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A Revision of the South American Hairstreak Butterfly Genera *Tergissima* and *Femniterga* (Lycaenidae: Theclinae)

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the middorsal line (imaginary), the midventral line (imaginary), the middle of the anus and the middle of the bottom of the labium. It is conventional to view the larva from the left. But if for some reason it has been drawn from the right, the original drawing (on coordinate paper) can be reversed by reversing the inked film when mounting.

The head is drawn in full-face (i.e., anterior) view. The plane of projection passes through the dorsalmost border of the head and the ventral border of the ventral surface of the labium. The head drawing must be bilaterally symmetrical. A convenient maximum width is 50 mm.

The left mandible is drawn in anterior view. The plane of projection passes through the apex and the anterior condyle. The lateral and medial condyles must be in the same plane. A convenient length for the drawing for the mandible is 60 mm.

Photographs

Photographs of ant larvae under light microscopes are occasionally useful, but the "state of the art" nowadays is SEM (scanning electron microscope). SEM is apparently the "buzz-word" used as bait in applications for grants. It proves that the applicant is on the research bandwagon. If he gets

the grant, then he must spend part of it for expensive SEMs, which may be worthless or even misleading; they may be unnecessary or even irrelevant to the applicant's thesis, but the editor will not know.

SEMs are useful for showing minute details of a small surface area, but for low magnifications of ant larvae we regard them as abominations. An ant larva is white and opaque, but an SEM will turn it into a ghost--black and translucent.

We still maintain that the external anatomy of an ant larva is best portrayed by a good drawing.

Literature cited

- Wheeler, G. C., and Jeanette Wheeler.** 1960. Techniques for the study of ant larvae. *Psyche* 67:87-94.
- Wheeler, G. C., and Jeanette Wheeler.** 1976. Ant Larvae: Review and Synthesis. Ent. Soc. Washington, Mem. 7. 108 p.
- Wheeler, G. C., and Jeanette Wheeler.** 1986. Ten-year supplement to "Ant Larvae: Review and Synthesis." *Proc. Ent. Soc. Washington* 88:684-702; 89:99.

ERRATA

In volume 3, no. 3, an error in the captions of two photos has been noted. In the article, "A Revision of the South American Hairstreak Butterfly Genera *Tergissima* and *Femniterga* (Lycaenidae: Theclinae), by K. Johnson, the caption for figure 2, page 197, refers to figure 5, page 201. The figures were reversed by the printer as the pages were made up.

A Revision of the South American Hairstreak Butterfly Genera *Tergissima* and *Femniterga* (Lycaenidae: Theclinae)

by Kurt Johnson

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Abstract

Tergissima Johnson and *Femniterga* Johnson, originally described from four sympatric south-central Andean species, are revised to include, respectively, four and nine South American species (of which six are previously undescribed). New combinations include *Femniterga cissusa* (Hewitson), *F. cinniana* (Hewitson) and *F. plumans* (Druce), all transferred from *Thecla*; new species include *Tergissima montanensis* and *T. shargeli*, and *Femniterga itaituba*, *F. megana*, *F. splendida* and *F. strobilata*. A lectotype is designated for *Thecla cissusa*. *Femniterga* and *Tergissima* are part of a largely undescribed eumaeine assemblage also including *Calycopis* Scudder and *Calystryma* Field.

Introduction

In 1988, as part of a faunal survey of NW Argentine hairstreak butterflies (Johnson, Eisele & MacPherson 1988 [hereafter, Johnson *et al.* 1988]), I described the new genera *Tergissima* and *Femniterga* from four sympatric species occurring in the NW Argentine and SE Bolivian Andes region (Johnson 1988). These two genera are related to *Calycopis* Scudder (1876) and *Calystryma* Field (1967b) (the four hereafter referred to as the "*Calycopis* assemblage"). The *Calycopis* assemblage is part of a large, little studied and mostly undescribed, eumaeine assemblage also including several of the "species groups" of Draudt (1919, see below). All these taxa are primarily brown or bluish on the wing upper surfaces and have brown under surfaces marked on the hindwing with a simple tripartite median band (Fig. 1).

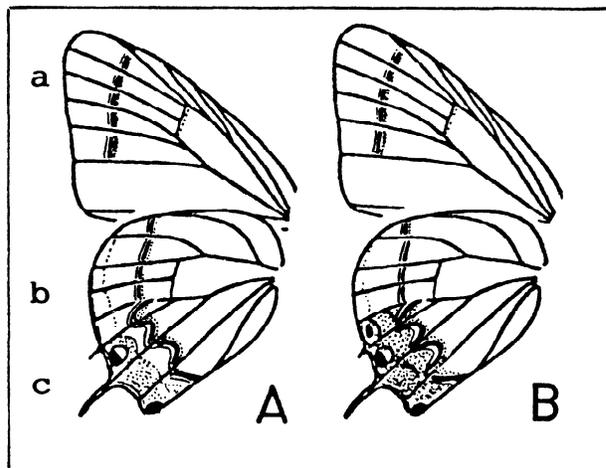


Figure 1. Generalized under surface wing patterns characterizing (A) *Calycopis*, *Tergissima* & *Femniterga*, (B) *Calystryma* and terminology (*sensu* Johnson *et al.* 1988) used herein: "Component A"-- FW postmedian tripartite line, usually from costa to cell CuA1 (black distad, red centrad, white basad); "Component B"-- HW medial tripartite line, M3 element out of line and forming a crossbar to rest of line [the "M3 crossbar"]; "Component C"-- limbal area with extremely "W"-shaped configuration of medial line framing various number of red or orange orbs, cells M3 to anal margin and with variously emphatic Thecla-spot at cell CuA1.

Because the distinctive morphologies typifying taxa of *Tergissima* and *Femniterga* had not been mentioned by Field (1967a, 1967b), I speculated that these genera might be of primarily austral South American distribution (Johnson 1988). Subsequently, it has been possible to survey a number of other museum collections for additional material and ascertain the species diversity and distributional limits of these two genera. Based on this information *Tergissima* and *Femniterga* are revised below.

Systematics

Purpose and Methods. The general purpose of this study is to continue delimiting monophyletic groups in the large, superficially similar, group of Eumaeini containing the *Calycopis* assemblage and the "*hesperitis*", "*badaca*", "*vesulus*", "*cecrops*" and "*demonassa*" species groups of Draudt (1919) (hereafter, the "Draudt groups"). Bridges (1988, p. II.20) recently cited the uncertainty concerning species compositions in these assemblages. Currently, cladistic analysis of this large component of the Eumaeini is inhibited by a preponderance of undescribed entities. Study of extensive samples and extant types (Johnson 1988; Johnson *et al.* 1988) suggests some 40-50% of the species level taxa are undescribed, with numerous undescribed taxa displaying morphologies diverging widely from known taxa.

Materials. Specimens utilized for the present study include samples from the Allyn Museum of Entomology (AME), American Museum of Natural History (AMNH), British Museum (Natural History) (BMNH), Carnegie Museum of Natural History (CMNH), Field Museum of Natural History (FMNH), Hope Entomological Collection, Oxford University (HEC); Instituto Miguel Lillo (Tucumán) (IML), Los Angeles County Museum (LACM), Museum National d'Histoire Naturelle (Paris) (MNHN), Milwaukee Public Museum (MPM) and Museo Zoologia Universidade Federal do Paraná (Curitiba) (MPZN). In the *Calycopis* assemblage and the Draudt groups, because of the numerous undescribed entities, I have examined all of the incorporated holdings, and as much of the unincorporated mounted material as presently accessible, at the AMNH, BMNH, CMNH, MNHN, and MPM. Much of this material is presently on loan at the AMNH to be utilized over the longer term.

Overview of Study Groups. Taxa of *Calycopis*, *Calystryma*, *Tergissima*, *Femniterga* and the Draudt groups have a generally similar under surface wing pattern (Fig. 1), though particular assemblages may have some unique characters. For instance, *Calystryma* is distinctive in having the "W"-shaped limbal element of the tripartite band deeply incised, and the limbal cells more expansively covered with orange or red (Fig. 1B). As emphasized in Field (1967a, 1967b) both sexes of *Calycopis* taxa are generally blue on the wing upper surfaces, while *Calystryma* taxa are generally brown (Field 1967a, 1967b; Johnson 1988, Johnson *et al.* 1988). *Femniterga* has both sexes generally blue, while taxa of the Draudt groups and *Tergissima* have

both sexes generally brown (Johnson 1988, Johnson *et al.* 1988). It is possible that species of *Tergissima* and *Femniterga* may be confused with an unnamed sympatric group of species of generic worth with brown males and blue females and genitalia mainly distinguished in males by a more robust vinculum and paired, centrally directed, apodemes on the eighth tergite and in females by an elongate caudally fluted ductus (Fig. 11). It is intended to name and describe this genus and its component species as part of a forthcoming study of generic groupings in the *Calystryma*-like assemblage. All the above taxa can be readily separated from the common *Thecla* species *autoclea* Hewitson by the latter's continuous hindwing band (Fig. 2H) and structural characters (Johnson, 1988).

As noted in detail in Johnson (1988, Figs. 3-4, Appendix and Table 1), *Tergissima* and *Femniterga* differ markedly in tergal and genitalic morphology from taxa of *Calycopis*, *Calystryma* (Fig. 3) and the Draudt groups. Primarily, the four genera of the *Calycopis* assemblage are distinguished by various modifications of the eighth tergite (the "subcordate incised posterior cavity" described in detail by Field 1967a, 1967b, Johnson 1988, Johnson & Matusik 1988, and Johnson *et al.* 1988) and genitalia. Compared to rather simple modifications in *Calycopis* and *Calystryma*, the subcordate incised posterior cavities in *Tergissima* and *Femniterga* are particularly elaborate (Figs. 3,8,9). In *Femniterga*, modification of the eighth tergite also occurs in the females (Figs. 6,7). There are major genitalic differences between the genera, making them easily recognizable (Fig. 3).

Calycopis is Nearctic and Neotropical, *Calystryma* Neotropical, and *Tergissima* and *Femniterga* limited to South America.

Format and Terminology. Hereafter, to save space, certain selected terms (or their abbreviations) are used throughout. Geographic directions are noted as N (north, etc.), NW (northwest, etc.) and C (central); TL means "type locality"; OD means "original description". Wing pattern and venation terminology follows Clench (1964, 1975) except to add the CuA (cubitus anterior) notation for phylogenetic consistency and the notations of Fig. 1 taken from Johnson *et al.*, 1988. Morphological terms follow Johnson (1976, 1988) and Johnson & Matusik (1988) except when referring to the terminal lamellae in females. For these, the alternative terms "genital plates" ("superior" & "inferior") (Klots, 1956) are used for their descriptive value. Johnson (1988) introduced the abbreviation "*sipc*" for the eighth tergite's "subcordate incised posterior cavity" *sensu*

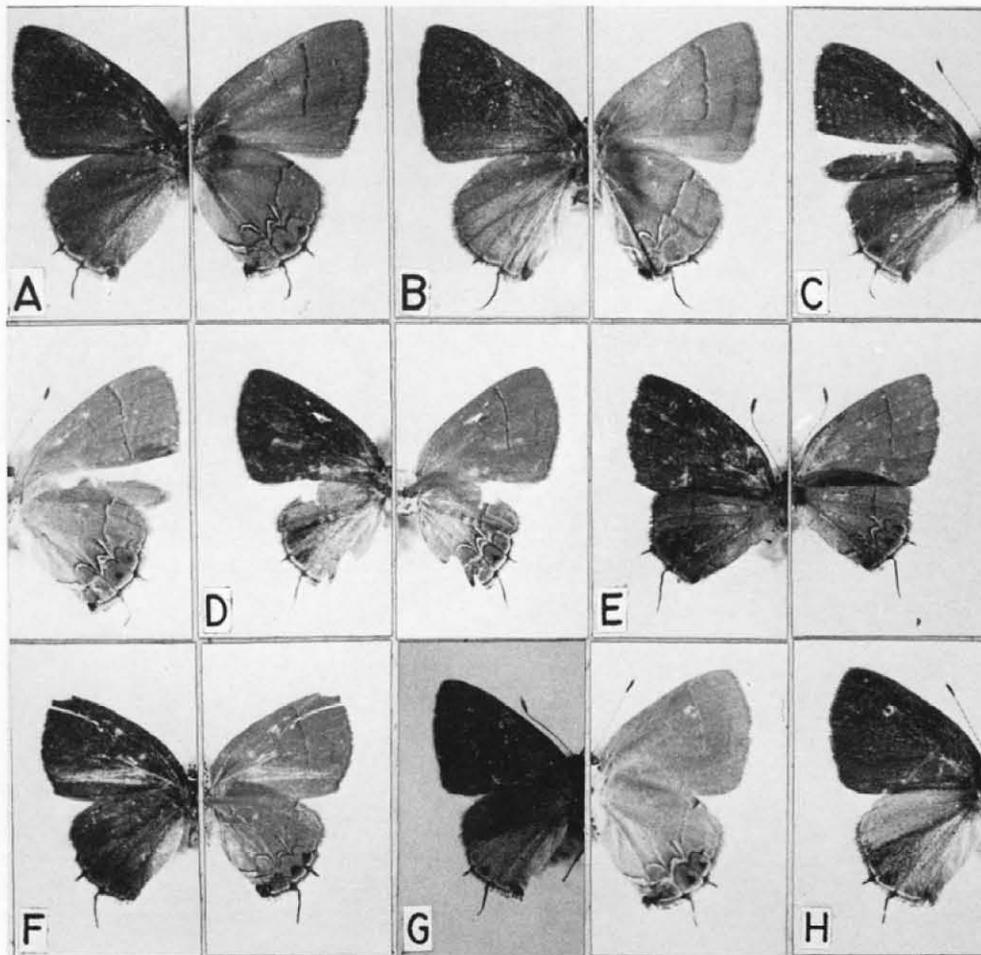


Figure 2. Adults of *Tergissima* (serially in rows, left to right in half-sides, upper surface "left"; under surface "right"). A. *T. mosconensis*, paratype male, Mosconi, Argentina, 20 June 1975 (AMNH); B. same, paratype female, same locality, 9 June 1975 (AMNH); C. *T. macphersoni*, paratype male, La Esperanza, Argentina, 20 June 1975 (AME); D. same, paratype female, Tartagal, Argentina, 31 May 1982 (AMNH); E. *T. shargeli*, holotype male; F. *T. montanensis*, allotype female; G. same, allotype female; H. *Thecla autoctea* (under surface only), Pichanal, Argentina (AMNH).

Field (1967a, 1967b). Since "*sipc*" is in the literature, I use it here in italicized form to save space. Similarly, because *sipc* structures are detailed in a number of publications, and cited often herein, I abbreviate these citations hereafter as: "Field *op. cit.*" for Field 1967a, 1967b and "Johnson *op. cit.*" for Johnson 1988, Johnson 1989, Johnson & Matu-sik 1988, and Johnson, Eisele and MacPherson 1988). Some localities in Material Examined are placed in quotation marks because of their generalized data or for reasons explained in each section. Specimens dissected are marked with an asterisk [*]. Locality names for Argentine specimens are taken from Johnson *et al.*, 1988, Table 1. In text, previously described species are treated in a brief diagnostic format; if their genitalia were not examined hitherto, a description is provided. New taxa receive full descriptive treatment. Citing this work,

Johnson *et al.* (1988) listed "*Thecla*" species belonging in *Femniterga* but did not use formal binomials; hence, I treat such combinations here as new.

Revision

Genus *Tergissima* Johnson

Figs. 2,3C-F

Tergissima Johnson 1988, p. 30. Johnson *et al.* 1988, p. 19.

Diagnosis. Distinguished from other Eumaeini by elaborate *sipc* in male and, in female, genitalia with only a simple, tubelike, ductus bursae almost lacking terminal genital plates and corpus bursae signa common to other Eumaeini (Fig. 3). Male genitalia

generally resemble *Femniterga*, lacking prominent saccus and with baso-cephalic area of vinculum declined nearly 90° to rest of vincular arc (Fig. 3CEF,8,9,11A). Wing upper surfaces in both sexes of *Tergissima* are brown (like most *Calystryma*), but on the under surface the hindwing tripartite band and limbal markings are like those of *Calycopis* (Fig. 1A). See Remarks below.

Type species. *Tergissima mosconiensis* Johnson (1988) by original description.

Distribution. Four species distributed from NW Argentina and NC Chile northward to C Peru.

Remarks. The following remarks apply both to *Tergissima* and *Femniterga* but, to save space, will not be repeated in the treatment of the latter taxon.

Comparative Morphology-- Detailed morphological comparisons for *Calycopis*, *Calystryma*, *Tergissima* and *Femniterga* have been presented previously (Johnson 1988, Figs. 3-4, Appendix and Table 1, Johnson *et al.* 1988, Figs. 8-9). In the present paper, for rapid reference, major characters of *Calycopis* and *Calystryma* (from their type species) are illustrated along with *Tergissima* in Fig. 3. *Tergissima* males have the most elaborately modified *sipc*. It extends from beneath the sixth segment's dorsum caudad to an extremely incised, sometimes pronged, terminus. Laterally, the *sipc* covers the entire circumference of the abdomen (leaving notches for the seventh and eighth segment spiracular openings and, in some species, recurving beneath the terminal sternite). The *sipc* is similar in *Femniterga* (Figs. 8-9). These structures differ greatly from the *sipc* in (i) *Calycopis* (Fig. 3B) (caudal modification extending from beneath seventh segment and laterally short of the spiracles, without sculptured modifications [like prongs or plates]) and (ii) *Calystryma* (Fig. 3A) (caudal modification as above, lateral modification extending just beyond spiracles, with a pronglike terminus in a single species). In the genitalia, both *Calycopis* and *Calystryma* (Fig. 3A,B) have a prominent saccus and no drastic central declination in the vincular arc. Female genitalia of *Tergissima* (Fig. 3C-F) lack the prominent genital plates which occur in other genera of the assemblage. As emphasized in Field *op. cit.*s. and Johnson *op. cit.*s., *Calycopis* taxa have prominent ductus bursae, a disto-terminally spined superior genital plate and an inferior genital plate with bilateral, extremely sclerotized, ventral plates; *Calystryma* taxa have prominent ductus bursae and emphatic disto-terminal spines on both the superior

and inferior genital plates. Genital plates are prominent in *Femniterga* but the ductus bursae diminutive (Fig. 6-7).

External Secondary Sexual Characters-- Males of *Tergissima* and *Femniterga* exhibit a darkened, flat-sheened distal patch in the discal cell. Johnson (1988) discussed the status of these dull markings as "brands" (*sensu* Eliot 1973).

Species

Tergissima mosconiensis Johnson
Figs. 2AB, 3C

Tergissima mosconiensis Johnson 1988, p. 34.
Johnson *et al.* 1988, p. 19.

Diagnosis. Superficially distinguished from congeners by resplendent, lunular, red markings covering most of the under surface limbal area. In morphology, exhibiting a unique terminal prong on the male *sipc* which (even in undissected specimens) can usually be seen protruding from the abdomen along with the aedeagal terminus. Female genitalia with ductus bursae length about 6X width (*T. macphersoni* [sympatric with *T. mosconiensis*] with a much more elongate ductus, length exceeding 12X width).

Adult. Male: Fig. 2A; forewing 11.5-13.0 mm. Female: Fig. 2B; forewing 10.5-12.5 mm. **Tergal Morphology and Genitalia.** Fig. 3C. For detailed description see Johnson 1988, p. 34 [Adults, Figs. 1A-D; Genitalia, Figs. 3C,H; 4E].

Types. Holotype male*, allotype female*, AMNH. TL: ARGENTINA. Salta Prov., Mosconi (xeric woodland bordering chaco).

Distribution. Spatial: known from several xeric woodland and chaco habitats in Salta and Jujuy provinces, Argentina; also known from eastern Bolivia. Temporal: monophenic [sexually monomorphic]; known from nearly every month of the year except September to December.

Remarks. As detailed in Johnson (1988, Fig. 4) and Johnson *et al.* (1988, Fig. 9) generic characters readily separate *T. mosconiensis* from the only *Calystryma* species with an *sipc* terminal spine (*C. keta* Field 1967b, Figs. 1,14). In addition, the terminal spine in *C. keta* is always pointed, with *sipc* immediately cephalad variously serrate (in *T.*

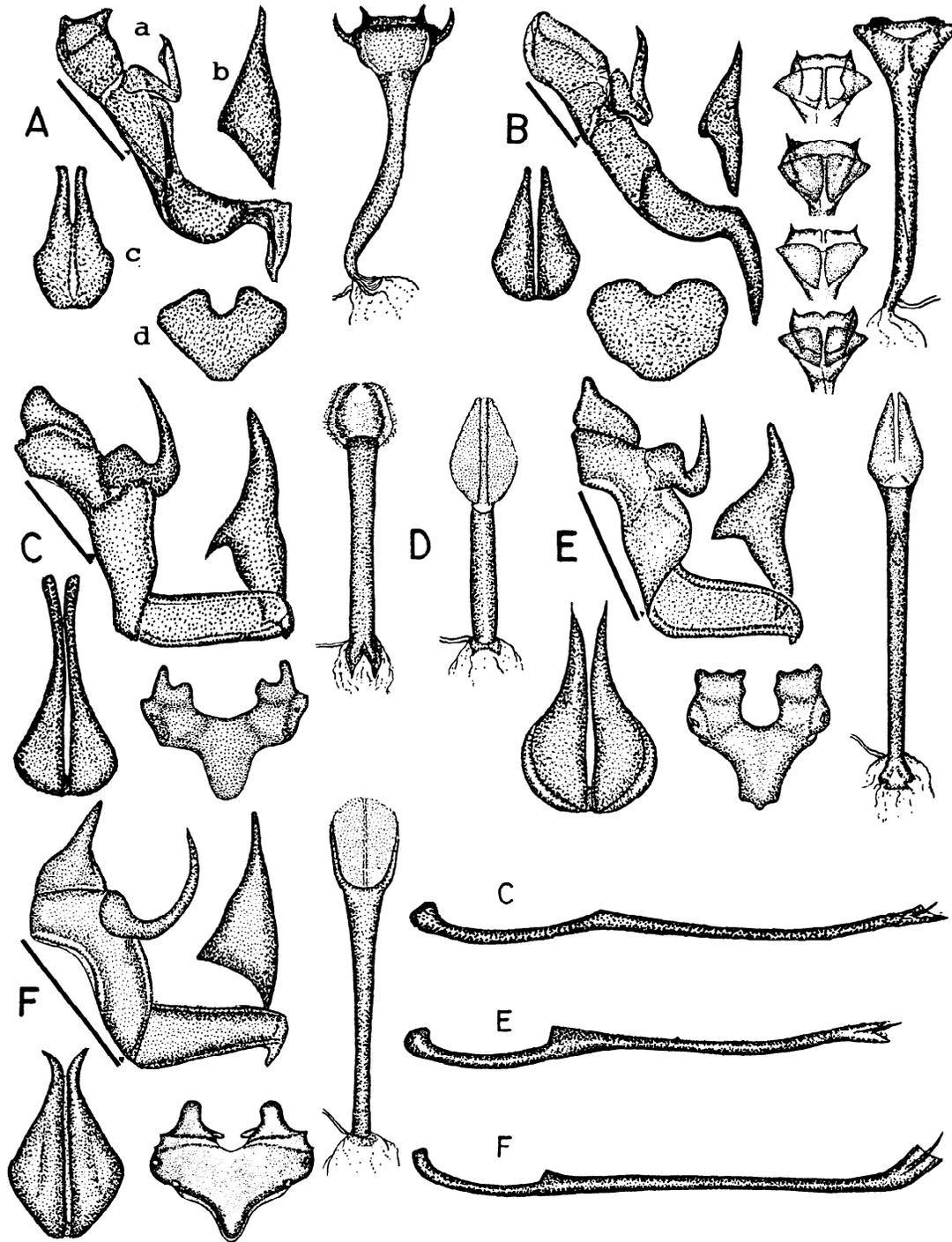


Figure 3. Tergal Morphology and Genitalia of *Calycopis*, *Calystryma* and *Tergissima* (format: left, male-- a, lateral view genitalia with aedeagus removed [solid line and carrot showing expanse and point of attachment of brush organs, respectively]; b, lateral view, valvae; c, ventral view, valvae; d, dorsal view, siph; right, female, ventral view, ductus bursae and terminal genital plates with distal end of corpus bursae). A. *Calystryma blora* Field (type species) male [female *C. keta* Field (*C. blora* female not available; stated to be like *C. keta*, Field 1967b)]. B. *Calycopis cecrops* Fabricius [type species *C. poesus* Hübner = *C. cecrops*], between male and female, four examples of extent of terminal spines (top to bottom: *C. caulonia* (Hewitson), *C. chacona* (Jörgensen), *C. bellera* (Hewitson), *C. jeneirica* (Felder), all sympatric with taxa of *Tergissima* and *Femniterga* across SE South America); C. *T. mosconiensis* (holotype male, allotype female); E. *T. macphersoni* (holotype male, allotype female); F. *T. montanensis* (holotype male, allotype female); D. *T. shargeli* (holotype female). Below, right (small C,E,F) lateral, aedeagii of *Tergissima* species: C. *T. mosconiensis*, E. *T. macphersoni*, F. *T. montanensis*.

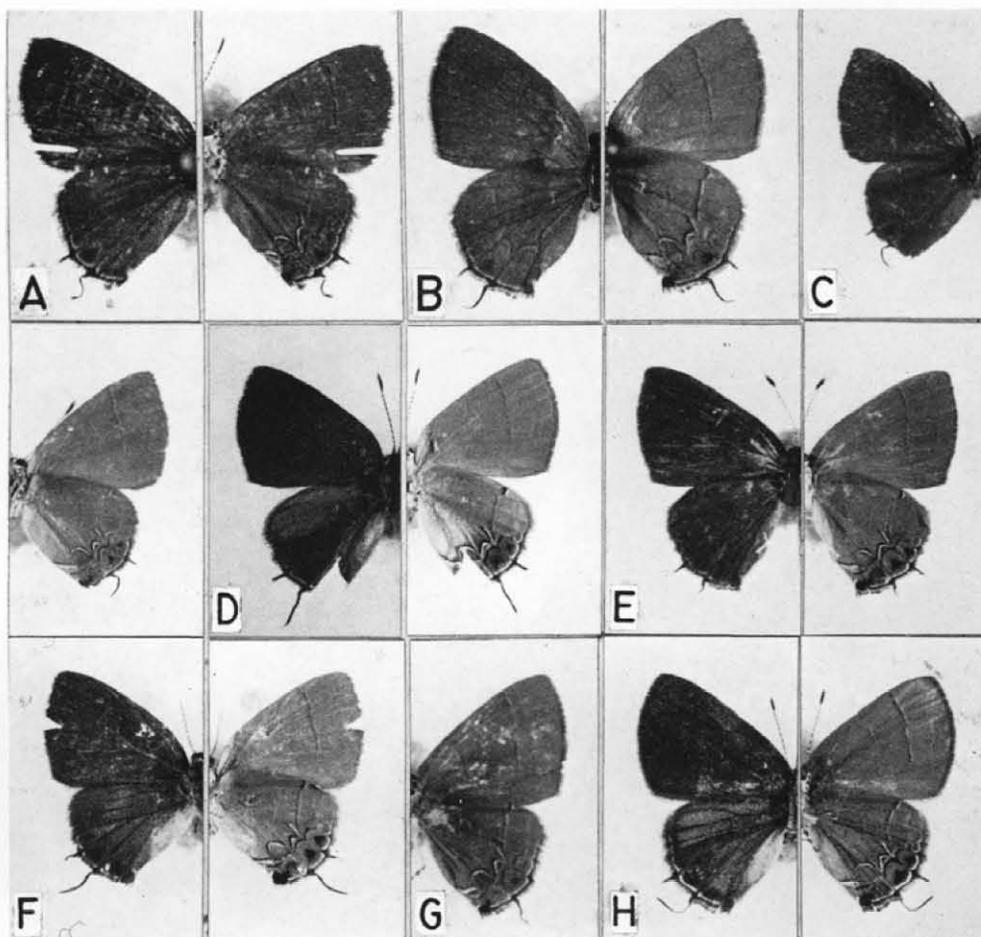


Figure 4. Adults of *Femniterga: notacastanea* Species Group and *F. strobilata* (format as Fig. 2). A. *F. notacastanea*, paratype male, Cucho, Argentina, 15 January 1987 (AMNH); B. same, paratype female (same data as A); C. *F. cissusa*, topotypical male, Para, Amazon (BMNH); D. same, topotypical female (same data as C) (BMNH); E. *F. megana*, allotype male; F. same, holotype female; G. *F. strobilata*, allotype male (under surface only, upper surface brown); H. same, holotype female.

mosconiensis, spine is rounded with *sipc* immediately cephalad exhibiting a second, less prominent, caudally directed lobe). Johnson *et al.* (1988) list eight specimens of this species collected since Johnson (1988).

Tergissima macphersoni Johnson
Figs. 2CD, 3E

Tergissima macphersoni Johnson 1988, p. 34.
Johnson *et al.* 1988, p. 20.

Diagnosis. Limbal area marked with limited red-orange (anal margin to caudal area of cell M3); terminus of *sipc* trilobate (not terminally pronged); ductus bursae of female genitalia elongate (length exceeding 12X width [circa 2X relative ductus bursae length in *T. mosconiensis*]).

Adult. Male: Fig. 2C; forewing 10.0-11.5 mm.

Female: Fig. 2D; forewing 10.0-12.0 mm. **Tergal Morphology and Genitalia.** Fig. 3E. For detailed description see Johnson 1988, p. 34 [Adults, Figs. 1E-H; Genitalia, Figs. 3C,4F,5C].

Types. Holotype male*, allotype female*, AMNH. TL: ARGENTINA. Salta Prov., Tartagal (cut-over mesic woodland).

Distribution. Spatial: geographically congruent with *T. mosconiensis*, but known primarily from mesic habitats. Temporal: monophenic [sexually monomorphic]; known currently from April through June.

Remarks. Johnson *et al.* (1988) list seven specimens of this species collected since Johnson (1988).

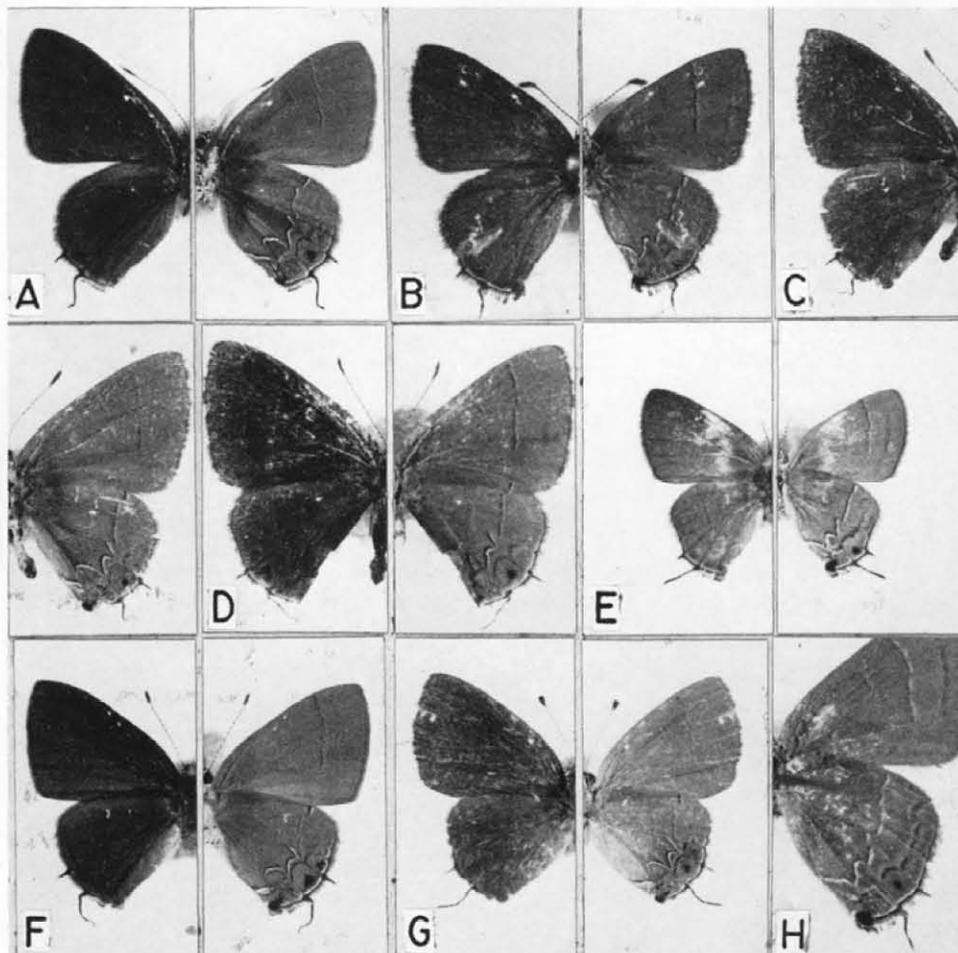


Figure 5. Adults of *Femniterga: judae* Species Group (format as Figs. 2, 4). A. *F. judae*, allotype male; B. same, holotype female; C. *F. plumans*, topotypical male, Chapada, Mato Grosso, Brazil (BMNH); D. same, near topotypical female, Urucum, Mato Grosso, Brazil (BMNH); E. *F. itaituba*, allotype male; F. same, holotype female; G. *F. cinniana*, male, Trinidad, 1913 (AMNH); H. same, female, Botanical Garden, Port-of-Spain, Trinidad (AMNH) [i.d. W. D. Field, 1967b] (upper surface only, under surface as on male).

Tergissima shargeli, new species
Figs. 2E, 3D

Diagnosis. Single known female specimen extremely small (forewing 7.5 mm.), limbal area with orange coloration limited to area immediately surrounding Thecla-spot (cell CuA1) (lunular red throughout limbal area in *T. mosconiensis*, red-orange from caudad vein M3 to anal lobe in *T. macphersoni*). Genitalia with ductus bursae shortest of genus, length equalling only 2X width of posterior genital plate (Fig. 3D).

Description. Male. Unknown. **Female.** Upper surface of wings: ground dull light brown, hindwing with long tail, terminus vein CuA2, shorter tail, terminus vein CuA1. Under surface of wings: ground beige; pattern typical of genus (Fig. 1A) but limbal area with light orange limited to area immediately around small, blackened Thecla-spot

(cell CuA1). Forewing: 7.5 mm. (holotype). **Female Tergal Morphology and Genitalia.** Fig. 3D. Ductus bursae short, length hardly 2X width of posterior genital plate; corpus bursae with prominent sclerotized hood covering caudal end, bursal sac lacking signa; genital plates limited to triangular posterior flaps.

Types. Holotype female*, CHILE. Santiago, R. Martin, deposited MNHN.

Distribution. Spatial and Temporal: known only from type specimen data.

Remarks. Johnson *op. cit.* treat other unique specimens from the R. Martin Chilean collections at the MNHN. This material, in the MNHN "supplemental collections" (available for study but not incorporated into the General Collection) is largely unsorted beyond suborder.

Etymology. Named for Rabbi Norton Shargel.

Tergissima montanensis, new species

Figs. 2FG, 3F

Diagnosis. Under surface hindwing with extremely pronounced Thecla-spot (cell CuA1); male *sipc* with terminal knob (but not extruding prong as in *T. mosconiensis*). Genitalia of male with unique (i) centrally produced labides, (ii) arc-shaped falces, (ii) greatly declined ventral vincular element and (iv) lateral shouldering of valvae; female with shovel-like (not tapered) ductus terminus.

Description. Male. Upper surface of wings: ground blackish brown, hindwing with long tail, terminus vein CuA2, short tail, terminus vein CuA1. Under surface of wings: ground beige; pattern typical of genus (Fig. 1A) but Thecla-spot (cell CuA1) pronounced and with red coloration in adjacent cell M3 and surrounding the "W"-shaped element of tripartite band. Forewing: 10.0 mm. (holotype). **Female.** Similar to male but with hindwing somewhat more rounded. Length of forewing: 10.0 mm. (allotype). **Male Tergal Morphology and Genitalia.** Fig. 3F, left. Valvae widely shouldered laterally; saccus more apparent than in congeners (length about 1/3 width of adjacent vinculum); labides pronounced centrally to elongate, slightly ventrally-declined, prong; falces arc-shaped; aedeagus with shaft and caecum nearly in same plane; brush organs elongate, abutting entire dorsal expanse of vincular arc. **Female Tergal Morphology and Genitalia.** Fig. 3F, right. Ductus elongate, length circa 7X maximal width; lamellae shovel-like, not terminally tapered; corpus bursae lacking signa.

Types. Holotype male*, allotype female*, PERU. Mt. Ollantaitamba, 3-5000 m., 25 March 1947, leg. J. C. Pallister, deposited AMNH.

Distribution. Spatial and Temporal: known only from type specimen data.

Remarks. Types were collected by Dr. John Pallister, late Curator Emeritus in Entomology (AMNH) on the Frank Johnson Expedition to Peru in 1947 (Pallister 1956). Pallister made detailed notes on collecting areas, some of which were published in 1956. Published notes describe the type locality as an "Inca village" in the valley of the Rio Urubamba, latitude 13° 13' S., longitude 72° 20' W.,

elevation "9,200 ft." (valley arid temperate zone climate with surrounding montane areas semi-arid chapparel). He noted very few insects were collected at the site. Such xeric habitat is compatible with the conditions noted for *Tergissima* in Argentina (Johnson *et al.* 1988).

Etymology. The name refers to the montane habitat of the type locality.

Genus *Femniterga* Johnson

Figs. 4-10

Femniterga Johnson 1988, p. 36. Johnson *et al.* 1988, p. 20.

Diagnosis. Distinct among Eumaeini by occurrence of an elaborate *sipc* in female as well as male (Figs. 6-10). Female genitalia with (i) ductus bursae length often less than that of genital plates (former sometimes hardly sclerotized and latter often greatly pronounced and terminally spined) (ii) corpus bursae diameter usually about same as ductus bursae length with two small, cross-shaped, signa. Male genitalia similar to *Tergissima* with elaborate *sipc* and genitalia with baso-cephalic area of vinculum declined nearly 90° to rest of vincular arc and not terminating with a pronounced saccus (Figs. 8-9). Hindwings of females with brilliant, often patchy or strobile, blue or purple on uppersurface; male upper surfaces variously dull iridescent blue to blue-hued brown. Under surface, both sexes, with simple tripartite band pattern (Fig. 1A) like that of *Calycopis* and *Tergissima*.

Type species. *Femniterga notacastanea* Johnson (1988) by original description.

Distribution. Nine species distributed in E South America from montane C Argentina northward to the Guyana Shield and in W South America from NE and C Peru southward to SE Bolivia.

Remarks. I divide *Femniterga* into three species groups, each exhibiting distinctive constellations of characters as noted in brief introductory sections.

Species

1. *notacastanea* Species Group-- female *sipc* dorsum robust (length and width almost equal) divided by prominent central suture line, lateral

surface curvate centro-cephalically and baso-caudally (Fig. 6A); female genitalia with either or both genital plates extremely produced and with disto-terminal spines; male genitalia with labides produced centrally to dorsally.

Femniterga notacastanea Johnson

Figs. 4AB, 6A, 8A

Femniterga notacastanea Johnson 1988, p. 38.
Johnson *et al.* 1988, p. 20.

Diagnosis. On wing upper surface males brownish, slightly flecked with dull iridescent blue; female forewings brown, hindwing overcast blue; both sexes with dull, but diagnostic, orangish spot submarginal in hindwing cell CuA1. Female genitalia with cephalic area of ductus bursae hardly sclerotized, superior genital plate widely bilobate and terminally spined, inferior genital plate diminutive.

Adult. Male: Fig. 4A; forewing, 11.0-12.5 mm. Female: Fig. 4B; forewing, 11.0-11.5 mm. **Male Tergal Morphology and Genitalia.** Fig. 8A. **Female Tergal Morphology and Genitalia.** Fig. 6A. For detailed description see Johnson 1988, p. 38 [Adults, Figs. 2A-D; Genitalia, Figs. 3DG, 4AG].

Types. Holotype female*, allotype male*, AMNH. TL: ARGENTINA. Salta Prov., Piquirenda to Acambuco at Laguna Las Catas, 850 m. (hydric woodland).

Distribution. Spatial: known primarily from montane wet woodland habitats, 1-3000 m. in the Argentine Andean Piedmont (*sensu* Johnson *et al.* 1988) northward into SE Bolivia; a few specimens are known from more mesic, marginal or grassland areas. Temporal: monophenic [sexually dimorphic]: known from every month of the year except seasonal transition months of February-March and August.

Remarks. Johnson *et al.* (1988) list fifteen specimens of this species collected since Johnson (1988a). In 1989, a female from Buenavista, Bolivia, (no other data) was added to the BMNH collection.

Femniterga cissusa (Hewitson),
new combination

Figs. 4CD, 6B, 8B

Thecla cissusa Hewitson 1863-1878 [1877], p. 188 [vol. 1], pl. 75, figs. 589, 590 [vol. 2]. Weeks 1911, p. xiv. Draudt 1919, p. 800, fig. 158h. Comstock & Huntington 1958-1964 [1959], p. 187. Zikán & Zikán 1968, p. 56. Johnson *et al.* 1988, p. 20. Bridges 1988, pp. I.81, II.105.

Diagnosis. Both sexes with forewing upper surface brown; male hindwing flushed dull blue, female hindwing brilliant silvery blue, varying from basally directed cone-shaped patches caudad vein CuA1, to entirely silverish except around a large marginal spot in this latter cell. Female superior and inferior genital plates pronounced and about equal in size, superior plate with slight, inturned, disto-terminal spines. Female *sipc* with lateral curvature sweeping prominently baso-caudad (Fig. 6B); males *sipc* terminating with prominent hemispherical lobes (Fig. 8B).

Adult. Male: Fig. 4C; forewing 8.0-10.0 mm. Female: Fig. 4D; forewing 8.5-10.0 mm. **Male Tergal Morphology and Genitalia.** Fig. 8B. Dorsum of *sipc* with prominent lobate termini. Genitalia with valvae elongate with gradually tapered termini taper; vinculum and falces laterally robust; labides with steep dorso-caudal production; aedeagus straight, slightly recurvate near terminus; brush organs dense, anchored dorso-cephalically on vinculum. **Female Tergal Morphology and Genitalia.** Fig. 6B. *Sipc* with prominent baso-caudal lateral curvature. Genitalia with superior and inferior genital plates both large (expanse equalling length of ductus), superior plate with inturned disto-terminal spines, varying somewhat in prominence (largest in SE Brazil), inferior plate bilaterally convex.

Types. **Two syntype females, BMNH, labelled "Thecla cissusa Hew., 79-69", "Para, L. [lower?] Amazons", "B.M. type no. 1072", "cissusa 2", here designated lectotype. Paralectotype [custom of BMNH] female, labelled "Thecla cissusa Hew., 79-60", "Para", "cissusa 1" [such number labels refer to an itemization of specimens determined to represent syntypes by BMNH staff].

Distribution. Spatial: known from the Guyana Shield SE across Bahia State and adjacent areas of Brazil southward to São Paulo and westward from W Mato Grosso State to E Bolivia and E Peru. Temporal: dates on specimens span September to March.

Remarks. *F. cissusa* is the most widely distributed species of the genus and (except for the long series of NW Argentine *F. notacastanea* assembled by R. Eisele and B. MacPherson) the most well-represented in collections. It occurs in three generally allopatric populations (Guyana Shield to Bahia State, Brazil; SE Brazil; and SW Brazil northward into Peru). Comments by Pallister (1956) concerning Bella Vista (PERU, see Material Examined, below) specimens, suggest this species is a primarily a dry season insect occurring when, in the dry season, Humid Upper Tropical Zone forest experiences a brief, annual, xeric period.

Variation. *F. cissusa* from throughout the Guyana Shield region, southward to the mouth of the Amazon River and adjacent Bahia State, Brazil, has females with black invading the silver blue of the hindwing between veins M2 and CuA2; specimens from southeastern Brazil (Rio de Janeiro area southward to the vicinity of São Paulo and westward to E Bolivia) have hindwing nearly completely silvery blue except around a large marginal spot in cell CuA1; specimens from Peru have pronounced black, often from vein CuA1 to the anal margin.

Material examined (localities from Gagarin material (MPM) in quotation marks because labels are known to contain generalized data encompassing a number of local collecting areas used by him [K. S. Brown, Jr., pers. com.]). BOLIVIA. Buena Vista [sometimes "Buenavista"], E. Bolivia, 450 m., leg. Steinbach, *one male, ****four females; Prov. del Sara, 450 m., leg. Steinbach, ***three females; Rio Surutu, E. Bolivia, 450 m., leg. Steinbach, *one male, *****five females (all CMNH); Buenavista, E. Bolivia, no other data, three females (BMNH). BRAZIL. Bruque, Santa Catarina State, 16 December 1967, leg. Y. Becker, one female (AME); "Bahia", *one female (BMNH); S. Antonio de Barra, Bahia, **two females; "Rio de Janeiro", 18 September 1961; 19 November 1960, October 1952, 2 October 1960, 21 January 1958, 19 November 1960, 20 October 1951, 19 October 1960, 17 October 1941, 24 November 1900, 8 January 1930 [all*] nine females, 7 June 1932, 3 February 1940, 11 August 1936, 10 October 1939, ****four males; "Independencia" 12 October 1936, *one female, 6 July 1938, *one male; "Petropolis", 24 February 1963 *one male; "Nova Tutonia", 5 May 1940, *one male; [all leg. Gagarin] (MPM); "Rio Grande", **two females, Niedhofer Collection (MPM); Guarujá Santos, Sao Paulo, April 1913, *one male, (BMNH); Santa Cruz [Brazil], 7 July 1913, *one female (BMNH); "Timbo, Blumenau", *one male, *one female (BMNH); "Timbo, Blumenau", *one female (MNHN); "Amazons, Brazil", *one female (AMNH); "Brazil" (****four males, **two females) (BMNH); "Igarapi-Assu, December 1911-February 1912", **two males, *one female (AMNH). FRENCH GUIANA. "French Guyana, C. Bar", *one female (BMNH); "Guyana Francaise", ****four females, ***three males (MNHN). GUYANA. Matioli, 6 March 1913, *one female (BMNH). PERU. "Peru", Joicey Collection, **two males, *one female (BMNH); Bella Vista, San Martin, 1500 ft., 10 December 1946, leg. J. C. Pallister, **two males (AMNH). SURINAM. "Surinam", *one female (MNHN).

Femniterga megana, new species
Figs. 4EF, 6C, 8C

Diagnosis. Presently known only from montane central Argentina, this species has numerous unique characters. On the wing upper surfaces the female's hindwing is marked by a wide (basal to median) patch of deep azure blue (similar only to *F. itaituba*), the male has the wingbase blue (similar to *F. plumans*). In the genitalia the female has the superior plate deeply cleft and not terminally spined, the male has the dorsal area of vincular arc deeply cleft, the labides lobate, and the falces with an area of the vinculum directly cephalad pronounced to a distinctive lobe.

Description. **Male.** Upper surface of wings: ground blackish brown with distinct basal azure blue on the hindwing; hindwing with long tail, terminus vein CuA2, short tail, terminus vein CuA1. Under surface of wings: ground dull brown; pattern typical of genus (Fig. 1A) but limbal area with red-orange pronounced only around the Thecla-spot (cell CuA1) and adjacent cell M3. Forewing: 9.5 mm. (allotype). **Female.** Upper surface of wings: as on male but hindwing azure blue extending to arc-shaped median border with darker ground. Under surface of the wings: as on male. Forewing: 10.0 mm. (holotype). **Male Tergal Morphology and Genitalia.** Fig. 8C. Valvae tapering gradually to pointed termini; saccus notable but not pronounced; labides lobate; falces spike-like; aedeagus only mildly curvate; brush organs elongate, abutting enlarged and deeply cleft dorsal margin of vinculum. **Female Tergal Morphology and Genitalia.** Fig. 6C. Vento-lateral area of *sipc* with distinct ventrally directed flap. In genitalia, superior genital plate with disto-terminal lobes entire and central area markedly cleft. General shape of genital plates rather square, an outstanding cephalic ridge bordering their juncture with the ductus bursae.

Types. Holotype female*, ARGENTINA. Mendoza, C. S. Larsen Collection, MNHN, allotype male*, ARGENTINA, Sierra Nevada [Mendoza Province], IML. Paratypes: same data as allotype, *one male (IML).

Distribution. Spatial and Temporal: known only from type data.

Remarks. These specimens were mentioned by Johnson (1988) but not described. As noted in

Johnson *op. cit.*, the C. S. Larsen collection (MNHN) is largely unsorted but contains numerous austral Neotropical specimens. Some of these were described by Lathy (1926, 1936) and curated into the specially-housed MNHN Fournier Collection; others remain in unsorted sections of MNHN supplemental material. Along with duplicate collection date, the primary types are construed as representing the same species because of the (i) biogeographic unity of the region of their occurrence and its known endemism and (ii) uniqueness of their characters.

Etymology. The species is named for Megan Foran Schmidt.

Femniterga splendida, new species

Fig. 10

Diagnosis. Both sexes with broad bright red or red-orange basal border to medial band of hindwing; male uppersurface dark brown with lighter buff borders and apices, female uppersurface brownish black with sheen of blue gray on hindwing. In morphology, female *sipc* with sculptured cephalic ridge invaginating dorsally and laterally, and forming bifurcate lobes at juncture with emphatically pronged superior genital plate; male genitalia with short, thin valvae, laterally produced vinculum and elongate, nearly straight, aedeagus.

Description. Male. Upper surface of wings: ground dark brown with lighter buff margins and apices, hindwing with long tail, terminus vein CuA2, short tail, terminus vein CuA1. Under surface of wings: ground, light brown; pattern typical of genus but with broad red-orange basal border to medial band, limbal area with bright orange red at the Thecla-spot, in adjacent cell M3 and around the "W"-shaped element of the tripartite band. Forewing: 12.0 mm. (allotype). **Female.** Upper surface of wings: forewing dark brown, slightly hued blue; hindwing with gray blue suffused throughout. Under surface of wings: as on males but basal red band more pronounced. Forewing: 12.5 mm. (holotype). **Male Tergal Morphology and Genitalia.** Fig. 10C. *Sipc* with termino-lateral margins trilobate. Genitalia with laterally paired valval lobes short (termini not reaching dorso-terminal arch of falces) and widely separated; vinculum with lateral surface greatly produced at the ventral declination, dwarfing diminutive saccus; labides dorsally produced; falces shouldered closely to vinculum with

termini spikelike; aedeagus nearly straight except for slight curve in terminal one-third; brush organs thickly abutting dorsal vincular surface. **Female Tergal Morphology and Genitalia.** Fig. 10D. *Sipc* with invaginated, sculptured cephalic margin extending laterally around abdomen to bifurcate termini dorsad the genital lamellae; *sipc* dorsal suture line not emphatic. Superior plate of genitalia with two greatly produced distal prongs, inferior plate bilaterally convex.

Types. Holotype female*, allotype male*, PERU. Uruhuasi, S. Peru, 7000 ft., April and May, 1910, W. F. Rosenberg, deposited BMNH.

Distribution. Spatial and Temporal: known only from type data.

Remarks. Species was discovered in 1989 and added in proof; illustrations of Fig. 10 were separately formatted. Along with distinctive wing and genitalic characters, the species is the largest in the genus.

Etymology. Named for the bright red-orange basal hindwing band.

2. The *strobilata* [presently monobasic] Species Group. Dorsum of female *sipc* with central suture line but lateral surface extremely distended ventro-terminally; genitalia with termini liplike, lacking pronounced development of the genital plates.

Femniterga strobilata, new species

Figs. 4GH, 6D, 8D

Diagnosis. Hindwing uppersurface in female with strobile purple stripes radiating from the wing base; male completely brown (but hindwing notably rounder than congeners and CuA2 tail with prominent white terminus). In morphology, ventro-terminal surface of female *sipc* distended drastically for genus and female genitalia lacking pronounced development of genital plates (ductus termini liplike, smooth-edged and nearly equal in terminal length); male with area of vinculum abutting falces greatly produced, ventrum of valves deeply cleft. Female hindwing coloration markedly resembles both sexes of *Calystryma blora* Field (see Remarks).

Description. Male. Upper surface of wings:

ground brown, hindwing with long tail, terminus vein CuA2, short tail, terminus vein CuA1. Under surface of wings: ground, light brown; pattern typical of genus, limbal area with bright orange red at the Thecla-spot, in adjacent cell M3 and around the "W"-shaped element of the tripartite band. Forewing: 10.5 mm. (allotype). **Female.** Upper surface of wings: forewing brown; hindwing with strobile purple stripes radiating from wingbase. Under surface of wings: as on males. Forewing: 11.0 mm. (holotype). **Male Tergal Morphology and Genitalia.** Fig. 8D. Valvae with laterally paired lobes widely separated; vinculum lateral surface robust, asymmetrical the ventrally declined region with saccus hardly apparent; labides centrally produced; falces widely shouldered at base and short termini; aedeagus bowed in ventral one-third; brush organs thick, abutting dorsal vincular surface. **Female Tergal Morphology and Genitalia.** Fig. 6D. *Sipc* ventro-caudally distended; genitalia lacking pronounced terminal plates; rather, ductus termini liplike, smooth-edged and nearly equal in terminal length.

Types. Holotype female*, allotype male*, FRENCH GUIANA. Maroni, deposited MNHN. Paratypes: FRENCH GUIANA. "Guyana Francaise", ***three males, *****five females (MNHN); "Guyana Francaise, C. Bar", *one female (BMNH); GUYANA. Berbice, New River Triangle, Camp Jaguar, 500', 8-10 November 1980, leg. S. Steinhauser, *four males, *one female (AME); "British Guiana", 20 March 1913, *one female (AMNH); Mallali, 20 March 1913, *one female (AMNH). SURINAM. "Surinam", *one female (MNHN).

Distribution. Spatial: known from several localities in the Guyana Shield region. Temporal: the only dated specimens are noted from late March.

Remarks. I have used the Maroni specimens as the primary types because they include a male and female with duplicate data. Regarding wing pattern similarity between this species and *C. blora* the male genitalia of the latter were illustrated by Field (1967b, Fig. 3) and the female genitalia cited as unknown. Dissection of numerous female *C. blora* (AMNH, CMNH, BMNH or as identified by Field by wing pattern and with data duplicating males) shows the genitalia is typical of *Calystryma* (there is no *sipc* and the genitalia have an elongate ductus bursae and prominent disto-terminal spines on both genital plates). Further, *C. blora* females (FW, base-

apex 12.0 mm. - 13.5 mm.) are usually larger than *F. strobilata*.

A number of taxonomically disparate taxa share the strobile markings hitherto attributed only to *C. blora*. *Femniterga strobilata* females also resemble another, undescribed, sympatric species which also lacks an *sipc* but has genitalia not typical of either *Femniterga* or *Calystryma*. Within *Femniterga*, *F. strobilata* is widely sympatric on the Guyana Shield with *F. cissusa*; the divergence of these characters suggests the genus has been long established in South America.

Etymology. The name refers to coloration on the female hindwing.

Material examined: all specimens examined have been included in the type series. The following females of *C. blora* have been examined: BRAZIL. Benevides, October 1960, ***three females (CMNH); Manacapuru, Amazon River, **two females (AMNH). FRENCH GUIANA. St. Laurent, *one male/*one female [i.d. W. D. Field] (AMNH); GUYANA. Shudihar River, *one male/*one female [i.d. W. D. Field] (AMNH); "British Guiana", *one female (BMNH).

3. judae Species Group. Female *sipc* with dorsum thin (width greatly exceeding length), lacking notable central suture line and with lateral surface exhibiting a prominent ventro-cephalically directed lobe; genitalia with superior genital plate unspined, inferior genital plate diminutive to lacking; male genitalia with labides produced ventrally.

Femniterga judae Johnson
Figs. 5AB, 7A, 9A

Femniterga judae Johnson 1988, p. 39. Johnson *et al.* 1988, p. 21.

Diagnosis. Both sexes with distinctive brilliant blue patches over the caudal two thirds of the hindwing upper surface; under surface tripartite band thick and lunular. Female genitalia similar only to *F. itaituba*, but with superior genital plate rectangular and ductus bursae straight (*F. itaituba* genital plate with guadraspherical lobes and ductus cephalically recurvate).

Adult. Male: Fig. 5A; forewing, 10.5-11.5 mm. Female: Fig. 5B; forewing, 11.5-12.0 mm. **Male Tergal Morphology and Genitalia.** Fig. 9A. **Female Genitalia.** Fig. 7A. For detailed description see Johnson 1988, p. 39 [Adults, Figs. 2E-H; Genitalia, Figs. 3Dc, 4B, H].

Types. Holotype female*, allotype male*, AMNH.

TL: ARGENTINA. Salta Prov., Mosconi (xeric woodland bordering chaco).

Distribution. Spatial: known from lowland (400-500 m.) xerophytic chaco and chaco margin habitat in Salta Province, Argentina (BMNH specimens from Tucumán have only provincial data). Temporal: Known only from May to July.

Remarks. Johnson *et al.* (1988) list two specimens of this species collected since Johnson (1988).

Femniterga plumans (Druce),
new combination
Figs. 5CD, 7B, 9B

Thecla plumans Druce 1907, p. 622. Comstock & Huntington 1958-1964 [1962] p. 116.
Johnson *et al.* 1988, p. 20.

Calystryma [?] [sic] *plumans*: Bridges 1988, pp. I.276, II.20.

Diagnosis. Male with hindwing upper surface dull azure blue at base, female with wing entirely brilliant silvery blue; both sexes with prominent black marginal spot in cell CuA1 of hindwing. In morphology, female *sipc* with prominent ventrocephalic curvature, genitalia with distinctively rectangular genital plates (inferior plate about half expanse of superior) and a truncated ductus bursae (only slightly sclerotized cephalad the genital plates); male genitalia with lateral surfaces of vinculum extremely thin, valvae shouldered laterally and extending to thin, dorsally inclined termini and aedeagus radically recurvate in its caudal one-third.

Adult. Male: Fig. 5C; forewing 9.0-10.0 mm. Female: Fig. 5D; forewing 9.5-10.5 mm. **Male Tergal Morphology and Genitalia.** Fig. 9B. Termini of dorsal plate of *sipc* extremely ovate in dorsal view. Genitalia with lateral surface of vinculum and falces very thin for genus; valvae laterally shouldered, terminally elongate, greatly recurved terminad in the lateral view; labides ventrally produced; aedeagus greatly recurved terminad; brush organs short. **Female Tergal Morphology and Genitalia.** Fig. 7B. Dorsal and lateral surfaces, *sipc*, with prominent ventro-cephalic curvature. Genitalia with ductus bursae truncated, sclerotized only slightly cephalad genital plates, latter which are rectangular in shape with terminal expanse of superior plate about twice that of the inferior.

Types. Holotype male, BMNH, labelled "Type" "Thecla plumans/ H. H. Druce", "Chapada, Mato Grosso, H. H. Smith", "B.M. type 1004" [OD says "Chapada, Campo, Brazil, December"].

Distribution. Known from numerous localities in Mato Grosso State, Brazil, and adjacent Paraguay.

Remarks. The holotype lacks an abdomen; another Druce specimen (BMNH World War II reference collection), with data duplicating the type's, has been examined. Additional specimens from the BMNH and the Podtiaguin Collection (AMNH) allow confidence in the diagnosis of the taxon and the association of the sexes.

Material examined. BRAZIL. Chapada, Matto [sic, throughout] Grosso State, *one male; Matto Grosso State, Urucum, 15 mi. S. of Corumba, 650 ft., 16-23 November 1927, leg. C. L. Collenette, *one male, *one female; Cuyaba, 1000 ft., 11-19 May 1927, C. L. Collenette, *one male; Cuyaba [sic], Matto Grosso State, *one male (all BMNH). PARAGUAY. Cordillera, Santísima Trinidad, May, leg. B. Podtiaguin, **two females (AMNH).

Femniterga itaituba, new species
Figs. 5EF, 7C, 9C

Diagnosis. Both sexes with hindwing wings above marked dark azure blue in a hemispherical patch basad the discal cell (similar to female of *F. megana*). Female genitalia with (i) ductus bursae cephalically recurved, (ii) inferior genital plate diminutive while posterior plate pronounced as two bilateral quadraspheres. Male genitalia with valval termini thin and spinelike, aedeagus greatly recurved in its terminal one-third.

Description. **Male.** Upper surface of wings: ground fuscous, hindwing with hemispherical azure blue patch at base. Hindwing with long tail, terminus vein CuA2, short tail, terminus vein CuA1. Under surface of wings: ground medium brown; pattern typical of genus (Fig. 1A) but "W"-shaped element of tripartite band very large, costal element comparatively small; limbal area with red extensive around Thecla-spot and in cell M3. Forewing: 8.0 mm. (allotype). **Female.** Upper surface of wings: similar to male except hindwing with azure blue patch more distally expansive. Under surface of wings: as on males. Forewing: 10.0 mm. (holotype). **Male Tergal Morphology and Genitalia.** Fig. 9C. Valvae terminally tapered to thin spine-like prongs; saccus absent; labides ventrally produced; vinculum thin (as in *F. plumans*); aedeagus with

terminal third extremely recurved dorsally; brush organs of moderate length along dorsal edge of vincular arc. **Female Tergal Morphology and Genitalia.** Fig. 7C. Lateral surface of *sipc* with expansive ventro-cephalic lobe. Genitalia with ductus bursae elongate, cephalically recurved; genital plates with inferior plate diminutive, liplike; superior plate quadraspherically lobate with no disto-terminal spines.

Types. Holotype female*, allotype male*, BRAZIL. Itaituba, Rio Pastaza, H. Descimon (no other data), deposited AMNH. PARATYPE: female*, "Amazons Bates Collection" (HEC).

Distribution. Known only from the type locality.

Remarks. In 1981, Dr. H. Descimon (Université de Provence, France) donated to the AMNH a large number of unmounted *Theclinae* assembled over many years. The types of this species were included; nothing else is known of their derivation.

Etymology. The name is taken from the type locality.

Femniterga cinniana (Hewitson),
new combination
Figs. 5GH, 7D, 9D

Thecla cinniana Hewitson 1817, vol. 1, p. 189, vol. 2 pl. 75, figs. 593, 594 [female]. Kirby 1877, p. 856; Druce 1907, p. 622. Draudt 1919, vol. 5, p. 805; 1921, p. 827; 1922, pl. 159, figs. f[3], f[4]. Comstock & Huntington 1958-1964 [1959], p. 187. Zoological Record 1971, p. 585 [misspelled as "cinmana"]. Lewis 1973, p. 67, fig. 8. Johnson *et al.* 1988, p. 20.

Calycopis cinniana: Kaye 1914, p. 570; 1921, p. 94.

Calystryma cinniana: Field 1967b, p. 22. Bridges 1988, pp. I. 81, II.20.

Diagnosis. Male unique among congeners with brilliant silvery blue over entire basal surface below the discal cell; female with hindwing completely silvery blue except for slight black suffusions at margin of cell CuA1. Female with *sipc* dorsum rather rectangular, laterally with central cephalic incision; genitalia with simple, unsculptured lamellae; male genitalia with ventrum of each valve nearly triangular, vinculum extremely robust and greatly ventro-terminally declined.

Adult. Male: Fig. 5G; forewing 8.0 mm.

(AMNH). Female: Fig. 5H; forewing 10.0 mm. (AMNH). **Male Tergal Morphology and Genitalia.** Fig. 9D. Dorsum of *sipc* with cephalic protrusion bifurcate; genitalia with each valve widely shouldered (nearly triangular), termini thinly tapered; vinculum laterally robust but falces thin; labides greatly produced ventrally; aedeagus gradually recurved terminad; brush organs dense, abutting entire dorsum of vincular arc. **Female Tergal Morphology and Genitalia.** Fig. 7D. Dorsum of *sipc* rectangular; cephalic area of lateral surface centrally incised. Genitalia with lamellae simple and unsculptured, ductus diminutive, signa typical (see Remarks).

Types. Holotype female, BMNH, labelled "*Thecla cinniana* (1), "Hewitson Coll. 79-69", "Amazon", "B.M. Type Rhop. 1073", "Type".

Distribution. Spatial: known from Trinidad, several localities on the Guyana Shield and the Amazon River area of Para State, Brazil.

Remarks. Field (1967a) considered "*Calystryma cinniana* unusual for the genus, referring specifically to its small size and the diminutive ductus of the female genitalia. In his Fig. 20 he also illustrated its smaller, less dendritically sclerotized signa, which typify *Femniterga*. He did not mention the female's radically modified eighth tergite (apparent in his dissection #5082, AMNH), but cited "greatly reduced" distal "spurlike processes" (p. 23) to place the species in *Calystryma*. These are actually the distal edges of the conjoining genital plates. Field's identification of females was accurate; confirmed by me through examination of the type. He considered the male unknown, apparently overlooking an AMNH specimen. In Fig. 7D I reduce the detail included for other species because sclerotin in Field's dissection is rather faded and colorless.

Additional material examined. BRAZIL. Santarem, Amazons, one female (MNHN). FRENCH GUIANA. "Guyane Francaise", six females (MNHN). TRINIDAD-TOBAGO. "Trinidad", December-January 1934, leg. W. G. Sheldon, one male, one female (AME); "Trinidad", 1913, *one male; Oroponche, 1-9 April 1929, *one female; Botanical Garden, Port-of-Spain, 1-9 April 1929, *one female [dissection #5082 W. D. Field] (AMNH); "Dahadic", Trinidad, Rait-Suite Bequest, *one female (BMNH); Port of Spain, 9 January 1913, in forest on cocoa plant, one female (HEC). VENEZUELA. District Federal, "emb. R. Mazare" 24 August 1937 (AME). Listed by Field (1967b, gender and deposition not noted) and not examined by me: TRINIDAD. "St. George County, Port of Spain, April"; FRENCH GUIANA. "Colony of Guiana, Cayenne (no date)". BRAZIL. "state?, the Amazon (no date)".

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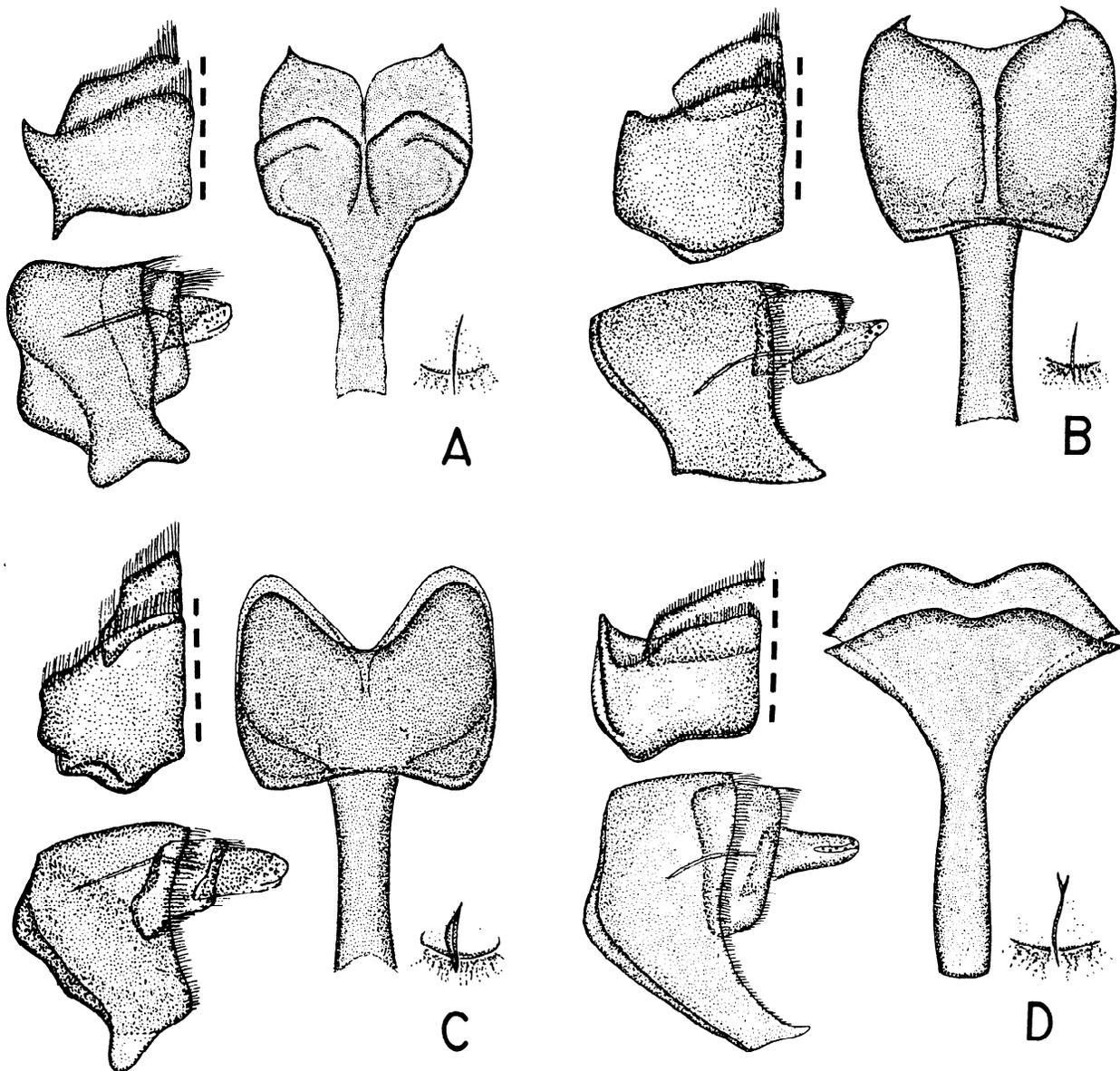


Figure 6. Female Tergal Morphology and Genitalia in *Femniterga*: *notacastanea* Species Group and *F. strobilata* (format: left above, *sup*, dorsal view left of midline [caudal = top]; left below, lateral view with papillae anales; right above, ductus bursae and terminal genital plates, ventral view; right below, signum. A. *F. notacastanea*, holotype; B. *F. cissusa* of Fig. 4D; C. *F. megana*, holotype; D. *F. strobilata*, holotype.

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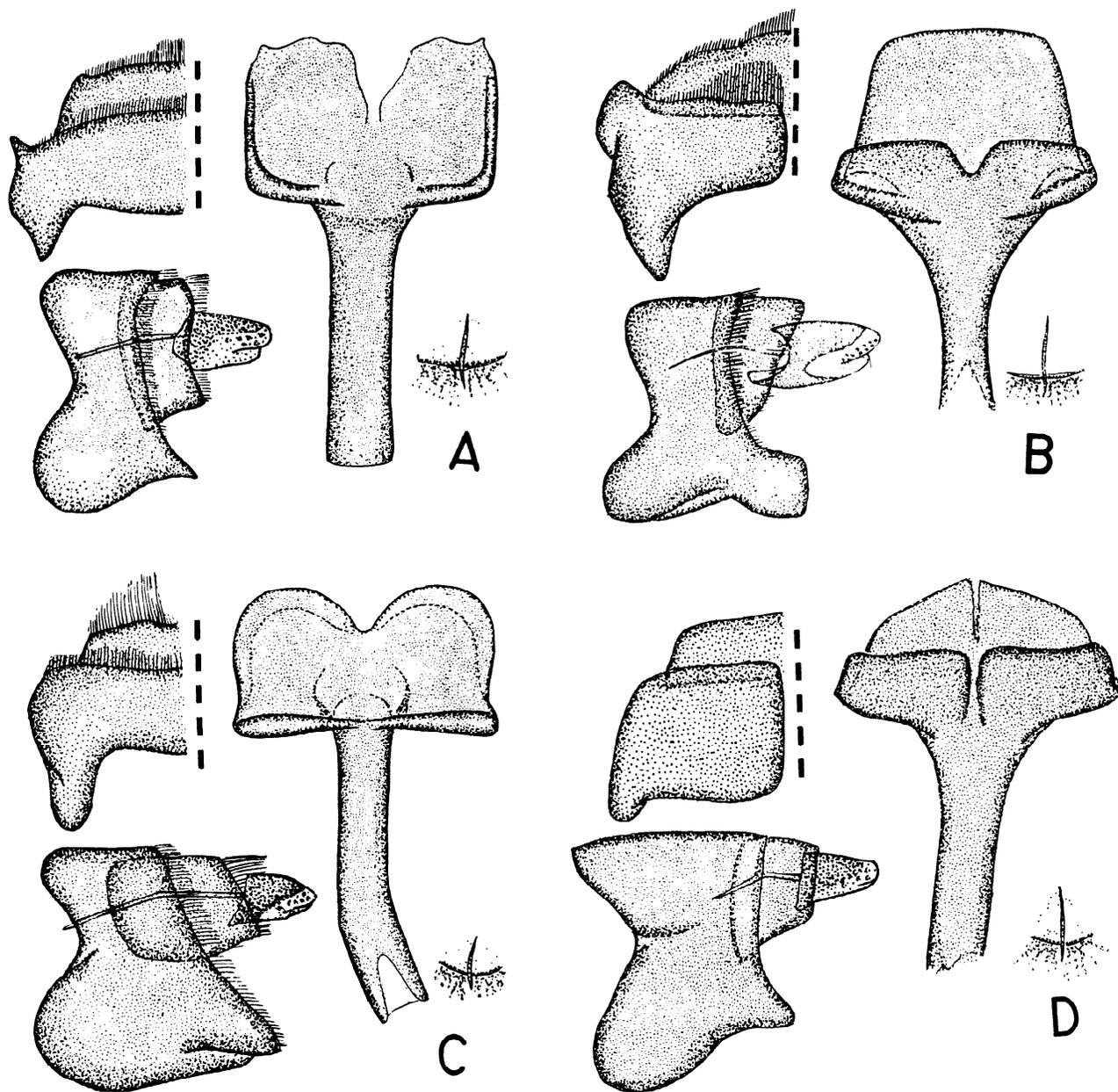


Figure 7. Female Tergal Morphology and Genitalia of *Femniterga judae* Species Group (format as in Fig. 6). A. *F. judae*, holotype; B. *F. plumans* of Fig. 5D; C. *F. itaituba*, holotype; D. *F. cinniana* of Fig. 5H.

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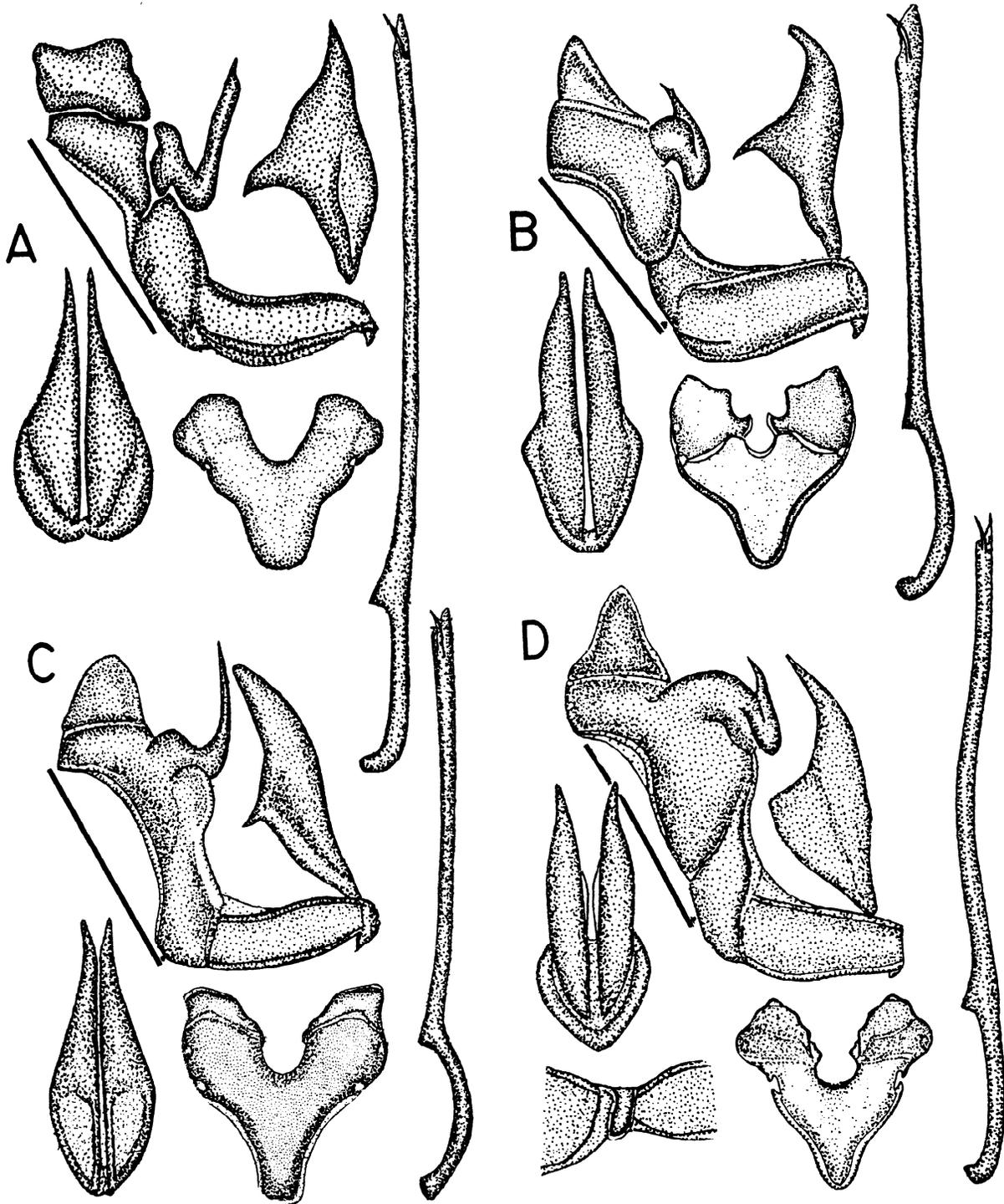


Figure 8. Male Tergal Morphology and Genitalia of *Feniterga*, *notacastanea* Species Group and *F. strobilata* (format as in males, Fig. 3 but aedeagus, lateral view, right). A. *F. notacastanea*, allotype; B. *F. cissusa* of Fig. 4C; C. *F. megana*, allotype; D. *F. strobilata*, allotype (below valvae, dorsal view of vincular asymmetry at saccus).

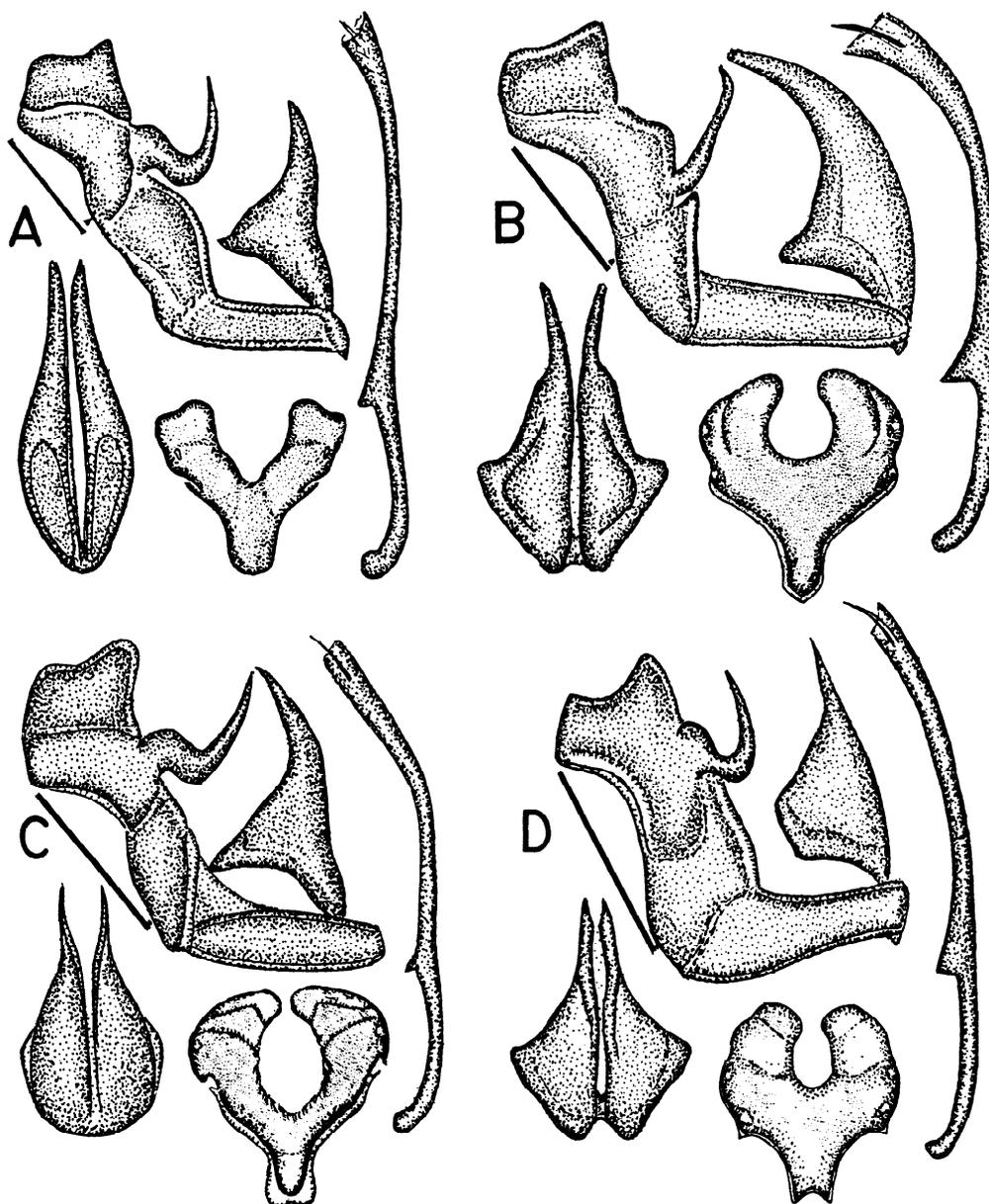


Figure 9. Male Tergal Morphology and Genitalia of *Femniterga, judae* Species Group (format as in Fig. 8). A. *F. judae*, allotype; B. *F. plumans* of Fig. 5C; C. *F. itaituba*, allotype; D. *F. cinniana* of Fig. 5G.

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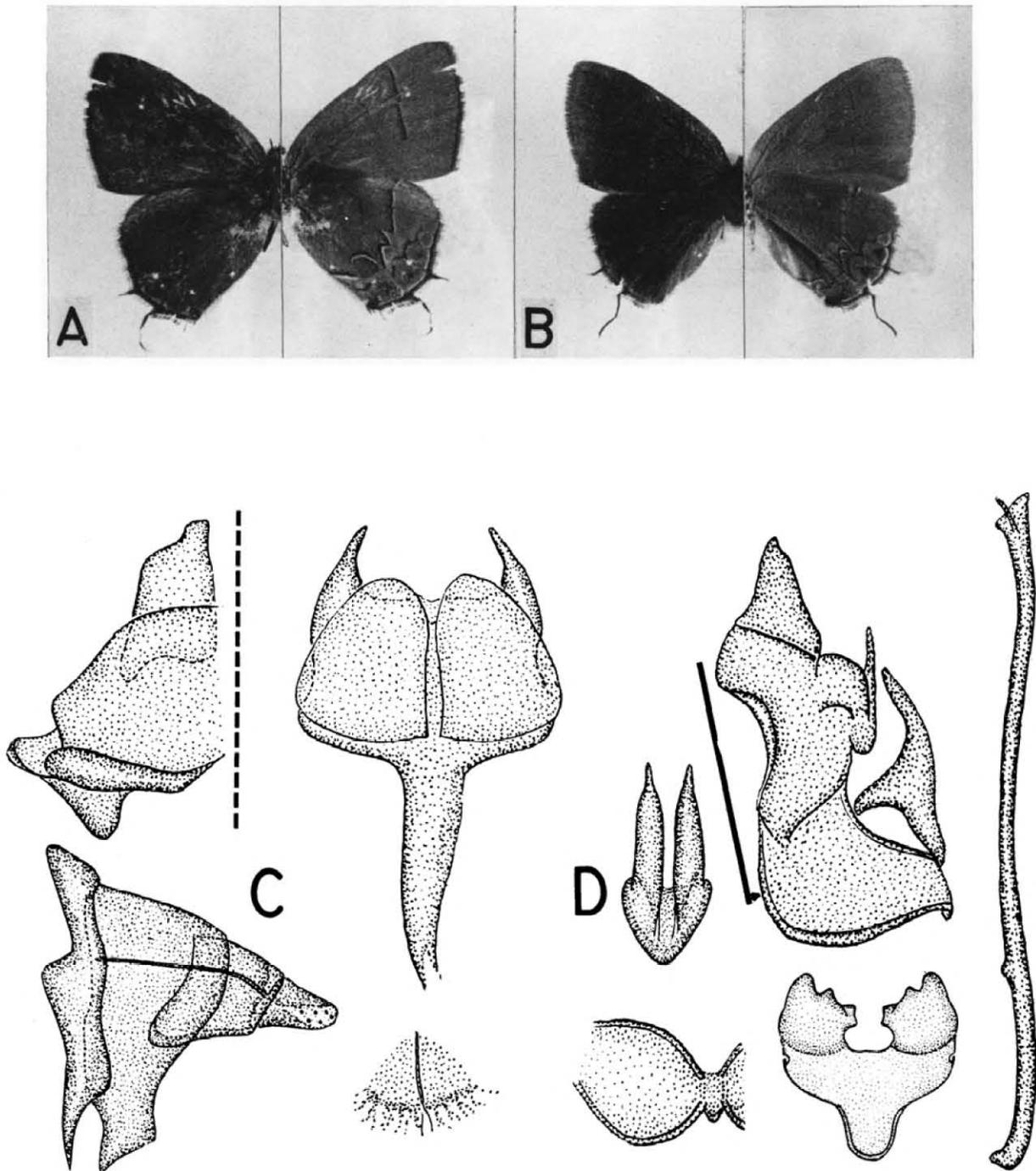


Figure 10. Adults and morphology of *Femniterga splendida* (addended in proof to *notacastanea* Group). A-B. Adults, (upper, left; under, right), holotype female, allotype male. C. Female morphology (format as in Fig. 6, etc.). D. Male morphology (format as in Fig. 8, etc.).

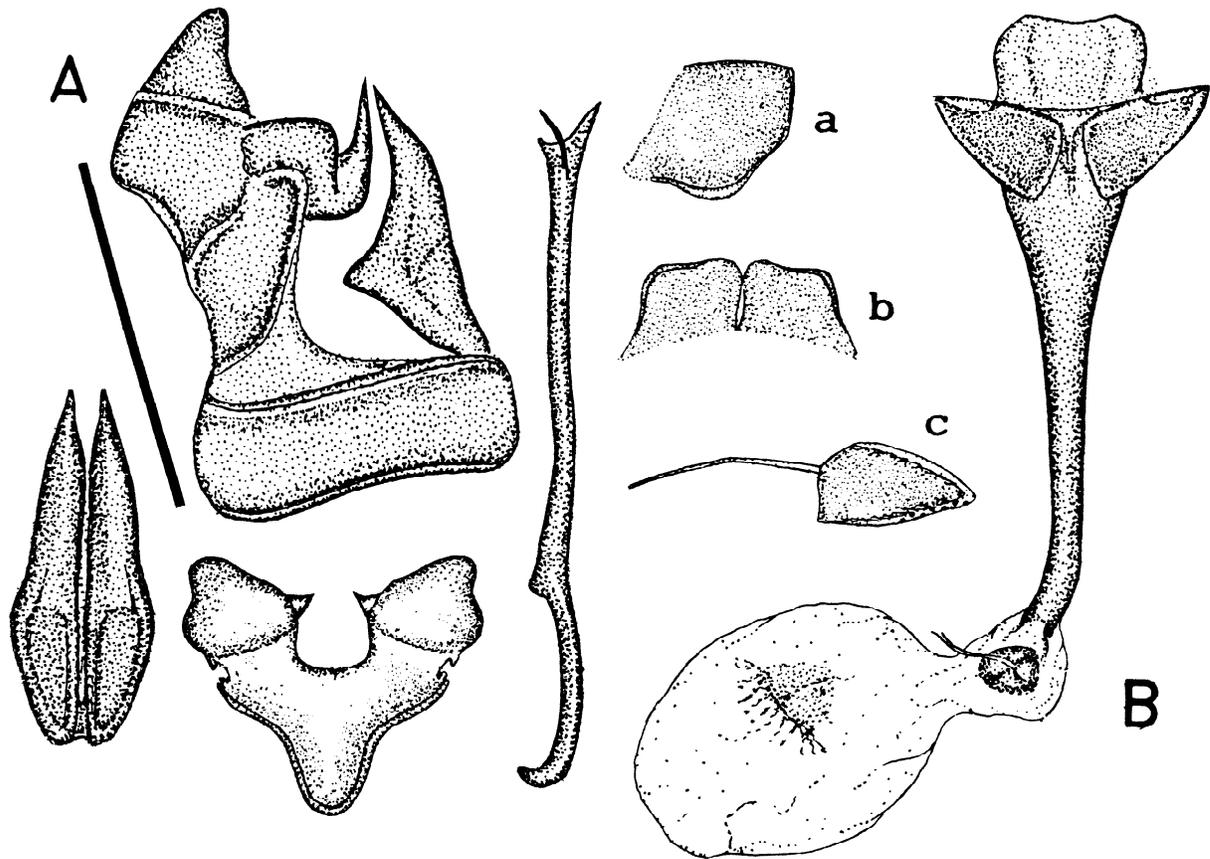


Figure 11. Tergal morphology and genitalia of an unnamed sympatric group of species of generic worth with brown males and blue females which could be confused by superficial characters with *Tergissima* and *Femniterga*. Format, male as in Figs. 8,9; female as noted below). A. male; B. female (upper left slanting right, ventral view genitalia; lower left, a. lateral view slight terminal *sipc*, b. dorsal view, same, c. lateral view, papillae anales).

Addendum

Prior to second proof of this paper, a specimen came to my attention representing an additional species of *Femniterga*. So it can be further recognized, I describe it briefly as follows: *Femniterga auria*, new species. **Diagnosis.** Female with wing upper surfaces brown except for light iridescent blue in hindwing cells above the caudal vein of discal cell and M3. Female *sipc* typical of the *judae*

Group but with prominent invaginated cephalo-dorsal and lateral margins. Female genitalia generally like *F. itaituba* and *F. judae* but with bilobate elements of superior plate produced to steep, conical, terminal points. **Holotype female** (FW 12.5mm), Iquitos, Peru, 2 October 1931, deposited in AMNH. The Latin name means "ear", referring to the pointed ear-like shape characterizing the female genitalia.