

# JOURNAL OF THE LEPIDOPTERISTS' SOCIETY

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Volume 28

1974

Number 4

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## A NEW SPECIES OF THE GENUS *SEMIOTHISA* FROM THE SOUTHEASTERN UNITED STATES (GEOMETRIDAE)

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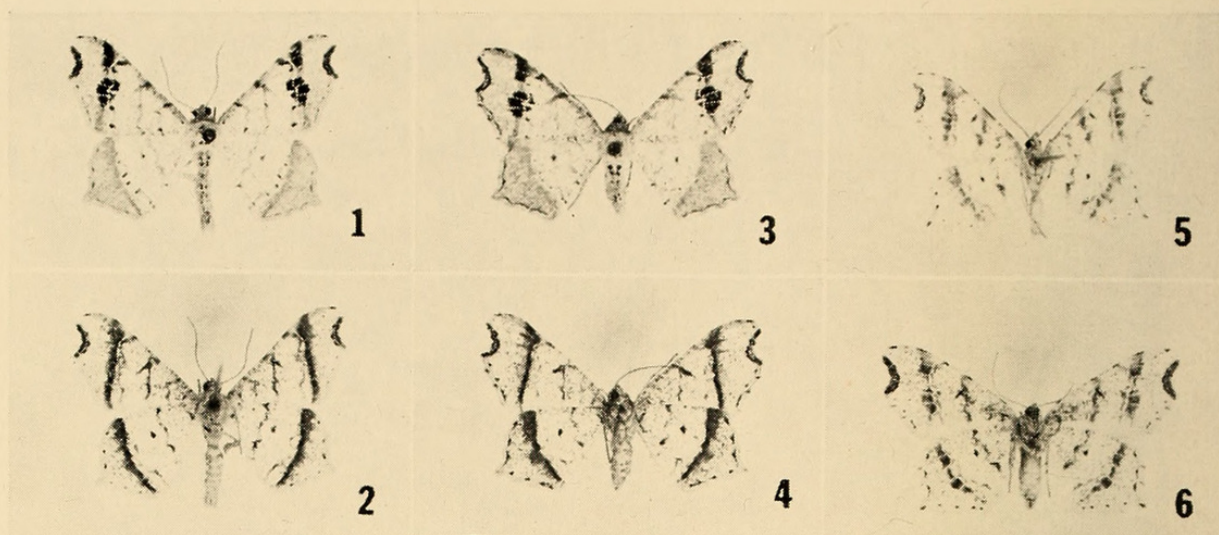
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Moths identified as *Semiothisa* (or *Philobia*) *aemulataria* (Walker) in most collections from the southeastern United States were found to be a mixture of two species of extremely similar appearance. One of these is the true *aemulataria*; the other is undescribed. *Semiothisa aemulataria* is common in collections and widely distributed, occurring across southern Canada from Newfoundland to Alberta and southward to the Gulf States, including northern Florida and eastern Texas. Southern specimens tend to be smaller, darker, and less clearly marked than northern ones, but I found no structural differences and continue to regard such variants as belonging to the same species.

The undescribed species that has been confused with *aemulataria* is somewhat larger, generally paler than southern examples of *aemulataria* from the same region, and with the markings more boldly defined, especially the intense, red-brown postmedial bands on the undersides of both wings. The heavily swollen (incrassated) hind tibia of the male (Fig. 14) at once distinguishes it from all of the North American species of *Semiothisa* Hübner formerly placed in *Philobia* Duponchel (*aemulataria* (Walker), and *versitata*, *perplexata*, *aspirata* and *ulsterata* (Pearsall)). The widely sympatric *Semiothisa aequiferaria* (Walker), often confused with *aemulataria* in the South, also has a swollen male hind tibia, but the moth is smaller and darker, with the outer margin of the forewing less obviously notched behind the apex. The new species, which I am naming *Semiothisa promiscuata*, occurs from Maryland to Florida, and west to Illinois, Arkansas and eastern Texas. Its hostplant and early stages are unknown.

*Semiothisa aemulataria* was described as *Macaria aemulataria* Walker (1861: 884) from one male and one female in the British Museum





Figs. 1-6. Specimens: (1) *Semiothisa promiscuata*, n.sp., holotype; (2) same specimen, underside; (3) *S. promiscuata*, allotype; (4) same specimen, underside; (5) *S. aemulataria* (Wlk) ♂. Bog E of Big Indian L., Halifax watershed area, Nova Scotia, 27 June 1963, underside; (6) *S. aemulataria* ♀, District of Columbia (no date), underside. Photos by Smithsonian Institution Photographic Laboratory.

(Natural History) from New York and "East Florida." I hereby designate as the lectotype the male, presumed to have been taken at Trenton Falls, Oneida Co., New York, and it is being so labelled. I have not seen this specimen, but in his description of it Walker said, "hind tibiae hardly incrassated." This precludes any possibility that it refers to the new species herein described. Also, the type locality as restricted is almost certainly too far north for this new species.

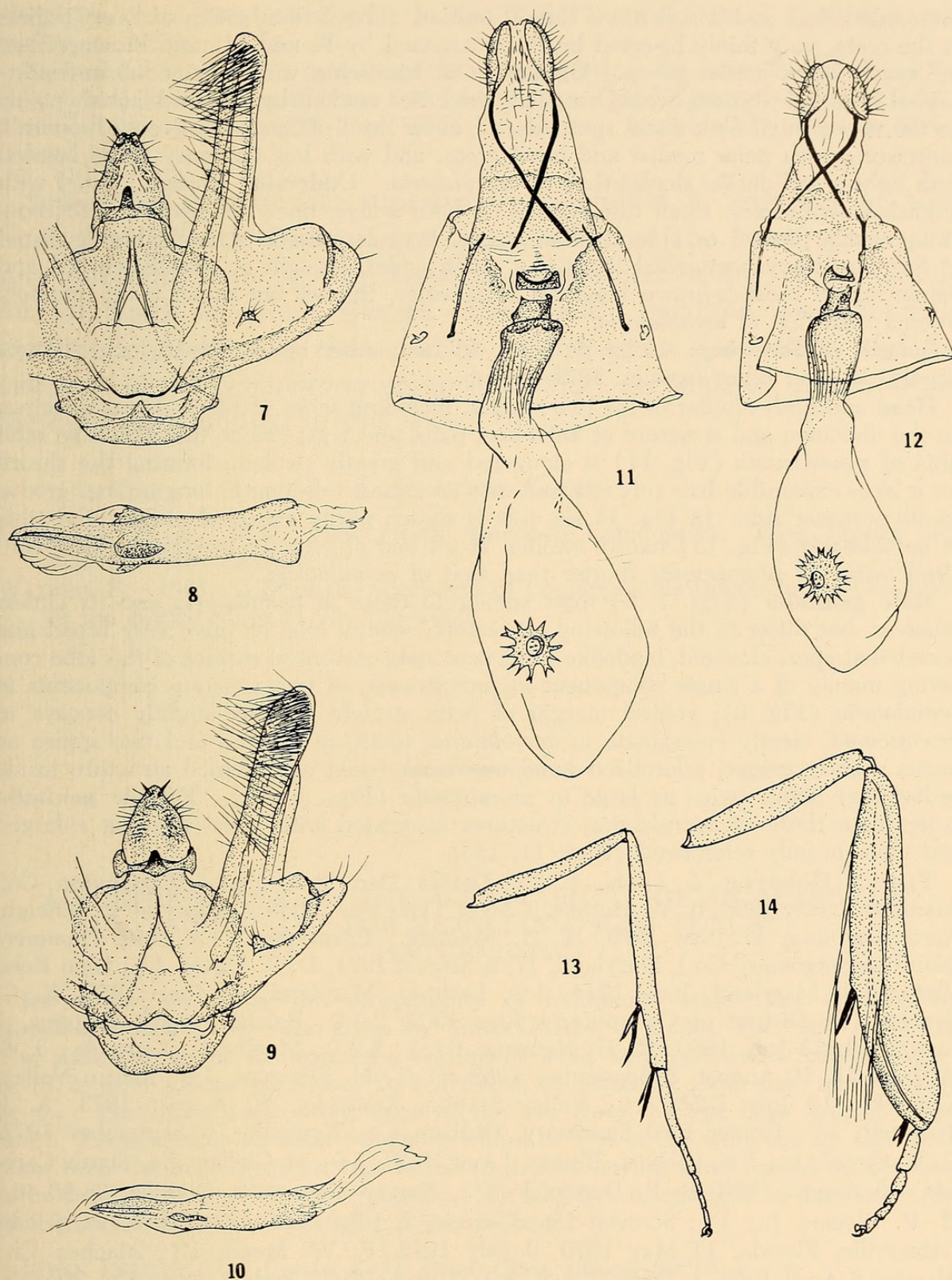
The only recognized synonym of *S. aemulataria* is *Macaria sectomaculata* Morrison (1874: 198), based on an unstated number of specimens from Massachusetts and New York. I have not seen the types, but again it would seem certain that their source is north of the range of *S. promiscuata*.

### ***Semiothisa promiscuata*, Ferguson, new species**

Figs. 1-4, 7, 8, 11, 14

**Description.** General coloring, pattern of upperside, and wing shape almost exactly as in *S. aemulataria*, although whitish areas of wings appear a little more lustrous and translucent, and size somewhat larger, more nearly comparable to the northern *S. ulsterata*. Outer margin of forewing distinctly emarginate just behind apex, this concavity with a blackish, crescent-shaped lining. **Upperside of forewing** with antemedial and medial lines light brown, weak, nearly perpendicular to inner margin except angled basad just before costa; postmedial line parallel to these but expanded intermittently to form a series of dark brown to blackish spots, especially near middle of wing; postmedial bounded outwardly by a thin, pale line, and beyond this by an incomplete postmedial band of larger dark spots concentrated in two patches, as follows: a group of 3 large blackish spots in the middle of the wing, trisected by pale veins ( $M_3$  and  $Cu_1$ ), closely adjacent to the mesial spots of the





Figs. 7-14. Genitalia and hind legs: (7) ♂ genitalia of *S. promiscuata*, Plummers Island, Maryland, 17 August 1971; (8) aedeagus of same specimen; (9) ♂ genitalia of *S. aemulataria*, Raleigh, North Carolina, 29 April 1970; (10) aedeagus of same specimen; (11) ♀ genitalia of *S. promiscuata*, Raleigh, North Carolina, 13 July 1969; (12) ♀ genitalia of *S. aemulataria*, Montgomery Co., Maryland, 25 May 1900; (13) right hind leg of *S. aemulataria*, Plummers Island, Maryland; (14) right hind leg of *S. promiscuata*, Jackson, Mississippi. Drawings by the author.



postmedial line, and a still more closely unified, subquadrate group of 2 or 3 spots at the costa, very thinly bisected by  $R_5$  or trisected by  $R_5$  and  $M_1$ , and browner than the nearly black mesial group. **Upperside of hindwing** with antemedial and postmedial lines light brown, weak, irregular, the latter marked by several blackish points on the veins; small dark discal spot present; outer third of hindwing evenly brownish, contrasting with paler medial and basal areas, and with less tendency to be banded with lighter and darker shades than in *aemulataria*. **Underside** whitish, dusted with reddish-brown scales; small discal spots on both wings; lines corresponding to those of upperside present or absent, often vague, irregular; however, immediately distad of the thin, wavy postmedial there is a much wider, straight or slightly curved and uninterrupted reddish-brown band on both wings, thinner but much more intensely colored than that of *aemulataria*.

**Length of forewing:** Holotype male, 13 mm; other males, 12–13 mm; allotype female, 13 mm; other females, 12.5–15 mm.

**Head and body** similar in the two species, including series of black dorsal markings on the abdomen and structure of antennae, palpi and legs, except that the male hind tibia of *promiscuata* (Fig. 14) is elongated and greatly swollen, forming the sheath for a large expansible hair tuft recessed into an almost full-length, longitudinal groove on its posterior side. In Fig. 14 the tuft is shown partly extruded. Male hind tibia of *aemulataria* (Fig. 13) hardly swollen at all and apparently lacking the hair tuft. Hind tarsus of *promiscuata* shorter than that of *aemulataria*.

**Male genitalia** (Figs. 7, 8) most similar to those of *aemulataria* and its closest relatives, but differ in the following characters: ventral lobe of valve very broad and rounded at apex; elevated, bladeliike ridge near apex on ventral surface of this lobe consisting mainly of a single component in *promiscuata*, of two separate components in *aemulataria* (Fig. 9); ventral margin of juxta straight or only slightly concave in *promiscuata*, clearly emarginate in *aemulataria*; tooth on gnathos and two spines on uncus slightly longer; sclerotized band on vesica (seen as a folded structure inside aedeagus) about twice as large in *promiscuata* (Figs. 8, 10). **Female genitalia** larger than those of *aemulataria*; structures associated with ostial opening enlarged and more heavily sclerotized (Figs. 11, 12).

**Types.** **Holotype** ♂ (Figs. 1, 2), Devil's Den State Park, Washington Co., Arkansas, 1 July 1966, R. W. Hodges, USNM Type No. 73059. **Allotype** ♀, Raleigh, North Carolina, 17 June 1970, H. H. Neunzig. **Paratypes:** 1 ♂, 1 ♀, Plummers Island [Montgomery Co.], Maryland, 17, 5 August 1971, D. R. Davis; 1 ♀, Glen Echo [Bethesda], Maryland, June 1914; 1 ♀, Lathrop, Maryland, 23 June 1955, E. C. Becker; 1 ♀, District of Columbia, 4 June 1902; 2 ♀ ♀, Raleigh, North Carolina, 1 June 1970, 13 July 1969, H. H. Neunzig; 6 ♂ ♂, 2 ♀ ♀, Morehead, Kentucky, 3, 8, 19 July, 21, 29 August, 8 September 1962–63, T. N. Freeman; 1 ♀, Renfro Valley, Kentucky, 18 July 1955; 1 ♀, Valley Station, Kentucky, 29 August 1973, A. J. Brownell; 1 ♀, Homer Bird Sanctuary, Oldham Co., Kentucky, 6 September 1972, C. V. Covell, Jr.; 1 ♀, Elkhart, Illinois, "Aug. 1–7"; 1 ♀, McClellanville, South Carolina, 30 August 1973, R. B. Dominick; 1 ♀, Emory University, Georgia, "8-10-46," H. V. Weems, Jr.; 1 ♀, Screven Co., Georgia, 8 July 1946, Otto Buchholz; 2 ♀ ♀, Gainesville, Florida, 14 May 1970, 9 July 1972, F. W. Mead; 1 ♂, Alachua Co., Florida, 8 April 1959, J. Perry; 2 ♂ ♂, 1 ♀, Torreya State Park, Liberty Co., Florida, 23 May 1966, G. W. Rawson; 1 ♀, Greenville, Mississippi, "8-09," G. Dorner; 1 ♂, Jackson, Hinds Co., Mississippi, 4 June 1960, Bryant Mather; 1 ♂, Town Bluff, Tyler Co., Texas, 27 March 1963, A. & M. E. Blanchard; 1 ♂, Conroe, Montgomery Co., Texas, 14 May 1967, A. & M. E. Blanchard. The type material is in the collections of the U.S. National Museum; the American Museum of Natural History; the Biosystematics Research Institute, Canada Department of Agriculture, Ottawa; the Division of Plant Industry of the Florida Department of Agriculture, Gainesville; Mr.



André Blanchard; Dr. C. V. Covell, Jr.; Dr. R. B. Dominick; Mr. C. P. Kimball; and Mr. Bryant Mather.

**Remarks.** I have also seen 3 specimens regarded as too poor to include in the type series. These are as follows: 1 ♀, Montgomery Co., Virginia, 1 June 1901; 1 ♀, Renfro Valley, Kentucky, 25 May 1955; 1 ♀, Quincy, Gadsden Co., Florida, 8 November 1966.

*Semiothisa promiscuata* superficially resembles *S. regulata* (F.) of Central and South America, but the genitalia of the latter species are very different, more so than those of *aemulataria* or any of the closely related North American species. The greatly enlarged, swollen, male hind tibia is generally characteristic of the genus *Semiothisa*, and the members of the *aemulataria* group (*Philobia*) are unusual in not having the hind leg modified in this way.

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#### A FURTHER NOTE ON THE ACCEPTABILITY OF AN ALTERNATE FOODPLANT FOR *HEMILEUCA MAIA* (DRURY) (SATURNIIDAE)

Information to verify the acceptability of foodplants other than *Quercus* for *Hemileuca maia* Drury was given by Smith (1974, J. Lepid. Soc. 28: 142-145). The author mentions the successful rearing of *maia* on a species of *Salix* (willow) in 1972, from Albany Co., New York livestock collected on scrub oak, and supplied by me. That same year, using some of the ova from the egg mass sent to Capt. Smith, I reared *maia* on *Salix* (weeping willow). The larvae were fed on this foodplant from the beginning, not transferred to it after having been started on *Quercus*, as in the case of Capt. Smith's program. My adults, too, emerged in September the same year, and were exceptionally large specimens.

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1974. "A new species of the genus *Semiothisa* from the southeastern United States (Geometridae)." *Journal of the Lepidopterists' Society* 28, 297–301.

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