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SERICOSTOLA TO GLYPHIPTERIGIDAE, WITH A NEW SPECIES FROM COSTA RICA (LEPIDOPTERA: COPROMORPHOIDEA)

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ABSTRACT.— The Neotropical genus *Sericostola* Meyrick, 1927, and its type-species, *S. rhodanopa* Meyrick, 1927, from Colombia, are given a modern description and reassigned from Yponomeutidae to Glyphipterigidae. Nearest relatives appear to be in the genus *Cotaena* Walker or *Myrsila* Walker. A new species from Costa Rica, *S. semibrunnea*, is described and assigned to *Sericostola*.

KEY WORDS: *Brenthia*, Choreutidae, Colombia, *Cotaena*, *Myrsila*, Neotropical, *Sericostola semibrunnea* n. sp., Yponomeutidae.

The family Glyphipterigidae, as now restricted, constitutes mostly small day-flying moths rarely over 10mm in wingspread. Species with the largest kwown wingspread in the family occur in the Neotropical faunal region, like the genus *Cotaena* Walker, with wingspreads up to 24mm.

Until now, the genus *Sericostola* Meyrick was placed in Yponomeutidae (Clarke, 1965), following Meyrick's original placement in his enlarged concept of Plutellidae (Meyrick, 1927). The genus was not studied in time to be noted as being in Glyphipterigidae for two recent summaries of the family (Heppner, 1982a, 1982b), but is now transferred to Glyphipterigidae following study of the type specimens. Wing venation, head features, and male genital characters demonstrate the characteristics of the family Glyphipterigidae. The convergent M, and Rs veins of the hindwing, with the vestigial median veins in the cells of both fore- and hindwing, plus an apparent pterostigma, are normal features of glyphipterigid species. The head has dorsoventrally flattened labial palpi, a characteristic of the family, as well as a naked haustellum. The ocelli are very small, however, whereas most Glyphipterigidae have large ocelli. The male genitalia have the typical glyphipterigid characteristics of a prominent anal tube, simple setaceous valvae, and a fused tegumen-vinculum configuration. There also are prominant tergal flaps on the pre-genital abdominal segment of the male, also typical for the family, although this character is also common to most Yponomeutoidea. The female genitalia are typical for a glyphipterigid moth other than the unusual armed ovipositor of *S. rhodanopa*.

A species from Costa Rica, thought to be a giant *Glyphipterix*, has been observed now to be closely related to *S. rhodanopa*. The characters noted above also fit the new Costa Rican species, except for the ovipositor which is unarmed in the new species. All specimens of both species of *Sericostola* have only been collected in montane areas at rather high altitudes (2000 to 3800m).

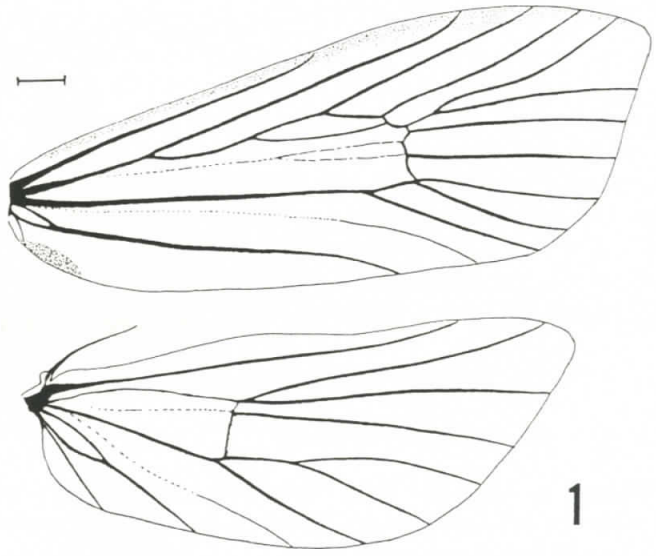

Fig. 1. Wing venation of *Sericostola rhodanopa* Meyrick (line = 1mm).

SERICOSTOLA Meyrick

Sericostola Meyrick, 1927:358. Type-species: *Sericostola rhodanopa* Meyrick, 1927, by monotypy.

Diagnosis.— *Head*: vertex relatively smooth scaled, with small median tuft; ocellus relatively small; eye large, rounded; labial palpus long, recurved and very pointed, with long basal segment, with mid and apical segments subequal (= 0.5 basal); antenna narrow, filiform; scape without

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pecten; haustellum naked; maxillary palpus minute, 2-segmented (?). *Thorax*: normal; tarsi 0-2-4. *Forewing* (Fig. 1): elongate-triangular, with a rather truncated termen; pterostigma rather indistinct but apparently most of the length of the dorsal margin; all veins free except R_{4+5} where R_4 goes to costa and R_5 to termen; Sc to costa at mindpoint of wing; chorda present; median veins equidistant; vestigial forked median vein in discal cell; M_3 meets CuA_1 at base; CuP evident at wing margin; A_{1+2} with small basal fork; A_3 minute. *Hindwing* (Fig. 1): subquadratic with angled termen and widely rounded tornus; Sc to 3/4 of wing; R_5 with fine (almost vestigial) basal portion; M_1 and M_2 close together at discal cell; M_3 from CuA_1 and distant from M_2; discal cell with vestigial median vein; CuP at wing margin; A_{1+2} with relatively long basal fork; A_3 long; A_4 vestigial. *Male genitalia*: typical for family, with prominent anal tube lacking socius; gnathos and uncus absent; transtilla absent; simple fused tegumen-vinculum band; valva simple, setaceous and elongated; anellus a half tube supporting a short aedeagus. *Female genitalia*: ovipositor setaceous, with or without spines; posterior apophyses with thin extended terminal points; ostium a complex cup on intersegmental membrane between sclerites 7 and 8; ductus bursae thin and attached posterolaterally to ovate bursa; ductus seminalis large and from bursa; signum absent.

Remarks.— *Sericostola* does not appear to have any very close relatives in the Glyphipterigidae but, from the female genitalia, the nearest genera appear to be *Cotaena* Walker or *Myrsila* Boisduval. The connecting position of the thin ductus seminalis with the bursa is unusual but common to many Glyphipterigidae, being somewhat lateral on the posterior end of the bursa. This reversal of form (where the ductus seminalis appears more like a normal ductus bursae than does the actual ductus bursae) has been found in many other glyphipterigid genera, but has been noted among other moths only in some Choreutidae (*Brenthia*). It will be very interesting to eventually examine the thus far unknown larvae of this genus, which should be borers like other Glyphipterigidae (some are leaf miners).

Sericostola rhodanopa Meyrick

Sericostola rhodanopa Meyrick, 1927:358.

Diagnosis.— Size: 30-35mm. One of the larger glyphipterigids known. Its size, together with the wing maculation and genitalia, allow easy recognition of this species.

Description.— Forewing length: 14mm ♂, 16.5mm♀.

Male (Fig. 2).— *Head*: ochreous, tuffed median vertex; labial palpus buff; head venter buff. *Thorax*: buff; venter buff, legs same, unmarked. *Forewing*: buff ground color, with irregular brown markings, with prominent buff to white line along cubitus, arched to median veins at end of cell, then to tornus; costal margin brown to 3/4 from base, then ochreous buff; radial area from end of cell with yellow-buff overlaid with brown line on each vein interspersed by several nearly black spots between veins; cell dark brown; and dorsal margins, to cubital fold, brown with some buff irroration, with more dark brown at tornus; cell dark brown coloration continued as wide line to apex; irregular and linear subterminal white lines and spots, plus 2 at tornus; 3 black subterminal spots near tornus; fringe ochreous-buff; venter dark brown, with ochreous buff along margins. *Hindwing*: lustrous brown, becoming lighter toward base; fringe ochreous brown (lighter along anal margin); venter dark brown; small dorsal hair pencil along vein A_{1+2}. *Abdomen*: light buff dorsally and ventrally. *Male genitalia* (Fig. 5): tegumen-vinculum a simple oval band; anal tube a membranous area extended dorsally, socius not evident; valva elongated, with setaceous distal half and bearing a ventral apical, slightly recurved extension, and a recurved flap on the dorsal margin near the midpoint of valva; anellus a simple supporting half-tube for aedeagus; saccus absent; aedeagus short, with bulbous distal half coming to tapering but blunt extremity; cornutus a small rod; ductus ejaculatorius a simple tube; phallobase absent.

Fig. 2-4. Adult maculation of *Sericostola*: 2. *S. rhodanopa*, ♂, Colombia; 3. *S. rhodanopa*, ♀, Colombia; 4. *S. semibrunnea*, ♀, Costa Rica.

Female (Fig. 3).- Similar to male but larger. *Female genitalia* (Fig. 6): ovipositor short (subequal to length of abdominal segment 7); papilla anales setaceous but armed with 3 stout spines each; apophyses thin, anterior pair about 2/3 length of posterior pair and posterior with stout, setaceous plates on abdominal segment 8; ostium a small cup-like structure with a U-shaped ventral ridge formation leading to the gono-

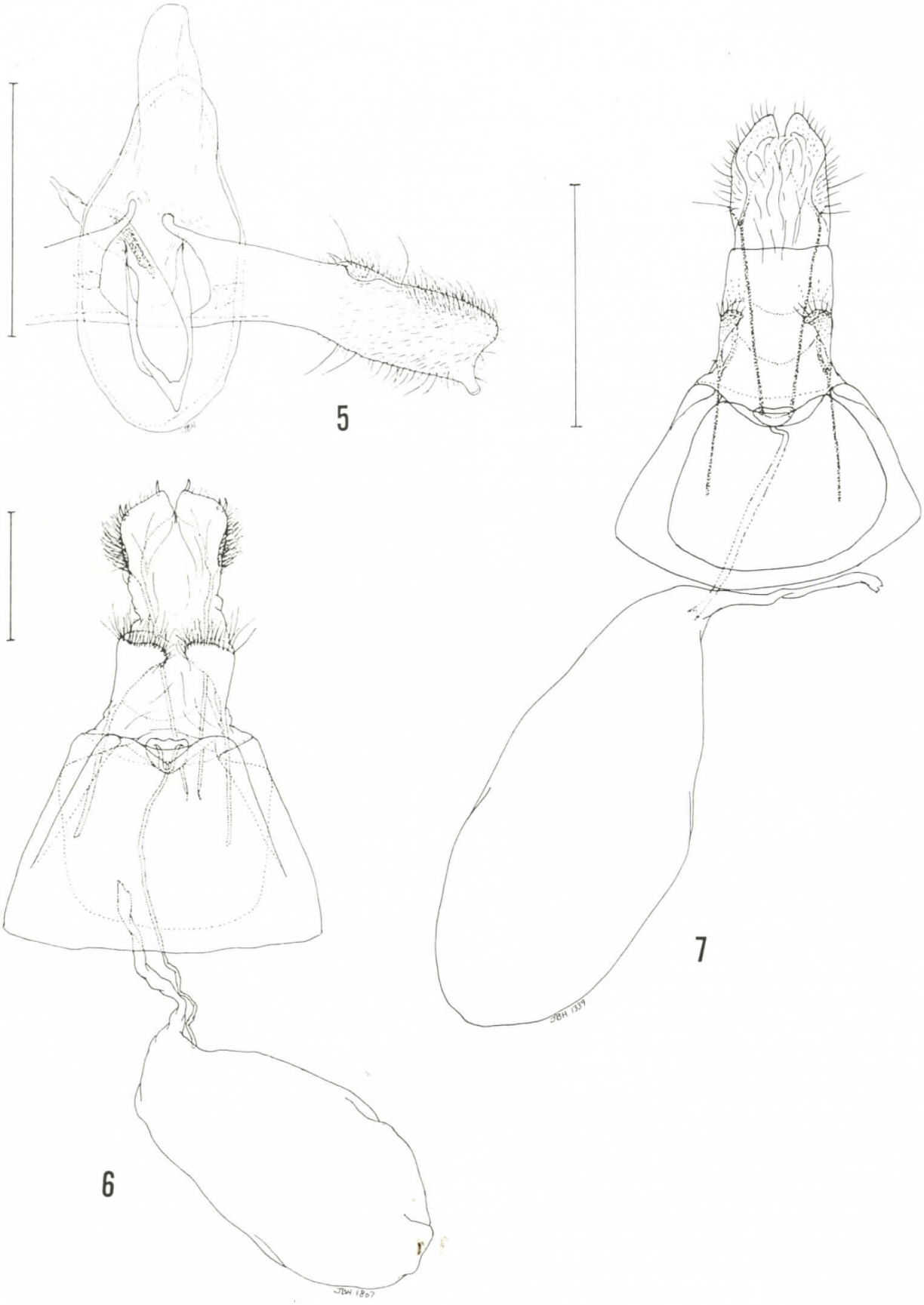

Fig. 5-7. Genitalia of *Sericostola*: 5. Male genitalia of *S. rhodanopa* (aedeagus in situ); 6. Female genitalia of *S. rhodanopa*; 7. Female genitalia of *S. semibrunnea* (lines = 1mm).

pore; ductus bursae very thin and length subequal to bursa length; entering bursa posteriorly but somewhat lateral; ductus seminalis from bursa posterior and about 3x width of ductus bursae; bursa copulatrix ovate, large (about subequal in length to total ovipositor length plus abdominal segment 7).

Immature stages.— Unknown
Hosts.— Unknown.
Distribution.— Colombia.
Types.— *Lectotype* ♂: COLOMBIA.— Mt. Socorro, 12500ft (3800m), Feb 1920 (BMNH); desginated by Clarke (1965:380); genitalia slide JFGC 8009. *Paralectotype* ♀: COLOMBIA.— San Antonio, 6600ft (2006m), Feb 1920 (BMNH); genitalia slide BM 20297. One other stated syntype is missing.

Remarks.— *Sericostola rhodanopa* is the largest known glyphipterigid, having a total wing expanse of 34mm in the female. The female genitalia are unusual in having a partially armed ovipositor. The ovipositor presumably is used to insert eggs into the host plant. The genital plate on abdominal segment 7 is very large and covers the entire area visible on the segment (Fig. 6). Only two specimens of the species are known, the third syntype noted in the original description is apparently lost.

Sericostola semibrunnea Heppner, **new sp.**

Diagnosis.— Size: 17.8mm. A large species with a distinct dark brown basal field on the costal half of the forewing, with light tan on the dorsal half of the forewing.

Description.— Forewing length: 8.2mm ♀.

Male.— Unknown.

Female (Fig. 4).— *Head*: buff, with whitish frons; labial palpus white-buff; venter dark brown. *Thorax*: buff, with anterior margins dark brown; venter whitish; legs buff. *Forewing*: buff ground color with large basal mark of dark brown from base to 2/3 of wing on costal half of wing, with distal end pointed and angled toward costal margin along edge of first of 5 apical costal silvery marks; the 5 silvery marks with apical 3 short and next 2 much longer and curved toward termen; wing center with 2 short silver marks beyond cell and some smaller marks; dark brown between apical silver marks 2 and 3 and along costal margin to base; termen with a silver streak along apical termen edge, with a small black dot near apex, and with another silver streak having a small black dot on each end near the tornus; wind termen with margin slightly inturned below apex; tornus with a small silver mark; tornal quarter with some brown suffusion; venter dark brown merging to buff along dorsal margin. *Hindwing*: lustrous gray brown; venter darker brown. *Abdomen*: buff dorsally and ventrally. *Female genitalia* (Fig. 7): ovipositor setaceous and unspined, subequal to length of abdominal segment 7; apophyses slender, with anterior pair about 2/3 length of posterior pair and posterior pair with fine, extended terminal points; ostium a small cup-like structure, with a broad U-shaped ridge ventral to the gonopore; ductus bursae thin and subequal to ovipositor in length, attached to the bursa somewhat lateral of the posterior bursa end; ductus seminalis from the posterior end of the bursa and 2-3x width of ductus bursae; bursa copulatrix ovate and relatively large (about 2x ovipositor length).

Immature stages.— Unknown.
Hosts.— Unknown.
Distribution.— Costa Rica.

Types.— *Holotype* ♀: COSTA RICA.- Cartago Prov.: 7.5km S. Ojo de Agua, 16 Jun 73, 2682m, T. Erwin and G. Hevel (USNM); genitalia slide USNM 77781.

Remarks.— This species was recognized as congeneric to *Sericostola rhodanopa* only upon study of the genus for its transfer to Glyphipterigidae. The female genitalia, as well as other characters like wing venation and head morphology, clearly allign the two species. Such apomorphic features as the sharply pointed posterior apophyses and the ostium form of the females demonstrate this very well. The only unusual feature lacking in *S. semibrunnea* is the armed ovipositor, which indicates that the new species may be less derived than *S. rhodanopa*. The two species have considerable resemblance in wing maculation since the demarcated color areas of *S. semibrunnea* are somewhat repeated in *S. rhodanopa*.

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