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NEOTROPICAL MICROLEPIDOPTERA, VIII¹
A REVIEW OF THE GENUS *FALCULINA*
WITH DESCRIPTIONS OF NEW SPECIES
(LEPIDOPTERA: STENOMIDAE)

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This paper represents part of a continuing study of the Neotropical moths of the family Stenomidae and presents for the first time, since the genus *Falculina* Zeller was established in 1877, illustrations, descriptions, and keys to all the known species. In addition, during the course of the study, two new species were encountered and are described herein.

Although the genus *Falculina* is composed of moderate-sized and rather strikingly marked moths, it is rare in collections. As a result, information concerning distribution is fragmentary and that concerning host plants and biology completely lacking. It is hoped that

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this study will stimulate collectors to provide additional specimens and biological data.

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The author also wishes to thank Mr. Andre Pizzini for the genitalic drawings and distribution maps included in this paper and Mr. Jack Scott for the photographic work.

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History: The genus *Falculina* was described by Zeller (1877) for a new species, *ochricostata*, which he described from a single female specimen. Meyrick (1916) redescribed the genus, added a new species, *lepidota*, and gave a brief description of a male from French Guiana believed by him to be that of *ochricostata*. One year later Meyrick (1917) described a new species, *antitypa*, and reported that this new species was described from the French Guiana material he had mistakenly identified as *ochricostata*. He also states that he is "indebted to Mr. A. Busck for examples of the true *ochricostata* from Panama, distinguishable from *antitypa* by the smaller size, partial rosy tinge of forewings, and especially by having 7 and 8 of the forewings stalked, as Zeller correctly states." Fifteen years later Meyrick (1932) described *F. caustopis* from a single male specimen from Brazil. Busck (1934) listed *Falculina* and the four described species in the Stenomidae part of the Lepidopterorum Catalogus series. Clarke (1955) selected lectotypes and illustrated the genitalia and wings of *antitypa* and *lepidota* in his study of the Meyrick types in the British Museum (Natural History).

Genus *Falculina* Zeller

Falculina Zeller, 1877, Hor. Soc. Ent. Rossica, vol. 13, p. 385.

Type species: *Falculina ochricostata* Zeller, by monotypy.

Head rough, lateral tufts spreading. Labial palpus moderately long, recurved; second segment thickened with appressed scales; apical segment acute, shorter than second. Forewing with costa slightly arched, apex falcate, termen concave, tornus rounded; with 12 veins, 3 and 4 connate, 5 approximate to 3 and 4, 7 and 8 stalked or separate, 7 to termen. Hindwing broader than forewing; with 8 veins, 3 and 4 connate, 5 closely approximate to 3 and 4, 6 and 7

stalked. Abdomen of males with strong, eversible pair of hair pencils contained in an elongate cuplike pocket on first sternum (fig. 1a).

Male genitalia: Uncus simple or furcate, erect or strongly recurved; gnathos with separate arms, with or without yokelike connection from their bases; subscaphium present or absent; harpe simple, furcate setae present; anellus with four lateral lobes, ventral pair simple, setiferous, dorsal pair larger, variously shaped; aedeagus with or without long lateral process, entrance of ductus ejaculatorius lateral, cornuti present or absent.

Female genitalia: Ostium bursae sclerotized; ductus bursae membranous; inception of ductus seminalis near ostium; corpus bursae membranous, with a heavily sclerotized, dumbbell-shaped, dentate signum.

This genus is unique in that it is recognized easily by its wing shape and maculation, a situation not common in the stenomids. No other genus in the family has the falcate wing apex and curious wing maculation which Meyrick (1916) referred to as "an aspect of reptilian mimicry." As regards "reptilian mimicry," I have not been able to locate any prior or subsequent application of this term and must simply presume that Meyrick detected a resemblance between the maculation of the moths of this genus and the scaling of reptiles.

The genitalia provide a number of distinguishing characters for the genus. In the males the lateral entrance of the ductus ejaculatorius into the aedeagus plus the separate gnathal arms associated with either a yokelike connection from their bases or a subscaphium on the tuba analis. In the females the inception of the ductus seminalis just before the ostium, membranous ductus bursae, and dumbbell-shaped signum readily distinguish the genus.

Key to the Species of *Falculina* Based on the Genitalia

- | | |
|---|-------------------------------|
| 1. Male | 2 |
| Female | 7 |
| 2. Subscaphium present | 3 |
| Subscaphium absent | 4 |
| 3. Uncus truncate apically | <i>F. ochricostata</i> Zeller |
| Uncus strongly furcate apically | <i>F. kasyi</i> , new species |
| 4. Ventral edge of harpe clothed with short, heavy setae | 5 |
| Ventral edge of harpe not clothed with short, heavy setae | 6 |
| 5. Short, heavy setae extending to apex of harpe | <i>F. bella</i> , new species |
| Short, heavy setae not extending beyond apical third of ventral margin. | <i>F. lepidota</i> Meyrick |
| 6. Anellus with one dorsal lobe large, curved laterad, apex irregularly truncate. | <i>F. antitypa</i> Meyrick |
| Anellus with one dorsal lobe large, curved laterad, apex acute. | <i>F. caustopis</i> Meyrick |

7. Lamella antevaginalis reniform **F. lepidota** Meyrick
 Lamella antevaginalis not reniform 8
8. Posterior margin of lamella antevaginalis broadly notched. **F. kasyi**, new species
 Posterior margin of lamella antevaginalis narrowly cleft. **F. antitypa** Meyrick

***Falculina ochricostata* Zeller**

FIGURES 1a-d, 4; PLATE 1 (FIG. 1)

Falculina ochricostata Zeller, 1877, Hor. Soc. Ent. Rossica, vol. 13, p. 385, figs. 135a, b.

Alar expanse 22-28 mm.

Antenna whitish basally, brown beyond. Head whitish shaded laterally with orange; second segment of labial palpus orange on outer side, white on inner side, apical segment white. Legs whitish shaded with orange. Thorax brownish ochreous irregularly spotted with fuscous. Forewing with veins 7 and 8 stalked; brownish ochreous becoming whitish towards costa basally; costa orange; basal half of wing more or less irregularly spotted with fuscous including two round fuscous spots enclosed by a ring of ground color at basal third; a line of indistinct fuscous dots from middle of costa to near termen beneath apex then sharply angulated and sinuate to dorsum before tornus; a terminal series of fuscous dots from apex to tornus. Cilia brownish. Hindwing stramineous basally deepening to bright yellow apically; cilia whitish.

Male genitalia: See figures (slide W.D.D. 2632). Uncus erect, truncate apically; gnathos two separate spiny arms; subscaphium present, bearing small spines apically; harpe of approximately uniform width throughout, apical third recurved approximately 45°; anellus with four lateral lobes, ventral pair small, setiferous humps, dorsal pair curved slightly laterad, bladefield in shape, apically acute; aedeagus simple, vesica without cornuti.

Female genitalia: Unknown.

Type: In the Zoologisches Museum der Humboldt-Universität zu Berlin.

Type locality: Unknown.

Distribution: Panama: Trinidad River (June, Sept.); La Chorrera (May). Costa Rica: Tuis [no date].

I have examined Zeller's type, a single female without abdomen, and associated it with material from Central America collected by Busck and identified by him as *ochricostata*. Zeller described *ochricostata* from material in the Staudinger Museum and, although Zeller's type is without locality data, the fact that most of the species described in the same paper were collected in Central America by

H. Ribbe, who was at that time curator of the Staudinger Museum, lends considerable support to the association with Busck's material.

On the basis of external characters such as maculation, venation, etc., *ochricostata* is inseparable from *kasyi*. However, the genitalia afford abundant distinguishing characters of which the truncate uncus in the males of *ochricostata* as compared to strongly furcate uncus in *kasyi* is the most prominent. Since the only known female of *ochricostata*, the type, is without abdomen no distinguishing characters for the females can at present be given.

***Falculina kasyi*, new species**

FIGURES 2a, 3b, 4; PLATE 1 (FIG. 2)

Alar expanse 26–28 mm.

Antenna, head, legs, thorax, forewing, and hindwing as in *ochricostata*.

Male genitalia: See figures (slide W.D.D. 2525, type). Uncus erect, strongly furcate apically; gnathos two separate arms, recurved and spatulate apically; subscaphium present, without apical spines; harpe broad, basally narrowing near midpoint; anellus with four lateral lobes, the ventral pair very slight setiferous elevations, the dorsal pair broad basally, excavated sharply near apex forming recurved, flat lobes; aedeagus simple, vesica without cornuti.

Female genitalia: See figures (slide A. Busck 1001, paratype). Posterior margin of lamella antevaginalis broadly notched; ostium bursae pouchlike; ductus bursae membranous.

Type: Moengo, Boven, Cottica R., Surinam. USNM 67227.

Distribution: Surinam: Moengo, Boven, Cottica R. (May); Kwakoe Gron, Saramacca R. (June). French Guiana: Saint Jean, Maroni R. [no date]. Brazil: Ponte Nova, Rio Xingu [no date].

Described from the male holotype, May 14, 1927, Moengo, Boven, Cottica R., Surinam; two male paratypes (Wm. Schaus), Saint Jean, Maroni, R., French Guiana, June 9, 1927, June 11, 1927, Kwakoe Gron, Saramacca R., Surinam; and one female paratype (Dognin Coll.), Ponte Nova, Rio Xingu, Amazonas.

This species is related very closely to *ochricostata* and characters for separation of the males were given in the discussion of that species. The broadly notched posterior margin of the lamella antevaginalis in the female genitalia readily separates *kasyi* from the other known females of *Falculina*.

I take great pleasure in naming this species in honor of Dr. Fritz Kasy, distinguished lepidopterist at the Naturhistorisches Museum, Vienna, Austria, who has been of invaluable aid in my study of the family Stenomidae.

Falculina antitypa Meyrick

FIGURES 2b, 3a, 4; PLATE 1 (FIG. 3)

Falculina antitypa Meyrick, 1917, *Exotic Microlepidoptera*, vol. 2, p. 58.

Alar expanse 24–36 mm.

Antenna white basally, brown beyond. Head whitish ochreous, shaded slightly with ochreous laterally; second segment of labial palpus grayish on outer side, white on inner side, apical segment white. Legs whitish, slightly shaded with fuscous. Thorax as in *ochricostata*. Forewing as in *ochricostata* except veins 7 and 8 separate. Hindwing as in *ochricostata*.

Male genitalia: See figures (slide W.D.D. 2640). Uncus curved approximately 90° ventrad at midpoint; gnathos consisting of two separate, apically acute arms with yokelike ventral connection from their bases; subscaphium absent; harpe narrow, slightly curved, apically acute; anellus with four lateral lobes, the ventral pair short, setiferous, the dorsal pair asymmetrical, one apically acute, bladelike, the other long, curved, trumpet-like, apex irregularly truncate; aedeagus with a long, curved, lateral process, vesica clothed apically with small spines.

Female genitalia: See figures (slide W.D.D. 3063). Posterior margin of lamella antevaginalis narrowly cleft; ostium bursae with two heavily sclerotized, pouchlike areas; ductus bursae long, membranous.

Type: In the British Museum (Natural History).

Type locality: Rio Maroni, French Guiana.

Distribution: French Guiana: Rio Maroni [no date].

I have examined specimens from Meyrick's original series and the photograph of the type specimen given in Clarke (1955). This species is very distinct on the basis of characters of the genitalia. The long trumpet-like anellar lobe in the male genitalia and the narrowly cleft posterior margin of the lamella antevaginalis in the female genitalia readily separates *antitypa* from the other species of *Falculina*.

Falculina caustopis Meyrick

FIGURES 2c, 5; PLATE 1 (FIG. 4)

Falculina caustopis Meyrick, 1932, *Exotic Microlepidoptera*, vol. 4, p. 288.

Alar expanse 29 mm.

Antenna whitish, shaded with gray basally, fuscous beyond. Head grayish white, shaded laterally with orange; second segment of labial palpus orange, shaded with fuscous on outer side, white on inner side, apical segment white, slightly shaded with fuscous at apex. Legs whitish, foreleg heavily shaded with fuscous. Thorax brown, shaded with fuscous. Forewing with veins 7 and 8 closely approximated at base; brown with faint pinkish tinge; basal half of wing mottled with

fuscous scales; costal edge fulvous; a faint fuscous subterminal line from middle of costa to near termen beneath apex, then sharply angulated and sinuate to dorsum before tornus; a terminal series of fuscous dots. Cilia concolorous with ground color. Hindwing bright yellow basally, apical fourth fuscous; cilia fuscous.

Male genitalia: See figures (slide W.D.D. 3125, type). Uncus erect, rounded apically; gnathos as in *antitypa*; subscaphium absent; harpe narrow, slightly curved, bluntly pointed apically; anellus with four lateral lobes, ventral pair simple, setiferous, dorsal pair asymmetrical, one long, curved 90° laterad near apex, inner margin serrate at apical third, apex acute, other shorter, slightly curved laterad, apically acute; aedeagus with a thin, straight lateral process, vesica clothed with tiny spines.

Female genitalia: Unknown.

Type: In the Naturhistorisches Museum, Vienna, Austria.

Type locality: Tefé, Amazonas, Brazil.

Distribution: Brazil: Tefé, Amazonas [no date].

Through the courtesy of Dr. Fritz Kasy, Naturhistorisches Museum, Vienna, I have had the opportunity to study Meyrick's type specimen which is the only known example of this species. The fuscous margin on the hindwing and the large, hooked lateral process of the aedeagus in the male genitalia readily distinguish *caustopis*.

Falculina lepidota Meyrick

FIGURES 2*d*, 3*f*, 5; PLATE 1 (FIG. 5)

Falculina lepidota Meyrick, 1916, Exotic Microlepidoptera, vol. 1, p. 482.

Alar expanse 28–36 mm.

Antenna whitish basally, brown beyond. Head whitish, shaded laterally with yellow; second segment of labial palpus whitish, shaded with yellow ochreous on outer side, white on inner side, apical segment white. Legs whitish ochreous, shaded with brown. Thorax as in *caustopis*. Forewing with veins 7 and 8 separate; maculation as in *caustopis*. Hindwing in female grayish basally, yellow apically; in male fuscous tinged with yellow ochreous at apex; cilia whitish ochreous in female, grayish ochreous in male.

Male genitalia: See figures (slide W.D.D. 2641). Uncus short, curved ventrad, apically acute; gnathos two separate truncate arms with yokelike ventral connection from their bases; subscaphium absent; harpe broad basally, ventral edge clothed in short, heavy setae from basal third to apical third; anellus with four lateral lobes, ventral pair simple, setiferous, dorsal pair asymmetrical, one longer, apically acute, bladelike, other shorter, twisted, apically rounded; aedeagus with a long, recurved lateral process, vesica clothed with tiny spines.

Female genitalia: See figures (slide W.D.D. 3064). Lamella antevaginalis reniform; ostium bursae simple; ductus bursae long, membranous.

Type: In the British Museum (Natural History).

Type locality: Rio Maroni, French Guiana.

Distribution. French Guiana: Rio Maroni [no date].

This species is very closely related to *bella* new species; however, the long, recurved, lateral aedeagal process and the short, heavy setae on the ventral edge of the harpe not extending to the apex readily separates the males. Since the female of *bella*, new species is not known, it is at present impossible to compare the females. However, the reniform lamella antevaginalis in the female genitalia distinguishes *lepidota* from the other known females in the genus.

Falculina bella, new species

FIGURES 2e, 5; Plate 1 (FIG. 6)

Alar expanse 28 mm.

Antenna whitish. Head whitish, slightly shaded laterally with ochreous; second segment of labial palpus white, slightly shaded with ochreous on outer side, white on inner side, apical segment white. Legs whitish, foreleg shaded with brown. Thorax as in *ochricostata*. Forewing with veins 7 and 8 separate; maculation as in *ochricostata*. Hindwing as in *ochricostata*.

Male genitalia: See figures (slide W.D.D. 3060, type). Uncus short, recurved, blunt apically; gnathos two separate apically acute arms, dorsal margin at apex serrate, with yokelike ventral connection from their bases; subscaphium absent; harpe broad basally, ventral edge clothed in short, heavy setae from basal third to apex; anellus with four lateral lobes, ventral pair simple, setiferous, dorsal pair asymmetrical, one longer, apically acute, bladelike, the other short, broad, flaplike; aedeagus with a long, curved lateral process, vesica clothed with tiny spines.

Female genitalia: Unknown.

Type: Above Obidos, Amazon, Brazil. USNM 67228.

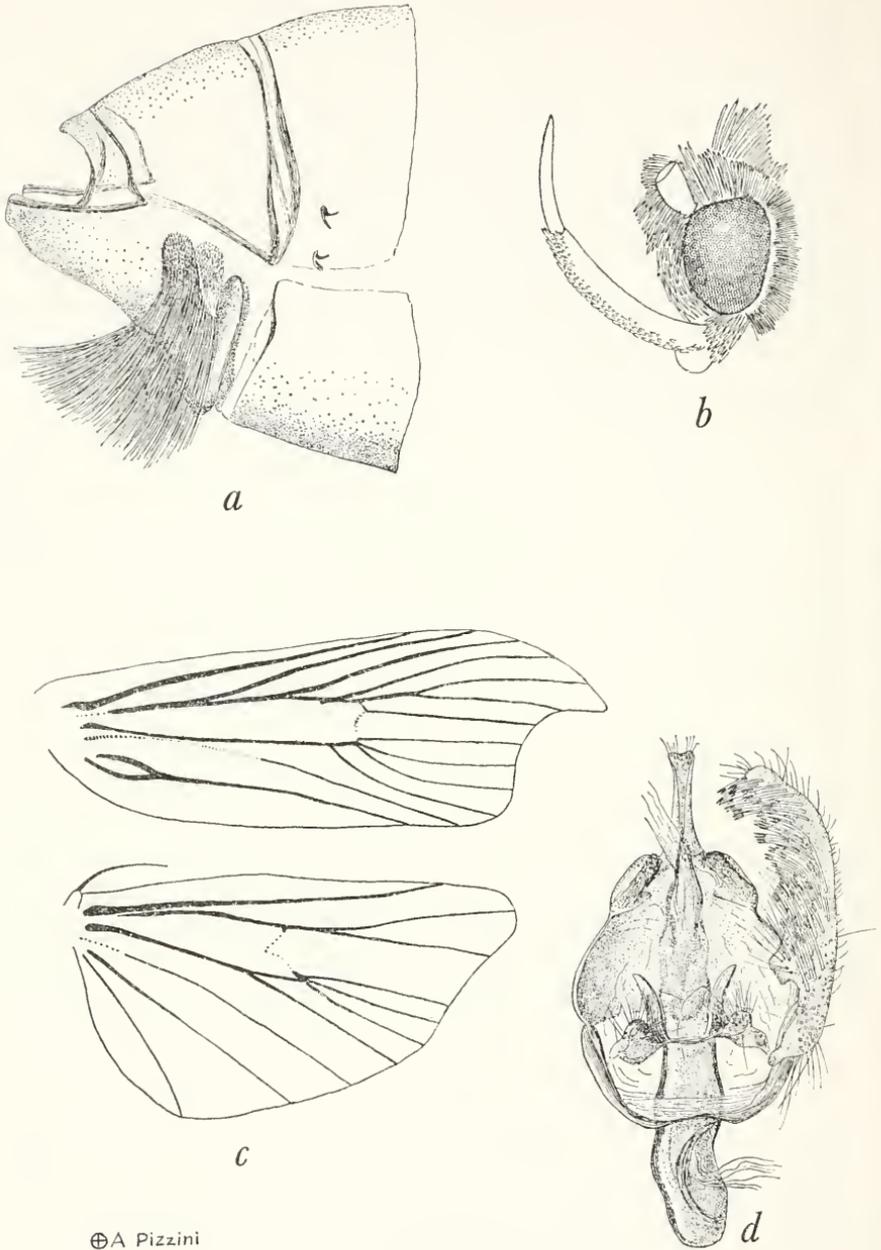
Distribution: Brazil: above Obidos (Sept.).

Described from the male holotype, Sept. 10, 1920, above Obidos, Amazon, Brazil.

This species is related very closely to *lepidota* and a comparison of distinguishing characters has been included in the discussion of that species.

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⊕A Pizzini

FIGURE 1.—*Falculina ochricostata* Zeller: *a*, lateral view of abdominal segments 1-2; *b*, lateral view of head; *c*, wing venation; *d*, ventral view of male genitalia with left harpe removed.

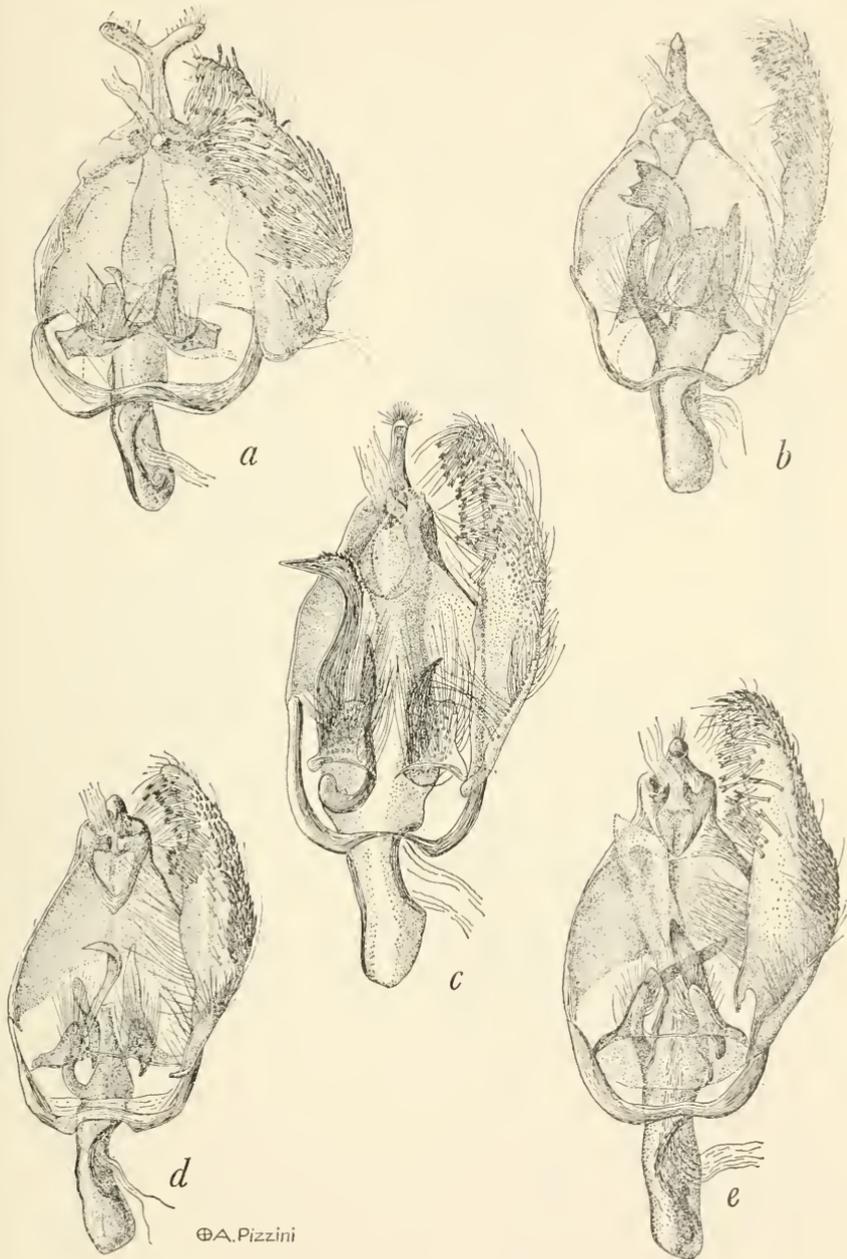


FIGURE 2.—Ventral view of male genitalia with left harpe removed: *a*, *Falculina kasyi*, new species; *b*, *F. antitypa* Meyrick; *c*, *F. caustopis* Meyrick; *d*, *F. lepidota* Meyrick; *e*, *F. bella*, new species.

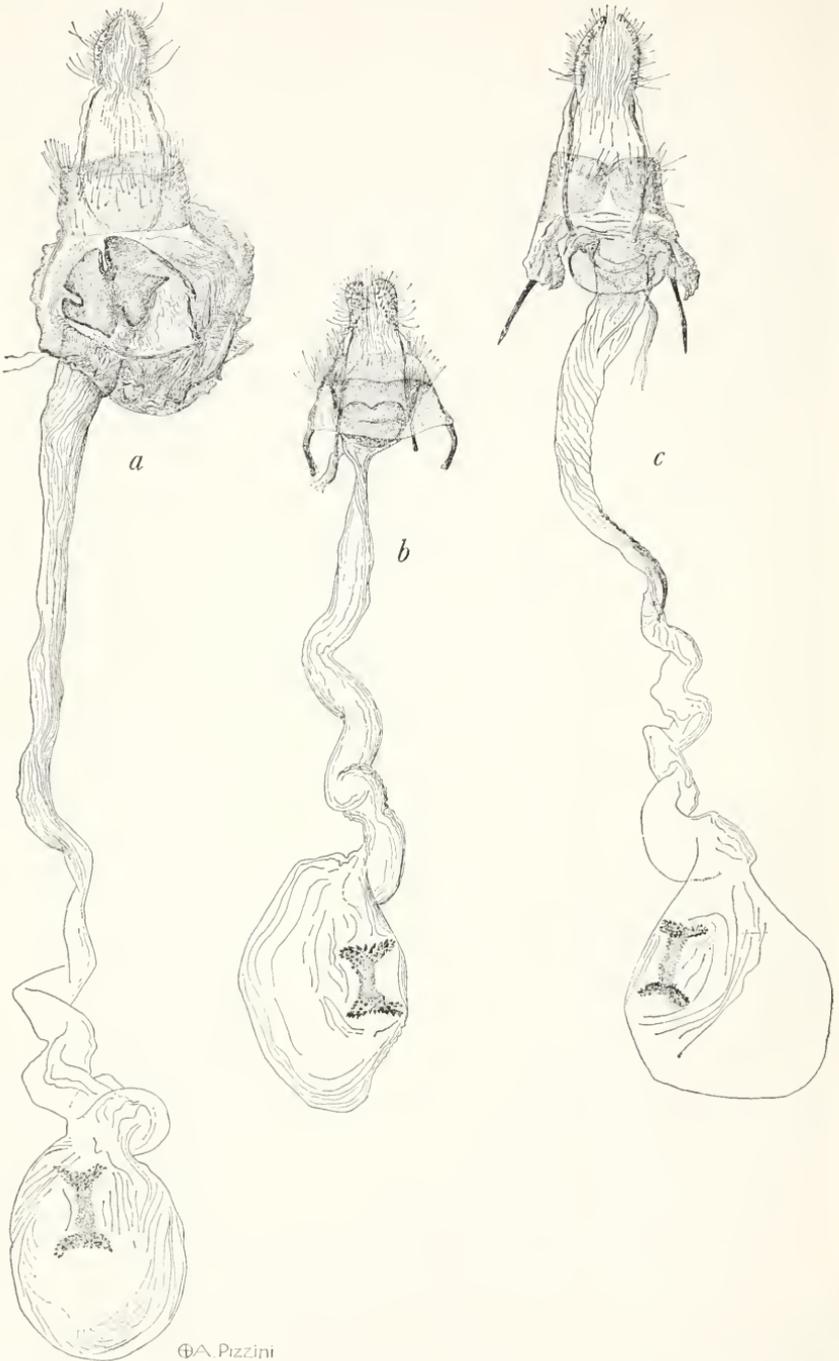


FIGURE 3.—Ventral view of female genitalia: *a*, *Falculina antitypa* Meyrick; *b*, *F. kasyi*, new species; *c*, *F. lepidota* Meyrick.

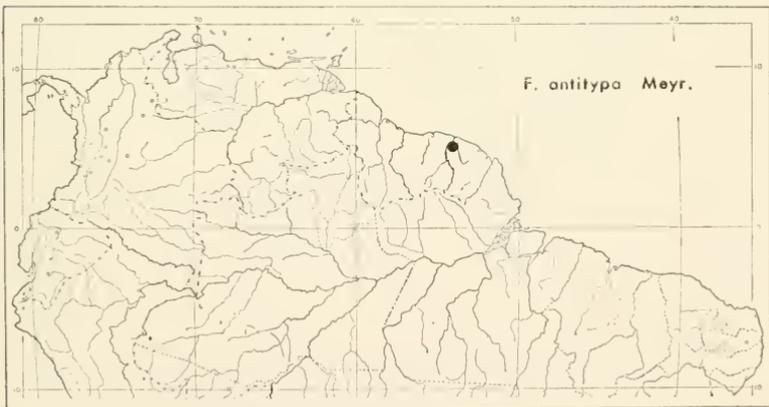
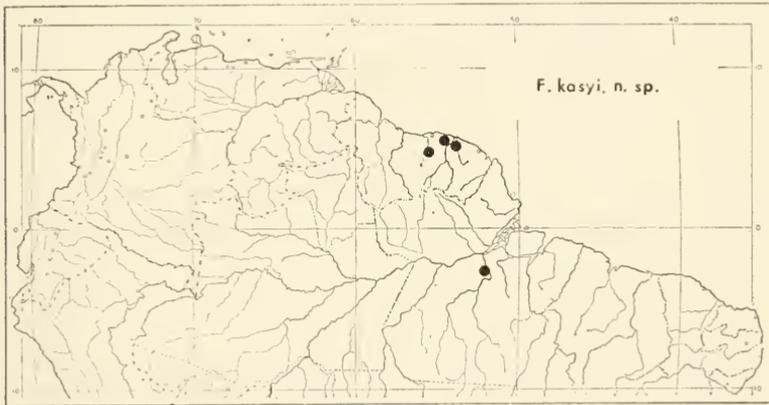
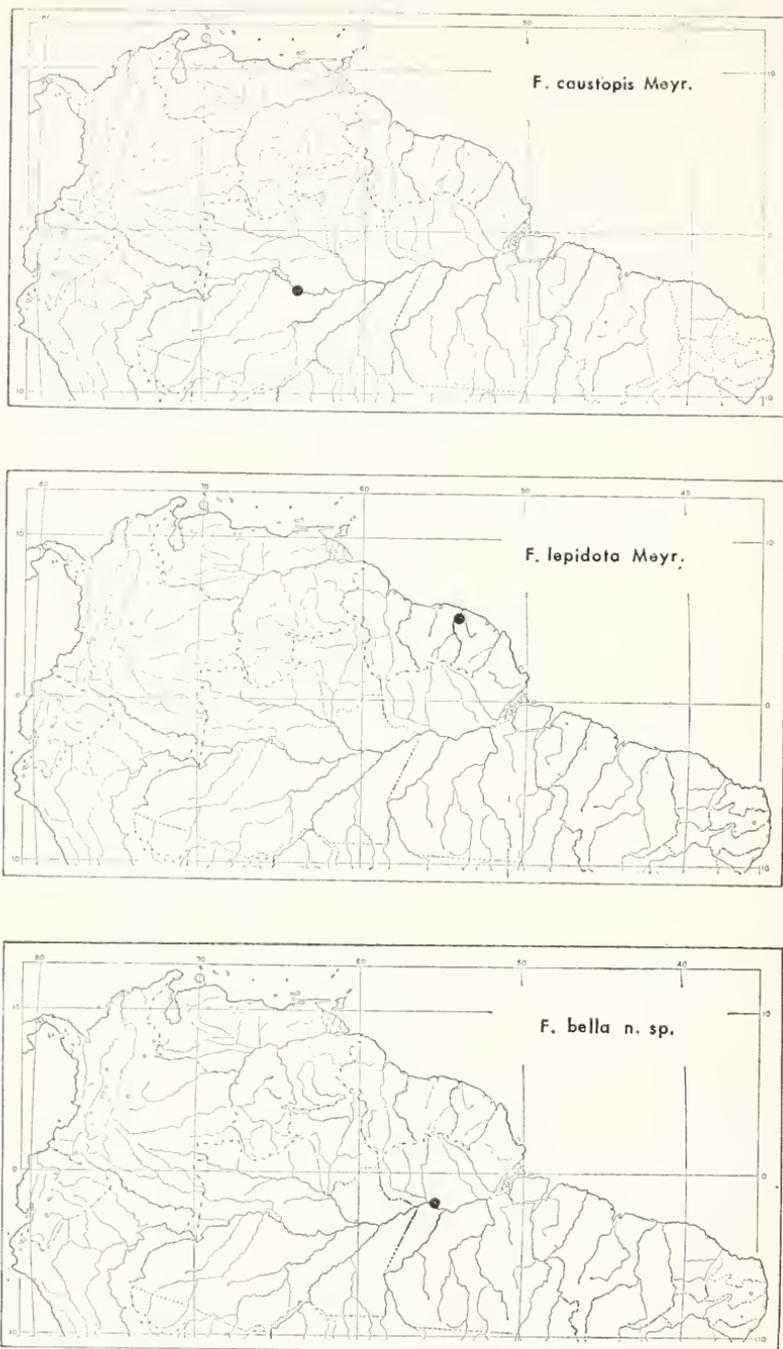


FIGURE 4.—Distribution of species of *Falculina*.

FIGURE 5.—Distribution of species of *Falculina*.





Left wings: 1, *Falculina ochricostata* Zeller; 2, *F. kasyi*, new species; 3, *F. antitypa* Meyrick; 4, *F. caustopis* Meyrick; 5, *F. lepidota* Meyrick; 6, *F. bella*, new species.

