

## WEST INDIES BRENTHIA

(Lepidoptera: Choreutidae)<sup>1</sup>

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The genus *Brenthia* includes numerous species in the New World and another large contingent in the tropical parts of Asia and Australia. There also are a few species known from Africa (Heppner, 1981). The few species in Japan represent the only intrusion of the genus into the Palearctic region.

Only one species of *Brenthia* is known for North America and this species, *Brenthia pavonacella* (Clemens), happens to be the type-species of the genus. An oddity of the genus involves the large number of species from various parts of the world that superficially are almost identical in wing maculation yet differ considerably in their genitalia. Thus, there are a number of look-alikes of *Brenthia pavonacella* in the northern neotropics and only in Tamaulipas, Mexico, near the Texas border, have any verified specimens been found of this Nearctic species outside of the United States.

The Neotropical *Brenthia* are currently being revised, but in the interest of better documenting the Cuban fauna at this time, mainly for a collection received for study from the Moravian Museum, Brno, Czechoslovakia, this initial review is presented for all the West Indian species. The area of coverage includes all the islands of the Gulf of Mexico except for coastal islands like Trinidad and Tobago, which will be included in the mainland revision. Thus far, six species of *Brenthia* are known for the West Indies, four of which are newly described herein. Additional collecting may well produce other species. Cuba has four of the known West Indian species in its fauna and at least one of these is endemic. Another endemic species occurs in Puerto Rico. Inasmuch as no specimens are available from Hispaniola and a number of other Antillean islands, the full extent of the West Indian fauna and the ranges of all the species will remain speculative until all the islands have been thoroughly surveyed. At least two of the included species also occur on the mainland in Venezuela and as far south as Brazil. Label data of specimens is herein limited to the West Indies; mainland data will be listed in the revision of the mainland *Brenthia* of the neotropics.

*Brenthia* Clemens

*Brenthia* Clemens, 1860:172. (Type-species: *B. pavonacella* Clemens, 1860, by monotypy).

*Microaethia* Chambers, 1878:76. (Type-species: *M. amphicarpeoana* Chambers, 1878, by monotypy), unavail. by publ. in synonymy.

The genus *Brenthia* comprises 67 described species in the world, with the inclusion of the new species described herein. All known *Brenthia* have short rounded forewings and usually a similar maculation of various white markings on a dark field, with distal silver and black marks as a subterminal line. The complex female genitalia are especially noteworthy, invariably having an extremely long and intertwined or convoluted ductus bursae before reaching the corpus bursae. The ductus bursae also has the unusual characteristic of often entering the corpus bursae on the side rather than the usual posterior end of the corpus bursae, and also the ductus seminalis often arises posteriorly where the ductus bursae usually is found in most Lepidoptera. The Australian *Brenthia quadriforella* Zeller has the normal configuration of these female organs and may, thus, represent one of the more primitive species of the genus.

Checklist of West Indies *Brenthia**Brenthia* Clemens, 1860

(Type-species: *B. pavonacella* Clemens, 1860, by monotypy)

*Microaethia* Chambers, 1878

(Type-species: *M. amphicarpeoana* Chambers, 1878 [= *B. pavonacella* Clemens], by monotypy), unavail.

<i>hibiscusae</i> Heppner, n. sp.	P. R.; Cuba; Venez.
<i>sapindella</i> Busck, [1934]	Cuba
<i>gregori</i> Heppner, n. sp.	Cuba; St. Thomas
<i>confluxana</i> (Walker, 1863) ( <i>Simaethis</i> )	West Indies to Brazil
<i>cubana</i> Heppner, n. sp.	Cuba
<i>elongata</i> Heppner, n. sp.	St. Thomas; P. R.

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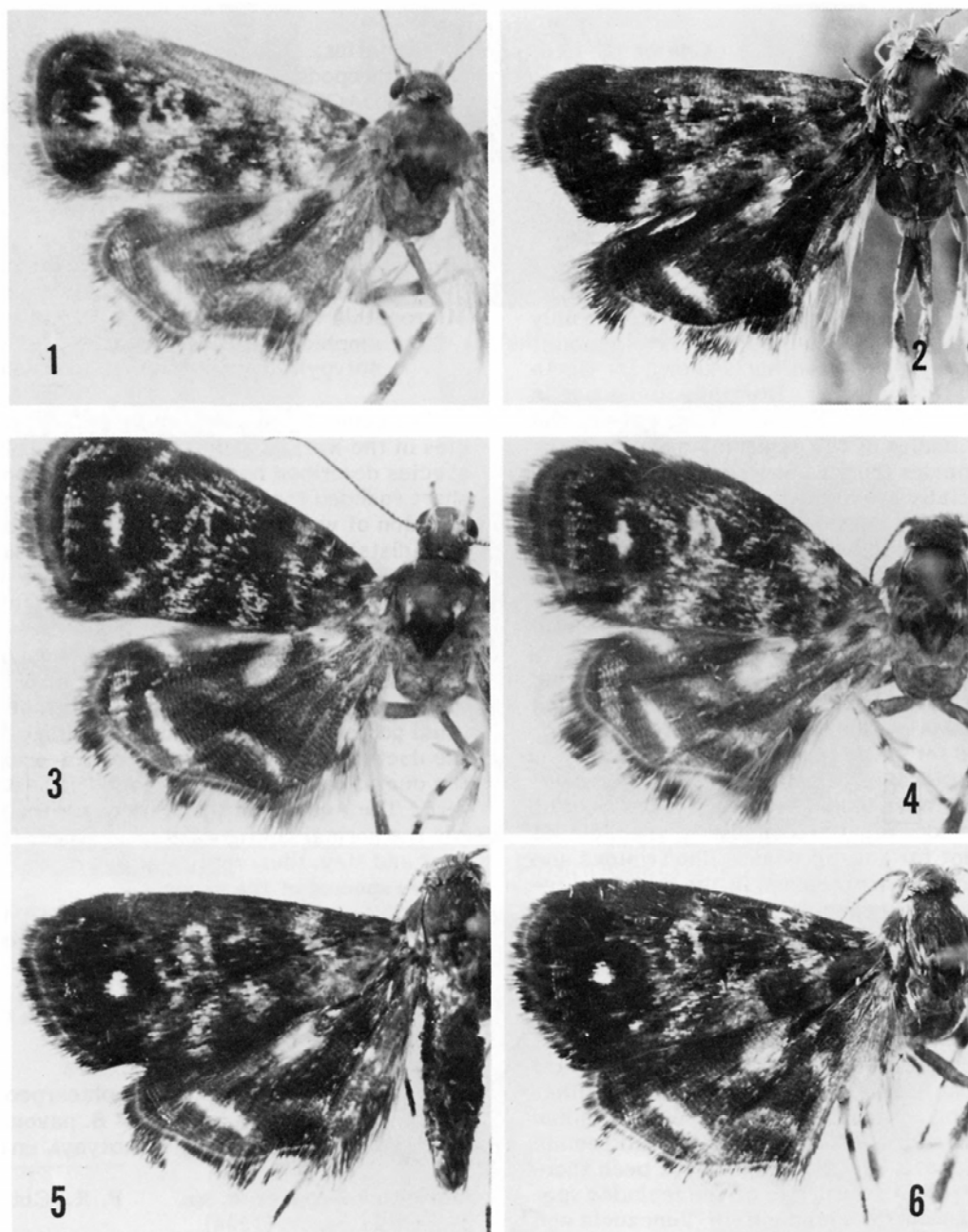


Fig. 1-6. Adults of *Brenthia*: 1, *B. hibiscusae* ♂ paratype, Cuba (JBH slide 901, MMBC); 2, *B. hibiscusae* ♀ holotype, Puerto Rico (USNM slide 78076); 3, *B. gregori* ♂ holotype, Cuba (JBH slide 164, MMBC); 4, *B. sapindella* ♂, Cuba (JBH slide 900, MMBC); 5, *B. confluxana* ♀, Dominica (USNM); 6, *B. confluxana* ♀, Dominica (USNM slide 78070).

Key to West Indies *Brenthia*

1. - Forewing with prominent white spot near end of discal cell; male without very elongated and fused valvae; female genitalia without long, narrow cone on ostium . . . . . 3  
 - Forewing without prominent white spot near end of discal cell; male with valvae very elongated and medially fused; female genitalia with long, narrow ostial cone . . . . . 2
- 2(1). - Female ostium a large elongated cone-like protrusion . . . . . **elongata**  
 - Female ostium a wide short cone (male unknown) . . . . . **cubana**
- 3(1). - Male genitalia with tegumen rounded above anal tube . . . . . 4  
 - Male genitalia with tegumen arms extended lateral to anal tube (female unknown) . . . . . **gregori**
- 4(3). - Male genitalia with anellar arms curved or bifid; female genitalia with ostial cup variable but central protrusion a wide point or a thickened and truncated tube . . . . . 5  
 - Male genitalia with single anellar arms very long, narrow, straight and pointed; female genitalia with ostial cup as wide as deep, with a narrow protrusion . . . . . **hibiscusae**
- 5(4). - Male genitalia with anellar arms bifid, straight; valvae with straight dorsal point; female genitalia with ostial cup wider than deep and central protrusion a wide point . . . . . **sapindella**  
 - Male genitalia with anellar arms single and curved; valvae with dorsal point recurved; female genitalia with ostial cup as wide as deep, with central protrusion a narrow truncated tube . . . . . **confluxana**

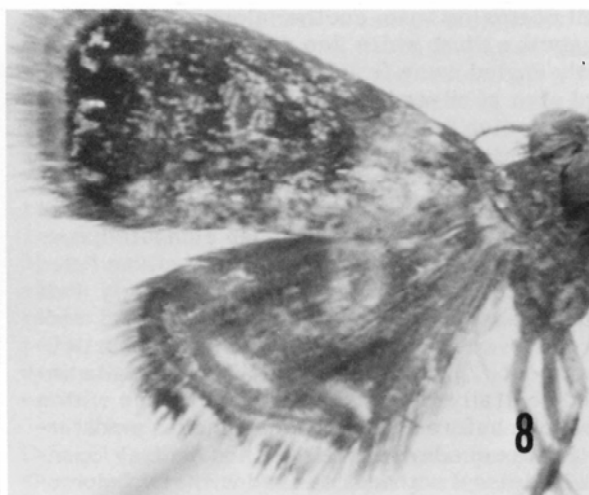
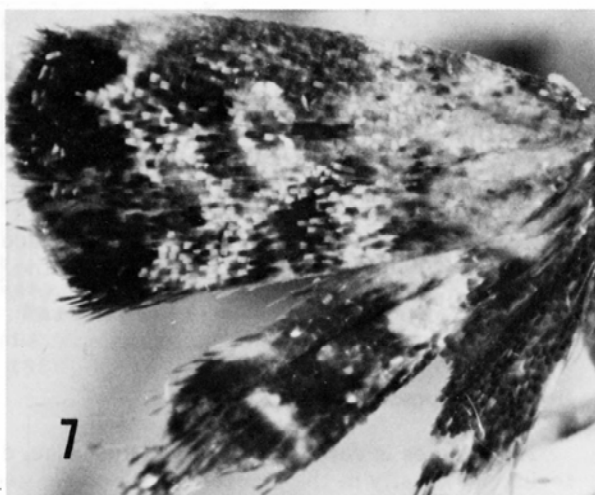


Fig. 7-8. Adults of *Brenthia*: 7, *B. cubana* ♀ holotype, Cuba (USNM slide 78065); 8, *B. elongata* ♂ holotype, St. Thomas, Virgin Is. (JBH slide 941, ZMHB).

**Brenthia hibiscusae** Heppner, n. sp.

This species and the other West Indian species, except the small *Brenthia cubana*, n. sp., and *Brenthia elongata*, n. sp., all have a prominent white spot in the black terminal field of the forewing. In the male genitalia there is a short saccular point and a narrow distal point on the valvae. Females have an ostial cup with a thin central projection.

Forewing length: 3.6 mm (♂), 3.8-4.1 mm (♀).

Male.- Head: fuscous, with extensive white on frons and white eye borders; labial palpus white, with some fuscous on basal and apical segments; antenna ringed fuscous and white; venter of head white.

Thorax: fuscous, with white mark on anterior borders of patagia which in turn have a corresponding white mark; patagia also with another white mark at wing base border; venter white; legs white with fuscous rings on distal ends of each leg segment.

Forewing (fig. 1): fuscous, with black over most of wing (except along  $CuA_1$ ), from radius to dorsal margin but interspersed with irregular white markings; a curved white fascia near wing base, followed by several white marks toward a white elliptical ring at end of cell; two white bars distal of elliptical white ring; a prominent white mark on apical  $1/4$ ; subapical and subterminal silver-green iridescent line; another silvery mark near end of cell; white mark at tornus and basad of tornus, separated by fuscous instead of black; fringe fuscous; venter fuscous, with white markings repeated but enlarged, plus repetition of terminal silvery line as well.

Hindwing: fuscous, with a large oval white mark in cell near wing base, another along costal margin near apex; a short white line near middle of termen, slightly angled away from it, and another at tornus; apical area of silver iridescence; fringe fuscous and white; venter fuscous, with all markings repeated but enlarged.

Abdomen: fuscous, with white posterior border on each tergite; venter white.

Male genitalia (fig. 9): tegumen elongated; socius small; vinculum with short saccus; valvae fused ventrally along median edge, approximately half distance to saccular point; valva with central midrib from base to pointed apex, with a semi-articulation about  $2/3$  from base; distal end of valva indented ventrally toward saccular point, then with a setose lobe before saccular point; anellus a posteriorly convex quadratic circle with a central opening, with lateral setose areas and with two dorso-posterior projecting curved appendages which come to sharp points; aedeagus (fig. 10) short, with a bulbous apical end and having a sharp ventral prolongation, and with a narrow central neck followed by a tapering basal end; one large tubule-cornutus, at posterior end narrow then widening to bulbous anterior end; ductus seminalis with a large pipe-like hood.

Female (fig. 2).- Maculation as in male. Female genitalia (fig. 19): ovipositor short (subequal to abdominal segment 7), with setose papilla anales; apophyses thin and unequal in length, with posterior pair about twice length of anterior pair; ostium a cup bearing a thin, elongated central protrusion as the actual ostial opening and enclosing the ventral end of the ductus bursae; ostium fused to posterior end of sternite 7; ductus bursae thin and membranous, first slightly widened and then extremely long and convoluted; ductus bursae attached to bursa at antero-lateral position; corpus bursae slightly rugose, ovate, elongate, and tapering to a narrowing ductus seminalis; no signum evident.

Immature stages.- Unknown (reared by Lesesne and Anderson in 1933 but larvae not described).

Host.- *Hibiscus sabdariffa* Linnaeus (Malvaceae).

Distribution.- Cuba and Puerto Rico; Venezuela.

Types.- Holotype ♀ (USNM): Mayaguez, Puerto Rico, 19-VII-1917, R. H. Van Zwalenburg (USNM slide 78076).

Paratypes.- (1♂, 5♀): Cuba.- Pinar del Rio Prov.: Soroa, 400 m, 28-VIII-1966 (1♂), F. Gregor (MMBC). Puerto Rico.- Mayaguez Co.: Mayaguez, 1-III-1915 (1♀), 19-VII-1917 (1♀), R. H. Van Zwalenburg (USNM); 15-XI-1912 (1♀), C. W. Hooker (USNM). Boyamón Co.: Boyamón, 5-VIII-1933 (2♀), "ex *Hibiscus sabdariffa*," Lesesne and Anderson (USNM).

Remarks.- This species is rather similar to *B. pavonacella* in the male genitalia. The anellus in each, however, is clearly different, with *B. hibiscusae* lacking the secondary interior appendages and having more sclerotized primary appendages than in *B. pavonacella*. The female genitalia are distinct in the narrow cone; this being broad in *B. pavonacella*. Thus far, *B. pavonacella* has only been found outside of the United States in Tamaulipas, Mexico. *Brenthia hibiscusae* also occurs in Venezuela, probably also in Central America, but determining the full extent of the distribution of this species will require further study as part of the revision of the genus for the neotropics. The species is named after the host plant. These species of *Brenthia* all are so similar that determination by wing maculation is not reliable and only examination of the genitalia can provide certain identification.

**Brenthia sapindella** Busck

*Brenthia sapindella* Busck, [1934]:183.

This species is very similar to *B. hibiscusae*, differing principally in the genitalia. The male genitalia have stouter valval ends and the anellar arms are much reduced. The female genitalia have a very wide cup-like ostium, with a central point unlike *B. hibiscusae*, where the ostium is a narrow cup with a thin central tube.

Forewing length: 3.6-3.8 mm (♂), 3.8-4.0 mm (♀). Male.- Head: fuscous, with white irrorations on

frons and white eye borders; labial palpus white except fuscous apex of distal segment; venter white.

Thorax: fuscous; patagia, with white on posterior tips; venter white; legs white, with interrupted fuscous marks towards tarsal ends.

Forewing: fuscous with black between irregular white markings; a basal vertical white fascia, ending as a silver spot on costal margin; an oval ring of white at end of cell, surrounded by a second irregular ring of white and a white line between oval and costal margin; dorsal margin with an irregular M-shaped white mark extending to discal cell white ring; a prominent white spot midwing on distal  $\frac{1}{4}$  of wing, somewhat surrounded by some ochreous scales; a large subterminal black field with a terminal line of interrupted silver-purple iridescence and a subfringal line of fuscous; silver-purple marks near costal margin at midwing and  $\frac{2}{3}$  from base; fringe fuscous with white near apex; venter similar to dorsal side but white marks enlarged.

Hindwing: fuscous, with large oval white marks near base along costa, a small subapical mark on costal margin, an angled white bar along termen and another iridescent spot at end of discal cell; fringe fuscous with three white areas from apex to tornus; venter fuscous, with dorsal markings repeated but white marks enlarged and more extensive silvery iridescent marks.

Abdomen: fuscous, with white rings as posterior borders to tergites; venter mostly white.

Male genitalia (fig. 11): tegumen prolonged by small socius; vinculum with short saccus; valva  $\frac{1}{3}$  fused from base ventrally; valva with strong central rib to stout pointed apex, setaceous on either side of midrib, with a semi-articulation of midrib near apex; distal end of valva apparently bifurcate due to extended saccular lobe; anellus a quadratic structure, centrally open, with a complex dorsal configuration of two blunt appendages and two, more posterior, pointed appendages emergent from recurved flaps from a second anellar opening; aedeagus (fig. 12) short, with a bulbous apical end; cornutus not evident; ductus seminalis with a pipe-like hood.

Female (fig. 4).- Maculation as in male. Female genitalia (fig. 20): short ovipositor with setose papilla anales; anterior apophyses thin and very short, about  $\frac{1}{3}$  length of posterior pair; ostium a broad cup with a central sharp point bearing the gonopore; ductus bursae thin, convoluted, and extremely long, entering bursa laterally on the anterior end, corpus bursae rotundate, with large ductus seminalis emergent from posterior end of bursa; no signum evident.

Immature stages.- No specimens available.

Hosts.- *Sapindus raponarius* Linnaeus (Sapindaceae).

Distribution.- Cuba.

Types.- Lectotype  $\sigma$  (USNM): "E.E.A. Ent No. 9809" [San Diego de los Banos, Pinar del Rio Prov., Cuba, 23-27-II-1932], ex *Sapindus raponarius*, [Otero & Brunner]; "male genitalia slide April 27, 1932, A.

Busck;" "*Brenthia sapindella* Busck, Type." Paralectotypes (1  $\sigma$ , 2  $\text{♀}$ ): (same data as lectotype).

Material examined.- Cuba.- Habana Prov.: Guajabon, II-1966 (2  $\sigma$ , 3  $\text{♀}$ ), F. Gregor (MMBC).

Remarks.- *Brenthia sapindella* is most related to *B. pavonacella*, particularly evident in the female genitalia with the broad ostium cup. In *B. pavonacella* the ostial protrusion is truncated whereas in *B. sapindella* it is sharply pointed. The male genitalia are less similar to *B. pavonacella*, particularly in the complex anellus.

#### *Brenthia gregori* Heppner, n. sp.

This species is clearly distinguished from related species by the bifid tegumen appendages. It is similar to *B. pavonacella* in the shape of the valvae, in the aedeagus and the anellus, but not in the bifid tegumen appendages.

Forewing length: 5.5 mm ( $\sigma$ ).

Male.- Head: fuscous, with white eye borders; labial palpus white, with fuscous on basal segment and on apex meson and anterior side of apical segment; antenna ringed fuscous and white; venter white.

Thorax: dark fuscous, with white marks near anterior patagia margin and laterally posterior of patagia; patagia dark fuscous, with white anteriorly on lateral margins; venter white; legs white with fuscous on distal ends of all segments.

Forewing (fig. 3): fuscous, with black over most of wing from radius to dorsal margin but interspersed with various white and silvery marks; a small white mark at wing base on costal margin, another nearby but Y-shaped and extended to anal margin and as a silver-green mark on costal margin; a wide indistinct M-mark of white on dorsal margin (from tornus to  $\frac{1}{3}$  from base), matched by a corresponding W-mark from radius to wing center; a silver-green iridescent line between radius and costa at midwing, another on radius near end of cell; a distinct white line at end of cell; a white bar on apical  $\frac{1}{4}$  on costa; subapical and subterminal line of silver-purple iridescence; fringe fuscous, with white on apex and tornus; venter fuscous, with most white marks repeated but much enlarged and with silvery subterminal line plus a matching series of several black spots.

Hindwing: fuscous, with white marks on costa near apex, two short lines along termen somewhat angled, and another on anal margin; ovate yellow-white mark near base of cell; silver-purple iridescent subapical line; fringe fuscous with several patches of white; venter fuscous with white marks repeated but enlarged and silvery marks repeated and two silvery marks along cubital vein.

Abdomen: fuscous, with white posterior border to each tergite; venter white.

Male genitalia (fig. 13): tegumen somewhat ov-

ate, fused with vinculum, socius as small setose elongation of tegumen, coming to a truncated quadrate appendage on each side of the median; saccus an even and mostly undemarcated prolongation of the vinculum; valvae setose centrally, fused ventrally along median to about  $1/2$  distance from base to saccular point; sacculus with large curved elongation, followed by a rounded setose lobe between sacculus and bluntly rounded apex, thus, appearing somewhat as an unevenly split valva; valva with a central sclerotized ridge from base to apex, with a semi-articulation about  $2/3$  from base; anellus ring round, with its dorsal half prolonged to an elaborate recurved configuration, with two drop-shaped plates divergent and free from the dorsal median of the anellus, and with a folded-like shape continued as two dorsal rounded points on either side of a half round notch on the dorsal margin; aedeagus (fig. 14) small, with a bulbous apical end prolonged into a blunt point, and with an anterior end relatively parallel except for a narrowing near the anterior end; cornutus a small tubule; ductus seminalis with a large pipe-like structure.

Female.- Unknown.

Immature stages.- Unknown.

Host.- Unknown.

Distribution.- Cuba and the Virgin Islands.

Types.- Holotype  $\sigma$  (MMBC): Mariano, Habana Prov., Cuba, IV-VII-1966, F. Gregor (JBH slide 164).

Paratype  $\sigma$ : [Virgin Is.]: "St. Thomas," [no date or collector] (NHMV). (Determined by R. Felder as "Choreutis suavis var.").

Remarks.- The specimen from St. Thomas, appears to be the same species as the one from Cuba. Another specimen has been seen from Brazil but is not now assigned to *B. gregori* inasmuch as some of the genital features are shaped somewhat differently. No females have been associated with any of the three males. The male aedeagus of *B. gregori* is very similar to that of *B. pavonacella* and, since in most *Brenthia* the aedeagus appears to correspond very closely to the shape of the female ostium, either conical or a cup-shape, the aedeagus of *B. gregori* indicates that the female of the species probably has genitalia with a round cup-like ostium as in *B. pavonacella*, rather than a cone as in some other species. The species is named in honor of Dr. F. Gregor, Moravian Museum, Brno, Czechoslovakia, who collected this species in Cuba and also allowed examination of his other Choreutidae from Cuba.

#### *Brenthia confluxana* (Walker)

*Simaethis confluxana* Walker, 1863:452.

*Brenthia confluxana*.- Meyrick, 1914:38.

This species is herein restricted to moths conforming to the following redescription, inasmuch as the holotype named by Walker lacks an abdomen, thus precluding any genitalic comparisons. Wing maculation in the West Indies populations conforms

to the holotype from Brazil. The male genitalia have valvae almost split, with elongated ends. The female genitalia have a more oval ostial cup, not as in *B. sapindella*.

Forewing length: 3.9-4.1 mm ( $\sigma$ ), 4.0-4.8 mm ( $\varphi$ ). Male.- Head: fuscous, with white irrorations on frons and white eye borders; labial palpus white, with some fuscous ventrally on apical segment; venter white.

Thorax: fuscous; patagia fuscous with white on posterior end; venter white; legs white with fuscous rings towards tarsal ends, but more fuscous on hind legs.

Forewing (fig. 5): as in *B. sapindella*, except the fringe with white marks also on tornus; venter repeats dorsal surface but with more white.

Hindwing: As in *B. sapindella* but oval of white on basal  $1/3$  of costa somewhat more elongated and overlaid with buff scales; venter repeats dorsal surface but with more white.

Abdomen: fuscous, with white bands on posterior of tergites; venter mostly white.

Male genitalia (fig. 15): tegumen pointed but no distinct uncus; socius around prolonged anal tube; vinculum triangular, merging into broadly rounded saccus; valvae free ventrally but ventral edges touching; valva appearing bifurcate, with a dorsal recurved and twisted apex and a recurved saccular appendage; dorsal half of valva setose; valva with strong, semi-articulated midrib to dorsal point; anellus a broad trapezoidal plate with a dorsal complex of two twisted, thin appendages each having a basal flattened semi-circular plate; aedeagus (fig. 16) short, with a small pointed protrusion; cornutus a small tube; ductus seminalis with a pipe-like hood. Female (fig. 6).- Maculation similar to male. Female genitalia (fig. 21): ovipositor short, with setose papilla anales; apophyses thin, with anterior pair very short ( $1/3$  length of posterior pair); ostium a deep rounded cup with a thin central, truncated protrusion bearing the gonopore; ductus bursae very thin, convoluted, and extremely long, entering the bursa laterally on anterior end; corpus bursae rotundate, with large ductus seminalis emergent from posterior end of bursa; no signum evident.

Immature stages.- Unknown.

Host.- Unknown.

Distribution.- Brazil; Trinidad; Cuba; Jamaica; Dominica.

Types.- Holotype [sex unknown] (BMNH): Amazonas, Brazil.

Plesiotypes  $\sigma$   $\varphi$  (USNM): Clarke Hall, Dominica, 11-20-I-1965, W. W. Wirth (USNM slides 78072  $\sigma$  and 78073  $\varphi$ ), hereby selected as representatives of the species.

Additional specimens (6  $\sigma$ , 15  $\varphi$ ).- Cuba.- Baracoa, [no date] ( $\varphi$ ), W. Schaus (USNM). Dominica.- Cafe, 3-VI-1964 (4  $\sigma$ , 2  $\varphi$ ), O. S. Flint, Jr. (USNM). Clarke Hall, 16-II-1965 (1  $\sigma$ ), J. F. G. Clarke and T.

Clarke (USNM). Springfield Estate, 20-26-VII-1963 (2 ♀), O. S. Flint, Jr. (USNM). Jamaica.- Windsor Estate, Pond, Trelawny Par., 29-VII-1962 (♂, 9 ♀), T. Farr and O. & R. Flint (USNM).

Remarks.- *Brenthia confluxana* is the most widespread species of *Brenthia* in the West Indies. Inasmuch as the holotype lacks an abdomen, I have chosen to designate a male and female from Dominica as plesiotypes upon which the present redescription is based. No Brazilian specimens were available for study, other than Walker's type. The distinctive appendages of the male genital anellus, together with the shape of the valvae, clearly distinguish this species. The female genitalia are less distinct, since there are a few Central American and Mexican species that appear very much the same, yet some of them may represent valid populations of *B. confluxana* there. This will be further elucidated in the mainland revision.

#### *Brenthia cubana* Heppner, n. sp.

Similar to the previous four species but lacking a prominent white spot at the end of the discal cell, it differs in the female genitalia by its ostial cone. The male is unknown.

Forewing length: 3.5 mm (♀).

Female.- Head: fuscous; extensive white on frons, merging to white eye borders; labial palpus white, with some fuscous on apical segment tip, venter is white.

Thorax: fuscous, with white near head on either side of mid-line; patagia fuscous, with white on posterior ends; venter white; legs white with fuscous bands toward tarsal segments.

Forewing (fig. 7): as in *B. sapindella* but without prominent white mark on distal  $\frac{1}{4}$ ; subterminal area black, with a sharp invagination of the black field by white and fuscous near apex; subterminal silvery-green iridescent line (lacking along tornus); fringe fuscous, with white on apex; venter fuscous with white and silvery markings repeated but white more prominent.

Hindwing: as in *B. confluxana*, with a large basal spot overlaid with buff; apical silvery line shorter; tornal white line not prominent; fringe fuscous with white opposite subterminal white lines; dorsal maculation repeated ventrally but white more prominent.

Abdomen: fuscous, with white ring at posterior of each tergite; venter mostly white.

Female genitalia (fig. 22): short ovipositor with setose papilla anales; apophyses thin, approximately subequal in length; ostium a cone coming to a very small apical opening, entirely situated on the intersegmental membrane between sternites 7 and 8; ductus bursae thin, convoluted and very long, attached to bursa laterally near anterior end; corpus bursae a simple oval with interior rugose walls; ductus

seminalis broad and attached on posterior end of bursa; no signum evident.

Male.- Unknown.

Immature stages.- Unknown.

Host.- Unknown.

Distribution.- Cuba.

Types.- Holotype ♀ (USNM): Baracoa, Cuba, [no date], A. Busck (USNM slide 78065).

Paratype ♀ (USNM): same data as holotype.

Remarks.- *Brenthia cubana* is similar to the previous four species but is distinguished by the cone-shaped ostium of the female genitalia. There are undescribed species in Mexico and Central America that have similar female genitalia and their relationships will be further elucidated in the general revision.

#### *Brenthia elongata* Heppner, n. sp.

This small species is one of the West Indian species distinguishable on maculation from most other *Brenthia* in the West Indies. It is darker in coloration, having less prominent white markings and no prominent white spot on the forewing cell. The genitalia of the male are unique in being very elongated and with broadly fused valvae. In the female genitalia there also is a unique elongated cone for an ostium. The genital characters distinguish the species from the similar *B. cubana*.

Forewing length: 4.0 mm (♂), 3.5-3.7 mm (♀).

Male.- Head: vertex and frons fuscous; narrow eye border white; labial palpus white with fuscous distally on apical segment; venter white.

Thorax: fuscous; patagia fuscous; venter white and fuscous; legs white with fuscous rings toward tarsal segments, more fuscous on hind legs.

Forewing (fig. 8): fuscous with widely scattered irrorations of white, not presenting any distinction except basal white fascia and discal cell oval ring of white, but both marks are not prominent; large subterminal area of black, with a distinct sharply pointed invagination of the black field by fuscous close to the apex on mesal side of black field; subterminal line of interrupted spots of silvery-blue to purple iridescence; fringe fuscous; venter fuscous with white ring and fascia, plus subterminal white fascia prominent, and small black field and silvery spots.

Hindwing: fuscous with indistinct basal white mark along costa, extending to midwing; fringe and other marks as in *B. sapindella*; venter with white marks prominent and more silvery markings.

Abdomen: fuscous with white bands on posterior of tergites; venter mostly white.

Male genitalia (fig. 17): tegumen broadly rounded; anal tube very large; socius not evident; vinculum fused with base of valvae and with a knobbed elongate saccus (folded under anellus in fig. 17); valvae fused  $\frac{2}{3}$  of length along ventral margins,

with one pair of setose appendages from base; valva elongate, sparsely setose, with bifurcate distal end, with saccular end extended as elongate point, with slightly hooked end; a short pointed appendage at base of tegumen on each side of anellus and near base of valvae; anellus a large flat plate with a narrowing width toward dorsal end and with a recurved base, itself with lateral ends again recurved, and dorsally with a median notch for aedeagus and lateral setose appendages; aedeagus (fig. 18) short, with rounded distal end; cornutus a bulbous tube with a pointed end; ductus seminalis with a large pipe-like hood.

Female.- Maculation similar to male. Female genitalia (fig. 32): ovipositor short, with setose papilla anales; apophyses thin, posterior pair somewhat longer than anterior pair; ostium a long narrow, pointed cone on the intersegmental membrane between sternites 7 and 8; ductus bursae thin, convoluted and very long, attached to bursa laterally near anterior end of bursa; corpus bursae elongate-ovate; ductus seminalis thicker than ductus bursae and attached to bursa at posterior end; no signum evident.

Immature stages.- Unknown.

Host.- ?*Paullinia pinnata* Linnaeus (Sapindaceae).

Distribution.- Puerto Rico and the Virgin Is.

Types.- Holotype ♂ (ZMHB): St. Thomas, [no date], Moritz (JBH slide 941).

Paratypes (3 ♀): *Puerto Rico*.- Arecibo, Cambalache For., 3-XII-1969 (1 ♀), J. Maldonado and S. Medina, "on leaf of *Paullinia pinnata*" (USNM). Rio Piedras, 6-XII-1921 (2 ♀), G. N. Wolcott, "on coffee leaves" (USNM).

Remarks.- This species appears to be closely related to *Brenthia suavis* Felder and Rogenhofer, by the similar female genitalia. Thus far, *B. suavis* is known only from Brazil and is without any associated males. Females of *B. elongata* are not available from St. Thomas, where the holotype male was found, but the Puerto Rico females have the same maculation that distinguishes the male from other *Brenthia* in the West Indies, providing relative certainty that these moths are all of the same species. The only similar species is *B. cubana*, for which the male is unknown. The male aedeagus of *B. elongata*, by its narrow apex, indicates that the females assigned to the species should be correct and that

the females of *B. cubana* are not compatible due to their wide cone-shaped ostium. Until the male of *B. cubana* is discovered, however, some doubt will remain as to which female is properly associated to the male of *B. elongata*.

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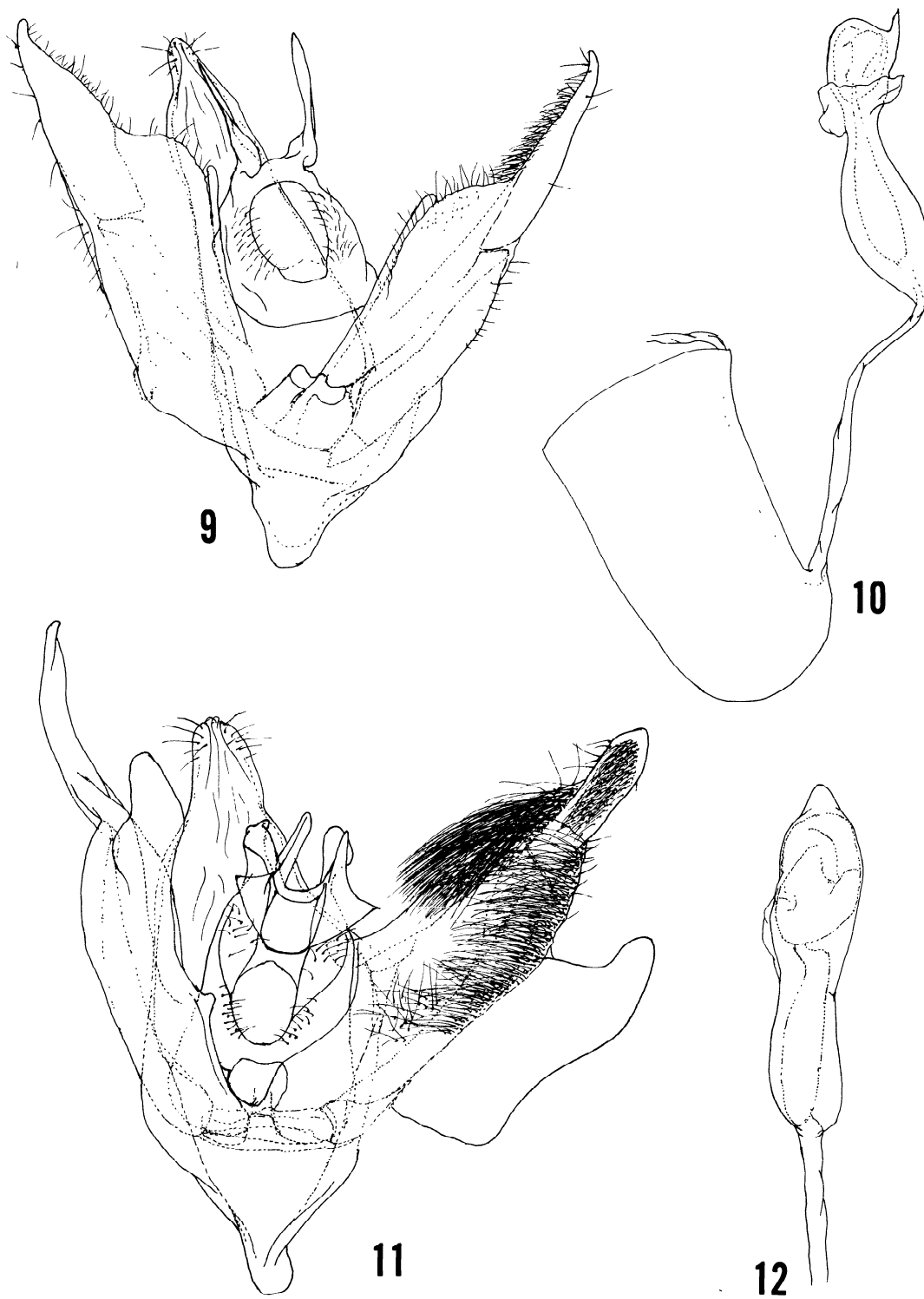


Fig. 9-12. Male genitalia of *Brenthia*: 9, *B. hibiscusae* (paratype), Cuba (JBH slide 901, MMBC); 10, same, aedeagus; 11, *B. sapindella* (paralectotype), Cuba (USNM slide 78067); 12, same, aedeagus.

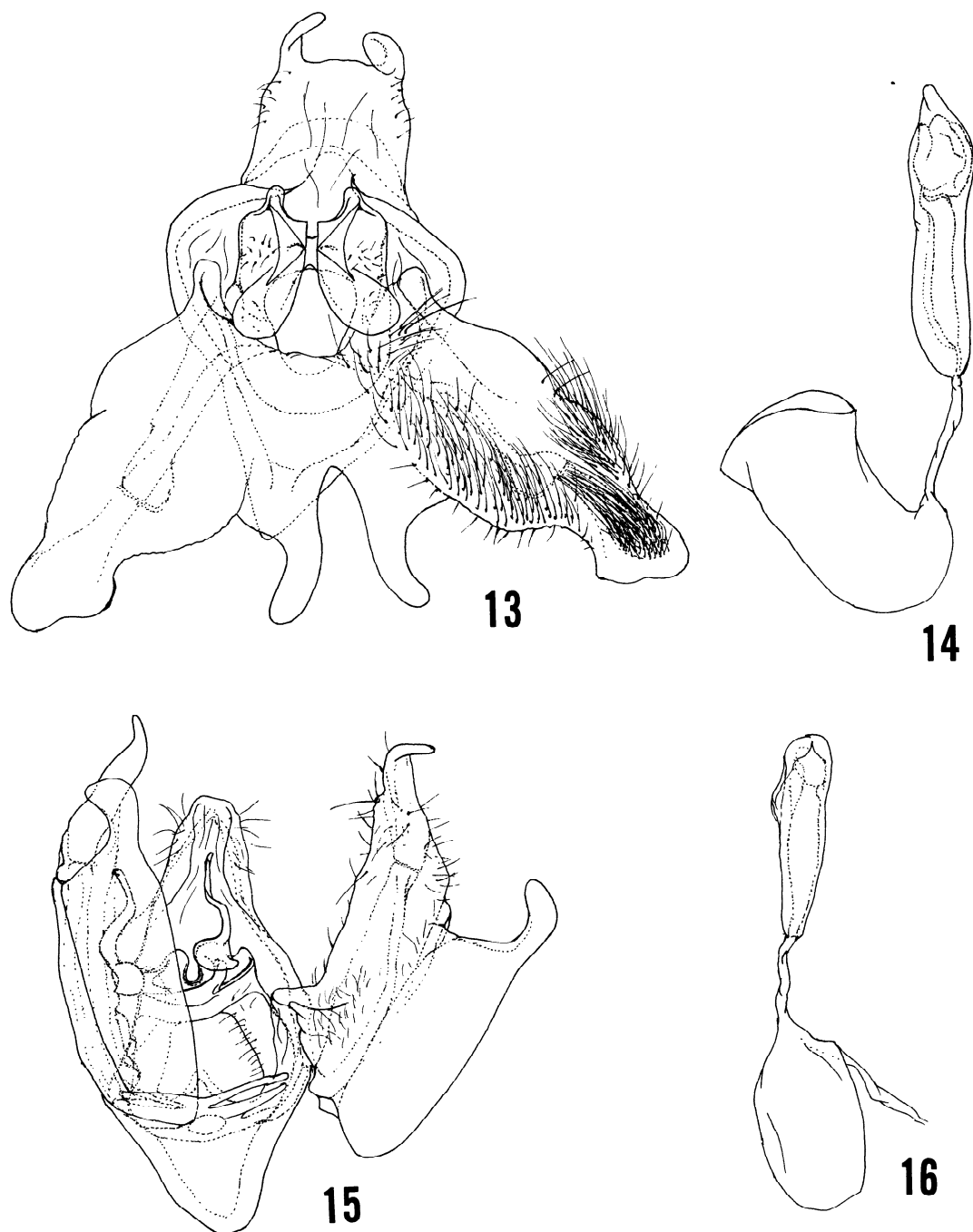


Fig. 13-16. Male genitalia of *Brenthia*: 13, *B. gregori* (holotype), Cuba (JBH slide 164, MMBC); 14, same, aedeagus; 15, *B. confluxana* (plesiotype), Dominica (USNM slide 78072); 16, same, aedeagus.

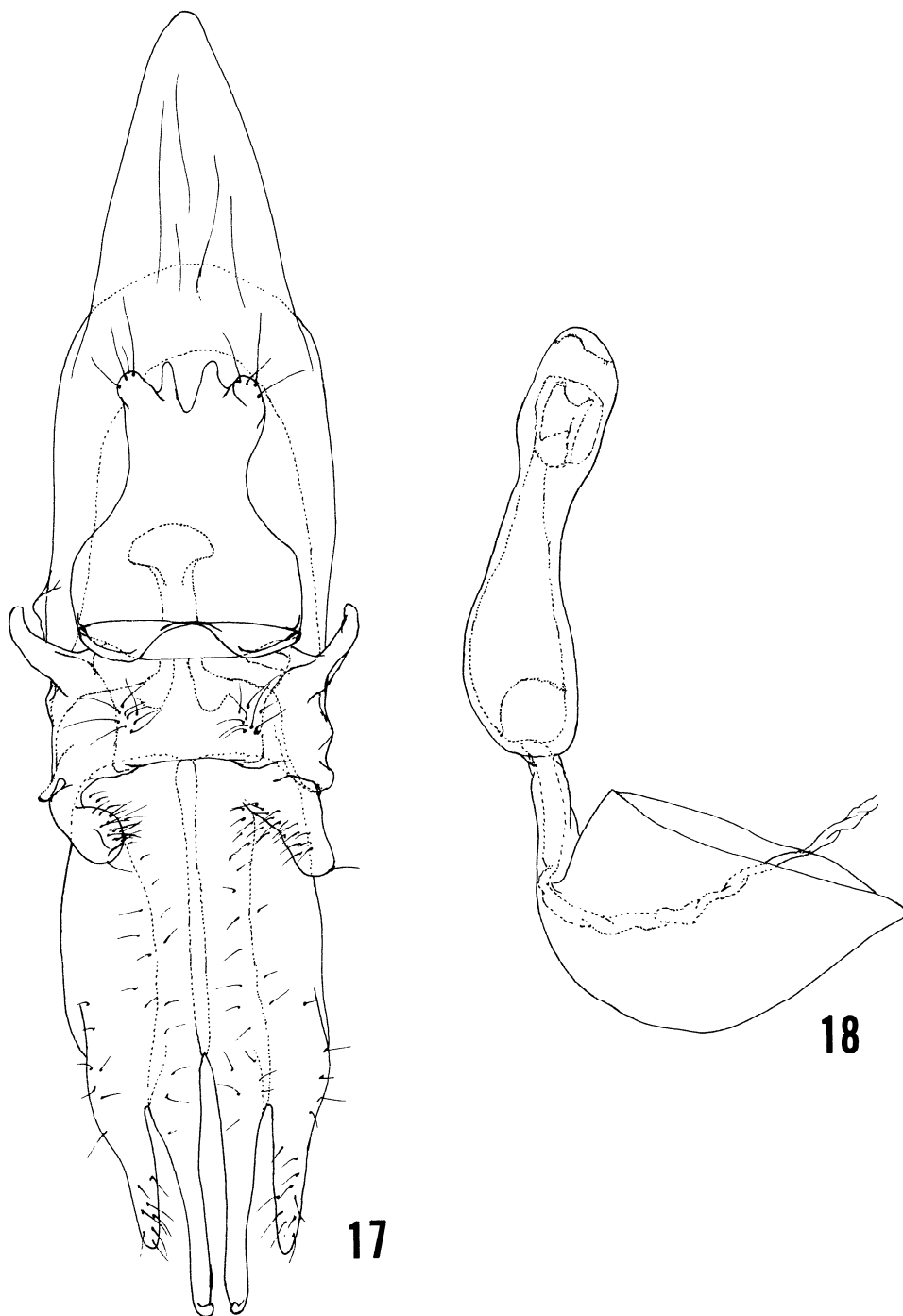


Fig. 17-18. Male genitalia of *Brenthia elongata*: 17, holotype, St. Thomas, Virgin Is. (JBH slide 941, ZMHB); 18, same, aedeagus.



Fig. 19-20. Female genitalia of *Brenthia*: 19, *B. hibiscusae* (paratype), Puerto Rico (USNM slide 78077); 20, *B. sapindella* (paralectotype), Cuba (USNM slide 78068).

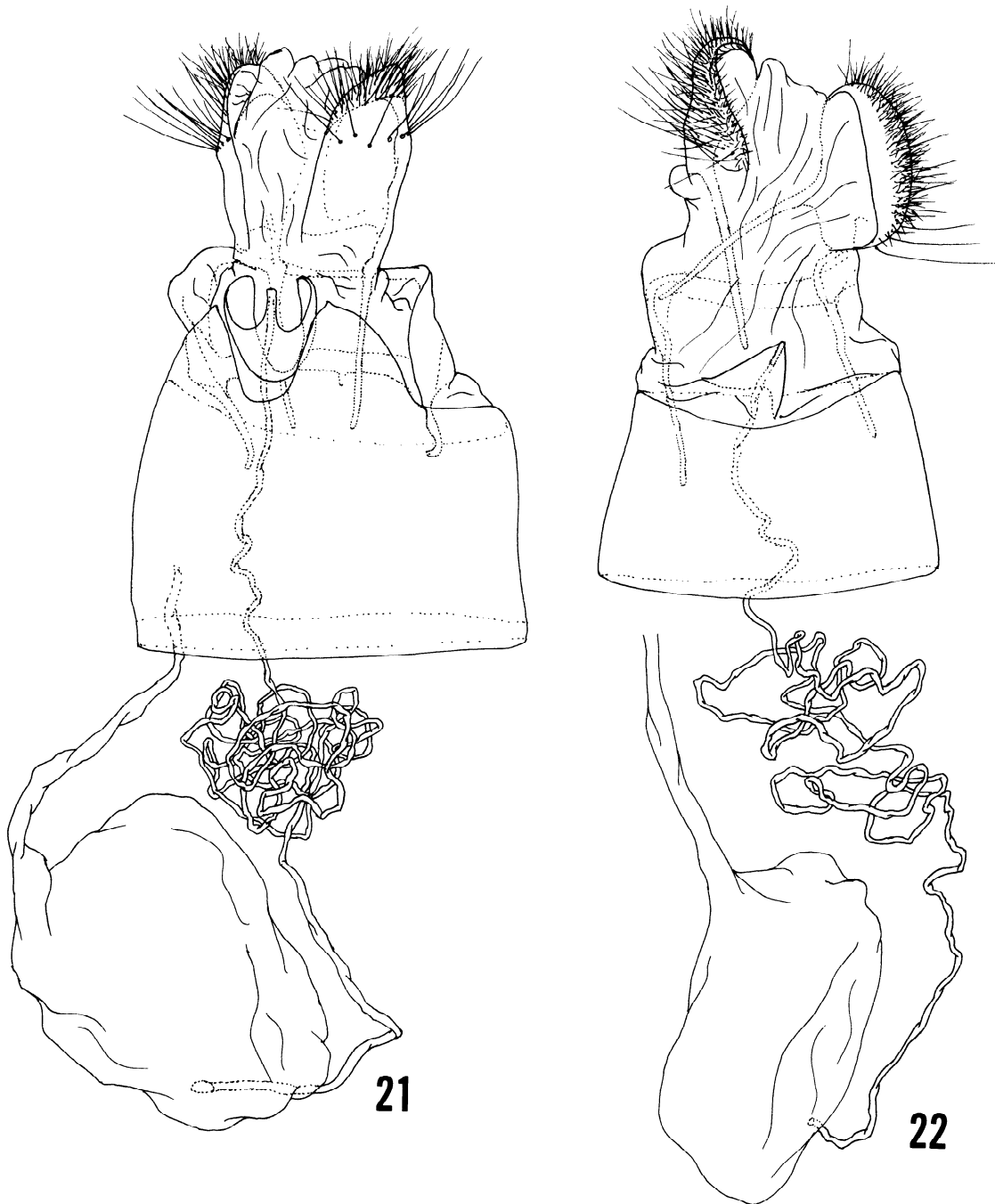


Fig. 21-22. Female genitalia of *Brenthia*: 21, *B. confluxana*, Dominica (USNM slide 78070); 22, *B. cubana* (holotype), Cuba (USNM slide 78065).

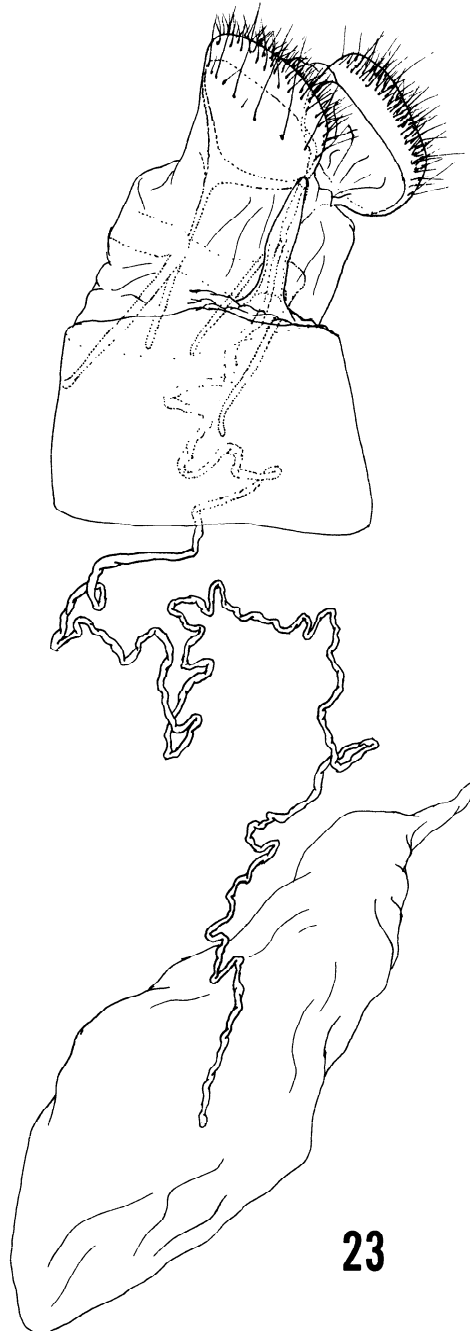


Fig. 23. Female genitalia of *Brenthia elongata* (paratype), Puerto Rico (USNM slide 78074).