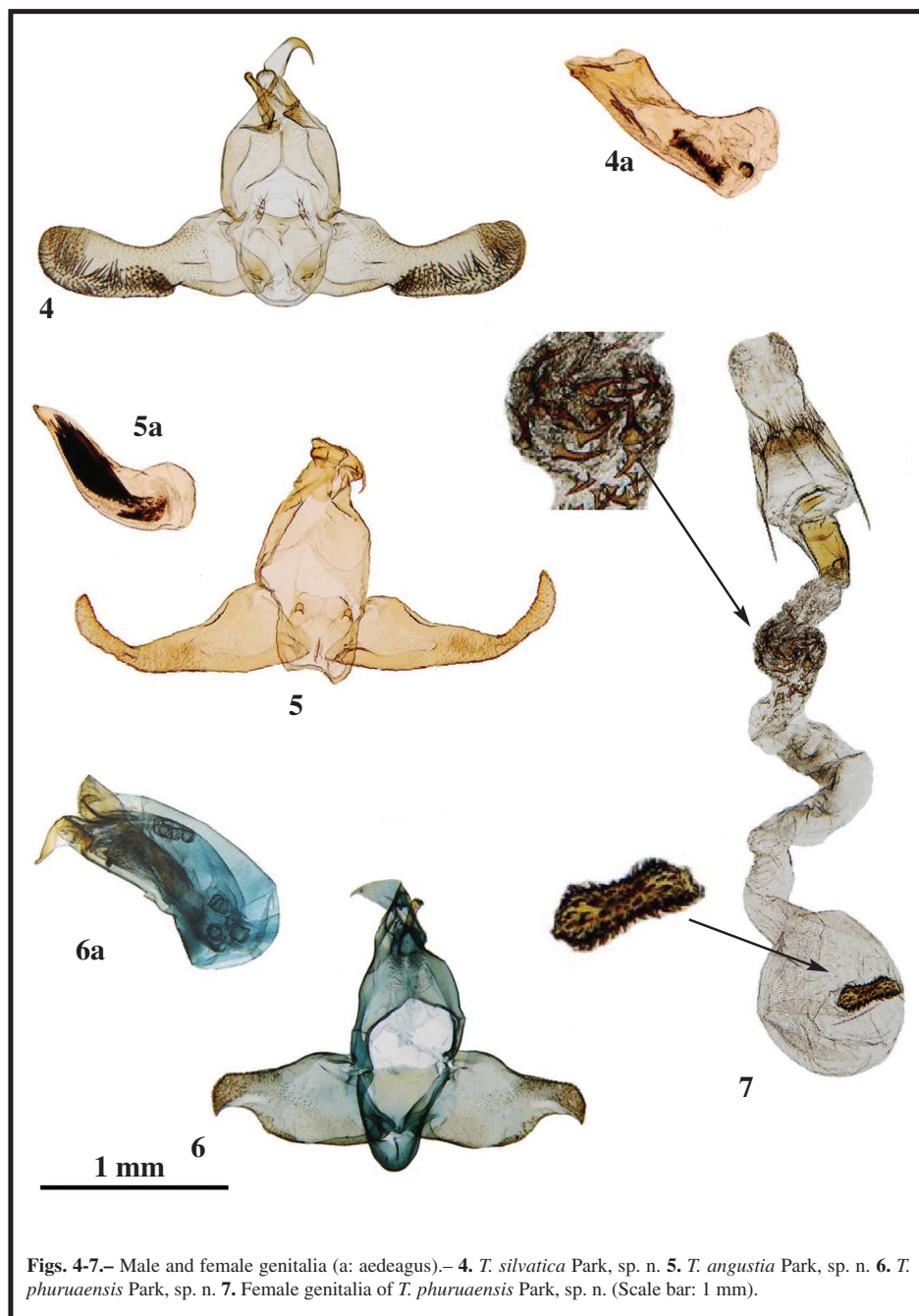
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THREE NEW SPECIES OF *TORODORA* MEYRICK, 1894 FROM THAILAND



Figs. 1-3.— Adults.— 1. *T. silvatica* Park, sp. n. 2. *T. angustia* Park, sp. n. 3. *T. phuruaensis* Park, sp. n.

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Figs. 4-7.— Male and female genitalia (a: aedeagus).— **4.** *T. silvatica* Park, sp. n. **5.** *T. angustia* Park, sp. n. **6.** *T. phuruaensis* Park, sp. n. **7.** Female genitalia of *T. phuruaensis* Park, sp. n. (Scale bar: 1 mm).