

TWO NEW SPECIES OF THE GENUS *TISIS* WALKER AND *SYNERSAGA* GOZMÁNY (LEPIDOPTERA, LECITHOCERIDAE) FROM THAILAND

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Abstract.- Two new species of the genus *Tisis* Walker and *Synersaga* Gozmány, belonging to the subfamily Lecithocerinae are described from Thailand. The new species are: *Tisis gloriosa* sp. nov., *Synersaga phuruensis* sp. nov. Photos of adults and male genitalia of the new species are given.

Key words: Taxonomy, Lecithocerinae, description, Oriental Region

Faunistic studies of lecitocerids in Thailand were initiated by Park (2001), in which a new species of *Tisis* Walker was described. Since then, 54 additional new species have been described, as follows: 15 species in *Torodora* Meyrick and four in *Antiochtha* Meyrick (Park (2002a, b); two in *Tisis* Walker, two in *Hygroplasta* Meyrick, and 12 in *Thubana* Walker (Park (2003a,b,c); five in *Homaloxestis* Meyrick (Park, 2004); four in *Frisilia* Walker (Park, 2005a); seven in *Lecithocera* Herrich-Schäffer (Park, 2005b, 2006a,b); and three additional species in *Torodora* (Park, 2007).

The Oriental genus *Tisis* Walker, 1864 includes 35 species to date (Park, 2005c), among them three that are known from Thailand (Park, 2001, 2003a). The genus is easily distinguished from other genera by superficial characters, including forewing coloring, the male antenna with a swollen groove near base of flagellum, and the 3rd segment of the labial palpus which is usually concealed in the hair-like scale tuft of the 2nd segment. However, there are few exceptional examples with normal antennae or labial palpi. The new species described here is one of the latter. The male genitalia are also characteristic, with a large cavity in the valva.

Synersaga Gozmány, 1978 is a small genus which comprises four species known only in the Oriental Region, including Myanmar, China, Vietnam and Taiwan, but no species have until now been reported from Thailand. The genus *Anamimnesis* Gozmány was previously synonymized with *Synersaga* (Park, 2000). *Synersaga* is differentiated from the genus *Lecithocera* by the wing venation with R_3 and R_{4+5} nearly connate or separate in the forewing and M_3 and CuA_1 short stalked or connate, and the male genitalia with a broadly rounded or pointed uncus, and with a well developed caudal plate of juxta.

Specimens examined are from the Osaka Prefecture University (OPU) collected in Thailand by Japanese specialists during the 1980s. Types will be deposited at OPU. The color standard for the description of adults followed Kornerup and Wanscher (1978).

Genus *Tisis* Walker, 1864

Type species: *Tisis bicolorrella* Walker, 1864: 793. TL: Sarawak.

***Tisis gloriosa* Park, sp. nov.**

(Figs 1-3, 7, 7a, 9, 9a)

Type.- Holotype: ♂, Loei, Phu Rua 800m, 15-19 VIII 1987 (Moriuti, Saito, Arita, Yoshimoto), gen. prep. No. 5817/Park.

Paratypes: 1♂, 2♀, same data as the holotype.

Diagnosis.- The color pattern of the forewing is different from that of congeners. The markings of the forewing are somewhat

similar to those of *T. meliorella* Meyrick, but the ground color is light orange with some metallic coloring, instead of orange-red in the latter.

Description.- Wingspan, 13.0-14.0 mm. Head covered with light brown scales on vertex, metallic, shiny, with some erect scales laterally; frons pale orange gray. Scape of antenna elongate, dark brown all around; flagellum dark brown throughout, simple in male but serrate in female. Tegula and thorax light brown. Second segment of labial palpus rather slender, light orange all around; 3rd segment as long as 2nd, light orange dorsolaterally, blackish ventrally. Forewing ground color light orange, metallic shiny; basal fascia small, brownish; median patch large, yellowish brown, round on anterior margin, arising from below Sc vein to inner margin occupying more than 1/4 wing length; distal 2/5 of wing yellowish brown entirely; costa nearly straight before 3/4, then obliquely bent, with narrow brownish fascia along costa between basal fascia and median patch; apex round; termen oblique, not sinuate; fringe concolorous. Venation (Fig. 3) with R_3 stalked with R_{4+5} at middle; R_4 and R_5 stalked near 4/5; R_5 to apex; M_1 close to R_3 at base; M_2 , M_3 and CuA_1 coincident; CuA_2 free from $M_{2+3}+CuA_1$; cell weakly closed. Hindwing pale grayish brown; apex round; fringe concolorous. Venation R_s and M_1 coincident; M_2 absent; M_3 and CuA_1 stalked. Hind tibia clothed with dense brownish scales above; tarsi blackish dorsally, light brown laterally. Abdominal spinous zone with weak, removable fine setae sparsely distributed.

Male genitalia (Figs 7, 7a). Uncus semiovalate. Gnathos relatively small, slender, bent apically. Valva with broad basal part, with large round cavity medially; cucullus somewhat triangular with round apex, outer margin slightly convex with strong spine-like setae along margin; costa expanded at base anteriorly, concave beyond; ventral margin strongly concave before cucullus; sacculus narrow, heavily sclerotized, ventral margin almost straight medially, extending to near end of cavity. Juxta with almost symmetrical, leaflike mid-caudal flaps bearing dense small spines, similar to those of *T. luteella* (Snellen). Saccus rounded. Aedeagus as long as saccus+ tegumen, nearly straight; cornuti consist of rows bearing numerous spicules

Female genitalia (Figs 9, 9a). Eighth segment sclerotized; caudal margin of sternite deeply emarginated medially. Apophysis anterioris very short, about 1/6 length of apophysis posterioris. Antrum cup-shaped, sclerotized, as long as 1/4 length of ductus bursae. Ductus bursae as long as corpus bursae; ductus seminalis arising from conjunction of corpus bursae. Corpus bursae semiovalate, large; signum peanut-shaped with strong, long horn-like spines along lateral margin.

Distribution.- Thailand (Loei).

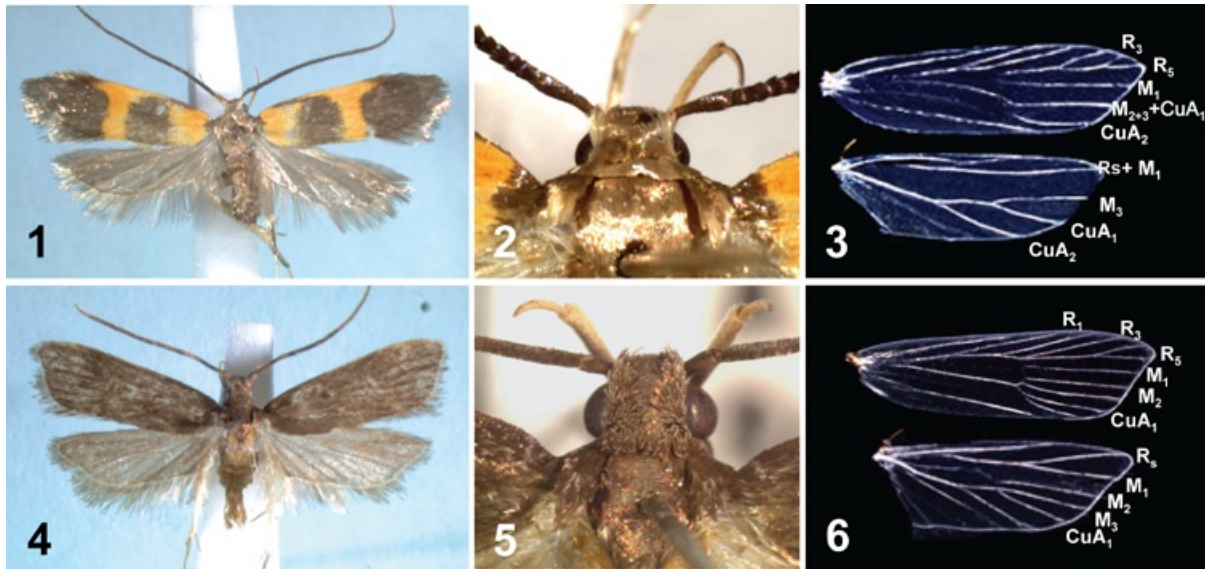


Fig. 1-6. Adults. 1, *Tisis gloriosa* sp. nov. (♀); 2, Dorsal view of head parts of *T. gloriosa*; 3, Wing venation of *T. gloriosa* (♂); 4, *Synersaga phuruaensis* sp. nov. (♂); 5, Dorsal view of head parts of *S. phuruaensis*; 6, Wing venation of *S. phuruaensis* (♂).

Etymology.- The species name is derived from Latin, *glori* (= glory) + suffix “osus”

Remark.- The genus *Tisis* is generally characterized by the male antenna swollen at the base of flagellum and the 3rd segment of labial palpus of the male is very short and concealed in the scale tuft of the 2nd, with few exceptions, e.g., *T. yasudai* Park, *T. sophistica* Park, *T. aurantiella* Park, and *T. latiductalis* Park. This new species has simple antenna without the swollen part and the labial palpus as well as other congeners, but doubtless it belongs to *Tisis* because of its wing pattern and the male genital character.

Synersaga Gozmány, 1978

Type species: *Lecithocera pseudocathara* Diakonoff, 1978.

TL: Myanmar.

= *Anamimnesis* Gozmány, 1978

Synersaga phuruaensis Park, sp. nov.

(Figs 4-6, 8, 8a, 10)

Type.- Holotype: ♂, Loei, Phu Rua 800m, 15-19 VIII 1987 (Moriuti, Saito, Arita, Yoshimoto), gen. prep. No. 5805/Park.

Paratypes: 1♂, same data as the holotype; 1♂, Chiang Mai, Doi Pakia, 1500m, 5-7 IX 1987, wing prep. No. 5822.

Diagnosis.- The new species is superficially very similar to *S. bleszynskii* (Gozmány) or *S. kuni* Park, but they can be easily distinguished by the male genitalia. It is more easily differentiated by the rounded uncus of *S. bleszynskii* and by the large, thumb-like caudal process of the juxta of *S. kuni* Park.

Description.- Wingspan, 16.0-16.5 mm. Head covered with mustard brown to soot brown rough scales, with some erect white tipped scales laterally. Antenna simple, thick, dark brown dorsally, paler ventrally. Tegula and thorax dark fuscous. Second segment of labial palpus normally thickened, dark brown on outer surface, pale brownish orange on inner surface; 3rd segment slender, as long as 2nd, pale brownish orange all around. Forewing rather broad, slightly broader towards apex, covered evenly with dark brown scales, with an indistinct blackish round spot before middle of cell, similar plical spot placed obliquely below it and a smaller spot at end of cell; costa almost straight; apex round; termen slightly concave medially;

fringe concolorous with paler basal line. Venation (Fig. 6) with R_2 nearer to R_3 than R_1 ; R_3 and R_{4+5} short stalked; R_{4+5} stalked beyond 3/5; R_5 to termen; M_1 far from R_3 at base; M_2 close to M_3 at base; M_3 free; CuA_{1+2} and CuA_2 short-stalked; cell closed. Hindwing brownish gray; apex acute; fringe concolorous. R_s and M_1 stalked near 1/4 level of M_2 ; M_2 well developed; M_3 and CuA_1 connate. Hind tibia clothed with dense light brown hair-like setae above, dark brown on outer surface, orange white on inner surface. Abdominal spinous zone well developed, with dense fine setae broadly distributed (Fig. 10). Female unknown.

Male genitalia (Figs 8, 8a). Uncus hat-shaped with denticle apically; caudal margin round, whereas it is somewhat triangular in *S. bleszynski* (Gozmány). Valva elongate; basal 2/5 broad; cucullus rather slender, slightly narrowed medially and then broadly expanded toward end, apex rounded, with dense setae on upper surface; ventral margin without small triangular process at the base of cucullus, which is present in *S. bleszynski* (Gozmány); sacculus broad, extended beyond middle. Juxta with a pair of well sclerotized thumb-like caudal plates, symmetrical, slightly longer than juxta; inner margin nearly straight, closed each other; outer margin round caudolaterally and slightly concave near base. Aedeagus stout, gently bent, as long as valva, shortly dentate on ventral margin preapically; cornuti consist of one long crescent plate and the other slightly shorter one with denticles preapically; a short chain of denticles apically.

Distribution.- Thailand (Chiang Mai, Loei)

Etymology.- The species name is derived from the type locality.

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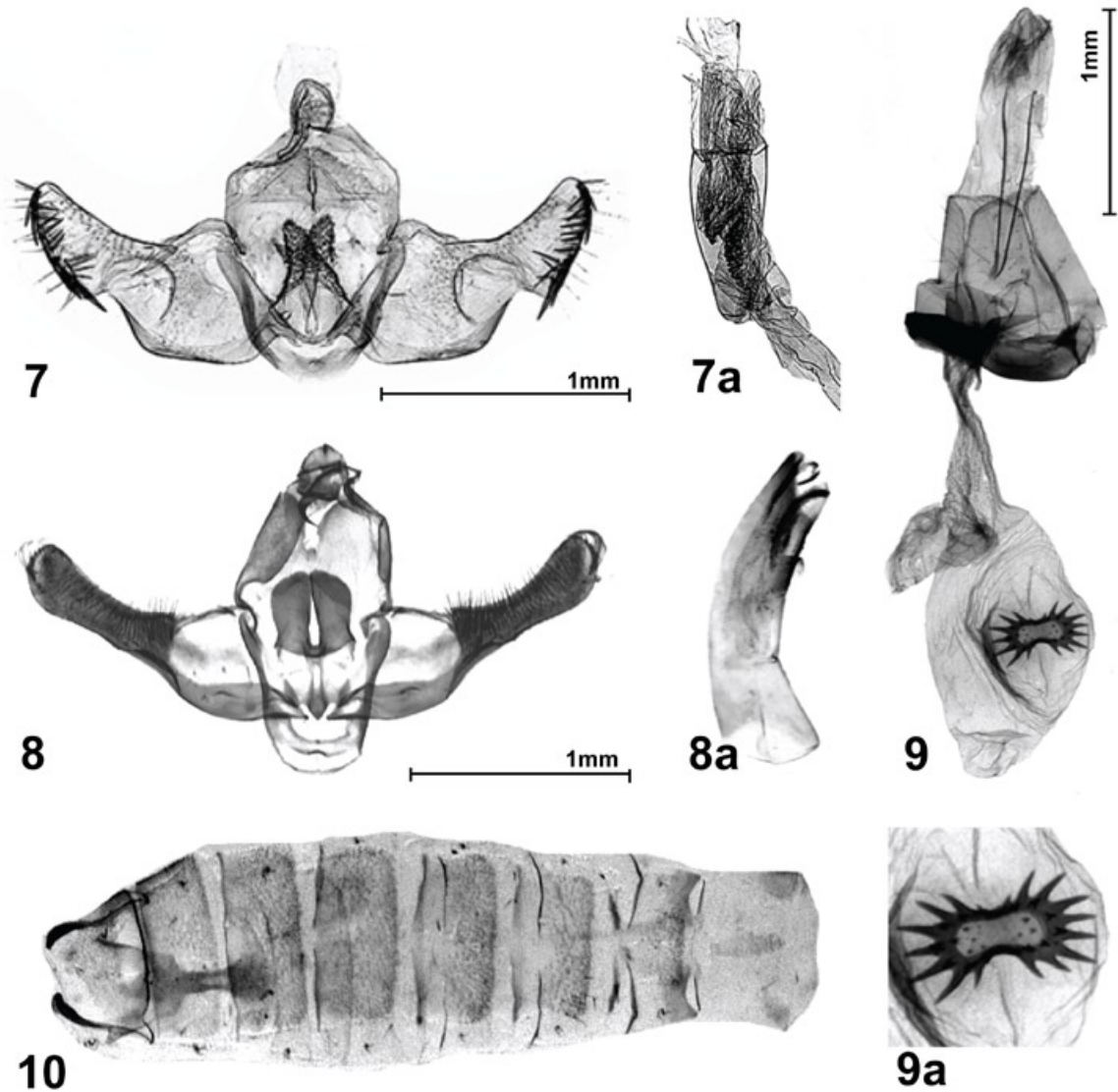


Fig. 7-10. Genitalia and abdomen. 7, Male genitalia of *Tisis gloriosa* sp. nov.; 7a, Ditto, aedeagus; 8, Male genitalia of *Synersaga phuruaensis* sp. nov.; 8a, Ditto, aedeagus; 9, Female genitalia of *S. gloriosa*; 9a, Enlargement of signum; 10, Abdomen of *S. phuruaensis*.

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