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**STUDIES OF THE GYPONINAE: RHOGOSANA
AND FOUR NEW GENERA, CLINONELLA,
TUBERANA, FLEXANA, AND DECLIVARA¹**

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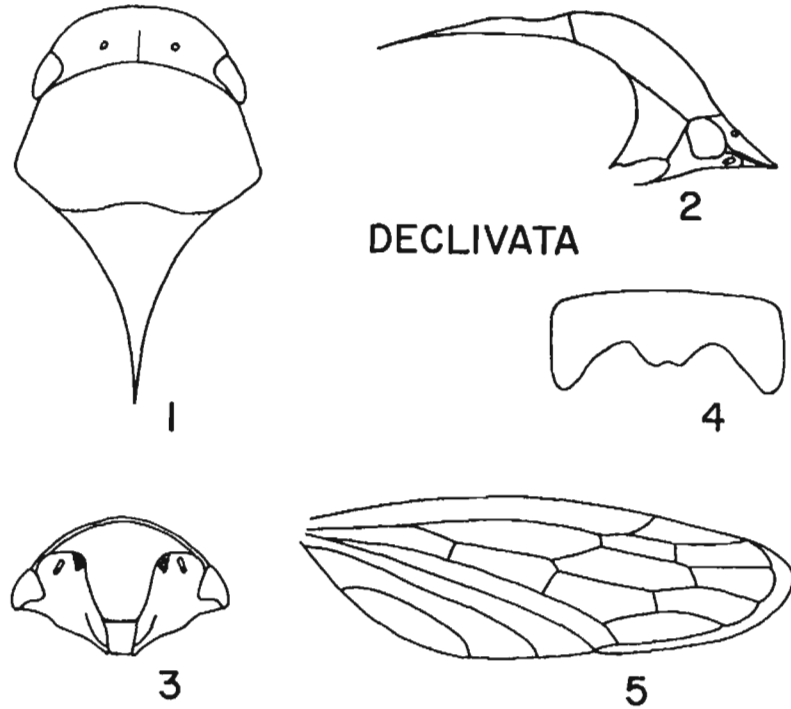
ABSTRACT

Four small South American genera of large gyponine leaf hoppers are described as new. Also treated is *Rhogosana* Osborn with one species, *rugulosa* Osborn. New are **Clinonella** with one species, *declivata* (Osborn) (type species); **Tuberana** with two new species, *cliva* and *tubera* (type species); **Flexana** with one new species *spinosa* (type species); and **Declivara** with one new species *ornamenta* (type species).

The five small South American genera of larger Gyponinae leaf-hoppers treated or described here are allied either to *Gypona*, to *Clinonaria*, or to *Prairiana*, and should be considered primitive forms. These are all isolated genera and can be easily separated from one another and from other members of the subfamily by external morphological features as well as male genital structures. A key to separate all genera of this subfamily will follow in a later publication.

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FIGS. 1-5. *Clinonella declivata* (Osborn). 1. Dorsal view of head, pronotum, and scutellum. 2. Lateral view of head, pronotum, and scutellum. 3. Face view of head (only first segment of antennae shown). 4. Ventral view of female seventh sternum. 5. Forewing.

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Genus *Clinonella* n. gen.

Pronotum bent sharply at scutellum, angled ventrally, sloping steeply to depressed head, head a continuation of angled pronotum. Head produced and broadly rounded, twice as wide between eyes at base as

median length. Pronotum more than twice as long as head. Crown with margin thin, foliaceous, deeply excavated beneath on face; antennal pits deeply excavated. Ocelli closer to proximal eye than to each other. Body broadest at pronotal humeral angles, tapered caudally, narrowed apically.

Type species: *Clinonana declivata* Osborn.

Clinonella declivata (Osborn), new combination
(Figs. 1-5)

Clinonana declivata Osborn, 1938: 14.

Length of female 15 mm. Head and pronotum strongly declivous, head produced and broadly rounded, twice as wide between eyes at base as median length. Color of head, pronotum, and scutellum in female usually dull yellow, forewings pale brown, veins darker brown.

Female genitalia with lateral angles of seventh sternum produced and narrowly rounded to posterior margin, posterior margin deeply excavated half way to base on each side of a median lobe. Median lobe produced half way to apex of lateral angles, about one-third width of segment, with a rather deep, v-shaped notch at apex.

This species was originally described from a single female holotype from Prov. del Sara, Bolivia, in the Carnegie Museum collections. Two other female specimens appearing to be this same species, but darker colored, are from Rio Santiago, Peru, and Iberia Madre de Dios, Peru, in the American Museum of Natural History collections. No males of this species are known. This genus is closely related to *Gypona* in the genital and external features.

This species was described in the genus *Clinonana* by Osborn in 1938, together with the type species of the genus, *C. magna*. *C. magna* was later found to belong to the subfamily Ledrinae, and the genus *Clinonana* was transferred to that subfamily by Kramer (1966). The genus *Clinonella* is being proposed for *C. declivata*, which is a distinct gyponine.

Genus *Rhogosana* Osborn

Rhogosana Osborn, 1938: 14.

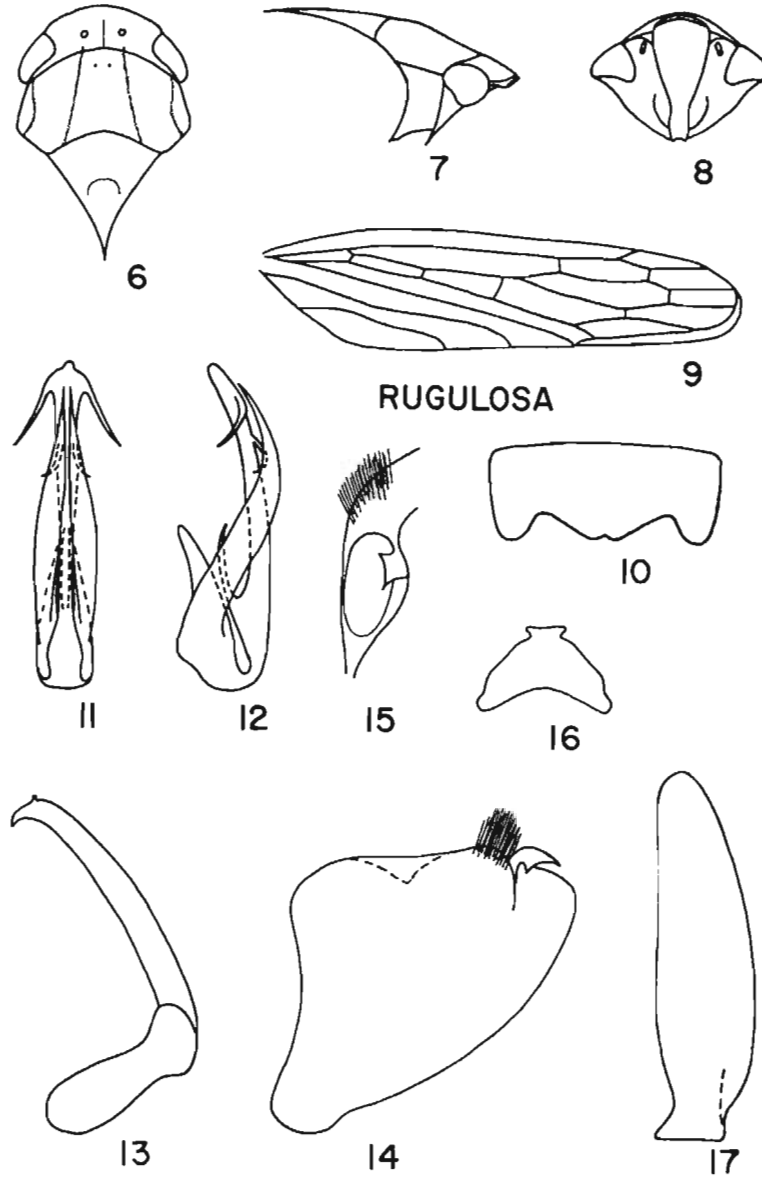
Head broadly roundedly produced, exceeded in width by lateral angles of pronotum. Ocelli slightly closer to eyes than to each other. Crown excavated at middle and laterad from each ocellus. Margin thin, excavated beneath at middle, frontal sutures distinct and complete across median area. Forewings elongate, appearing narrow.

Type species: *Rhogosana rugulosa* Osborn.

Rhogosana rugulosa Osborn
(Figs. 6-17)

Rhogosana rugulosa Osborn, 1938: 15.

Length of male 15 mm, of female 16 to 18 mm. Crown roundedly produced, more than twice as wide as median length; more depressed in



FIGS. 6-17. *Rhogosana rugulosa* Osborn. 6. Dorsal view of head, pronotum, and scutellum. 7. Lateral view of head, pronotum, and scutellum. 8. Face view of head. 9. Forewing. 10. Ventral view of female seventh sternum. 11. Ventral view of aedeagus. 12. Lateral view of aedeagus. 13. Lateral view of style. 14. Lateral view of pygofer. 15. Distal view of pygofer apex. 16. Ventral view of connective. 17. Ventral view of plate.

female than in male. Tegmina rugose. Color variable in intensity. In well marked specimens with four longitudinal black stripes extending length of pronotum. Lateral pair close to margin and terminate behind each eye. Median pair extending onto basal portion of crown and terminate behind each red ocellus. Five irregular darker markings above margin. Front dark brown or black beneath margin, clypellus usually brown. Tegmina pale brown with darker brown or black mottling. Veins usually darker brown, claval area usually yellow or paler brown.

Female genitalia with lateral angles of seventh sternum produced and rounded, strongly excavated each side of a broad median triangular lobe, lobe almost as long as lateral angles and slightly notched at middle.

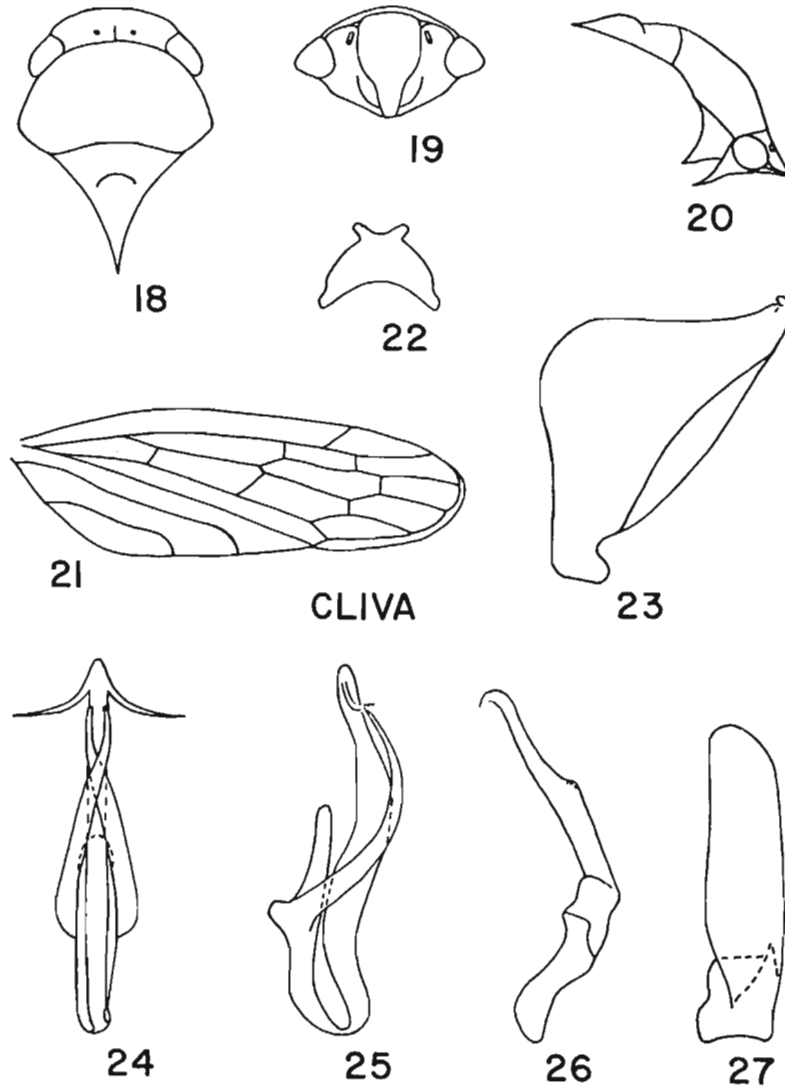
Male genitalia with plates elongate, rounded at apices. Style long, slender, curved gently dorsad and narrowed just before footlike apex, apex with a pointed curved toe extending dorsad and a tiny protruding heel on ventral margin. Aedeagus U-shaped with a pair of processes arising dorsally at base and extending on each side of shaft at middle to ventral margin where they are proximal, tapering to long pointed apices extending almost to apex of shaft. Shaft long, broadened on apical half; bearing three pairs of processes, a pair of stout short lateral processes arising just before broad bluntly angled apex, a pair of shorter lateral processes arising at about four-fifths length of shaft, and a dorsal pair arising near base. Pygofer notched posteriorly, with a thick tuft of hair on dorsal caudal angle and a short stout ventrally curved spine arising at middle of notch.

This species was originally described from a single female from French Guiana in the Carnegie Museum collection, which is at hand. The allotype male, described above, is from British Guiana [Kutari sources, Jan.-Feb. 1936 (G. A. Hudson) B. M. 1936-360] and is in the British Museum of Natural History collections along with another male from the same locality. Two other female specimens were examined, one from Guyane in the collection of North Carolina State University and the other from British Guiana in the American Museum of Natural History collections. This genus is closely related to *Prairiana* in the genitalic and external features.

Genus **Tuberana** n. gen.

Pronotum and head strongly declivous at anterior of scutellum, convexly rounded. Head broadly rounded, crown more than twice as wide between eyes at base as median length. Ocelli same distance from each other as either is from proximal eye. Margin of crown thin, foliaceous, antennal pits deeply excavated. Frontal suture complete and distinct. Scutellum with a prominent tubercle at middle. Forewing with normal venation.

This genus, like *Rhogosana*, is closely related to *Prairiana*. The members of both genera are much larger than typical members of



FIGS. 18-27. *Tuberana cliva* n. sp. 18. Dorsal view of head, pronotum, and scutellum. 19. Face view of head. 20. Lateral view of head, pronotum, and scutellum. 21. Forewing. 22. Ventral view of connective. 23. Lateral view of pygofer. 24. Ventral view of aedeagus. 25. Lateral view of aedeagus. 26. Lateral view of style. 27. Ventral view of plate.

Prairiana, and this genus has the unusual prominent tubercle on the scutellum.

Type species: *Tuberana tubera* n. sp.

Tuberana cliva n. sp.

(Figs. 18-27)

Length of male 14 mm. Female unknown. Head and pronotum strongly declivous. Crown produced, broadly rounded, twice as wide between eyes at base as median length, margin thin, foliaceous. Scutellum with a rounded elevated tubercle on median apical two-thirds. Color generally yellow with darker markings. Crown with a dark brown longitudinal stripe each side of median suture, a dark brown spot at base each side half way between eye and median line. Pronotum with dark brown markings indicating longitudinal brown stripes merging on apical half. Forewings mottled with yellow and brown, veins varying from yellow to brown.

Male genitalia with elongate plates three times as long as wide, apices rounded. Style long, narrow, with a rounded protrusion on ventral margin near middle, beyond which apical half more slender, curved ventrally then dorsally at apex forming a slightly enlarged, dorsally curved, bluntly pointed tip. Aedeagus with shaft appearing broad in lateral view. In ventral view, shaft long and slender with a pair of stout lateral processes arising at apex, curving basad then laterad, about one-fourth length of shaft. A pair of basodorsal processes extending along shaft, curving to ventral side, tapering to narrow apices, and extending almost to apex of shaft. Pygofer bluntly pointed at apex.

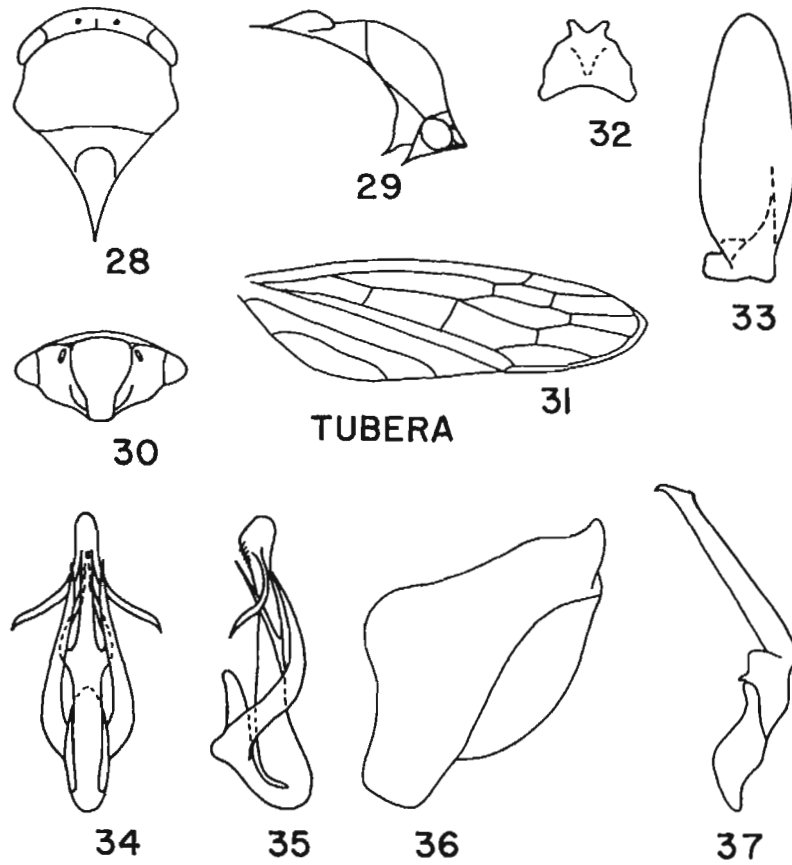
Holotype, male, Rio Santiago, Peru, IX-7-30 (F-6139) in the American Museum of Natural History collections.

Tuberana tubera n. sp.

(Figs. 28-37)

Length of male 13 mm. Female unknown. Head and pronotum strongly declivous, median portion of pronotum strongly convexly rounded, crown broadly rounded, only slightly produced at middle, almost three times as broad between eyes at base as median length. Margin thin. Scutellum with an elevated, rounded tubercle on median posterior two-thirds. Color yellow with dark brown markings; crown and pronotum mottled with brown, scutellum with a brown spot in each basal angle, and a large spot, interrupted at middle, on tubercle. Forewings brownish hyaline, veins darker brown. Face yellowish, a black spot just beneath margin.

Male genitalia with plates three times as long as broad, apices bluntly pointed. Style long, slender, tapered from bent portion one-third distance from base to near apex, apex slightly bent and foot-shaped with "toe" extending dorsocaudally, bluntly pointed, and "heel" protruding



FIGS. 28-37. *Tuberana tubera* n. sp. 28. Dorsal view of head, pronotum, and scutellum. 29. Lateral view of head, pronotum, and scutellum. 30. Face view of head. 31. Forewing. 32. Ventral view of connective. 33. Ventral view of plate. 34. Ventral view of aedeagus. 35. Lateral view of aedeagus. 36. Lateral view of pygofer. 37. Lateral view of style.

ventrally before apex. Aedeagus with shaft appearing broad in lateral view. In ventral view, shaft tapered from base to apex; apex with a pair of long stout processes extending caudally and laterally and one-half length of shaft; another pair of long processes arising from ventral margin of shaft at about one-third its length and extending dorsally and apically. A pair of aedeagal processes arising from dorsal basal portion and extending almost to apex, tapering to narrow pointed apices. Pygofer bluntly angled caudally.

Holotype, male, Tingo Maria, Huan., Peru, October 8, 1946, 2,200 ft, (J. C. Pallister) (Donor Frank Johnson) in the American Museum of Natural History collections. Paratype male: Chauchamayo, Peru, (W. F. H. Rosenberg) in the U. S. National Museum collection.

Genus **Flexana** n. gen.

Pronotum and head strongly declivous from anterior margin of scutellum, margin of head blunt, thick; face not excavated except antennal pits. Ocelli closer to proximal eye than to each other. Frontal sutures not distinct. Lateral margins of pronotum spinose. Scutellum with small tubercle. Forewings without first discal crossvein, with extra distal veins along costa.

This genus resembles *Clinonaria* in the overall size and shape of specimens, and resembles *Prairiana* in the type of male genitalia. It differs from both in the very unusual spinose lateral extensions of the pronotum.

Type species: *Flexana spinosa* n. sp.

Flexana spinosa n. sp.

(Figs. 38-47)

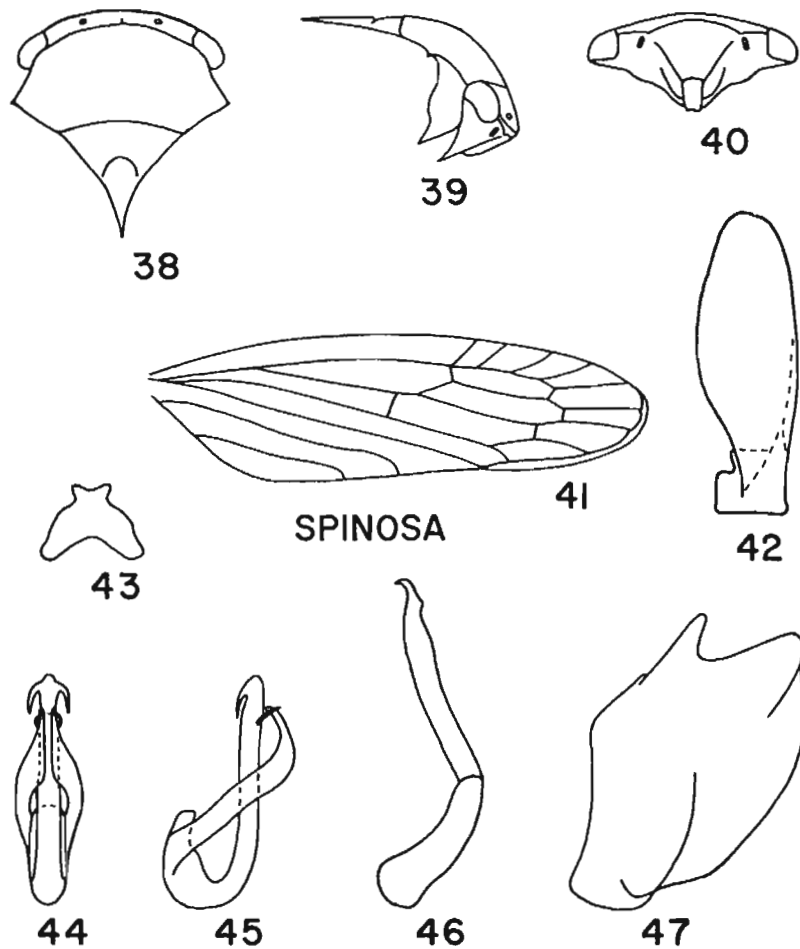
Length of male 13.5 mm. Female unknown. Crown more than six times as wide between eyes at base as median length. Lateral margins of pronotum with pointed projections. Color pale brown, crown with a median line, spots on base (one next each eye, and one behind each ocellus), black. Pronotum with red lateral spinose projections, a black marginal spot just back of each, and irregular black markings on anterior portions of pronotum. Scutellum with basal angles, a pair of small round spots at middle, and a spot on tubercle, black. Forewings gray, veins pale brown, costal area, apical, antepical and discal cells, with dark brown, elongate spots.

Male genitalia with plates almost three times as long as wide, apices rounded. Style with blade slightly enlarged on ventral margin, just before apex, then concavely curved on dorsal margin to form a narrow, upturned, sharp-pointed apex. Aedeagal shaft with a pair of short, subapical, lateral spines bent basad; lateral processes arising near apex of basodorsal portion of recurved shaft, crossing shaft at half length of shaft, bending caudad, terminating subapically; apices narrowed. Pygofer with a prominent finger-like dorsal projection.

Holotype, male, Rio Santiago, Peru, XI-29-24, F617, C. H. Bassler Collection, Acc. 33591, in the American Museum of Natural History collections.

Genus **Declivara** n. gen.

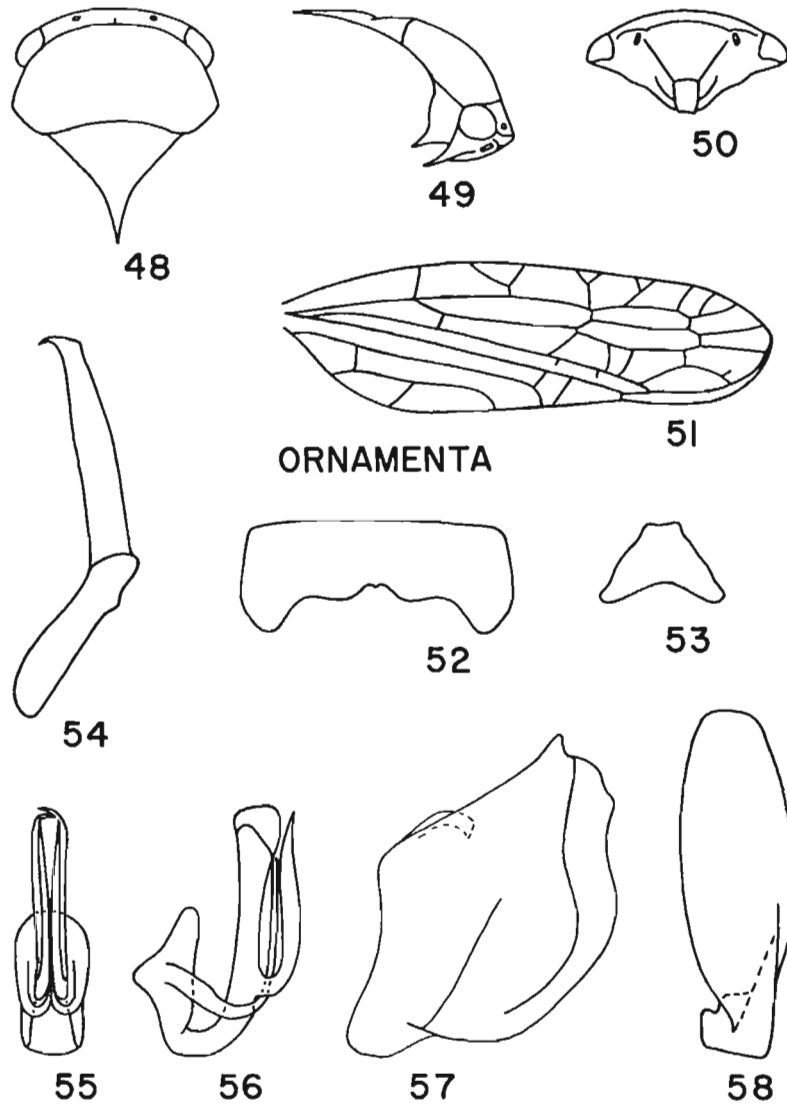
Pronotum and head strongly declivous, margin of head blunt, face not excavated beneath crown. Ocelli closer to proximal eye than to each



FIGS. 38-47. *Flexana spinosa* n. sp. 38. Dorsal view of head, pronotum, and scutellum. 39. Lateral view of head, pronotum, and scutellum. 40. Face view of head. 41. Forewing. 42. Ventral view of plate. 43. Ventral view of connective. 44. Ventral view of aedeagus. 45. Lateral view of pygofer. 46. Lateral view of style. 47. Lateral view of pygofer.

other. Frontal sutures not distinct. Pronotal margins normal. Scutellum slightly raised posteriorly, without tubercle. Forewing with several branched veins along costa, and extra crossveins, especially on clavus.

This genus, like *Flexana*, fits somewhere between *Clinonaria* and



FIGS. 48-58. *Declivara ornamenta* n. sp. 48. Dorsal view of head, pronotum, and scutellum. 49. Lateral view of head, pronotum, and scutellum. 50. Face view of head. 51. Forewing. 52. Ventral view of female seventh sternum. 53. Ventral view of connective. 54. Lateral view of style. 55. Ventral view of aedeagus. 56. Lateral view of aedeagus. 57. Lateral view of pygofer. 58. Ventral view of plate.

Prairiana. The very unusual forewing venation, with many extra branches, however, will separate this genus.

Type species: *Declivara ornamenta* n. sp.

Declivara ornamenta n. sp.

(Figs. 48-58)

Length of male 14 mm, of female 17 mm. Crown more than three times as wide between eyes at base as median length. Color pale brown; crown with median longitudinal line, a diagonal line from base to ocellus, each side, and margin of crown, black. Pronotum with many punctate spots and irregular markings on anterior portion, black. Scutellum with three short, longitudinal stripes terminating in a transverse band before middle, black. Forewings pale brown, veins black, broadly black on costa.

Male genitalia with plates more than three times as long as broad, apices rounded. Style broad at base of blade, narrowed on apical fourth, bent dorsally at apex with an upwardly curved, narrow, pointed tip. Aedeagal shaft stout, apex enlarged, broadly rounded: with two pairs of processes, a pair of long, slender, bladelike structures arising on ventral margin of shaft at one-third its length and extending to apex of shaft, and a pair of basolateral processes arising near apex of recurved portion of shaft, extending across shaft to ventral margin, then along shaft to near its apex. Pygofer with a short, spurlike spine on dorsal margin near base.

Female genitalia with lateral angles of seventh sternum produced, rounded, posterior margin of seventh sternum broadly, deeply excavated more than one-third distance to base, with a median broad V-shaped notch.

Holotype, male, "St. Paola, Coll. Signoret." Female allotype: "Minas, Coll. Signoret." Paratypes: 2 ♂, "XI-31. GOYAZ (Vianopolis) coll. R. Spitz." Holotype and allotype in the Vienna Museum. Paratypes in the collection of the Departamento Zoologia, Sao Paulo, Brazil, and the Delong collection (O. S. U.).

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