

**NEW WORLD LEAFHOPPERS OF THE SUBFAMILY  
AGALLIINAE: A KEY TO GENERA WITH  
RECORDS AND DESCRIPTIONS  
OF SPECIES  
(HOMOPTERA: CICADELLIDAE)**

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More than twenty-five years have passed since the publication of Oman's (1933, 1938a) two major contributions to the New World Agalliinae. These two papers have been and will remain the keystones for students of the American Agalliinae. The purpose of the present paper is to supplement Oman's works by providing the first unified key to the New World genera incorporating all data accumulated in the intervening years. In addition, this paper affords the opportunity to describe the new species found among the undetermined material in the collection of the United States National Museum. Descriptions of previously unknown males, records of little-known species, and new synonymies are included. In order to make this paper of greater use, checklists are provided under appropriate genera which include species described since Oman's works and those species overlooked or unstudied by him.

SUBFAMILY AGALLIINAE

*Subfamily diagnosis.*—Clypellus narrow, not swollen. Head almost always short. Lateral frontal sutures terminating at antennal pits and not replaced by carinae above antennal pits; ocelli on face; distance between ocelli less than distance between antennal pits. Lateral margins of pronotum very short. Mesothoracic tibiae without spinelike setae. Hind wing with four apical cells.

*Notes on the key to the New World genera of Agalliinae.*—The treatment below is the first attempt to handle all of the American genera in a single key. Unlike keys to many groups of the Cicadellidae, this one uses characters common to both sexes with but one exception. Couplet 9 employs only male characters, but geographical data (Neotropical versus Nearctic) will permit a

choice to be made with female specimens. In general, the geographical data will prove useful in running the couplets. This is especially true for those genera endemic to the islands of Juan Fernandez and Hispaniola. There is, of course, always the chance that some of these island endemics may be found elsewhere, in which event the structural features will allow their recognition. In couplet 3, distinguishing *Agalliota*, the distances must be measured carefully because in some genera the ocelli appear to be closer to each other than they are in fact.

The three genera, *Stenagallia*, *Kuscheliola*, and *Agalita* (a junior synonym of *Agalliana* Oman, new synonym), described by Evans (1957), as well as two genera, *Brasopsis* and *Megagallia*, described by Linnavuori (1954), were not seen. All five, however, were sufficiently well characterized so that they could be recognized from the literature. Through the kindness of Dr. E. Kjellander and the Stockholm Museum, Bergroth's type, *amandatus*, representing the monotypic genus *Alloproctus*, was made available for study. *Alloproctus* Bergroth was found to be a junior synonym of *Agallia* Curtis (new synonym).

#### KEY TO THE NEW WORLD GENERA OF AGALLIINAE

1. Crown strongly produced anteriorly, one and one-half times as long as pronotum (Evans 1957, fig. 2g) (Juan Fernandez Island)
  - Stenagallia* Evans
  - Crown never strongly produced anteriorly, always much shorter than pronotum ..... 2
2. Ocelli visible in dorsal aspect of crown; forewings with many extra cross-veins (Evans 1957, fig. 2f) (Juan Fernandez Island)
  - Kuscheliola* Evans
  - Not with the above combination of characters ..... 3
3. Distance between ocelli equal to or less than distance from ocellus to eye (Neotropical) ..... *Agalliota* Oman
  - Distance between ocelli always greater than distance from ocellus to eye ..... 4
4. Posterior margin of crown sinuately curved laterally and crown distinctly extended laterally behind each eye (fig. 13) ..... 5
  - Posterior margin of crown evenly curved or with a very narrow extension laterally behind each eye (fig. 17) ..... 6
5. Pronotum with ill-defined transverse rows of punctures (Brazil)
  - Brasopsis* Linnavuori
  - Pronotum without punctures of any sort (Nearctic and Neotropical)
    - Agalliopsis* Kirkaldy

- 6. Surface of pronotum distinctly coarsely pitted, punctured, or transversely rugulose ..... 7
- Surface of pronotum never coarsely pitted, punctured, or transversely rugulose ..... 11
- 7. Surface of pronotum coarsely pitted or punctured ..... 8
- Surface of pronotum transversely rugulose ..... 9
- 8. Length 5.5 mm. or more; hind margin of crown upturned; male plates acute apically and longer than pygofer (Brazil)
  - Megagallia* Linnavuori
  - Length 5. mm. or less; hind margin of crown normal; male plates rounded or truncated apically and not longer than pygofer (Neotropical, including West Indies) .. *Agalliana* Oman (= *Agallia* Evans)
- 9. Styles of concealed male genitalia forked (Neotropical)
  - Bergallia* Oman
  - Styles of concealed male genitalia not forked (Nearctic) ..... 10
- 10. Aedeagus V-shaped in lateral view; posterior margin of female pregenital sternum four-lobed (southwestern United States and northwestern Mexico) ..... *Ceratogallia* Kirkaldy
- Aedeagus not V-shaped in lateral view; posterior margin of female pregenital sternum not four-lobed (Nearctic) ... *Acceratogallia* Kirkaldy
- 11. Style of concealed male genitalia forked distally (figs. 47, 64); pregenital sternum of female normal and covering base of ovipositors ... 12
- Style of concealed male genitalia not forked distally (fig. 61) or fork obsolete (fig. 34); pregenital sternum of female reduced and exposing underlying membranes or base of ovipositors ..... 13
- 12. Pronotum in lateral view strongly humped (fig. 65); crown slightly shorter at middle than next to eye; coloration striking, red and black (Hispaniola) ..... *Brasa* Oman
- Pronotum in lateral view not humped; crown of uniform length or nearly so; coloration usually drab, never red and black (Nearctic and Neotropical) ..... *Agallia* Curtis (= *Alloproctus* Bergroth)
- 13. Eyes bulbous (fig. 19); robust species; coloration dull, various shades of brown with darker brown or black markings (Neotropical)
  - Euragallia* Oman
  - Eyes not bulbous (fig. 56); slender species; coloration bright, various shades between brown and black with highly conspicuous yellow to red markings (Brazil) ..... *Chromagallia* Linnavuori

Genus **STENAGALLIA** Evans

*Stenagallia* Evans, 1957, p. 370. Type-species *Stenagallia sagittaria* Evans.

The single species in the genus is *Stenagallia sagittaria* Evans. It is known only by the male holotype and female allotype collected on the Juan Fernandez Islands.

Genus **KUSCHELIOLA** Evans

*Kuscheliola* Evans, 1957, p. 372. Type-species *Kuscheliola reticulata* Evans.

The single representative of this genus is *Kuscheliola reticulata* Evans. It is known only by the male type from the Juan Fernandez Islands.

Genus **AGALLIOTA** Oman

*Agalliota* Oman, 1938b, p. 351. Type-species *Agallia punctata* Oman.

*Agalliota*, containing five species, is a Central and South American genus which was reviewed by Oman (1938a, pp. 392-396). One new synonym is reported below.

*Agalliota punctata* (Oman) (Figs. 54, 55)

*Agallia punctata* Oman, 1934b, p. 457.

*Agalliota punctata* (Oman), Oman 1938b, p. 351.

*Agalliota insularis* Linnavuori, 1956a, p. 15. New synonym.

*Agallia punctata* Oman was described initially from two females from Tabasco, Mexico. Later Oman (1938b, p. 351) erected a new genus *Agalliota*, for its reception without additional specimens. Linnavuori (1956a, p. 15) described the first male as a new species, *insularis*, from material collected in Trinidad and Brazil. I have examined a long series of specimens from Mexico, Honduras, Guatemala, Nicaragua, El Salvador, Panama, Colombia, and Trinidad. In all specimens the male genitalia are alike. The seventh sternum of the female varies somewhat, not unusual in leafhoppers, from rounded apically (Oman 1934b, pl. 3, fig. 3a) to slightly notched apically (Linnavuori 1956a, fig. 2L). The male genitalia are redescribed below.

*Male genitalia*.—Genital capsule in lateral view with aedeagus broadest basally, shaft long, very slender and decurved; connective moderately stout; style elaborated, both forks slender, upper fork longer, curved dorsally and with a tooth-like expansion on ventral margin (fig. 54). Aedeagal apex in dorsal view acute with gonopore preapical (fig. 55).

Genus **BRASOPSIS** Linnavuori

*Brasopsis* Linnavuori, 1954, p. 129. Type-species *Bythoscopus gilvipes* Stål.

*Brasopsis gilvipes* (Stål), a Brazilian species, is the only member of the genus. It was completely redescribed by Linnavuori. The species is known only from the unique female type.

Genus **AGALLIOPSIS** Kirkaldy

*Agalliopsis* Kirkaldy 1907a, p. 31. Type-species *Jassus novellus* Say.

Oman monographed the New World species of *Agalliopsis* in three papers: North American (1933, pp. 8-24), Central American (1934b, pp. 445-453), and South American (1938a, pp. 354-362). The species not included in Oman's comprehensive papers are listed below.

- Agalliopsis atricollis* Linnavuori, 1956a, p. 11. (Brazil)  
*Agalliopsis dracula* Kramer, new species. (Colombia)  
*Agalliopsis florida* Oman, 1935, p. 10. (Florida)  
*Agalliopsis gavia* Kramer, new species. (Texas)  
*Agalliopsis hydra* Kramer, new species. (Peru)  
*Agalliopsis lamboa* Kramer, new species. (Nicaragua)  
*Agalliopsis neocervina* Kramer, new species. (Mexico)  
*Agalliopsis neopepino* Oman, 1935, p. 9. (Cuba)  
*Agalliopsis novellina* Oman, 1935, p. 12. (western United States)  
*Agalliopsis ornatcollis superba* Linnavuori, 1956a, p. 12. (Ecuador)  
*Agalliopsis rex* Kramer, 1960, p. 63. (Ecuador and Colombia)  
*Agalliopsis sazosa* Ball, 1936, p. 649. (Arizona)  
*Agalliopsis serpula* Kramer, new species. (Peru)  
*Agalliopsis tezella* Kramer, new species. (Texas)  
*Agalliopsis vellana* Ball, 1936, p. 649. (Florida)  
*Agalliopsis zenestra* Kramer, new species. (Brazil)

***Agalliopsis anomala* (Baker)** (Figs. 1-2, 40-41)

*Agallia anomala* Baker 1898, p. 200.

*Agalliopsis anomala* (Baker), Oman 1933, p. 23.

*A. anomala* (Baker) is a rather ordinary-looking species which can be separated from superficially similar species by the single cross-vein between the sectors of the forewings. The type locality is the State of Veracruz, Mexico. It was described from two females, and Oman (1933, p. 23) listed additional females from Guatemala and Costa Rica. The previously unknown male is reported below.

*Length*.—Male 2.8 mm.

*Coloration*.—General ground color pale brownish gray. Face, crown, pronotum, and scutellum marked with dark brown to black as in figs. 1 and 2. Forewings with same ground color, cells irregularly infuscated, costal area broadly hyaline distally, veins pale and most distinct in clavus and at apex.

*Male genitalia*.—Genital capsule in lateral view with tenth segment stout and irregular ventrally; aedeagus transverse, elongated with dorsal apodeme

large and two small ventral recurved processes at apex; connective strap-like; style simple (fig. 40). Aedeagal apex in dorsal view sharply expanded laterally, a pair of slender preapical processes, and with terminal gonopore (fig. 41).

*Specimens examined.*—1, Acapulco, Mexico, C. F. Baker; 1, Cuernavaca-Acapulco Road, Mexico, August 29, 1936, Ball and Stone; 1 (mounted on point with three females), Acapulco, Mexico, August 24, 1936, Ball and Stone.

*Discussion.*—The males are more heavily marked than the females and as a result appear darker. For a comparison of the crown, pronotum, and scutellum of both sexes, consult fig. 1 (male) and Oman 1933, fig. 2c (female).

***Agalliopsis dracula*, new species**

(Figs. 3-4, 21-23)

*Length.*—Male 3.9-4.2 mm.

*Coloration.*—Venter black, legs black except for light yellow-brown femoral apices, pro- and mesothoracic tibiae and tarsi, and metathoracic tarsi. Face light brown to yellow, very heavily marked with black as in fig. 4. Crown, pronotum, and scutellum light brown to yellow, very extensively marked with black; black markings delimiting striking pair of light central pronotal spots as in fig. 3. Forewings light brown hyaline, veins anterior to claval apices brown and distinct, veins beyond claval apices concolorous with wings, irregular vague dark-brown band from near claval apex to center of costal margin, usually with single white or yellow spots at base and apex of clavus, and centrally on corium (total three).

*Male genitalia.*—Genital capsule in lateral view with plate two-segmented; tenth segment barlike; aedeagus and connective together reverse S-shaped and slender, aedeagal apex with a blunt slender proximal hook and a moderately long slender appendage; style with both forks large and well-developed (fig. 21). Distal portions of tenth segment in dorsal view enlarged and partially crossed (fig. 23). Aedeagal apex in ventral view with gonopore preapical and appendages as illustrated (fig. 22).

*Female genitalia.*—Female unknown.

*Types.*—Holotype, ♂ (USNM 66814), Valle de Papas, Caqueta, Colombia, 10,000 ft., March 21-April 3, 1912. Paratypes: 1 ♂, Valle de Papas to St. Augustina, Colombia, April 6, 1912; 2 ♂, Colombia, March 11, 1912.

*Discussion.*—*A. dracula* is very distinctive on the basis of coloration; the pair of light spots at the center of the pronotum are particularly striking. The male genitalia provide many unique features; the two-segmented male plates and the modified aedeagal apex are without equal.

*Agalliopsis gavia*, new species

(Figs. 5-6, 30-32)

*Length*.—Male 3.5 mm. Female 3.7 mm.*Coloration*.—Venter and legs brown, variably touched with darker brown to black. Face yellowish brown marked with black as in fig. 6. Crown, pronotum, and scutellum yellowish brown marked with dark brown to black as in fig. 5. Forewings light to dark brown with most veins yellowish to white.*Structure*.—Four to six cross-veins between major longitudinal veins of forewings.*Male genitalia*.—Genital capsule in lateral view with tenth segment long and terminating in an irregular bifurcation, margins of bifurcation finely and irregularly serrated; posterior margin of pygofer with a crescent-shaped appendage on inner surface; aedeagus short and stout, narrowed and upturned at apex; connective straplike; and style convex (fig. 30). Aedeagus in dorsal view broadest apically and notched basally with gonopore terminal (fig. 32).*Female genitalia*.—Posterior margin of pregenital sternum shallowly excavated on middle one-third.*Types*.—Holotype, ♂ (USNM 66815), Alpine, Texas, August 8, 1936, E. D. Ball. Allotype ♀ and 2 ♂ paratypes with same data as type.*Discussion*.—On the basis of male genitalia, *A. gavia* is most similar to *A. inscripta* Oman. The male genitalia of *A. inscripta* Oman were illustrated by Kramer (1960, fig. 7), but the internal process of the pygofer was omitted; it is shown here in figs. 26-27. In addition to the many small differences in genital structures, *gavia* can be easily distinguished from *inscripta* by the extra cross-veins in its forewings.*Agalliopsis hydra*, new species

(Figs. 62-63)

*Length*.—Male 3.6 mm.*Coloration*.—Venter brown. Legs, face, and crown pale brown to yellowish brown. Sutures of face very lightly embrowned, antennal bases brown, each ocellus with inner margin broadly touched with dark brown. Crown with seven black spots, single subtriangular apical spot, pair of round subapical spots, pair of dots on posterior coronal margin directly behind subapical round spots, and pair of roundish larger lateral spots (one near each eye). Pronotum pale brown with anterior area darkened in region touching the sinuately curved posterior coronal margin, and with a small brown spot at center of each lateral margin. Scutellum yellowish with anterior angles and two anterior rectangular spots brown. Forewings pale brown, subhyaline, with veins concolorous.*Male genitalia*.—Genital capsule in lateral view with posterior margin of pygofer avicephaliform; aedeagus greatly elongated, extended basally into

pregenital abdominal segment, shaft narrowed with a tooth dorsally before upturned distal portion, gonopore apical, and with two pairs of long slender appendages, shorter pair ventral and preapical, longer pair lateral and up-curved with a tooth on dorsal margin; connective straplike; style simple (fig. 62). Appendages of aedeagus and gonopore best observed in dorsal view (fig. 63).

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 66816), Rio Igará, Parana, Oriente, Peru, August 16, 1920.

*Discussion*.—The color markings and the extremely bizarre male genital structures are unique.

*Agalliopsis lamboa*, new species

(Figs. 7-8, 35-37)

*Length*.—Male 3.6 mm. Female 3.8 mm.

*Coloration*.—Venter and legs brown, variably touched with darker brown to black areas. Face light brown to yellowish, heavily marked with darker brown to black as in fig. 8. Crown, pronotum, and scutellum light brown to yellowish marked with black spots as in fig. 7. Female with two pairs of pronotal spots (fig. 7); male with three pairs of pronotal spots, third pair behind eyes near posterior pronotal margin. Forewings brown hyaline with veins yellowish and distinct.

*Male genitalia*.—Genital capsule in lateral view with tenth segment long, somewhat undulated, and terminating with a sharp "foot"; posterior margin of pygofer with a slender process on inner surface; aedeagus very stout and bulbous basally, dorsal apodeme stout, shaft narrowed and terminating with a bluntly hooked dorsal portion and a slender upcurved ventral portion; connective straplike; stylar forks somewhat elongated, upper fork with a tooth dorsally near apex (fig. 35). Distal portion of aedeagus in dorsal view constricted preapically with a pair of subapical oblique appendages extending anteriorly, appendages finely serrated proximally and slightly curved inward distally, and gonopore subterminal (fig. 37).

*Female genitalia*.—Posterior margin of pregenital sternum broadly concave mesally and produced laterally.

*Types*.—Holotype, ♂ (USNM 66817), Managua, Nicaragua, C. F. Baker. Allotype ♀ with same data.

*Discussion*.—*A. lamboa* is distinctive in both coloration and genital characters. In general the male is more heavily marked with black than the female. The illustrations of the head and thorax (figs. 7 and 8) were prepared from the allotype female.

*Agalliopsis neocervina*, new species

(Figs. 9-10, 42-43)

*Length*.—Male 4.5 mm.

*Coloration*.—Venter brown, legs pale brown touched with darker shading, thoracic venter heavily marked with dark brown. Face pale brown to yel-



lowish and marked with black as in fig. 10. Crown yellowish with five black spots, pronotum and scutellum also marked with black as in fig. 9. Forewings light brown hyaline, veins dark only basally in corium, few whitish areas in both clavus and corium.

*Male genitalia*.—Genital capsule in lateral view with a blunt tooth-like process at base of anal tube; posterior margin of pygofer thickened; highly irregular subtriangular appendage at middle on inner surface of pygofer; aedeagus extremely slender, elongated, mesally undulated, with pair of simple apical appendages; connective rather stout; style elaborated, lower fork finely serrated on distal dorsal margin, upper fork twice-pronged, lower prong with single ventral tooth (fig. 42). Apical processes of aedeagus slender in dorsal view with gonopore terminal (fig. 43).

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 66818), Xucumanatlán, Guerrero, Mexico, 7,000 ft., July, H. H. Smith.

*Discussion*.—*A. neocervina* is most similar to *A. cervina* Oman. The markings of *neocervina* are less extensive (compare fig. 9 and Oman 1933, fig. 2a), and the details of the male genital structures are different. In *neocervina* the apical aedeagal appendages are smooth and not recurved apically (fig. 43), and the style is stouter and more elaborated (fig. 42). In *cervina* the apical aedeagal appendages are once-toothed ventrally and recurved apically (Oman 1933, fig. 14b), and the style is slender and simple (Oman 1933, fig. 14a).

***Agalliopsis serpula*, new species**

(Figs. 11-12, 38-39)

*Length*.—Male 3.8 mm.

*Coloration*.—Venter brown, legs stramineous to pale brown. Face yellow to pale brown with black areas on clypeus, under antennal bases, and around ocelli as in fig. 12. Crown yellow to pale brown with a pair of sub-apical black spots and black areas next to each eye, pronotum and scutellum black except for narrow yellowish hind margin as in fig. 11. Forewings very dark brown to black, semihyaline, veins concolorous except for yellowish claval sutures and commissural margins.

*Male genitalia*.—Genital capsule in lateral view with tenth segment produced distally as a pair of slender serpentlike appendages, each with a slender elongate basal tooth; dorsal portion of pygofer with a slender appendage on inner surface; aedeagus broadest basally, shaft narrowed and elongated, shaft situated above basal portion; connective short; style with dorsal fork slender and ventral fork heavy and wide (fig. 38). Gonopore apparently preapical on venter of aedeagal shaft. Inner appendage of pygofer in dorsal view as in fig. 39.

*Female genitalia*.—Female unknown.

*Types*.—Holotype, ♂ (USNM 66819), La Sombra, Peru, August 22, 1920. One paratype ♂ with same data as type.

*Discussion*.—The coloration and male genital structures, particularly the highly modified tenth segment, are very distinctive.

***Agalliopsis texella*, new species** (Figs. 13-14, 28-29)

*Length*.—Male 2.8 mm.

*Coloration*.—Venter and legs light brown, thoracic venter heavily marked with dark brown. Face pale yellowish brown lightly marked with brown as in fig. 14. Crown, pronotum, and scutellum pale yellowish brown marked with pale orange to brown spots and lines as in fig. 13. Forewings very pale brown hyaline, veins white, some infuscation along commissural border.

*Male genitalia*.—Genital capsule in lateral view with tenth segment enlarged apically as four irregular acute expansions, also with an acute preapical expansion; posterior margin of pygofer with a comparatively short appendage on inner surface; aedeagus simple, curved basally but tapering to an acute upturned apex; connective rather stout; style simple (fig. 28). Aedeagus in ventral view with a moderately deep apical notch, gonopore at base of notch.

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 66820), Brownsville, Texas, March 1, 1932, E. D. Ball.

*Discussion*.—The small size and highly modified male tenth segment readily distinguish *A. texella*.

***Agalliopsis zenestra*, new species** (Figs. 15-16, 24-25)

*Length*.—Male 4.2 mm. Female 4.7 mm.

*Coloration*.—Venter pale brown to yellowish brown, thorax irregularly touched with darker areas, legs pale yellowish brown. Face yellow marked variably with black (fig. 16 shows heavily marked male) facial markings of female much less extensive with central area bordered by black and not almost solid black as in male. Crown, pronotum, and scutellum yellow, marked with black in both sexes as in fig. 15. Forewing with clavus marked with longitudinal elongate dark-brown to black markings at base and apex, rest of forewing fumose to black with large yellowish spot at center of costal margin, base at times narrowly yellow, apical cells sometimes pale brown hyaline.

*Male genitalia*.—Genital capsule in lateral view with both aedeagal shaft and dorsal apodeme slender and nearly transverse, basal portion of aedeagus gracefully curved downward and ending in a long slender "foot"; connective straplike; style with ventral fork large and angular (fig. 24). Aedeagus in dorsal view with dorsal apodeme simple (omitted in drawing), shaft somewhat arrow-shaped with gonopore terminal, and basal portion roundly forked, each fork indented at apex producing two points (fig. 25).

*Female genitalia*.—Pregenital sternum of female with posterior margin gradually produced mesally as a wide, moderately long, blunt tooth.

*Types*.—Holotype, ♂ (USNM 66821), Silvestro, Rio de Janeiro, Brazil, October 12, 1919. Allotype ♀ and paratype ♂, Jussara, Angra, Estado do Rio de Janeiro, Brazil, October 9, 1934, Travassos and Lopes. Paratype ♀, S. M. Madalena, 750 m., Estado do Rio de Janeiro, Brazil, July, 1960, M. Alvarenga.

*Discussion*.—*A. zenestra* is readily distinguished by the yellow and dark-brown to black coloration and by the distinctive features of both the male and female genitalia.

#### Genus MEGAGALLIA Linnavuori

*Megagallia* Linnavuori, 1954, p. 128. Type-species *Bythoscopus punctaticollis* Stål.

*Megagallia punctaticollis* (Stål), a Brazilian species, is the only member of the genus. It was completely redescribed by Linnavuori together with excellent illustrations of the male genital structures. The species is known only from the type specimen.

#### Genus AGALLIANA Oman

*Agalliana* Oman, 1933, p. 70. Type-species *Bythoscopus sticticollis* Stål.

*Agalita* Evans, 1957, p. 370. Type-species *Agalita minuta* Evans. New synonym.

Oman (1934a, pp. 333–340) monographed this South American genus and included five species. Three additional species are listed below.

*Agalliana mediana* Oman, 1938a, p. 407. (Argentina)

*Agalliana minuta* (Evans), Kramer, new combination. (Juan Fernandez Islands)

*Agalliana puella* Oman, 1938a, p. 406. (Colombia)

*Agalliana minuta* (Evans), new combination

*Agalita minuta* Evans, 1957, p. 371.

Evans gave a highly adequate description of this species together with an illustration of the male genitalia. The coarsely punctate pronotum clearly places this species in *Agalliana* Oman. *A. minuta* is known only from the Juan Fernandez Islands.

Genus **BERGALLIA** Oman

*Bergallia* Oman, 1938b, p. 350. Type-species *Bythoscopus signatus* Stål.

All of the species in *Bergallia* are South American. The genus was monographed by Oman (1938a, pp. 407-415). At the time of Oman's study nine species were included; two additional species are listed below.

*Bergallia arica* Linnavuori, 1956a, p. 15. (Chile)

*Bergallia brachyptera* (Evans), Kramer, new combination. (Juan Fernandez Islands)

***Bergallia brachyptera*** (Evans), new combination

*Agallia brachyptera* Evans, 1957, p. 372.

Evans provided a rather complete description of this species together with illustrations of the crown, pronotum, and scutellum as well as of the male genitalia. The transversely rugulose or striated pronotal surface and the forked style clearly place this species in *Bergallia* Oman. *B. brachyptera* is known only from the Juan Fernandez Islands.

Genus **CERATAGALLIA** Kirkaldy

*Ceratagallia* Kirkaldy, 1907b, p. 61. Type-species *Agallia bigeloviae* Baker.

*Ceratagallia* Kirkaldy was monographed by Oman (1939, pp. 529-543). The genus contains twenty-five species whose distribution includes the semi-arid portions of the western United States and adjacent Mexico.

Genus **ACERATAGALLIA** Kirkaldy

*Aceratagallia* Kirkaldy, 1907a, pp. 11 and 30. Type-species *Bythoscopus sanguinolentus* Provancher.

The members of this genus are primarily North American with a few species ranging into southern Mexico. Oman (1933, pp. 45-70) keyed and described thirty-three species. Since Oman's monographic treatment, only four species have been described. They are listed below.

*Aceratagallia grisea* Oman, 1935, p. 13. (Arizona)

*Aceratagallia ovata* Oman, 1935, p. 14. (Arizona).

*Aceratagallia triunata* (Ball), 1933, p. 226. (Arizona)

*Aceratagallia truncata* Oman, 1935, p. 13. (California)

Genus **BRASA** Oman

*Brasa* Oman, 1938b, p. 352. Type-species *Macropsis rugicollis* Dozier.

This genus is known only by one species from Haiti and the Dominican Republic. *Brasa rugicollis* (Dozier) is redescribed and the male genitalia are illustrated for the first time.

***Brasa rugicollis* (Dozier)** (Figs. 64-66)

*Macropsis rugicollis* Dozier, 1926, p. 264.

*Brasa rugicollis* (Dozier), Oman, 1938b, p. 352.

*Length*.—Male 5 mm. Female 5.5-5.8 mm.

*Coloration*.—Venter of abdomen, thorax, and legs black, touched with pruinose areas, sometimes intersegmental regions paler. Face and crown bright red, at times with irregular pale or black areas. Pronotum and scutellum bright red, sometimes with irregular paler areas, anterior margin and discal area of pronotum and basal angles of scutellum occasionally black. Forewings black, at times pruinose.

*Male genitalia*.—Genital capsule in ventral view with valve and plates well-developed, valve semicircular, plates elongated and triangular, neither with macrosetae. Pygofer laterally with two clusters of macrosetae (fig. 66). Genital capsule in lateral view with style distinctly forked; connective rod-like; aedeagus slender, simple, recurving distally to a sharp apex; tenth segment modified with teeth and slender processes (fig. 64).

*Female genitalia*.—Pre-genital sternum with a weakly defined longitudinal carina at middle and a variable V-shaped notch on posterior margin.

*Specimens examined*.—2 ♂ and 3 ♀, Fond-des-Negres, Haiti, June 12, 1930, H. L. Dozier. 2 ♀, Valle Nuevo, La Vega Province, Dominican Republic, December 28, 1955, J. Maldonado-Capriles. 1 ♀, Paso de la Vaca, Le Vega Province, Dominican Republic, December 27, 1955, J. Maldonado-Capriles.

*Discussion*.—*Brasa rugicollis* (Dozier) is the only species assigned to the genus. It is apparently limited to the island of Hispaniola. The humped pronotum (fig. 65), the red head and thorax, and the black wings readily distinguish the species.

Genus **AGALLIA** Curtis

*Agallia* Curtis, 1833, p. 193. Type-species *Agallia consobrina* Curtis.

*Alloproctus* Bergroth, 1924, p. 400. Type-species *Alloproctus amandatus* Bergroth. New synonym.

Oman monographed the New World species of *Agallia* in three papers: North American species (1933, pp. 24-45), Central American species (1934b, pp. 453-457), and South American species (1938a, pp. 363-391).

The following checklist includes all species of the New World *Agallia* described since the above-mentioned papers by Oman. It also includes those species unstudied by him but since elucidated by recent workers.

- Agallia amandata* (Bergroth), Kramer, new combination. (Juan Fernandez Islands)  
*Agallia assimilis* (Stål), Linnavuori 1954, p. 124. (Brazil)  
*Agallia bicornis* Linnavuori & Heller, 1961, p. 1. (Peru)  
*Agallia cetra* Kramer, new species. (Brazil)  
*Agallia cobera* Kramer, new species. (Brazil)  
*Agallia cucata* Kramer, new species. (Brazil)  
*Agallia inexpecta* Linnavuori, 1956a, p. 13. (Argentina)  
*Agallia masatierrensis* Evans, 1957, p. 369. (Juan Fernandez Islands)  
*Agallia modestoides* Linnavuori, 1956a, p. 13. (Brazil)  
*Agallia paraguayensis* Linnavuori, 1956a, p. 13. (Paraguay)  
*Agallia peregrinans* (Stål), Linnavuori 1956b, p. 179. (California and Brazil)  
*Agallia phalerata* (Stål), Linnavuori 1954, p. 125. (Brazil)  
*Agallia placida* Evans, 1957, p. 369. (Juan Fernandez Islands)  
*Agallia pulchra alta* Caldwell, 1952, p. 33. (Puerto Rico)  
*Agallia soosi* Linnavuori, 1956a, p. 13. (Colombia)  
*Agallia thomasiana* Linnavuori, 1956a, p. 14. (St. Thomas Island)  
*Agallia vidua* (Stål), Linnavuori 1956b, p. 179. (Ecuador)

*Agallia amandata* (Bergroth), new combination (Figs. 44-46)

*Alloproctus amandatus* Bergroth, 1924, p. 400.

*Length*.—Male 4.5 mm.

*Coloration*.—Venter including legs and face pale yellow brown without darker markings. Ocelli red. Crown, pronotum, and scutellum pale yellow brown; only pronotum vaguely and irregularly darker anteriorly and sublaterally. Forewings pale yellow brown with veins irregularly darker; one or two irregular dark areas in clavus and at base of wing.

*Structure*.—Ocelli located on extreme upper portion of face, nearly on coronal margin. Crown slightly longer at middle than next to eye. Surface of face, dorsum, and forewings finely granulate.

*Male genitalia*.—Genital capsule in lateral view with anal tube small; hind margin of pygofer indented; a stout, slightly curved, apically pronged dorsal process extending downward slightly beyond ventral margin; aedeagus moderately stout, resembling a "flying bird"; connective straplike and as long as aedeagus; dorsal fork of style heavy and strongly hooked (fig. 44). Aedeagus in ventral view expanded near apex with sharp "shoulders" and apical gonopore (fig. 45).

*Female genitalia*.—Female unknown.

*Type*.—Known only from holotype ♂, Masafuera, Juan Fernandez Islands, in collection of Naturhistoriska Riksmuseet in Stockholm, Sweden.

*Discussion.*—In erecting a new genus for *amandata*, Bergroth overstressed the antennal ledges which are really not greatly different from many other members of *Agallia*. His comments on the male genitalia show no knowledge of the other genera of the Agalliinae.

***Agallia cetra*, new species**

(Fig. 47)

*Length.*—Male 3.75 mm.

*Coloration.*—Venter including legs pale brown. Face pale brown, sutures darker, antennal bases brown, black spot on gena under each eye, clypellus darkened mesally, clypeus palest mesally, ocelli ringed with brown. Crown pale yellow marked with a pair of subapical irregular dark-brown spots and indistinct pale-brown areas at apex and near each eye. Pronotum pale yellow marked with a pair of large triangular brown spots at base, mesal longitudinal stripe, and irregular, angular pale-brown areas at anterior margin. Scutellum pale yellow with anterior angles broadly darkened. Forewings light brown hyaline, some cells lightly infuscated, and with veins paler.

*Male genitalia.*—Genital capsule in lateral view with distal portion of plate sharply upturned; dorsal margin of pygofer with an undulated process acute apically, aedeagus similar to *quadrata* but apex finely toothed ventrally and not notched apically; connective short; style short with both forks moderately heavy (fig. 47).

*Female genitalia.*—Female unknown.

*Type.*—Holotype, ♂ (USNM 66822), Lassance, Minas Gerais, Brazil, November 14, 1919, R. C. Harris.

*Discussion.*—This species most closely resembles *quadrata*, but it can be distinguished from *quadrata* by differences in coloration and more importantly, by features of the male genitalia.

***Agallia cobera*, new species**

(Figs. 17–18, 50–51)

*Length.*—Male 4.9 mm.

*Coloration.*—Venter brown, legs slightly paler, thorax touched with irregular dark-brown areas. Face, crown, pronotum, and scutellum light brown to yellowish brown heavily marked with dark-brown to black areas as in figs. 17 and 18. Forewings with claval veins pale and claval cells entirely brown, rest of veins brown with cells heavily embrowned at margins.

*Male genitalia.*—Genital capsule in lateral view with narrow, irregular process at base of anal tube and a subtriangular process distally on inner surface of pygofer; aedeagus irregularly bulbous basally, shaft narrowed and sharply upturned at extreme apex, gonopore large and preapical on venter of shaft, one pair of simple processes near apex; connective stout; style broad and stout (fig. 50). Processes of aedeagus and gonopore best observed in ventral view (fig. 51).

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 66823), Jussara, Angra, Estado do Rio de Janeiro, Brazil, October 9, 1934, Travassos and Lopes.

*Discussion*.—The comparatively large size, dark coloration, and male genital structures distinguish *A. cobera*. The subtriangular pygofer process is particularly notable.

***Agallia cucata*, new species**

(Figs. 52-53)

*Length*.—Male 3.6 mm.

*Coloration*.—Venter including all of face below ocelli black. Legs pale brown, metathoracic legs darker. Ocelli and antennae pale brown with oblique pale-brown line from each ocellus to each antennal base. Combined areas of extreme upper face and crown pale brown marked with a black central, longitudinal oval spot and a pair of irregular black round spots (one on either side of central spot), ventrally all three spots fuse with the black face, mesally the lateral spots fuse with the central spot, and dorsally all three spots attain posterior margin of crown. In dorsal view crown appears to have three angular black markings at middle. Pronotum, scutellum, and forewings black, all heavily pruinose.

*Male genitalia*.—Genital capsule in lateral view with dorsal margin of pygofer thickened and apex acute; aedeagus U-shaped with distal one-half much broader than proximal one-half, a partial transverse suture distally on lower portion; connective straplike; and stylar forks slender (fig. 52). Aedeagus in posterior view with gonopore large and preapical at heart-shaped apex (fig. 53).

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 66824), Jussara, Angra, Estado do Rio de Janeiro, Brazil, January 9, 1935, Dario Mendes.

*Discussion*.—*A. cucata* is easily distinguished by the dark coloration and unique male genital structures.

***Agallia quadrata* Oman**

(Figs. 48-49)

*Agallia quadrata* Oman, 1938a, p. 382.

*A. quadrata* Oman can be recognized by the pair of round spots on the crown and the pair of triangular spots near the hind margin of the pronotum (Oman 1938a, pl. 44, fig. 1). It is known from Brazil, Bolivia, and Peru. Oman described the species from both males and females but did not illustrate the male genital structures.

*Male genitalia*.—Genital capsule in lateral view with dorsal margin of pygofer thickened; posterior margin of pygofer with a somewhat avicephaliform appendage; aedeagus broadly U-shaped, basally bulbous with a pair



of irregularly oval short processes, shaft tapering to a slender notched apex; connective short; ventral fork of style heavier than dorsal fork (fig. 48).

*Agallia vidua* (Stål)

Linnavuori (1956b, p. 179) restudied the Stål type from Puna, Ecuador, and published an excellent redescription with illustrations of the male genital structures (Linnavuori 1956b, figs. 8d-8f). Since the original description, over one-hundred years ago, no additional records have been published. The species is apparently not as rare as supposed because there is a moderately long series, twenty-five specimens, in the collection of the United States National Museum. Fifteen have the data Guayaquil, Ecuador, February 20, 1950, S. W. Frost, and ten, Guayas Cuatro Hermanitas, Ecuador, September 22, 1955, R. Levi-Castillo.

*Agallia bicornis* Linnavuori and Heller

*Agallia bicornis* Linnavuori and Heller (1961, p. 1) was described from Peru. There are two specimens of this species in the collection of the United States National Museum with data Tingo Maria, Peru, October 15, 1944, E. J. Hambleton, collected on beans. The economically important species of Peruvian leafhoppers are not well known; this species, if it is a true feeder on beans, may have considerable importance.

Genus **EURAGALLIA** Oman

*Euragallia* Oman, 1938b, p. 351. Type-species *Agallia jurculata* Osborn.

The species of *Euragallia* range from Mexico to Brazil. Oman (1938a, pp. 397-405) keyed and described nine species. The previously unknown male of *Euragallia albopunctata* Oman and one new species are described below.

*Euragallia albopunctata* Oman

(Fig. 34)

*Euragallia albopunctata* Oman, 1938a, p. 403.

*E. albopunctata* Oman is easily recognized by the elongate white or yellowish spot on the disk of each forewing and by the markings of the pronotum (Oman 1938a, pl. 44, fig. 6). The species was described from two females taken in Corumba, Brazil, and until now the male was unknown.

*Length*.—Male 4 mm.

*Coloration*.—Same as female.

*Male genitalia*.—Genital capsule in lateral view with tenth segment very large; aedeagus not stout, dorsal apodeme oblique, shaft turned ventrally, then dorsally, and ultimately obliquely toward base of tenth segment; connective very short; style moderately stout with forks obsolete (fig. 34). Shaft of aedeagus and apex of style finely scaly (not shown in drawing).

*Specimen*.—Unique ♂, Rio Igu-Putumayo, Brazil, August 11, 1920.

***Euragallia machaera*, new species**

(Figs. 19–20, 33)

*Length*.—Male 4.2 mm.

*Coloration*.—Venter light brown, legs paler. Face light brown sparsely marked with contrasting shades of brown to black as in fig. 20. Crown, pronotum, and scutellum light brown to yellowish brown, crown and scutellum marked with black, pronotum marked with a slightly contrasting shade of brown as in fig. 19. Forewings light brown hyaline, veins mainly yellowish or whitish, some cells very weakly embrowned at margins.

*Male genitalia*.—Genital capsule in lateral view with dorsal margin of pygofer somewhat thickened distally; base of anal tube with a moderately long slender appendage; aedeagus broadest basally, shaft narrowed and then expanded ventrally considerably before apex; connective long; style short and twice-toothed distally on dorsal margin (fig. 33).

*Female genitalia*.—Female unknown.

*Type*.—Holotype, ♂ (USNM 68825), Bello Horizonte, Minas Gerais, Brazil, November 6, 1919.

*Discussion*.—The aedeagal apex and styles of *E. machaera* are unique.

Genus **CHROMAGALLIA** Linnavuori

*Chromagallia* Linnavuori, 1954, p.126. Type-species *Bythoscopus flavofasciatus* Stål.

This genus contains but two brightly colored species from South America. They are keyed and discussed below.

1. Crown, pronotum, and scutellum bright yellow with black markings (Linnavuori 1954, fig. 4a); forewings chocolate brown marked with yellow (Linnavuori 1954, fig. 1d); side lobe of male pygofer with a deep notch in middle of hind margin (Linnavuori 1954, fig. 2a)

*flavofasciata* (Stål)

Crown, pronotum, and scutellum black; forewings very dark brown to black, each with three large scarlet patches (fig. 56); side lobe of male pygofer without a notch of any sort (fig. 60) . . . *saucia* (Stål)

**Chromagallia flavofasciata** (Stål)*Bythoscopus flavofasciatus* Stål, 1854, p. 255.*Chromagallia flavofasciata* (Stål), Linnavuori 1954, p. 127.

*Chromagallia flavofasciata* (Stål), type of genus, is still known only by the unique male collected in Brazil. The coloration and male genital structures afford excellent diagnostic characters. In addition to a lateral view of the genital capsule as mentioned in the key, Linnavuori (1954) has illustrated the aedeagus (fig. 2b) and the style (figs. 2c-2e).

**Chromagallia saucia** (Stål)

(Figs. 56-61)

*Bythoscopus saucius* Stål, 1862, p. 53.*Chromagallia saucia* (Stål), Linnavuori 1954, p. 127.*Length*.—Male and Female 5.2 mm.

*Coloration*.—Venter of abdomen reddish. Venter of thorax black touched with light brown. Legs light brown variably washed with black on all femora and hind tibiae. Face black with antennae, ocelli, and a subtriangular spot near each antennal base on clypeus orange (fig. 57). Crown, pronotum, and scutellum uniformly black, at times pruinose. Forewings dark brown to black brilliantly marked with three scarlet patches as follows: First, transverse irregularly hourglass-shaped at middle (shape seen best in broad view of wing, Linnavuori 1954, fig. 1c); second, irregular at base of clavus; and third, irregular at base of corium. Habitus illustration (fig. 56).

*Male genitalia*.—Genital capsule in ventral view with valve concealed, plates greatly narrowed on distal two-thirds, and sides of pygofer inturned (fig. 58). Genital capsule in lateral view with posterior margin oblique and plates upturned distally (fig. 60). Aedeagus in lateral view subrectangular with a moderately long dorsal extension and a shorter ventral extension (fig. 59). Gonopore seemingly dorsal, position indicated by arrow. Style very small, in lateral view with base narrowed and apex expanded but blunt (fig. 61).

*Female genitalia*.—Pregenital sternum small, posterior margin semicircular with two bunches of short, dense, stiff hairs (Linnavuori 1954, fig. 3m).

*Specimens examined*.—1 ♂, Rio de Janeiro, Brazil, H. Souza Lopes. 1 ♀, Rio de Janeiro, Brazil, D. Mendes. 1 ♀, Rio de Janeiro, Brazil, Botanical Gardens, October 9, 1936, H. Souza Lopes.

*Discussion*.—*Chromagallia saucia* (Stål) is one of the most beautifully colored species in the Agallinae. The scarlet and black forewings are distinctive. Until now, this species was known only by the unique female type collected in Rio de Janeiro, Brazil.

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## EXPLANATION OF FIGURES

## PLATE XI

- Fig. 1.—*Agalliopsis anomala* (Baker), head and thorax, dorsal view.
- Fig. 2.—Same, face.
- Fig. 3.—*Agalliopsis dracula* n.sp., head and thorax, dorsal view.
- Fig. 4.—Same, face.
- Fig. 5.—*Agalliopsis gavia* n.sp., head and thorax, dorsal view.
- Fig. 6.—Same, face.
- Fig. 7.—*Agalliopsis lamboa* n.sp., head and thorax, dorsal view.
- Fig. 8.—Same, face.
- Fig. 9.—*Agalliopsis neocervina*, n.sp., head and thorax, dorsal view.
- Fig. 10.—Same, face.
- Fig. 11.—*Agalliopsis serpula* n.sp., head and thorax, dorsal view.
- Fig. 12.—Same, face.
- Fig. 13.—*Agalliopsis texella* n.sp., head and thorax, dorsal view.
- Fig. 14.—Same, face.
- Fig. 15.—*Agalliopsis zenestra* n.sp., head and thorax, dorsal view.
- Fig. 16.—Same, face.
- Fig. 17.—*Agallia cobera* n.sp., head and thorax, dorsal view.
- Fig. 18.—Same, face.
- Fig. 19.—*Euragallia machaera* n.sp., head and thorax, dorsal view.
- Fig. 20.—Same, face.

(Drawings made to same approximate size.)

## PLATE XII

- Fig. 21.—*Agalliopsis dracula* n.sp., male genital capsule, lateral view.
- Fig. 22.—Same, aedeagal apex, ventral view.
- Fig. 23.—Same, apex of tenth segment, dorsal view.
- Fig. 24.—*Agalliopsis zenestra* n.sp., male genital capsule, lateral view.
- Fig. 25.—Same, aedeagus, dorsal view (dorsal apodeme omitted).
- Fig. 26.—*Agalliopsis inscripta* Oman, internal pygofer process, lateral view.
- Fig. 27.—Same, internal pygofer process, posterior view.

- Fig. 28.—*Agalliopsis texella* n.sp., male genital capsule, lateral view.  
 Fig. 29.—Same, internal pygofer process, posterior view.  
 Fig. 30.—*Agalliopsis gavia* n.sp., male genital capsule, lateral view.  
 Fig. 31.—Same, internal pygofer process, posterior view.  
 Fig. 32.—Same, aedeagus, dorsal view.

(Drawings made at various magnifications.)

#### PLATE XIII

- Fig. 33.—*Euragallia machaera* n.sp., male genital capsule, lateral view.  
 Fig. 34.—*Euragallia albopunctata* Oman, male genital capsule, lateral view.  
 Fig. 35.—*Agalliopsis lamboa* n.sp., male genital capsule, lateral view.  
 Fig. 36.—Same, internal pygofer process, posterior view.  
 Fig. 37.—Same, aedeagal apex, dorsal view.  
 Fig. 38.—*Agalliopsis serpula* n.sp., male genital capsule, lateral view.  
 Fig. 39.—Same, internal pygofer process, dorsal view.  
 Fig. 40.—*Agalliopsis anomala* (Baker), male genital capsule, lateral view.  
 Fig. 41.—Same, aedeagal apex, dorsal view.  
 Fig. 42.—*Agalliopsis neocervina* n.sp., male genital capsule, lateral view.  
 Fig. 43.—Same, aedeagal apex, dorsal view.

(Drawings made at various magnifications.)

#### (PLATE XIV

- Fig. 44.—*Agallia amandata* (Bergroth), male genital capsule, lateral view.  
 Fig. 45.—Same, aedeagus, ventral view.  
 Fig. 46.—Same, apices of male plates.  
 Fig. 47.—*Agallia cetra* n.sp., male genital capsule, lateral view.  
 Fig. 48.—*Agallia quadrata* Oman, male genital capsule, lateral view.  
 Fig. 49.—Same, internal pygofer process, posterior view.  
 Fig. 50.—*Agallia cobera* n.sp., male genital capsule, lateral view.  
 Fig. 51.—Same, aedeagal apex, ventral view.  
 Fig. 52.—*Agallia cucata* n.sp., male genital capsule, lateral view.  
 Fig. 53.—Same, aedeagal apex, posterior view.  
 Fig. 54.—*Agalliota punctata* (Oman), male genital capsule, lateral view.  
 Fig. 55.—Same, aedeagal apex, dorsal view.

(Drawings made at various magnifications.)

#### PLATE XV

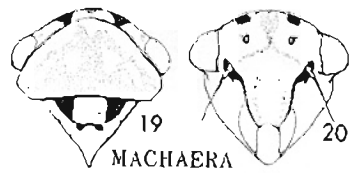
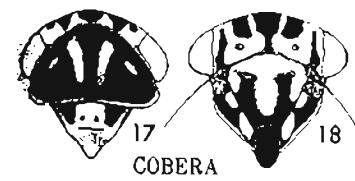
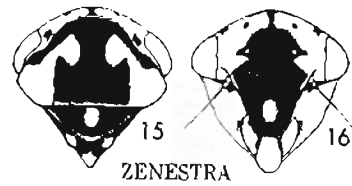
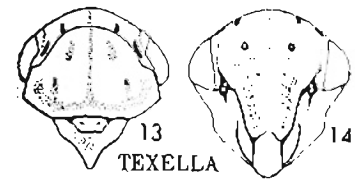
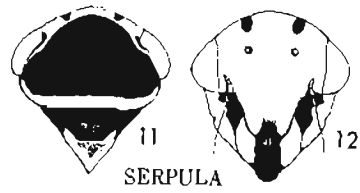
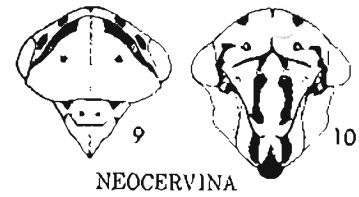
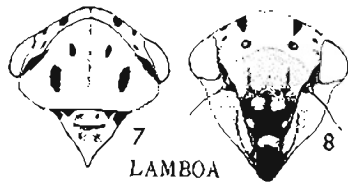
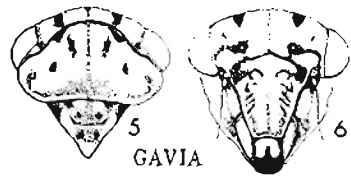
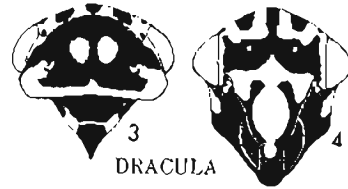
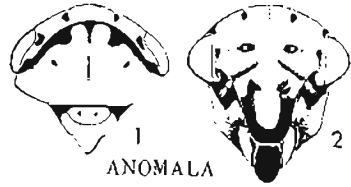
- Fig. 56.—*Chromagallia saucia* (Stål), dorsal view.  
 Fig. 57.—Same, face.  
 Fig. 58.—Same, male genital capsule, ventral view.  
 Fig. 59.—Same, aedeagus and connective, lateral view.  
 Fig. 60.—Same, male genital capsule, lateral view.  
 Fig. 61.—Same, style, lateral view.  
 Fig. 62.—*Agalliopsis hydra* n.sp., male genital capsule, lateral view.

- Fig. 63.—Same, distal portion of aedeagus, dorsal view.  
Fig. 64.—*Brasa rugicollis* (Dozier), male genital capsule, lateral view.  
Fig. 65.—Same, head and thorax, lateral view.  
Fig. 66.—Same, distal portion of pygofer showing setal arrangement, lateral view.

(Drawings made at various magnifications.)

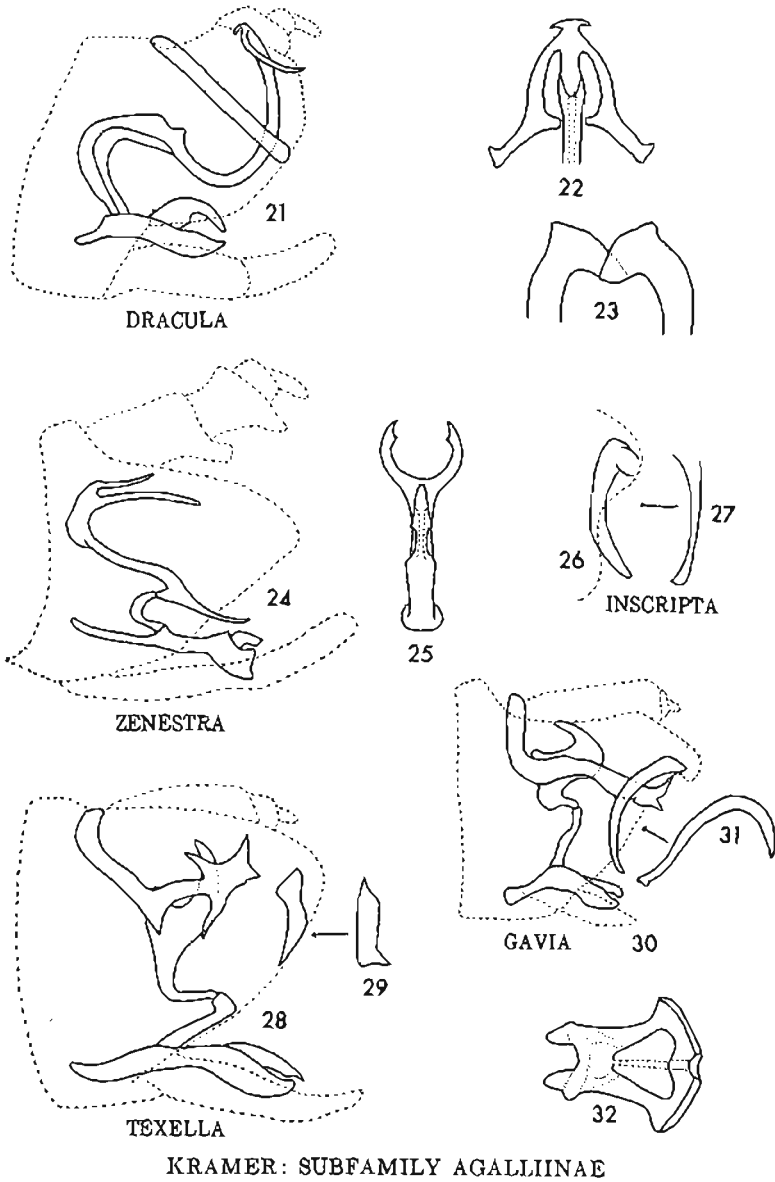




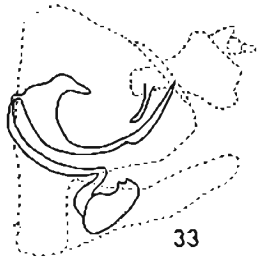


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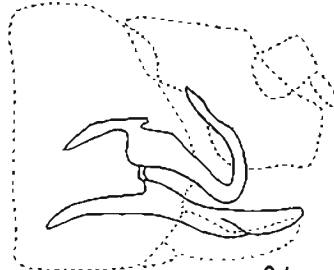






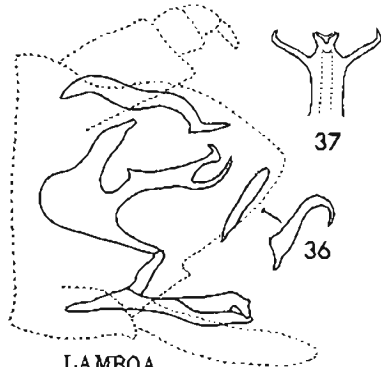
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MACHAERA



34

ALBOPUNCTATA

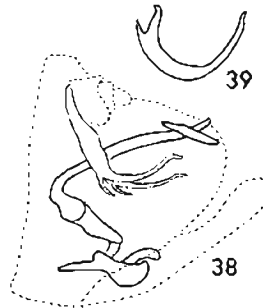


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LAMBOA

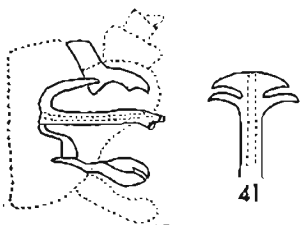
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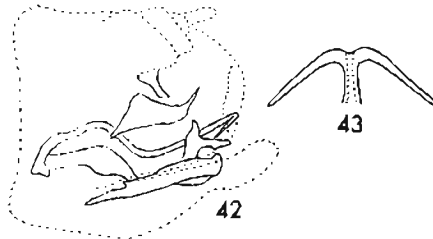
SERPULA



41

ANOMALA

40



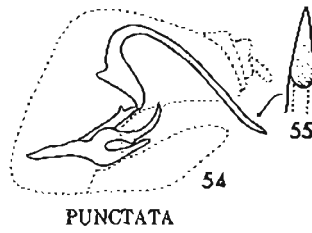
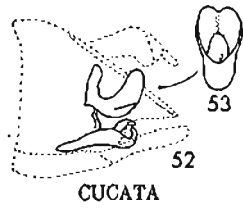
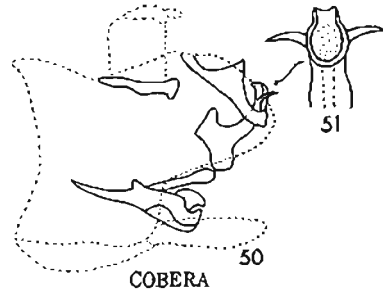
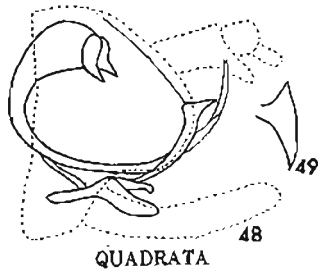
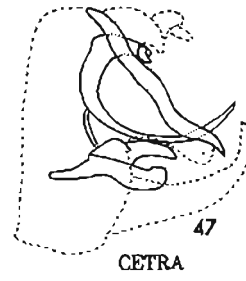
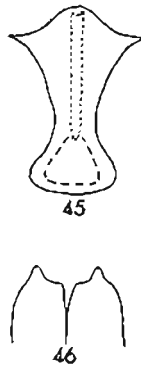
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NEOCERVINA

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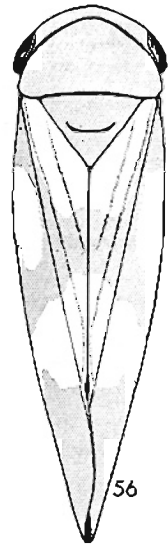




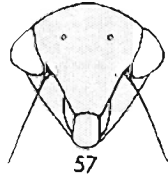
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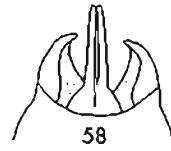




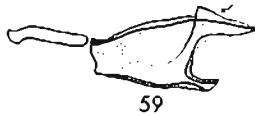
SAUCIA



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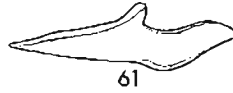
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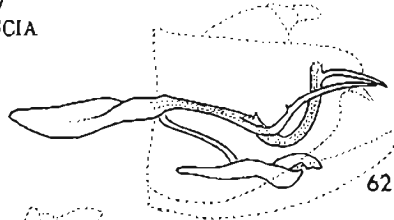
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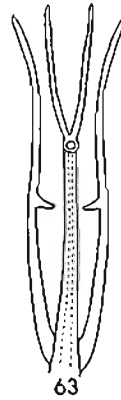
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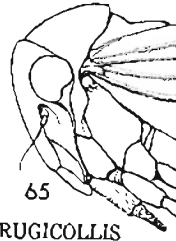
HYDRA



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RUGICOLLIS



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