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NEW LANTERNFLIES (FULGOROIDEA) FROM  
SOUTH AMERICA

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DESCRIPTIONS are given herein of seven new species of Fulgoroidea in the cixiid genus *Pintalia* Stål, of a new genus and species in the otiocerine Derbidae, and of two new species of *Ateson* Metcalf (Achilidae). All the specimens mentioned, including the types, are in the United States National Museum.

Family CIXIIDAE

Genus PINTALIA Stål

*Pintalia* STÅL, Svenska Vet.-Akad. Handl., vol. 3, No. 6, p. 4, 1862. (Genotype, *P. lateralis* Stål, designated by Muir, Pan-Pacific Ent., vol. 1, pp. 103, 106, 1925.)

This rapidly expanding genus is very compact. The characters by which species may be distinguished include the shape of the carinae of the vertex and of the margins of the frons at its base, that of the anal segment of the male, of the pygofer, aedeagus, and genital styles, and the color pattern on the tegmina. The natural relationship of the included species cannot be assessed with precision until there is evidence to indicate the order of seniority of the variables used in their separation. On current evidence it would seem that the shape of the male anal segment and of the genital styles is slightly more stable than the other characters mentioned, and the writer tentatively groups as follows those species for which the relevant data are available:

Anal segment short, lateroapical lobes narrow, decurved through 130°, genital styles short, subangulate.....	<i>propria</i> group
Anal segment fairly short, not or scarcely deflexed distally, genital styles expanded and spatulate distally.....	<i>ecuadoriensis</i> group
Anal segment long, distally deflexed as far as, but not exceeding, 45°, genital styles long, narrow in ventral view.....	<i>albolineata</i> group
Anal segment asymmetrical, often twisted into a single vertical lamina distally, genital styles short.....	<i>obtorta</i> group
Anal segment as above, genital styles long.....	<i>infuscata</i> group
Anal segment distally deflexed as far as 45°, genital styles short, clublike.	<i>ornata</i> group
Anal segment shortly deflexed through 45°, styles short, angulate, pointed in ventral view.....	<i>huigrensis</i> group
Anal segment deflexed through 90° or slightly more, genital styles distally expanded, truncate or concave on apical margin.....	<i>bicaudata</i> group
Anal segment as above, very asymmetrical, genital styles rounded at apical margin.....	<i>vomerifera</i> group

The *propria* group includes only this species; the second group includes *ecuadoriensis* Muir and *quadrinaculata* (described below); *albolineata* Muir, by contrast, typifies a large group including *brunnivenosa* Muir, *latinotata* Muir, *longispinis* Muir, *quadrispinosa* Muir, *fuscomaculata* Muir, *blairmontensis* Muir, *tumatumariensis* Muir, *fuscipennis* Muir, *albomarginata* Muir, *obscurata* Muir, and two species, *marmorata* and *obliquivitta*, described below; the *obtorta* group, including *obtorta* Muir, *pulchella* Muir, and *fuscomarginata* Muir, would appear to be quite closely related to the *infuscata* group (*infuscata* Muir, *angustinotata* Muir, and *falcata* (described below)) if judged by the shape of the anal segment; *ornata* Muir is grouped with *altamazonica* Muir and *discrepans* Muir, *huigrensis* Muir is somewhat doubtfully associated with *furcata* Muir, while *bicaudata* Muir, *maculipennis* Muir, and *curvivitta* and *daedala* (both described below) form a fairly closely knit group; *vomerifera* (described below) is placed apart, though it shares characters with the preceding group and with the *obtorta* group, on the ground that the shape of the genital styles and the general structure of the aedeagus differ considerably from those of all the species so far considered.

PINTALIA QUADRIMACULATA, new species

PLATE 2, FIGURES 1, 7-10

*Male*.—Length, 4.0 mm.; tegmen, 5.9 mm.

Vertex with anterior margin and transverse carina straight, lateral margins of frons not thickened in basal portion.

Fuscous; genae, lateral fields of pronotum, sternum, and legs testaceous. Tegmina testaceous, posterior edge of costal cell, base of cell Sc, basal four-fifths of cell R, cell M, and the larger part of cells Cu<sub>1a</sub> and Cu<sub>1b</sub> deeply infusate, almost piceous, a white round spot at middle

of common stalk of  $M$ , a similar spot at fork of  $Cu_1$ , a third on  $Cu_{1a}$  and a fourth on  $Cu_{1b}$ , a hyaline area parallel to nodal line and just basad of it, a fuscous band overlying nodal line and a similar band of equal width and more clearly defined obliquely traversing apical cells across middle from apex of  $R$  to  $M_3$ , apical margin narrowly fuscous to  $M_3$  then broadly fuscous posteriorly but infuscate area interrupted by a large testaceous spot distad of apex of clavus.

Anal segment of male short, not deflexed; lateroapical angles only slightly prominent, very slightly produced ventrally. Pygofer broad with each lateral angle produced in a short narrow lobe, distally rounded. Aedeagus tubular, straight, with three spines arising at approximately same level at base of flagellum, the middle spine porrect, the other two strongly curved. Genital styles in profile angulate at middle with a pointed eminence on dorsal border, spatulate distally with greatest width two-thirds from base.

*Type*.—U.S.N.M. No. 57092.

Described from one male specimen taken at Tumupasa, Bolivia, by W. M. Mann (December 1921). The dark basal field of the tegmina and its ornamentation of four cretaceous spots readily distinguish this species.

**PINTALIA MARMORATA, new species**

PLATE 2, FIGURES 5, 20; PLATE 3, FIGURES 30-32

*Male*.—Length, 4.1 mm.; tegmen, 6.0 mm.

Vertex with anterior margin and transverse carina straight, lateral margins of frons very slightly thickened basally.

Testaceous; frons, genae, lateral fields of pronotum, and mesonotum fuscous. Tegmina ivory-hyaline, marbled dull brown in small irregular spots, with an irregular fascia across apical cells subparallel with apical margin; veins dull brown. Wings hyaline, veins fuscous.

Anal segment of male moderately long, deflexed through  $45^\circ$  distad of anal foramen but not much produced. Pygofer broad, lateral angles large, with dorsal margin slightly concave, ventral margin convex. Aedeagus long, tubular, slightly curved dorsad, with three unequal spines at base of flagellum, one being much longer than the other two, flagellum distally expanded, its dorsal margin continued in a slender curved spine, apex of flagellum somewhat pointed. Genital styles strongly angulate, with a broad-based, pointed eminence dorsally near angle, gradually expanded distally, apical margin obliquely truncate.

*Type*.—U.S.N.M. No. 57093.

Described from a single male specimen collected at light on deck in harbor, Puerta Bolívar, Ecuador, by M. Kisliuk and C. E. Cooley (April 9, 1932). This species is distinguished by the pattern on the tegmina and by the shape of the anal segment, pygofer, and genitalia.

## PINTALIA OBLIQUIVITTA, new species

PLATE 2, FIGURES 3, 16-19

*Male*.—Length, 4.0 mm.; tegmen, 6.0 mm.

Vertex with anterior margin and transverse carina straight, lateral margins of frons prominently raised but not thickened basally.

Fuscous; sternum testaceous, legs pale fuscous. Tegmina ivory-hyaline, a broad oblique band from base of stigma to apex of clavus, three transverse narrow bars in costal cell, the basal bar extended in a narrow broken fascia to claval suture, a suffusion along nodal line and two S-shaped areas in apical cells of R and M, a pale suffusion over distal part of apical cells, cell  $Cu_{1b}$  except for a round spot, and two broad bands between claval suture and first claval vein yellowish brown. Wings hyaline, veins testaceous.

Anal segment of male moderately long, distally deflexed through  $60^\circ$ , deflexed part not nearly so long as horizontal part. Pygofer broad, lateral angle about  $60^\circ$ . Aedeagus tubular, a spine one-third from base on left side directed ventrally and anteriorly, a second spine on left side at base of flagellum directed dorsally and caudad, a stout curved spine at middle of dorsal surface directed dorsally and caudad, a longer slender spine on right side at base of flagellum directed ventrally and anteriorly, flagellum with two minute adpressed spines on right side near middle, and a longer somewhat oblique spine at apex. Genital styles angulate near base, with a short broad spine dorsally near angle, distally narrow, slightly expanding caudad, rounded and setigerous at apex.

*Type*.—U.S.N.M. No. 57094.

Described from one male taken at Santo Domingo, southeastern Peru, labeled "collection Rosenberg." This species is distinguished by the genitalia and by the tegminal pattern.

## PINTALIA FALCATA, new species

PLATE 2, FIGURES 4, 22; PLATE 3, FIGURES 27-29

*Male*.—Length, 4.3 mm.; tegmen, 6.1 mm.

Vertex with anterior margin and transverse carina straight, lateral margins of frons not thickened basally.

Fuscous; tegmina ivory-hyaline, extreme base of tegmina, a broken fascia from costa to junction of claval veins, a second fascia from costa just basad of stigma to commissural margin distad of apex of clavus, nodal line, apex of each apical vein, and a band from third apical cell of M to middle of cell  $Cu_{1a}$  yellowish brown. Wings slightly infusate, veins dark.

Anal segment of male angulately deflexed beyond anal foramen, twisted into a horizontal lobe distally. Pygofer with lateral angles broadly rounded. Aedeagus tubular, a long straight spine on left



side at base of flagellum, a long curved spine on right side at same level, both directed anteriorly; flagellum with a curved tubular membranous lobe arising at middle and curving to left, a pair of broad unequal spines distally. Genital styles weakly angulate at middle, distal portion somewhat sinuately expanded, a row of minute denticles on inner border distally.

*Type and paratype*.—U.S.N.M. No. 57095.

Described from one male and one female collected in French Guiana by W. M. Schaus.

PINTALIA CURVIVITTA, new species

PLATE 2, FIGURES 2, 11-15

*Male*.—Length, 3.9 mm.; tegmen, 5.9 mm.

Vertex with anterior margin and transverse carina straight, lateral margins of frons not thickened basally.

Fuscous; sternum and legs testaceous. Tegmina ivory-hyaline, sparsely marked with yellowish brown on membrane, a broad approximately semicircular band of the same color widely enclosing stigma and reaching posteriorly to  $Cu_{1a}$ ; a band across apical cells of M, apex of  $Cu_{1b}$ , a spot distad of apex of clavus, and a suffusion at middle of claval suture yellowish brown. Wings hyaline, veins testaceous.

Anal segment of male deflexed through  $100^\circ$ , symmetrical, deflexed part almost as long as basal part. Pygofer with lateral angles produced into a short narrow lobe, markedly sinuate at apex. Aedeagus tubular, a short stout spine on dorsal surface one quarter from base, directed dorsally and anteriorly, a second spine of similar shape, though slenderer, dorsally at middle, and a third spine, curved dorsad and caudad, at base of flagellum, a short slender spine at middle on left side directed ventrad and forward, a longer sinuate spine subparallel to it at base of flagellum, flagellum devoid of ornamentation. Genital styles angulately bent at middle, expanded distally, apical margin very shallowly excavate.

*Type*.—U.S.N.M. No. 57096.

Described from a single male taken at Rurrenabaque, Bolivia, by W. M. Mann (November 1921). This species is distinguished by the shape of the anal segment, of the lateral angles of the pygofer and of the genitalia, and by the pattern on the tegmina.

PINTALIA DAEDALA, new species

PLATE 2, FIGURES 6, 21; PLATE 3, FIGURES 33-35

*Male*.—Length, 5.0 mm.; tegmen, 6.0 mm.

Vertex with anterior margin straight or slightly curved, transverse carina slightly arcuate on each side of middle line, lateral margins of frons thickened basally.

Anterior portion of vertex, basal three-quarters of frons, distal portion of clypeus, sides of clypeus and genae before eyes, pronotum medially, mesonotum, mesopleurites, and fore and middle legs piceous-brown; posterior portion of vertex, frons in apical quarter and clypeus at base, genae above eyes and around antennae, lateral fields of pronotum and basal half of procoxae ivory to pallid, hind legs and sternum pallid testaceous, abdomen dull fuscous. Tegmina hyaline, basal two-thirds of clavus yellowish, postcubital (first claval) vein dark in middle, a yellowish-brown fascia from two bars at middle of costal cell to commissural margin at level of union of claval veins, a very broad fuscous band transversely across tegmina, enclosing stigma anteriorly and of subequal width throughout, a narrow wedge-shaped band from apical veins of R to penultimate apical cell of M, apical margin expandingly fuscous from Rs, two opalescent-hyaline spots between stigma and apex of clavus between Rs and M and  $M_2$  and  $M_{3+4}$ , respectively, the veins at  $M_f$ , M-Cu, and Cu distad of apex of clavus yellow. Wings smoky, veins testaceous.

Anal segment of male deflexed distally through  $80^\circ$ , deflexed portion fully as long as basal, in profile slightly dilated distally, a semi-circular excavation on apical margin at middle. Pygofer with lateral angles shortly produced in a small rounded lobe. Aedeagus tubular, a short, broad-based horizontal spine at middle on right side, and a slenderer spine directed caudad at same level on left side, two long spines at base of flagellum on left side, one curved dorsad, the other sinuately ventrocaudad, flagellum tubular, somewhat tumid at base.

*Type*.—U.S.N.M. No. 57097.

Described from one male taken near Baños, Ecuador, by S. W. Frost (February 20, 1937). This species is distinguished by the shape of the anal segment of the male and of the genitalia and by the pattern on the tegmina.

PINTALIA VOMERIFERA, new species

PLATE 3, FIGURES 36-38

*Male*.—Length, 4.7 mm.; tegmen, 5.5 mm.

Vertex with apical margin and transverse carina straight, lateral margins of frons not thickened basally.

Testaceous-fuscous; tegmina ivory-hyaline, three brown spots in costal cell, the basal spot extending in a broken fascia faintly across to junction of claval veins, a brown spot over R-M and M-Cu, membrane slightly and unevenly suffused fuscous, vein  $Cu_{1b}$  pallid, a pale spot in middle of cell  $Cu_{1a}$ . Wings very slightly smoky, veins testaceous.

Anal segment of male deflexed distally through  $95^\circ$ , right side dilated, apical margin very oblique, making apex acutely pointed. Pygofer with lateral angles not produced, or, if so, very obtusely.

Aedeagus tubular, a stout spine in middle line ventrally curved posteriorly, a deep median keellike lobe ventrally in distal half, a long bladellike process arising at base of flagellum on right directed ventrally and forward, two unequal spines at base of flagellum on distal side directed dorsally, flagellum with two scroll-like folds. Genital styles weakly angulate at middle, much dilated distally, outer margins strongly convex, inner margin straight or nearly so.

*Type*.—U.S.N.M. No. 57098.

Described from one male taken at Baños, Ecuador, by S. W. Frost (February 29, 1937). This species is distinguished by the shape of the anal segment and of the genitalia and by the pattern on the tegmina.

## Family DERBIDAE

### Tribe OTIOCERINI

#### IQUITOSA, new genus

Vertex longer than wide across base (3:1), disk deeply sunken, lateral margins thickened and pustulate distally, approximated at apex, posterior margin concave; frons linear, clypeus medially carinate; head compressed, in profile produced obliquely upward and anteriorly in an acute angle, almost pointed at tip; antennae subequal to length of head, first joint about as broad as long, second joint flattened, with sides straight, expanding distally, apical margin asymmetrically excavate, a single short vermiform appendage attached at base. Pronotum very short, anterior margin angularly convex, posterior margin still more acutely concave, lateral fields broad, quadrate, median carina present, and a carina on each side between eye and tegula; mesonotum convex, depressed in posterior third, median carina feeble, lateral carinae obsolete except for two flangelike vertical eminences in middle; tegulae relatively large. Tegmina with sides expanding distally, apical margin oblique, costal margin sinuate, with a prominent recurved rounded eminence near base, vein M leaving Sc+R one-seventh from base, Sc+R forking two-sevenths from base, M with five branches reaching apical line of transverse veins, clavus narrowly open, but common claval vein not passing beyond its apex. Wings four-fifths as long as tegmina.

Genotype, *Iquitosa shannoni*, new species.

#### IQUITOSA SHANNONI, new species

PLATE 2, FIGURES 23-26; PLATE 3, FIGURES 39-41

*Male*.—Length, 3.2 mm.; tegmen, 5.0 mm.

Head, pronotum except margins, mesonotum except carina, a patch on each lateral field, and posterior margin brown; median carina of mesonotum and margins of pronotum and mesonotum, sternites, and



legs testaceous to stramineous, except for a narrow fuscous band at apex of profemora and a similar band in middle of protibiae. Tegmina mostly piceous, a dull testaceous spot on each side of piceous costal eminence, apical cells from node to  $M_3$  and intervening veins dull yellow with two fuscous interruptions, middle portion of subapical veins paler than corium, veins of corium chiefly red, basally infusate and interrupted with dull yellow spots. Wings smoky, veins concolorous, margin red.

Anal segment narrow, lateral apical angles slightly deflexed. Aedeagus tubular in basal half, with a minute bicuspidate process near base of flagellum, two stout spines at base of flagellum, one on right side, the other distally, both directed dorsally, a transparent spine on flagellum at middle, apex of flagellum lobate with a large spine below it on left; two small spines on right. Genital styles narrow, membranous dorsally distad of middle, with a scroll-like process in middle of dorsal margin.

*Type*.—U.S.N.M. No. 57099.

Described from one male collected at Iquitos, Peru, by R. C. Shannon (March 1931). The basal reflection of the costal margin recalls the similar modification found in *Sayiana* Ball, but *Iquitosa* differs from Ball's type, with which it has been compared, in the more pointed head, the shape of the antennae, and the shape and venation of the tegmina.

## Family ACHILIDAE

### Subfamily APATESONINAE

#### Genus ATESON Metcalf

*Ateson* METCALF, Bull. Mus. Comp. Zool., vol. 82, No. 5, pp. 367, 369, 1938. (Genotype, *A. marmoratum* Metcalf, *loc. cit.*, p. 369.)

#### ATESON SEMILUTEUM, new species

#### PLATE 3, FIGURES 42-47

*Male*.—Length, 5.5 mm.; tegmen, 8.0 mm.

Frons with lateral margins ampliate and raised between level of antennae and suture, median carina terminating distally against a transverse ridge, median carina of clypeus distinct except at base.

Testaceous; abdominal sclerites infusate. Tegmina yellowish, fuscous at base and chiefly so distad of nodal line, with a pale area in the subapical cells of  $M$  and  $Cu_{1a}$ , transverse veins mostly pale. Wings hyaline at base, smoky near apical margin, veins fuscous.

Anal segment of male short. Pygofer with lateral angles scarcely produced, pointed, slightly falcate, medioventral process twice as broad as long, distally shallowly trilobed, the middle lobe largest.



Aedeagus tubular, slightly tapering distally, periandrium recurved dorsally at apex into a sinuate spine, penis when everted with two curved spines directed ventrally and two straight spines porrect caudad. Genital styles distally expanded, in profile with apical margin sinuately oblique, dorsal margin sinuately horizontal, folding inward with a short pointed lobe.

*Type*.—U.S.N.M. No. 57100.

Described from one male taken at Pará, Brazil, by P. R. Uhler (coll. No. 132). This species is distinguished by the carination of the frons and by the pattern on the tegmina, as well as by the shape of the genitalia.

ATESON LUTEOSPERSUM, new species

PLATE 3, FIGURES 48, 49

*Female*.—Length, 7.0 mm.; tegmen, 8.5 mm.

Lateral margins of frons not much raised above level of disk, disk of vertex scarcely depressed, margins scarcely raised.

Vertex, frons, clypeus, pronotum, and mesonotum fuscous, heavily speckled with yellow spots, genae testaceous, sternum and legs fuscous. Tegmina fuscous, heavily marbled and spotted with yellow on membrane, a small patch basad of stigma and over junction of claval veins yellow, corium wholly fuscous, veins spotted with yellow. Wings smoky, veins fuscous.

Ovipositor with first valvulae bearing two teeth dorsally near apex and a curved apical spine; apex of second valvulae rounded in profile. Genital chamber (bursa copulatrix) with three pairs of sclerotized plates, each of the posterior pair, in dorsal view, elongate-quadrate, each of the middle pair larger, curved and triangular, each of the third (dorsal) pair small, narrow, sinuately tapering as shown in figure.

*Type*.—U.S.N.M. No. 57101.

Described from one female taken at Cabima, Panama, by A. Busck (May 28, 1911). This species is distinguished by the weak carination of the frons and vertex, by the shape of the second valvulae of the ovipositor and of the sclerites of the genital chamber, and by the distribution of the yellow spots on the tegmina.

ATESON MARMORATUM Metcalf

PLATE 3, FIGURES 50-54

*Ateson marmoratum* METCALF, Bull. Mus. Comp. Zool., vol. 82, No. 5, p. 369, 1938.

For comparison with the preceding species figures are given of the male genitalia of a paratype specimen and of the distinctive portions of the female genitalia.

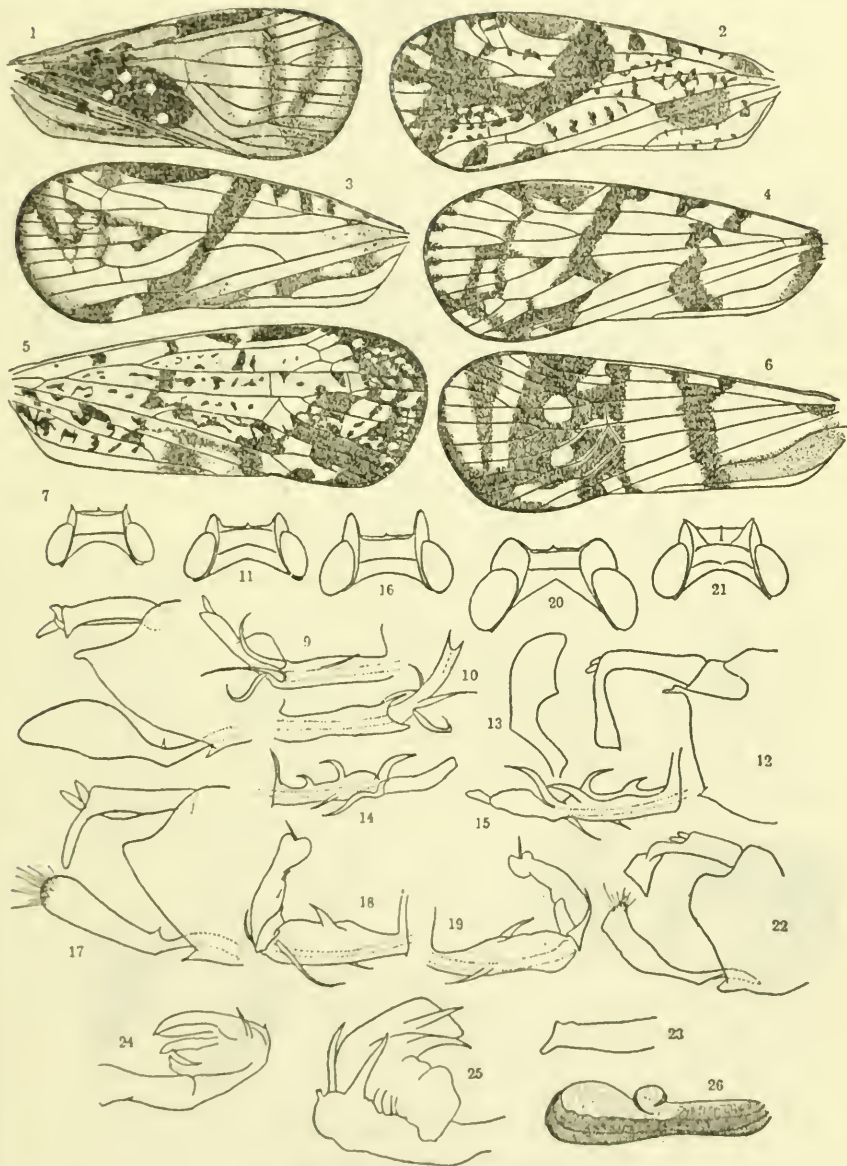
## EXPLANATION OF PLATES

### PLATE 2

- 1, 7-10, *Pintalia quadrimaculata*, new species: 1, Tegmen; 7, vertex; 8, anal segment, pygofer, and right genital style; 9, aedeagus, right side; 10, aedeagus, left side.
- 2, 11-15, *Pintalia curviovitta*, new species: 2, Tegmen; 11, vertex; 12, anal segment and pygofer; 13, right genital style; 14, aedeagus, left side; 15, aedeagus, right side.
- 3, 16-19, *Pintalia obliquivitta*, new species: 3, Tegmen; 16, vertex; 17, anal segment, pygofer, and right genital style; 18, aedeagus, right side; 19, aedeagus, left side.
- 4, 22, *Pintalia falcata*, new species: 4, Tegmen; 22, anal segment, pygofer, and right genital style.
- 5, 20, *Pintalia marmorata*, new species: 5, Tegmen; 20, vertex.
- 6, 21, *Pintalia daedala*, new species: 6, Tegmen; 21, vertex.
- 23-26, *Iquitosa shannoni*, new genus and species: 23, Anal segment, side view; 24, aedeagus, left side; 25, aedeagus, right side; 26, right genital style, side view.

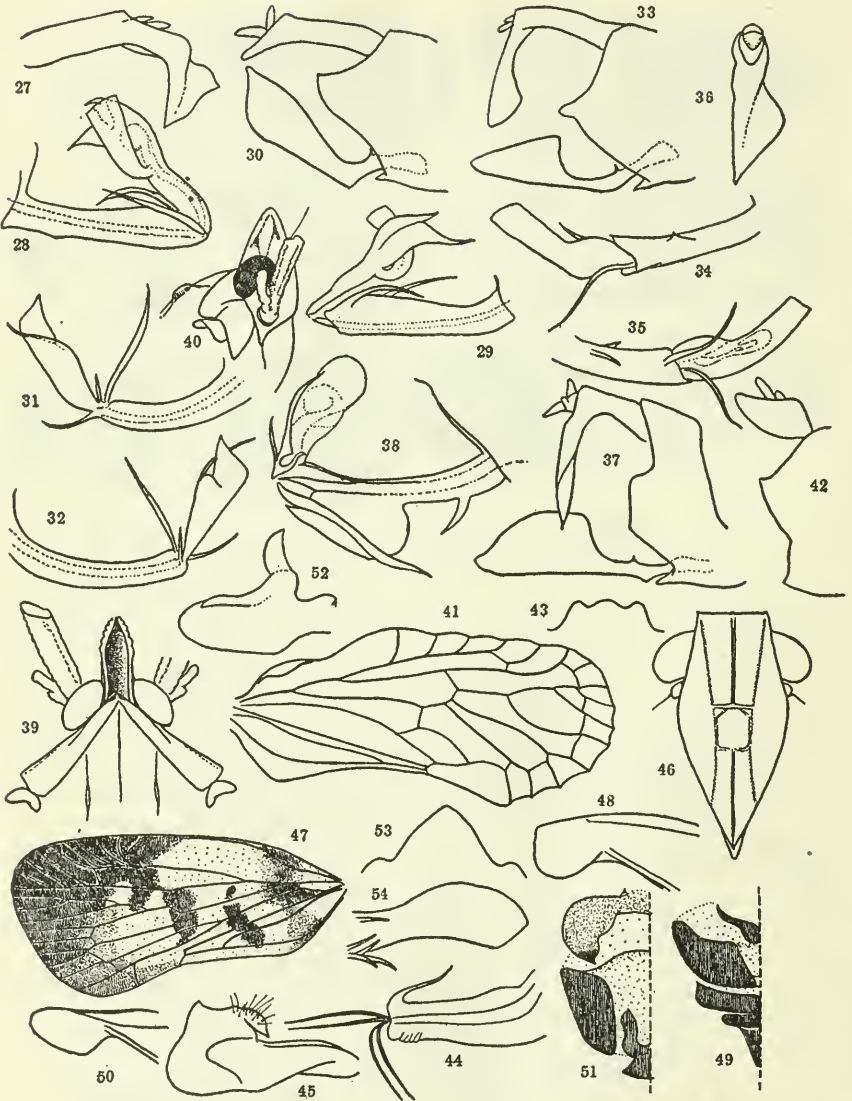
### PLATE 3

- 27-29, *Pintalia falcata*, new species: 27, Anal segment, left side; 28, aedeagus, left side; 29, aedeagus, right side.
- 30-32, *Pintalia marmorata*, new species: 30, Anal segment, pygofer, and right genital style; 31, aedeagus, right side; 32, aedeagus, left side.
- 33-35, *Pintalia daedala*, new species: 33, Anal segment, pygofer, and right genital style; 34, aedeagus, right side; 35, aedeagus, left side.
- 36-38, *Pintalia vomerifera*, new species: 36, Anal segment, posterior view; 37, anal segment, pygofer, and left genital style; 38, aedeagus, right side.
- 39-41, *Iquitosa shannoni*, new genus and species: 39, Head and pronotum (right antenna incomplete); 40, head in profile; 41, tegmen.
- 42-47, *Ateson semiluteum*, new species: 42, Anal segment and pygofer; 43, medioventral process of pygofer; 44, aedeagus (everted), right side; 45, right genital style; 46, head, frontal view; 47, tegmen.
- 48, 49, *Ateson luteopersum*, new species: 48, Right second valvula of ovipositor; 49, sclerotization of genital chamber.
- 50-54, *Ateson marmoratum* Metcalf: 50, Right second valvula of ovipositor; 51, sclerotization of genital chamber; 52, right genital style, ventrolateral view; 53, medioventral process of pygofer; 54, aedeagus (retracted), left side.



NEW SOUTH AMERICAN FULGOROIDEA.

For explanation see page 104.



SOUTH AMERICAN FULGOROIDEA.

For explanation see page 104.